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Community College of Denver



Auraria Campus
North Campus
Red Rocks Campus
Aurora Education Center

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CD
80-81

College Catalog

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Community College of Denver

College Addresses

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Phone: 629-3285

North Campus
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Westminster, Colorado 80030
Phone: 466-8811

Red Rocks Campus
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Golden, Colorado 80401
Phone: 988-6160

Aurora Education Center
9859 East 16th Avenue
Aurora, Colorado 80010
Phone: 344-1463

1980-81 College Catalog

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Community College of Denver

The College reserves the right to change any provision or requirement of this catalog, including fees, pursuant to law, State Board for Community Colleges and Occupational Education (SBCCOE) rules and College policy.

The College reserves the right at any time and from time to time, without notice, to cancel any course or program described in this catalog, or to change or modify the content, description, timing, availability, location, instructor, academic credit, or any other aspect of any course or program, whenever in its judgment it is necessary or advisable to do so.

Furthermore, the College shall not be responsible for any failure to present or complete any course or program or to perform any other activity, function, or obligation referred to in this catalog, if it is prevented from doing so for any reason beyond its reasonable control, including without limitation, acts of God or of any public enemy; riot; labor strike; lockout; boycott or shortage; the elements; flood or fire; legal prohibition; or the actions of students, of any court, governmental agency, military authority or accrediting entity.

The College further reserves the right to require the student to withdraw at any time pursuant to appropriate policies and procedures. It also reserves the right to impose probation on any student whose conduct is unsatisfactory in relation to established College policy. Any admission on the basis of false statements or documents may be grounds for dismissal and loss of all credit for work which may have been completed at the College.

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Denver Area Council



Eddie L. Brandon
Chairperson
4/2/79-5/26/81
Arapahoe County



Mr. Edwin E. Harshbarger, Jr.
Vice Chairperson
1/12/77-5/26/83
Adams County



Mr. Cipriano Griego
Secretary
5/26/75-5/26/83
Denver County



Robert E. Lahti

The Community College of Denver welcomes you to a wealth of educational opportunities. CCD offers a variety of programs, certificates and associate degrees to anyone wishing to profit from our instructional services.

The new 1980-81 college catalog describes all of our programs and services extended by our excellent staff as we attempt to meet the needs of each individual. Should there be additional instructional activities which would allow us to be more responsive to our five-county service area, we hope you will not hesitate to call them to our attention.

All of us here at CCD pledge to do our best to facilitate the achievement of your educational goals with further commitment of the dignity and significance of each individual student.

Welcome to our campus!

Robert Lahti
President



Mrs. Rosemary Dooley
5/26/75-5/26/83
Jefferson County



Mrs. Aurelia C. Anderson
9/14/67-5/26/81
Boulder County

Instructional Programs and Majors



Instructional Programs and Majors

	Prefix	Associate of Arts or Associate of Science Degree Emphasis	Associate of Applied Science Degree	Certificates	Page
Accounting	ACC		A,N,R	A,N,R	50
Administrative Support Occupations					50
Options					51
Administrative Secretary			A,N,R		52
Chiropractic (not yet approved by State agencies)				A	52
Clerical				A,N,R	52
Credit Operations				A	51
Legal			A,N,R		51
Medical			A		
Secretarial-Bilingual					51
Office Careers			N		
Secretarial			A,N,R		51
Stenographic				A,N,R	52
Word Processing			R		51
Airframe Power Plant			A		53
Anthropology	ANT	A,N,R			*
Appliance and Refrigeration Technology			A	A	53
Options					
Commercial-Industrial	RAC				53
Refrigeration/Heating and Air Conditioning					
Major Appliance Repair	APT				53
Architectural Technology	ATE		N		54
Art	ART	A,N,R			54
Audiovisual Technology	AVT		R		56
Auto Body Painting	ABP			N	49
Auto Body Service	ABS		N	N	49
Automotive Mechanics	AUM		N,R	N,R	54
Biology	BIO	A,N,R			57
Black Studies		A			57
Bricklaying	BRI		R	R	58
Building and Grounds Management	BGM			A	56
Business Machine Technology	BMT		A	A	58
Carpentry	CAR		R	R	59
Chemistry	CHE	A,N,R			60
Chicano Studies		A			60
Child Development Associate			N	N	70
Civil Engineering Technology	CET		R	R	60
Commercial Art	COA		A		61
Communications	COM	A,N,R			61
Computer Programming For Business	CPB		N		62
Computer Science	CSC	A			62
Consumer Electronics Technology	TCE		N	N	100
Continuing Education for Nursing	NCE			A,N,R	86
Criminal Justice Program	CRJ		R	R	63
Dental Assisting	DEA		N		64
Diagnostic Radiologic Technology	RAT		A		94
Dietetic Technology	DIT		N	N	65
Diesel Power and Heavy Equipment & Truck Mechanics	DPE		R	R	65
Drafting for Civil/Topographic Mapping	DRM		A,R		68
Drafting for Construction	DRC		R	R	67
Drafting for Industry	DRI		A,R	A,R	66
Drama	DRA	A,N,R			61
Early Childhood Education and Management	ECE		A,N,R	A,N	69
Earth Science	EAS	R			*
Economics	ECO	A,N,R			71
Electricity Industrial/Commercial	EIC		R	R	72
Electronics Digital Technology	EDT		R	R	71

Locations: A - Auraria Campus
N - North Campus
R - Red Rocks Campus

* See advisor page 6

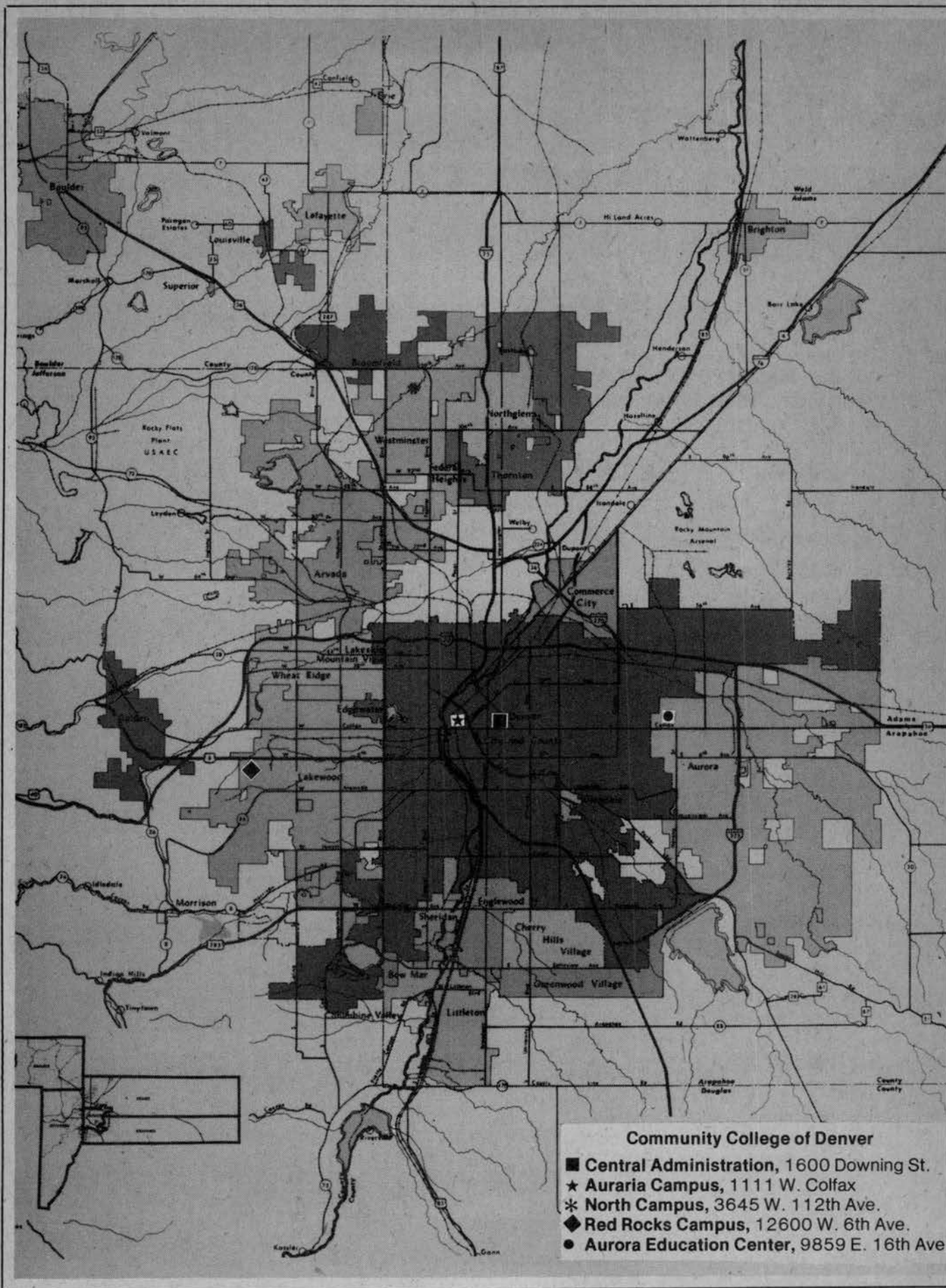
Electronics Technology	ELT		A,N	A,N	73
English	ENG	A,N,R			75
Environmental Technology	EVT		R	R	75
Fire Science Technology	FST		R	R	77
Fluid Power	FLP		R	R	76
Food Service and Management	FSM			N	77
Foreign Automotive Mechanics	FAM		A	A	75
French	FRE	A,R			*
Geography	GEO	A,N,R			78
German	GER	R			*
Gerontology/Geriatrics and Activities Directing	GGA			A	78
Graphic Arts	GRA		A	A	79
Heavy Equipment Operations and Preventative Maintenance	HEO		R	R	79
History	HIS	A,N,R			80
Hotel/Motel Management	HMM		A	A	80
Humanities	HUM	A,N,R			75
Human Services	HSE		A		81
Industrial Maintenance Technology	IMA		R	R	81
Industrial Management	INM		R	R	84
Industrial Mechanical Drafting Technology	IMD		N	N	82
Information Media Technology	IMT		A	A	83
Journalism	JOU	A,N,R			61
Literature	LIT	A,N,R			75
Machine Drafting Technology	MDT		N	N	82
Machine Shop	MAS		N	N	85
Management	MAN		A,N,R		84
Marketing	MAR		A,N,R		85
Mathematics	MAT	A,N,R			86
Music	MUS	A,N,R			*
Nuclear Medicine Technology	NMT		A	A	87
Nursing	NUR		A,N	A,N	88
Optometric Assisting	OPA			N	90
Paralegal	PAR		A	A	90
Petroleum Technology-Exploration/Production	PET		R		90
Philosophy	PHI	A,N,R			*
Photography	PHO		A	A	91
Physics	PHY	A,N,R			92
Plumbing	PLU		R	R	92
Political Science	POS	A,N,R			93
Psychology	PSY	A,N,R			99
Psychiatric Technician	PST			A	93
Public Administration			R		93
Radiation Therapy Technology	RTT		A	A	96
Real Estate	REE		R		94
Recreational Leadership	REL		R	R	94
Respiratory Therapy Technology	RIT		N		95
Science	SCI	A,N,R			*
Social Science	SOS	A,N,R			99
Sociology	SOC	A,N,R			99
Solar Energy-Installation and Maintenance	SOM		R	R	98
Spanish	SPA	A,N,R			99
Speech	SPE	A,N,R			61
Sports Crafts & Specialty Area Mechanics	SCS		N	N	96
Surgical Technology	STE			A	99
Surveying	SUR		R		100
Technical Illustration	TEI		A		68
Traffic Engineering Technology	TET		R		102
Traffic & Transportation Management	TTM		A		102
Travel & Tourism Occupations	TTO			A	103
Urban Horticulture	URH		N	N	104
Urban Planning Technology	UPT		R		103
Water-Wastewater Technology	WWT		R	R	108
Welding and Fabrication	WEF		A,N,R	A,N,R	106

College Course Offerings

Prefix	Alphabetical Listing by Prefix Letter	Key:	Campus	Page
ABP	Auto Body Painting	A - Auraria	N	113
ABS	Auto Body Service	N - North	N	113
ACC	Accounting	R - Red Rocks	A,N,R	113
ANT	Anthropology		A,N,R	113
APT	Appliance and Refrigeration Technology		A	113
ART	Art		A,N,R	113
ASL	American Sign Language		N	121
ATE	Architectural Technology		N	121
AUM	Automotive Mechanics		N,R	123
AVT	Audiovisual Technology		R	126
BGM	Building and Grounds Management		A	128
BIO	Biology		A,N,R	128
BMT	Business Machine Technology		A	131
BRI	Bricklaying		R	132
BSI	Business Simulation and Internship		A,N,R	134
BUS	Business		A,N,R	134
CAR	Carpentry		R	139
CET	Civil Engineering Technology		R	137
CHE	Chemistry		A,N,R	137
COA	Commercial Art		A	138
COM	Communications		A,N,R	139
CPA	Chiropractic Assisting (Not yet approved by State agencies)		A	141
CPB	* Computer Programming for Business		A,N,R	141
CRJ	Criminal Justice		R	142
CRM	Credit Management		A	145
CSC	Computer Science		A	146
DEA	Dental Assisting		N	147
DIT	Dietetic Technology		N	149
DPE	Diesel Power — Heavy Equipment and Truck Mechanics		R	150
DRA	Drama		A,N,R	152
DPR	Drafting/Blueprint Reading		A,R	153
DRC	Drafting for Construction		R	153
DRI	Drafting for Industry		A,R	154
DRM	Drafting for Civil/Topographic Mapping		A,R	155
DRS	Drafting — Solar		R	156
EAS	Earth Science		R	156
ECE	Early Childhood Education and Management		A,N,R	158
ECO	Economics		A,N,R	162
EDT	Electronic Digital Technology		R	163
EIC	Electricity Industrial/Commercial		R	164
ELF	Electricity Fundamentals		R	166
ELT	Electronic Technology		A,N	167
ENG	English		A,N,R	169
EVT	Environmental Technology		R	171
FAM	Foreign Automotive Mechanics		A	173
FLP	Fluid Power		R	174
FRE	French		A,R	177
FSM	Food Service and Management		N	177
FST	Fire Science Technology		R	178
GED	General Education Development		A,N,R	181
GEO	Geography		A,N,R	182
GER	German		R	183
GGA	Gerontology/Geriatrics and Activities Directing		A	183
GRA	Graphic Arts		A	184
HEO	Heavy Equipment Operation and Preventive Maintenance		R	186
HIS	History		A,N,R	187
HMM	Hotel/Motel Management		A	189
HOC	Health Occupations		A,R	191

HSE	Human Services	A	192
HUM	Humanities	A,N,R	193
MA	Industrial Maintenance Technology	R	194
MD	Industrial Mechanical Drafting Technology	N	194
MT	Information Media Technology	A	196
NM	Industrial Management	R	198
PD	Industrial Pipe Drafting	N	198
TP	Interpreter Training Program	N	198
JOU	Journalism	A,N,R	200
JT	Literature	A,N,R	200
MAN	Management	A,N,R	202
MAR	Marketing	A,N,R	203
MAS	Machine Shop	N	204
MAT	Mathematics	A,N,R	206
MDT	Machine Drafting Technology	N	208
MOM	Medical Office Management	A	208
MUS	Music	A,N,R	208
NCE	Continuing Education for Nurses	A,N,R	210
NMT	Nuclear Medicine Technology	A	215
NUR	Nursing	A,N	216
OPA	Optometric Assisting	N	221
PAR	Paralegal	A	222
PET	Petroleum Technology Exploration/Production	R	223
PHE	Physical Education	N,R	224
PHI	Philosophy	A,N,R	227
PHO	Photography	A	228
PHY	Physics	A,N,R	229
PLU	Plumbing	R	231
POS	Political Science	A,N,R	233
PPD	Process Pipe Design	N	234
PST	Psychiatric Technician	A	234
PSY	Psychology	A,N,R	235
RAC	Commercial-Industrial Refrigeration, Heating and Air Conditioning	A	237
RAT	Diagnostic Radiologic Technology	A	239
REA	Reading	A,N,R	240
REE	Real Estate	R	241
REL	Recreational Leadership	R	242
RIT	Respiratory Therapy Technology	N	245
RTT	Radiation Therapy Technology	A	246
SCI	Science	A,N,R	247
SCS	Sports Crafts and Specialty Area Mechanics	N	248
SEC	Secretarial	A,N,R	251
SHM	Sheet Metal	R	253
SOC	Sociology	A,N,R	253
SOM	Solar Energy — Installation and Maintenance	R	255
SOS	Social Science	A,N,R	257
SPA	Spanish	A,N,R	258
SPE	Speech	A,N,R	259
STE	Surgical Technology	A	260
STP	Sign Teacher Program	N	260
SUM	Supervisory Management	N	261
SUR	Surveying	R	262
TCE	Consumer Electronics Technology	N	263
TEI	Technical Illustration	A	266
TET	Traffic Engineering Technology	R	266
TTM	Traffic and Transportation Management	A	268
TTO	Travel and Tourism Occupations	A	269
UPT	Urban Planning Technology	R	270
URH	Urban Horticulture	N	271
WEF	Welding and Fabrication	A,N,R	273
WWT	Water-Wastewater Technology	R	277

Complete programs are not offered on each campus. The student should check the Instructional Programs and Majors Guide to determine the campus offering the complete program.



Community College of Denver Instructional Calendar

Fall Semester 1980

Monday, August 25
Wednesday, Thursday, August 27-28
Monday, September 1
Tuesday, September 2
Thursday, Friday, November 27-28
Wednesday, December 17

Faculty Report
Registration
Labor Day
Classes Begin
Thanksgiving holidays (no classes)
Classes End

Spring Semester 1981

Tuesday, January 13
Wednesday, Thursday, January 21-22
Monday, January 26
Monday-Friday, March 23-27
Friday, May 15

Faculty Report
Registration
Classes Begin
Spring Vacation
Classes End

Summer 1981 (15 week term)

Monday, May 18
Monday, May 18
Wednesday, May 20
Monday, May 25
Friday, July 3
Thursday, August 20

Faculty Report
Registration
Classes Begin
Memorial Day (no classes)
Independence Day (no classes)
Classes End

Summer 1981 (10 week term)

Wednesday, June 3
Wednesday, June 3
Thursday, June 4
Friday, July 3
Thursday, August 13

Faculty Report
Registration
Classes Begin
Independence Day (no classes)
Classes End

Fall Semester 1981

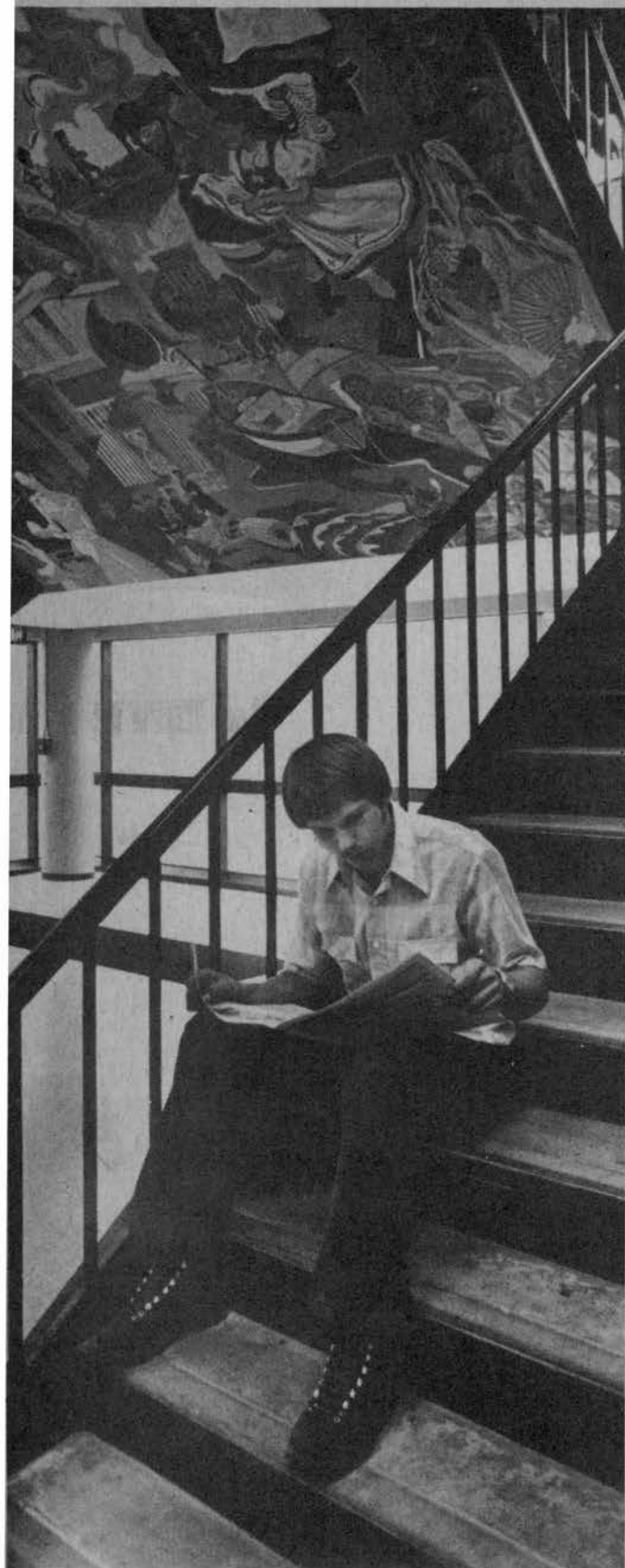
Monday, August 24
Wednesday, Thursday, August 26-27
Monday, August 31
Monday, September 7
Thursday, Friday, November 26-27
Wednesday, December 16

Faculty Report
Registration
Classes Begin
Labor Day (no classes)
Thanksgiving holidays (no classes)
Classes End

(Note: The College reserves the right to alter the Instructional Calendar at any time.)



General Information



History

Community College of Denver is a public community college planned and developed in response to the needs of the metropolitan Denver community.

The successful passage of House Bill 1448 in 1967 established a state system of community colleges under a State Board for Community Colleges and Occupational Education. The first college to be created under the State Board, by the passage of House Bill 1449, was the Community College of Denver.

Through a foresighted general assembly, this act provided for educational facilities and faculty for greater development of skilled manpower to meet the demands of an expanding industrial and business environment. It initiated more accessible low-cost, high-quality, post high school education to many citizens of the community who found post-secondary education inaccessible because of high tuition or limited offerings among existing Colorado higher education institutions at that time.

House Bill 1449 also called for the establishment of three campuses in successive years beginning in the Fall of 1968 to serve the five-county area of Adams, Arapahoe, Boulder, Denver and Jefferson.

The first students enrolled on North Campus, the first of the three campuses, in relocatable buildings at East 62nd Avenue and Downing Street in 1968. The permanent North campus building was constructed in 1977 at 112th Avenue and Lowell Boulevard.

This campus has gained the distinction of having the largest known solar-heated facility in the world. At a time when many are feeling the pangs of the energy shortage, North's solar-heated campus building of 279,000 square feet, serves the community not only by providing academic excellence, but also by making minimum demands on limited supplies of energy that must be shared by all.

The West Campus was established in 1969, also at a temporary site. The first phase of the permanent new facility was built at 12600 West 6th Avenue and opened its doors to students in 1973.

This beautiful campus, with the mountains in its backyard, was renamed Red Rocks. A final phase of the campus was completed in 1976.

When your goal as a community college is to serve your community, you must go where the people are, as North and Red Rocks have done. It was for this reason that CCD chose downtown Denver as the site for its third campus, Auraria.

From its inception in 1970, operating out of several rented buildings, Auraria has provided ready access from the core city. The permanent location at 1111 West Colfax Street, in the Auraria Higher Education Center Complex was established in 1976. The Auraria campus has made education readily available to people who live and work in Denver. Auraria has the distinction of being the only urban campus in Colorado.

In 1979, the Aurora Education Center, an extension of CCD, was established to more effectively serve the eastern part of the Denver metro area. Located at 9859 East 16th Avenue, the Aurora Education Center is housed in a building which was formerly occupied by the city's police department and municipal court. The Center still shares facilities with the fire department and city library.

The City of Aurora was virtually without higher education within its boundaries until a joint effort on the part of Aurora officials and citizens and CCD officials resulted in establishment of the Aurora Education Center.

Since CCD's early beginnings there have been more than 300,000 registrations in one or more courses at the multi-campus college. More than 100 different technical and occupational programs leading to certificates or degrees in a broad range of employment fields are offered through the three-campus CCD system.

Many other individual and community services are also offered to thousands of people who are finding the proximity, economy and quality level of CCD courses to their liking. CCD's efforts have been dedicated to meeting the wide range of interests and needs of the people of the community.

It is estimated that CCD represents an impact on the lives of approximately one out of ten metropolitan Denver residents. One campus led to three and 1,861 students expanded to a Fall 1979 enrollment of over 13,000 students. CCD has grown into the third largest college in Colorado.

As the College looks to plan for the future, CCD remains dedicated to a high level of service to the community and to truly being a comprehensive community college.

Accreditation

Community College of Denver remains under the jurisdiction of the Colorado State Board of Community Colleges and Occupational Education. In April 1975, each of CCD's three campuses were granted unconditional accreditation and membership status in the North Central Association of Colleges and Schools. All courses and educational programs are accredited by this Association.

CCD offers associate degrees and certificates. Students who plan to transfer to baccalaureate programs at four-year institutions are encouraged to follow a prescribed transfer program in order to make a smooth transition to the four-year institution.

Statement of College Philosophy

The Community College of Denver believes that each individual, regardless of sex, race, religion, age, national origin, handicap or financial resources, should be provided the opportunity to develop his or her full potential to the individual's ultimate benefit. The College further believes that quality education supports individuals as they are and assists them in attaining a stronger and more purposeful goal in life. The College is dedicated to accepting those who can benefit from the educational programs of the College. The Community College of Denver pledges itself to the continuing role of developing and maintaining the best educational opportunities possible, within the limits of resources, for all citizens in its service area.

Implementation of this philosophy will include the following goals:

- To offer a high-quality, balanced general education program designed to provide students with essential college-level skills and competencies.
- To develop and maintain programs in continuing education, outreach education, and community services to meet the life-long learning needs of citizens of its service area.
- To provide high-quality, balanced occupational education programs for students which ensure upgrading and job-entry skill levels in current and developing occupations.
- To develop and maintain educational opportunities that enable students to transfer to baccalaureate degree-granting colleges and universities in the academic discipline or professional area of their choice.
- To provide students with personalized settings with opportunities to develop skill and knowledge at all levels.
- To actively recruit students from all segments of the community and to minimize barriers to admission.
- To accept students as they are, to assist them in making wise decisions relative to those educational routes and programs which are consistent with their interests and abilities, and to assist them in completing their objectives.
- To make available a variety of instructional modes and options so as to provide students with the most effective learning experiences.

- To provide high-quality educational guidance and counseling that will aid students in matching their talents and interests with educational and career opportunities.

- To provide opportunities for students to be exposed to cultural and aesthetic experiences, and sponsor cultural events as a contribution to the enrichment of the community.

The goals above reflect the Community College of Denver's dedication to remaining a comprehensive, multi-campus community college that is sensitive and alert to the evolving nature of society and to the changing needs of those served.

Affirmative Action Program and Statement

The Community College of Denver has had a policy pertaining to nondiscrimination since the College opened its doors in 1968. The Affirmative Action Plan constitutes a commitment of the College to the continuing implementation of that policy.

It is not sufficient to state a policy of nondiscrimination. The College has a legal and moral obligation to take positive action to ensure the full realization of equal opportunity for all who are employed or seek employment at the Community College of Denver. Special effort is made to identify promising minority persons and women for positions in all areas and at all levels in which these groups are unrepresented relative to their availability. Selection must be based solely on the candidates' qualifications to carry out the responsibilities that the positions require. Such actions

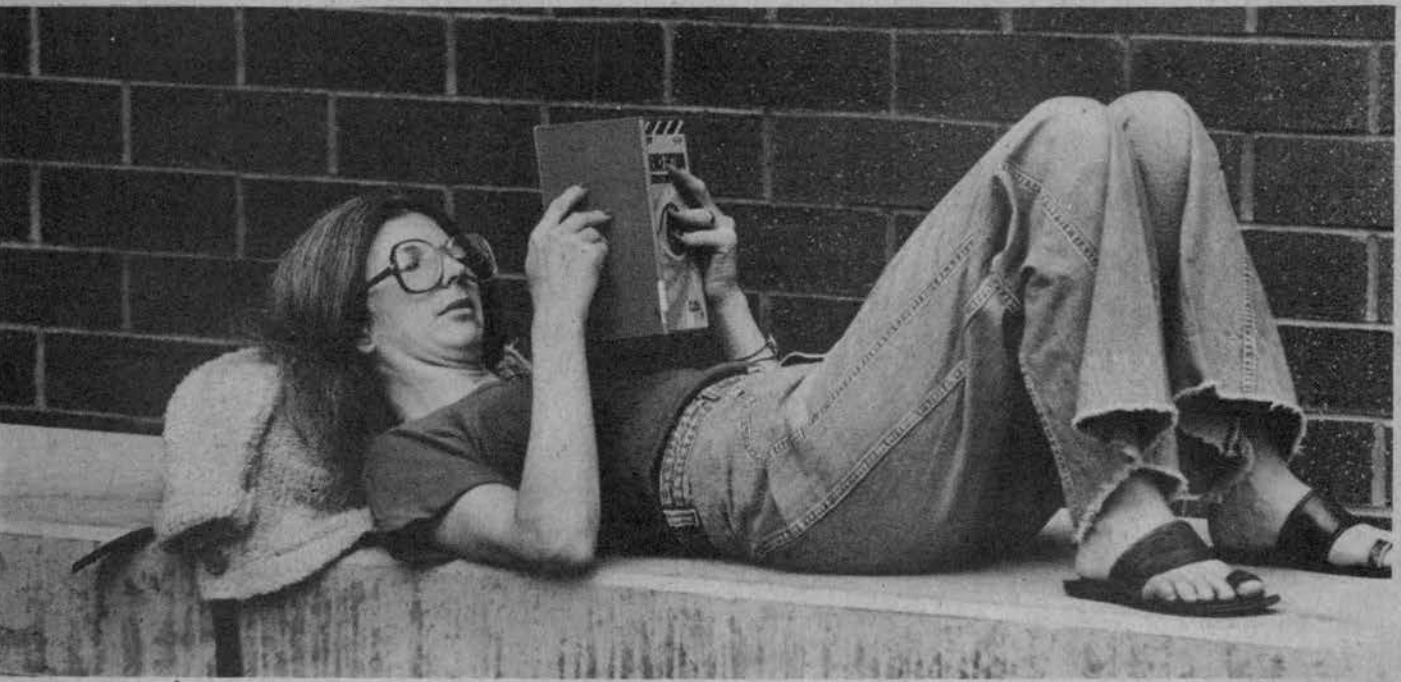
can only result in raising the quality and competence of the College faculty and staff.

All College staff members should share the responsibility for implementing and maintaining an aggressive Affirmative Action Program. An Affirmative Action office has been established to serve the students and staff of the three campuses and Central Administration in all cases of discrimination. The Affirmative Action function is located in the office of Personnel Services at Central Administration, 1600 Downing Street.

Community Services

The Community Service Offices at each campus offer non-credit programs both on campus and off campus. These classes are conducted for the general public as well as on-site for businesses and organizations. Additionally these offices assist in establishing off campus credit classes, providing resources to enhance community problem solving, offer cooperative programs with the Women's Center and are involved in improving the curriculum and services of the institution. Community Services staff attempt to meet any request for education programs for which there is sufficient enrollment demand and which is appropriate to the goals of the College. The general public and organizations are encouraged to make program requests.

Professional development, vocational, social development, business, recreation, dance, financial and home improvement, arts and crafts, communications, older Americans, women's issues, aviation, psychic, health, domestic skills and others. Persons 65 and over wishing to take credit or non-credit classes may do so at no cost.



Resource Development

The College actively seeks funding from external funding sources in order to provide programs that will:

1. Enable more students to attend the college.
2. Offer courses of instruction and provide services that could not ordinarily be provided from present operating funds.
3. Enrich present programs.
4. Be consistent with the philosophical commitment of the College.
5. Be within the scope of the financial and human resources of the College.

The programs vary according to schedules for funding and agency guidelines.

Cooperative Education Program

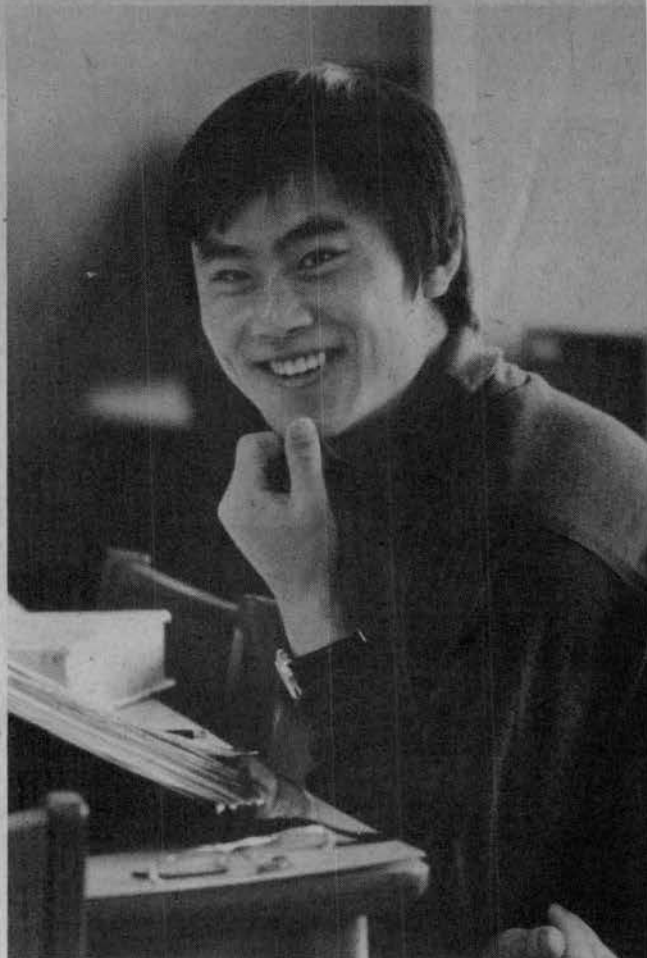
The Cooperative Education Program provides opportunities to supplement course work with practical experience related to the student's educational program and occupational objective.

In some programs, cooperative education is a part of the course of study. The student signs an agreement with the College and the employer in the Denver metropolitan area. The student works under the immediate supervision of experienced personnel at the business or industry involved. The College coordinator provides general guidance and evaluation.

Prerequisites for enrollment in the Cooperative Education Program are permission of the instructor and approval of the division director. A weekly one-hour seminar is required of all students.

Advisory Committee

Each occupational program has an advisory committee representative of that particular business, industry, or professional area. The committee assists the College in planning and development activities, such as, curriculum, equipment selection and employment opportunities.



Warren Center

The Community College of Denver, Red Rocks campus, and the Warren Occupational Technical Center have established a cooperative agreement whereby students from either of the institutions may enroll in one or the other's programs. This agreement, in essence, doubles the number of offerings in both institutions.

Admissions Procedures for Warren Center

Any high school student desiring to take an occupational program at Community College of Denver Red Rocks campus (CCD/RR), must contact their home high school counselor who will assist them through the Warren Center and into CCD/RR.

Post-Secondary Students Admission to Warren Center

Any post-secondary student desiring to take a day-time occupational program at Warren Center must contact the Vocational Guidance Specialist at CCD/RR for assistance. For entry into evening occupational programs at Warren Center contact the specific division director at CCD/RR.

Any occupational program which is located both at CCD/RR and at Warren Center will be filled on a space-available basis. Where duplicate occupational programs exist, CCD/RR classes will be filled on a priority basis.



Admissions Information

Admissions Policy

Admission to the Community College of Denver is open to high-school graduates and non-graduates, 18 years of age or older, and any other person who can profit from the instruction for which he/she enrolls. Admission to the College does not assure acceptance of a student in a particular course or program. A student may enroll in any course which he/she may be reasonably expected to complete, but students may be requested to enroll in courses designed to correct deficiencies. The College provides special courses created for the purpose of assisting students in the achievement of skills necessary to succeed in their program major.

Students should be aware that some programs have limited space and have additional special admissions procedures and forms. The applicant is responsible for contacting the particular division at the campus of his/her preference for this information.

Physical examinations are not required as a condition for admission to the College. Physically handicapped students, following admission to the College, are encouraged to contact the Center for the Physically Disadvantaged (CPD). CPD provides, at no additional cost to the student, numerous types of support services which seek to provide full accessibility to all programs and facilities of the College. All acquired information is confidential, and is utilized for the sole purpose of planning appropriate services.

Students are served more adequately when applications, transcripts, and other information that would be of assistance in making educational decisions are assessed prior to registration in classes. For this reason, students may be assessed for the purpose of advising relative to their probability of success in particular courses. Transcripts of previously earned credit should be submitted in advance of counseling, advising, and registration for classes.

Student Rights and Responsibilities

Admission to the College implies a recognition that the student should respect the rights of others, and observe moral and civil laws. Interference with the normal processes of education in the classroom or elsewhere on the campus will be regarded as unacceptable conduct which warrants suspension and/or dismissal from the school. The success of the College in attaining its objectives is conditioned by the good will, integrity, and honor of its students.

The Denver Area Council has approved a document which contains a Definition of Education, a Joint Statement on Rights, Freedoms and Responsibilities of Students, and Rules of Procedure in Student Disciplinary Matters. This document provides guidelines necessary to insure the rights of all members of the college community. Each campus has its specific "due process" procedures. These procedures are available in Student Activities/S.G.A. offices.

Admissions Procedure:

Submit an official form for admission to the Community College of Denver, available from the Registrar's Office. Transcripts of previous high school or college credit are not required except as follows:

1. Persons planning to receive a degree or certificate from the College, who wish previous college credits to be considered, must submit official copies of those previous college transcripts to the Registrar's Office no later than the deadline for graduation applications as published in the quarterly schedule of courses. Veterans using V.A. benefits must submit transcripts of all previous post-secondary education and training.
2. The College reserves the right to request transcripts of students in cases where it is felt that the student can be better served through use of his transcripts.
3. International students should refer to International Student section.

These documents become the property of the College and will not be released to the student or transferred to other institutions. The student's subsequent registration is contingent upon receipt of all required documents.

The High School Student

An individual, under 18, presently attending high school, and wanting to take courses at the College should:

1. Make arrangements through a high school counselor for certification of credit.
2. Complete a standard form for admission.
3. Submit the special under age student application.

High School Graduates

Colorado high school seniors applying for admission should obtain the application form from the Office of Admissions and Records at CCD.

Program Admission

Admission to the College does not assure acceptance of an individual student in a particular occupational course or program. Occupational students must declare their program major at the time of registration and in the event of a change in program major, must notify the registrar's office of such change.

Readmission of Former Students

Former students who are returning to the College after an absence of one or more semesters, summer term excepted, must make application for readmission. Students who have attended other colleges since last attending the Community College of Denver will be requested to submit a transcript of all college credits.

Transfer of Credit

Copies of previous college transcripts must be submitted to the Registrar's Office at the time of application for admission.

Students needing transcript evaluations for educational planning must make arrangements for evaluations before or after formal registration periods. Due to staff limitations, transcripts will not be evaluated on registration days.

The Community College of Denver will accept "D's" from other institutions, but in order for a person to graduate from Community College of Denver with a certificate or an associate degree, he must have an overall grade point average of 2.0 in all credit counted toward the certificate or degree. Students are herewith advised that "D" credit may not be acceptable to four year institutions.

Transferability of CCD Credit to Four-Year Institutions

Students whose primary interest in attending the Community College of Denver is to prepare for transfer to a four-year college or university should familiarize themselves with the general education requirements of that institution. Since graduation requirements vary among institutions, it is important to obtain assistance from an advisor or counselor in planning a transferable program of study. A *Transfer Guide* to Colorado State colleges and universities is available in the Office of Student Services.

In addition, each major field of study at a particular institution has specific course requirements. Therefore, it is extremely important for students to follow a well-planned course of study at CCD. Students who follow a prescribed transfer program (recommended by an advisor or counselor) will have the best chance of making a smooth transition to the four-year college of university.

International Students

The Community College of Denver is authorized by the U.S. Immigration Service to admit non-immigrant alien students.

International students who wish to enroll at the Community College of Denver are required to submit the following documents:

1. An official form for admission to the Community College of Denver.
2. Two official copies of the appropriate high school, college or equivalent transcript. One copy must be an English translation. The other transcript should be in the original language.
3. Evidence of proficiency in the English language as documented by one of the following:
 - a. Test of English as a Foreign Language, minimum score 475.
 - b. Michigan Test of English Language Proficiency, minimum score of 75 on both parts of the examination.
 - c. ELS, level 107 (English Language Services) or high intermediate level 4 of Intensive English Centers.

- d. Level of achievement comparable to the above to be judged by the Registrar's Office.

U.S. Immigration and Naturalization Service regulations require that foreign students on F-1 Visas carry and complete full courses of study (minimum of 12 credit hours per semester), and that they complete their educational objectives within a reasonable period of time.

For information on the TOEFL test, write to:
Test of English as a Foreign Language
Educational Testing Service
Box 899
Princeton, New Jersey 08540 U.S.A.

4. A statement of the financial resources to provide for the student's stay in the United States.

Form 1-20A will not be issued to an International student until all the above documents are on file in the appropriate campus Office of Admissions and Records, and a decision to admit the student is made. International students should allow sufficient time to gather and submit *all* required documentation so that an admissions decision might be made by the College prior to the beginning of the term for which admission is sought.

Tuition and fee charges for international students are the same as for out-of-state registrants.



Request for Transcripts

A student requesting that a transcript of his record be sent to an educational institution or to a prospective employer must complete the appropriate form which may be obtained from the Admissions and Records Office. The College assesses no fee for this service; however, no transcript will be provided for a student who has not fulfilled all financial obligations to the College or who has not provided transcripts as requested by the College.

Change of Address

It is the responsibility of each student to notify the Office of Admissions and Records of any change of address.

Inter-Campus and Inter-Institutional Registration

Students who wish to register concurrently on one or more campuses of the Community College of Denver, or at both the Auraria campus and Metropolitan State College, should make inquiry at the office of the Registrar. International students must meet host institution's English Proficiency requirements.

Family Education Rights and Privacy Act of 1974

In compliance with the Family Education Rights and Privacy Act of 1974, also known as the Buckley Amendment, institutions of higher education such as the Community College of Denver are required, on an annual basis, to inform their students of their rights under the Act, and to enumerate its basic provisions. The following statement constitutes such notice.

Under the Act, students at post-secondary institutions have the right to inspect and review any and all official records, files, and data directly related to the student, including all material that is incorporated into each student's cumulative record folder.

The student shall have the right to challenge the contents of their educational records and also, an opportunity for the right to a hearing to challenge the content of his/her school records, to ensure that the records are not inaccurate, misleading, or otherwise in violation of the privacy or other rights of students, and to provide an opportunity for the correction or deletion of any such inaccurate, misleading, or otherwise inappropriate data contained therein.

Institutions may lose federal funds if institution policy permits the release of personally identifiable records or files (or personal information contained therein) of students without written consent of the student, to any individual, agency, or organization, other than the following:

1. Other officials within the college.
2. Officials of other colleges to which the student seeks admission.
3. Certain state and federal authorities.
4. Financial aid agencies.
5. Authorities entitled to access under state law (e.g. Open Records Law).
6. Organizations studying means of improving test student aid, or instruction.
7. Accrediting organizations.
8. Parents of dependent students.
9. Officers of the court in response to order of subpoena.
10. Persons dealing with emergency that threaten health or safety.

"Personally identifiable records" includes the following: the name and address of the student, the name of the student's parent(s) or other family member, the student's social security number, a list of personal characteristics which would make the student's identity easily traceable, or other information which would make the student's identity easily traceable.

The school may release "directory information" about students without the prior approval of the student unless the student requests in writing that the institution not designate that information relating to the student: the student's name, address, telephone number, date and place of birth, major field of study, participation in officially recognized activities and sports, dates of attendance, degrees and awards received, the most recent previous educational agency or institution attended by the student, and other similar information.

Any student at CCD not wishing any or all of the above information to be released upon request to any interested party must notify the Registrar's Office in writing within the first ten class days of any quarter or semester. Forms for such purpose are available in the Registrar's Office. Requests for non-disclosure will be honored by the institution for only one academic year. All requests for non-disclosure filed in any academic year expire on the first day of class of the next academic year (Sept. -June), and must be renewed if the student desires further non-disclosure.

The following types of information are maintained by the institution and are located in the Registrar's Office:

1. Application for admission.
2. Evaluations of transfer credit and the transferred transcript(s).
3. Applications for and evaluations pertaining to graduation.
4. Petitions for change in residency classification.
5. Records pertaining to the awarding of non-traditional credit (CLEP, USAFI, Life Experience).
6. Records of all courses attempted and completed at CCD.
7. Official CCD transcript of the student's academic record.
8. Routine correspondence between the student and the institution.
9. Other records pertaining to routine transactions between the student and the institution on a day-to-day basis, e.g. add-drop forms, requests for transcripts, grade change forms, etc.

The Registrar is the person responsible for the maintenance of records, and inquiries regarding such records should be directed to the Registrar or his designee.

Students wishing to examine their records may be required by the institution to give written notice of such intent. Such requests must be honored by the institution within a period not to exceed forty-five days from the date of the notice of intent.

When personally identifiable information is released to third parties under the provisions of this act, it is done on the condition that such party will not permit any other party to have access to such information without the written consent of the student.

This notice supersedes all previous notices on the Family Educational Rights and Privacy Act of 1974 published by or for the Community College of Denver. Revisions and clarifications will be published as experience with the law and institutional policy warrants.

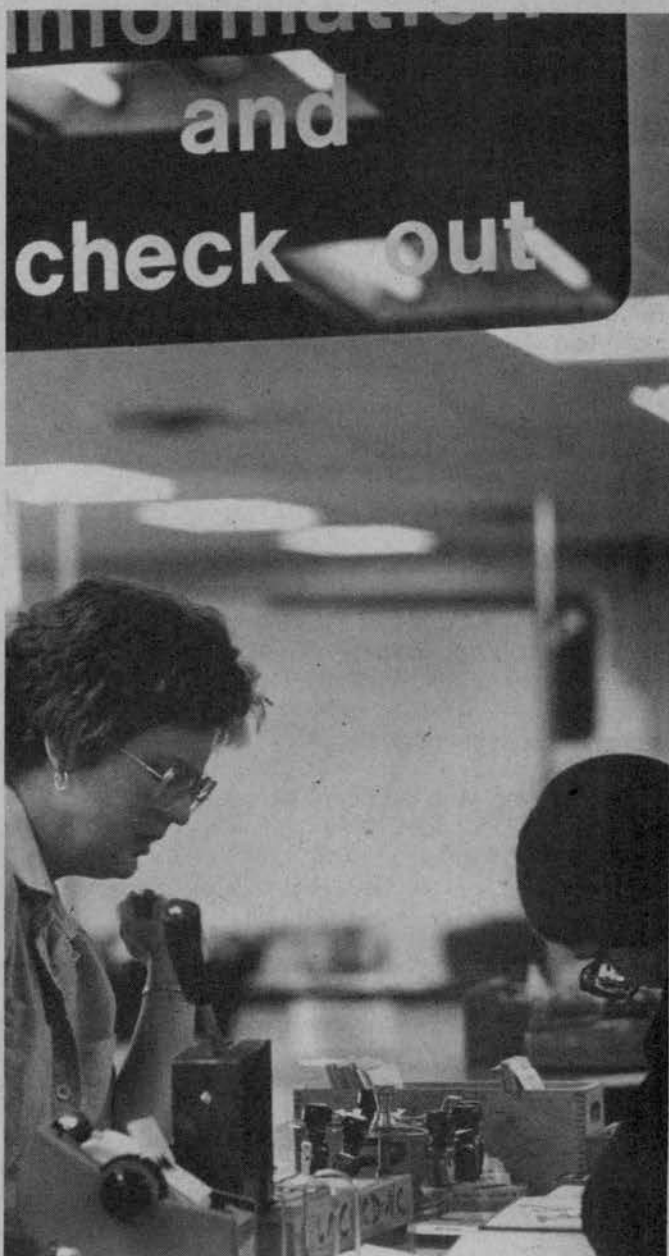
Safety

Correct safety instruction and practices are a vital concern within the instructional programs of the College and it is the responsibility of all persons to practice correct safety measures. If an injury does occur during instruction, the student needs to report such injury to the instructor immediately, so that first aid may be

administered or the student may be directed to the College Health Service Office. Students with health problems should report such problems to the Health Service Office, so that information will be available in case of an emergency.

Student Health Insurance

All students are urged to have health insurance (student plan, family plan or other) before enrolling in any instructional course or program. In case of an injury or emergency medical care, the College is not responsible for students' financial obligations. For additional information please contact the Office of Student Services.



Tuition, Fees and Refunds

Tuition

The tuition for state supported institutions is determined by the Colorado General Assembly and is subject to change.

Tuition Summer Term, Fall and Spring Semester

Resident

1-11 credit hours — \$20.55 per credit hour

12-18 credit hours — \$246.50

Each hour over 18 is an additional \$16.45

Non-Resident

1-11 credit hours — \$89.15 per credit hour

12-18 credit hours — \$1070.00

Each hour over 18 is an additional \$71.35

Fees

A student fee in the amount of \$.75 to \$2.40 per credit hour, depending upon the campus, up to a maximum of \$28.80 is charged to all enrolled students. This money is used for various student activities and benefits including student publications, operation of student government, parking privileges, cultural activities, recreational activities, clubs and organizational activities. Expenditure of student fee monies is generally made with the approval of the Student Government Association. Students enrolled in certain courses may be required to purchase individual supplies and materials and to rent uniforms.

In addition to the activity fee at the Auraria campus, every registered student is assessed \$10.00 per semester which is for the payment for the construction of the Auraria Student Center and Child Care Center.

Financial Obligations of Students

The financial obligations of students to the College — such as payments for tuition, fees, and books — are due and payable on the published specified date or at the times the obligations are incurred. In unusual circumstances of an emergency nature, where it may be impossible for a student to pay the total charges at the proper time, special arrangements may be considered for approval by the Business Office.

A student is not considered officially registered until his class schedule has been processed by the Business Office.

A student who is in any way financially obligated to the College through a tuition deferment, emergency student loan, National Defense Loan, etc., or who has failed to account for College property in his possession will be denied a transcript of record and registration for subsequent sessions until he has made a satisfactory settlement with the college.

Residence Classification for Tuition Purposes

At the time of application for admission, students are classified for tuition purposes as Colorado residents or out-of-state residents according to provisions of Colorado law.

Any student who has been classified as a non-resident and who believes he can qualify as a resident may secure from the Registrar a petition form for in-state status. A copy of the regulations governing residence classification is a part of the petition. Students should be aware of the published deadline for petitions for each academic term. It is the student's responsibility to ensure that petitions and all supportive documentation are on file in the Registrar's Office by the published deadline. The Registrar's Office cannot assume responsibility for mailed petitions which arrive after the deadline, and petitions will not be accepted after the published date.

The final decision regarding tuition status rests with the Registrar. Changes in classification, whether from out-of-state to in-state or the reverse, shall become effective at the time of the student's next registration. All questions regarding residency classification should be addressed to the Registrar.

Withdrawal Procedure and Tuition Refunds

Students are admitted to the Community College of Denver under the assumption that they will remain until the end of the semester or longer, unless unforeseen circumstances necessitate their withdrawal from the institution.

When a student finds it necessary to initiate a complete withdrawal from the College, he should check with the Registrar's office for the proper procedure and obtain the necessary forms.

1. The student may claim a 100% tuition and fee refund for partial or total withdrawal from registration before the first day of class.
2. A 75 percent refund of tuition for total or partial withdrawal from the first day of classes through the



12th day of classes. No tuition or fee refund of less than \$1.00 will be made. A refund may be prorated on the basis of the length of the course.

3. No refund will be made subsequent to the 12th day of classes.
4. Prior to the 12th day of class, no tuition or fee shall be charged to a student for adding or dropping classes unless the difference between the number of credits dropped or added takes that student beyond the amount the student has originally paid.
5. If original tuition paid warrants, students are entitled to a 100 percent refund of tuition and fees paid for any class(es) cancelled by the College. This refund must be initiated by the student through the Admissions Office.

6. Unusual circumstances concerning refunds should be referred to the Dean of Student Services.

Program Changes

The College retains the right to cancel programs or courses, to change instructors, and to change times or locations of classes offered.

Published charges for tuition and fees are subject to changes established by the Legislature.

All courses listed in the current catalog but not offered in a given semester or on a given campus may be offered if there is sufficient student interest.

Educational Standards

Attendance

Regular class attendance is necessary if a student is to obtain maximum benefits from his work. Learning objectives are designed around the student's attendance and absenteeism will definitely affect a student's achievement. Students are expected to comply with the attendance policy as set by individual instructors and divisions.

Credit Hours

Generally, one credit hour is earned by attending a non-laboratory class for a fifty-minute period, once a week, for a full semester. In a laboratory course, one credit hour is granted for from two to three fifty-minute periods per week in a laboratory.

Course Load

The normal course load is 12 to 18 credit hours. Students who are registered for fewer than 12 credit hours are regarded as part-time students.

In order to complete a 60 credit hour program within two years, a student must complete 15 credit hours each semester in the regular academic year (fall and spring semester).

Eighteen (18) credit hours is considered a heavy load. Twenty (20) credit hours is the maximum load for all students without special permission.

Course Numbers

Course numbers consist of prefix letters which constitute an abbreviation of the subject area or program and a series of three digits, the first of which indicates its classification according to the year it should be taken. Usually, course numbers below 100 are designed for developmental education and numbers from 100-199 are usually taken during the first year of college since they are prerequisite courses. Courses numbered 200-299 are usually taken during the second year of college.

Adding and Dropping Courses

Students wishing to adjust their schedules should be familiar with the College policy which reads: "The deadline for adds will be the 12th full day of instruction. The deadline for drops will be on the date two weeks prior to the end of the semester." Exceptions to this policy may be made only upon approval by the appropriate division director and instructional dean.

After the 12th class day, regular tuition will be charged for all credits added. Offsetting drops will not be taken into consideration in calculating any additional tuition. Students are encouraged to become aware of the last day to add classes each semester to avoid any additional tuition payment.

Academic Standards

It is the policy of the Community College of Denver to aid and support students in pursuit of their educational goals.

A grade point average of at least 2.0 (C) is required on all academic work for a student to complete certificate and degree programs. Students who earn more than fifteen (15) credit hours and have less than a cumulative 1.5 grade point average will be considered in a "progress alert" status.

Students who have earned more than thirty (30) credit hours and have less than a cumulative 2.0 (C) grade point average will be considered to be making unsatisfactory progress and shall be subject to enrollment restrictions.

Students who have earned over thirty (30) hours and have less than a 1.5 grade point average may be asked to withdraw for a semester so that the student may better clarify his/her goals. Students who are administratively withdrawn have the right to appeal such a decision.

Evaluation and Grading

The Community College of Denver is philosophically committed to focus, not on student failure, but on student success. Thus it has adopted a non-punitive grading system which emphasizes achievement rather than failure. This system does not compute a grade as part of the grade-point average (GPA) when, for whatever reason, a student is unable to fulfill the requirements of a course.

Student achievement is evaluated in relation to the attainment of specific objectives of the course. At the beginning of a course the instructor will explain these objectives and the basis upon which grades are assigned. For the purposes of the grade descriptions, "achievement" means successfully reaching a certain level of knowledge or understanding, and "mastery" means successfully reaching an objective level of competency in a skill.

Grade descriptions derive from the average grade attained by students, the C-level, and are as follows:

Grade Symbol	Quality of Work Indicated by Symbol	Grade Points
A	The student has demonstrated superior mastery or achievement of course objectives and/or additional objectives.	4
B	The student has demonstrated better-than-acceptable mastery or achievement of the course objectives and/or additional objectives.	3
C	Acceptable standard for graduation. The student has demonstrated acceptable mastery or achievement of the course objectives.	2

The student has demonstrated less-than-acceptable mastery or achievement of course objectives. In some programs it may be necessary to repeat the course in order to advance, as D-level achievement is not generally satisfactory for advancement in the same or related studies. Credit may not transfer.

1

AU The student has audited the course.

Not computed in GPA

Grades are issued at the end of each semester for all students, and grade slips will be mailed approximately one week after the last day of classes.

Credit. The student has demonstrated at least acceptable completion of the course objectives. Limited to certain specified courses in which student achievement is evaluated on a credit-no credit basis, rather than by a letter grade.

Not computed in GPA

Satisfactory Progress. For designated courses listed as open-entry/open-exit, denoting that the class may extend beyond the normal end of a term. The student has demonstrated satisfactory progress in completing course objectives and is eligible to complete the course during the following semester for credit and a grade. Re-registration may be required in certain circumstances.

Not computed in GPA

No Credit. The student has remained enrolled in the course, but has not, for whatever reason, demonstrated achievement of course objectives.

Not computed in GPA

Incomplete. Due to extenuating circumstances, the student has not been able to complete the course requirements. Two-thirds to three-fourths of the work shall have been satisfactorily completed for a student to be eligible for an "I," and the instructor shall have determined that the student has a reasonable chance of completing the remainder. **It is the student's responsibility** before the end of the term, to arrange with the instructor for completion of the course. Course work needed to change an "I" to a grade should be completed before the end of the next consecutive fall or spring semester, or the "I" will become an "NC".

Not computed in GPA

The student has officially withdrawn from the course.

Not computed in GPA



Guidelines For Grade Symbols

The guidelines listed below are used by faculty, subject to the needs of the program or course, to establish their grading criteria.

GRADE A — A Distinguished Grade For Superior Work

1. The student has mastered the content and objectives of the course, is able to apply what he/she has learned to new situations, and is able to relate it to other knowledge.
2. The student consistently distinguishes himself/herself in examinations, reports, projects, class participation and laboratory or training situations.
3. The student shows independent thinking in assignments and class discussion.
4. Work is consistently in proper form, where required shows satisfactory evidence of careful research, and is submitted punctually.
5. Where achievement in the course involves development of hand or body skills, the student consistently demonstrates superior skills, ability and performance.
6. The student complies with the instructor's attendance requirements.

GRADE B — A Better-than-Acceptable Grade

1. The student consistently shows mastery of the course content and objectives, and usually is able to apply what he/she has learned to new situations or to relate it to other knowledge.
2. The student is consistently above average in examinations, reports, projects, class participation, and laboratory or training situations.
3. Work is in proper form, where required shows satisfactory evidence of research, and is submitted punctually.
4. Where achievement in the course involves development of hand or body skills, the student consistently demonstrates above average skills, ability and performance.
5. The student complies with the instructor's attendance requirements.

GRADE C — An Acceptable Grade

Permitting Progress Forward In Course Sequence

1. The student shows evidence of a reasonable comprehension of the subject matter of the course and has an average mastery of the content sufficient to indicate success in the next course in the same field.
2. The student consistently makes average scores in examinations, reports, projects, class participation and laboratory or training situations.
3. If the subject carries transfer credit, the student has indicated sufficient competence in the content to continue in the subject field upon transfer.
4. Assignments are completed in good form and on time.
5. Where achievement in the course involves development of hand or body skills, the student consistently demonstrates average skills, ability and performance.
6. The student complies with the instructor's attendance requirements.

GRADE D — A Less-than-Acceptable, Passing Grade

1. The student falls below the average examinations, projects, reports, class participation and laboratory or training situations, but shows some competence in the assigned subject matter of the course.
2. The competence demonstrated is insufficient to indicate success in the next courses in the subject field.
3. Assignments are completed in imperfect form, sometimes late, or of inconsistent quality.
4. Where achievement in the course involves development of hand or body skills, the student consistently demonstrates usable but below average skills, ability and performance.
5. The student complies with the instructor's attendance requirements.

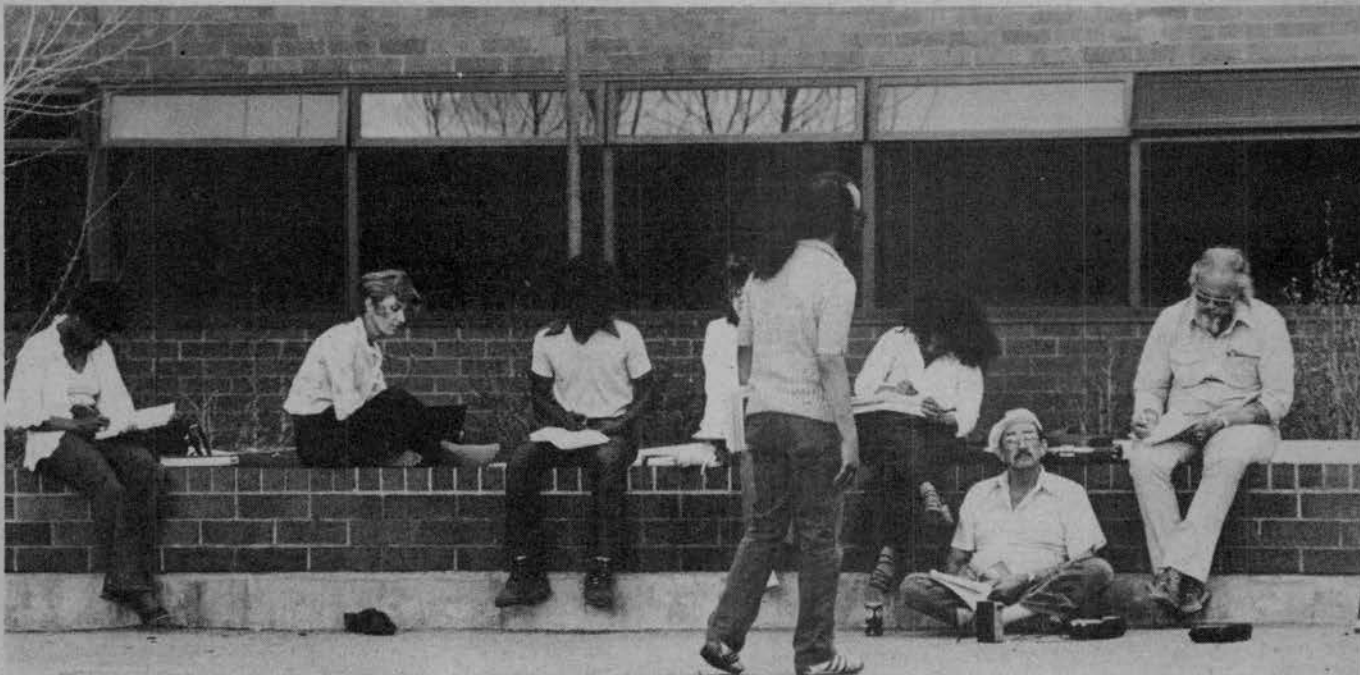
NC — No Credit

1. With respect to examinations, projects, reports, class participation and laboratory or training situations, the student fails to perform at the "D" or above level.
2. The student shows little or no competence in the assigned subject matter of the course.
3. Where achievement in the course involves development of hand or body skills, the student fails to perform at the "D" or above level.
4. The student fails to comply with attendance regulations.

SP — Satisfactory Progress

Some courses, designated as open-entry/open-exit, may extend beyond the normal end of a semester since they are designed on a mastery-learning basis.

Upon successful completion of such a course, upon request, credit and a grade will be awarded. Regulations for such courses are these:



- In courses for which this grade is authorized, the SP will be given to —
 - the student who has attended for a full term and has shown satisfactory progress, but has not yet mastered required course objectives, or
 - the student who, under CCD continuous-enrollment policy, has enrolled late in the semester and is making satisfactory progress, but has not had sufficient time to master required course objectives.
- A student may be required to re-register for a course in which he/she received an SP. When the remaining time needed for completion is short, however, or when other extenuating circumstances occur, the Dean may waive the requirement for re-enrollment.

credit — No Credit

Some courses are offered on a credit-no credit basis. Upon successful completion of such a course, unit credit will be awarded. However, courses taken on a credit-no credit basis are not used in the computation of a student's grade-point average. Regulations for such courses are these:

- In courses in which credit-no credit is authorized, the credit grade is granted for performance which is equivalent to the letter grade of "C" or better.
- Courses in which credit-no credit grading may be used must be so designated by the division involved. Courses falling into this category will be specified by the campuses each term in their class schedules. A department may require majors to obtain letter grades in that department's major subjects.

Grade-Point Average

Under this system, grade points measure the achievement of the student for the number of credit hours he has taken. They are determined by multiplying the grade points per credit hour by the credit hour value of the course taken. The following example will enable the student to compute his grade point average.

Course	Completed Credit Hrs.	Final Grade	Grade Points
English	3	A	4 grade points (4x3) equals 12
Mathematics	3	B	3 grade points (3x3) equals 9
Electronics	2	A	4 grade points (2x4) equals 8
Physics	5	C	2 grade points (5x2) equals 10
Physical Education	3	D	1 grade point (3x1) equals 3
	14		42

Total grade points are divided by total credit hours to compute the grade point average. For example, 42 divided by 14 equals a 3.0 grade point average. The cumulative grade point average is the total number of grade points recorded, divided by the total number of credit hours.

Quarter Credit Conversion to Semester Credits

A quarter credit hour is equivalent to 2/3 of a semester credit hour. Multiply quarter credit hours by 2/3 to convert them to semester credit hours. Examples:

- 17 quarter credits x 2/3 equals 11 1/3 semester credit hours
- 19 quarter credits x 2/3 equals 12 2/3 semester credit hours
- 90 quarter credits x 2/3 equals 60 semester credit hours.

The permanent record will reflect only the cumulative total quarter credit hours converted to semester credit hours: 129 quarter credits x 2/3 equals 258/3 equals 86 semester credits.

Independent Study

The College recognizes a commitment to provide for individual needs, and independent study is seen as one means of meeting this commitment. This program provides an opportunity for a student to pursue study on a special topic outside the regular offerings of the institution. The division director or appropriate supervisor will select an instructor and determine the amount of credit to be granted. Credit will be granted proportional to the hours of experience.

Credit for Experiential Learning

Students are allowed to earn credit for experiences, formal or informal, which have not been previously equated to college credit. The College will allow credit for life experience which, upon evaluation, is considered to be equivalent to courses in the catalog. Students who wish to apply for such credit should contact the appropriate instructional division.

Other Challenges for Credit

The following additional procedures and conditions will apply for students to earn credit for experiential learning:

- The student must be currently enrolled in the College.
- The student must submit a petition to the appropriate division director setting forth the nature of the student's previous experience(s) and planned career objective(s) which support his petition to seek allowance of credit in lieu of enrolling in and completing a particular course.
- Upon approval of the division director, an evaluation shall be arranged whereby the student shall have the opportunity to demonstrate that his level of achievement is the equivalent of that required by the College for successful completion of a particular course.



4. No more than one evaluation for credit for a particular course will be arranged during any semester of the regular academic schedule of the College.
5. Upon successful completion of the evaluation for credit, the student shall be awarded full credit for the particular course(s) as set forth in his approved petition.
6. Students pay tuition only if they pass and would normally owe tuition for the credit.

College Level Examination Program

The College recognizes the College Level Examination Program (CLEP) examination as well as selected subject examinations. Up to 30 hours of college credit may be awarded through the CLEP general examinations. Additional credit may be earned by attaining successful scores on CLEP subject examinations. The Registrar's Office should be consulted for details concerning CLEP examinations.

Advanced Placement — Nursing

Corpsmen, Licensed Practical Nurses, and transfer students from hospital nursing programs entering the Nursing Program at North campus are eligible for credit awarded by examination for advanced placement in the program.

Students achieving a score of 45 in Adult Nursing Fundamentals of Nursing and Maternal Child Care Nursing — A.D., on the ACT Proficiency Examination Program receive credit for first year nursing courses.

USAFI

Students desiring credit for courses completed through the U.S. Armed Forces Institute should request that copies of such transcripts be forwarded to the Registrar's Office. An evaluation will be made and credit awarded as recommended by the Commission on Accreditation of Service Experiences of the American Council on Education.

Student Services — Financial Aid

General Information:

The Office of Financial Aid administers federal and state financial aid programs. Eligibility is based on financial need as defined by federal, state and institutional regulations and guidelines.

Full-time (12 credit hours or more) financial aid recipients are expected to complete a minimum of 12 credit hours per semester with a 2.0 grade point average.

Part-time (1-11 credit hours) financial aid recipients are expected to complete all credit hours attempted with a 2.0 grade point average.

For more detailed information refer to the "Financial Aid Information Booklet" which is available in the Office of Financial Aid.

Application Procedures:

All students must apply and be accepted for admission to the College before disbursement of any financial aid can be made.

Applications for financial aid are required to be completed once each year to determine eligibility.

The following applications are required:

1. American College Testing Program's Family Financial Statement (FFS). Students may use this form to apply for the Basic Education Opportunity Grant as well as other types of financial aid.
2. Colorado Student Data Form (CSDF).

Additional supporting documents may be requested by the Office of Financial Aid, such as Federal Income Tax Return Forms 1040A, 1040, Affidavit of Non-support, statements of Welfare, Social Security, Vocational rehabilitation benefits, etc.

Applications are available in the Office of Financial Aid.

Priority in awarding financial aid will be given to students with completed applications on file by the following dates:

Summer 1980 — April 1, 1980

Academic Year 1980-81 — June 1, 1980

Spring 1981 — December 1, 1980

Summer 1981 — April 1, 1981

Students are encouraged to submit applications early. Applications received after the above priority dates will be given consideration based on the availability of funds.

Students cannot expect to receive a financial aid award at the time classes begin unless the application is complete.

Students whose files are not complete at the time of registration will be responsible for paying their own tuition and fees. Upon completion of the application process, if eligible, a financial aid award will be made.

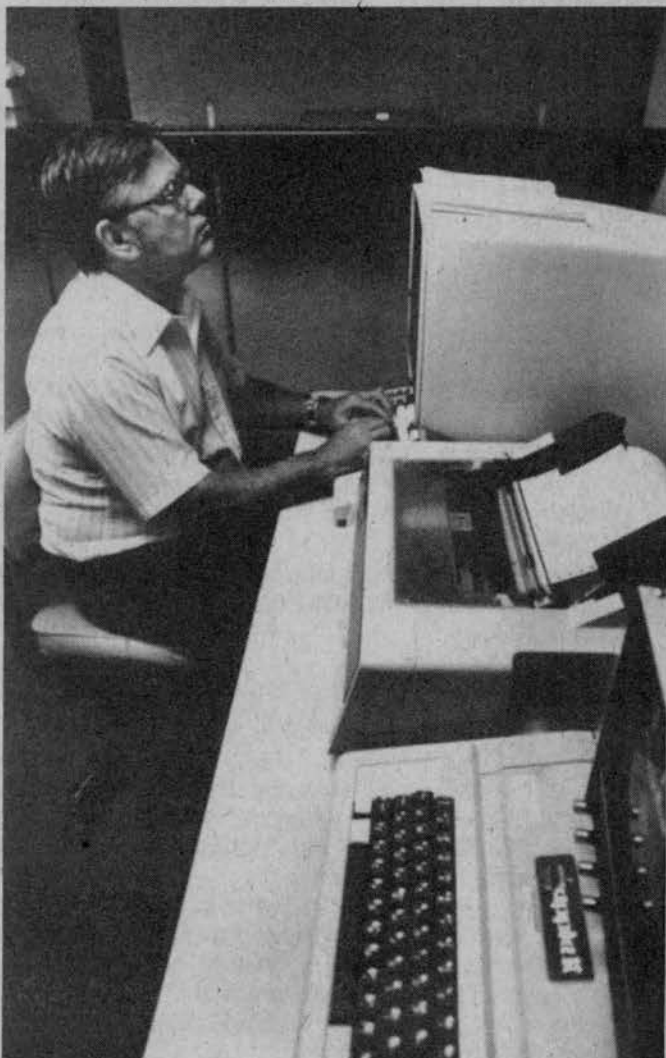
Eligibility:

Most types of financial aid are based on financial need as determined by the Office of Financial Aid. Financial need is the difference between the cost of attending the College and the resources available to the student. Resources include parents' contributions, student's earnings, spouse's earnings, G.I. bill, social security, vocational rehabilitation, welfare, etc.

All resources and changes in resources must be reported to the Office of Financial Aid.

Part-time students (1-11 credit hours per semester) and G.E.D. students may be eligible for aid not to exceed tuition and fees, \$6.00 per credit hour for books and \$10.00 per month transportation allowance.

Students who have earned an associate, baccalaureate, masters or other advanced degree will not be eligible for financial aid. Students who feel they have circumstances that may justify their receiving financial assistance may file an appeal to determine eligibility.



Satisfactory and Measurable Progress:

Students receiving financial aid must maintain satisfactory and measurable progress each semester. Full-time aid recipients must complete at least 12 credit hours per semester with a 2.0 grade point average to remain in good standing.

In general, financial aid recipients may only receive up to five semesters of financial assistance. For more detailed information contact the Office of Financial Aid.

Repayment Policy

A student who withdraws during the semester must repay a portion of financial aid received. If the student's tuition and fees were paid by financial aid and the student is eligible to receive a tuition refund, the refund will be returned to the financial aid account.

Types of Financial Aid

1. Basic Educational Opportunity Grant (BEOG)

The BEOG program provides federal grants to assist with educational expenses. Award amounts range from \$200 to \$1800 depending upon the cost of education. Approximately six weeks after the student applies he/she will receive a Student Eligibility Report (SER). All copies of the SER must be brought or mailed to the Office of Financial Aid even if the student is ineligible to receive a basic grant award.

2. Self-Help Programs

a. College Work-Study Program

The College Work-Study Program provides employment opportunities for students demonstrating a financial need as defined by the College. Hourly rates start at federal minimum wage.

b. Colorado Work-Study (No-Need)

The State of Colorado provides limited funds to employ students who do not demonstrate financial need and who are Colorado residents for tuition purposes. Hourly rates start at federal minimum wage.

c. National Direct Student Loan (NDSL)

Loans are available to students based on demonstrated financial need. Repayment begins not later than ten months after graduation or termination of student status. The interest rate is three percent per annum with minimum payments of \$30 per month. Repayments may be postponed if education is resumed, for service in the Peace Corps, Vista or for up to three years of military service. The period of repayment cannot exceed 10 years.

d. Nursing Loans

Loans are available to students enrolled in a course of study leading to the associate degree in nursing. Repayment begins six months after the borrower graduates or terminates his student status. Interest accrues at the rate of three percent per annum.

3. Grants

a. Colorado Student Grant (CSG)

Grants are available to Colorado residents based on financial need. Awards range up to \$1000 per academic year.

b. Colorado Student Incentive Grant (CSIG)

Grants are available on a need basis. The maximum award is \$1500 per year.

c. Supplemental Educational Opportunity Grant (SEOG)

Grants range from \$200 to \$1500 depending on financial need. In order for students to be eligible, their resources cannot exceed 50% of their college budget. Grants must be matched with other financial assistance such as grants, scholarships, loans, and work-study earnings equal to the SEOG award.

d. Nursing Scholarship Program

Scholarships are available to students enrolled in a course of study leading to an associate degree in nursing. Awards range up to \$2,000 per year based on availability of funds and the student's demonstrated financial need.

4. Scholarships

Colorado Scholars Program

Scholarships are available to Colorado residents who have completed a minimum of 12 credit hours at the college with at least a 3.0 grade point average in all coursework attempted. Applications are available in the Office of Financial Aid. Scholarships are limited and dependent upon availability of funds.

Veterans Affairs Office

This program, funded through the Veterans Cost of Instruction Payments Program (U.S. Office of Education) provides comprehensive services to veteran students as well as, through community outreach efforts, to veterans in the community.

The program, available on all three campuses, was established to enable Vietnam era veterans to use their VA and other federal, state and community benefits and aid the educational institution in meeting the Vietnam era veterans' special needs.

Services available include:

- Information about veterans benefits — federal, state and community
- Assistance with VA inquiries
- Referral for emergency food, clothing, housing, legal aid, employment, etc.

Veterans Academic Standards of Progress

The following policy applies to all student veterans and other eligible persons receiving VA benefits:

1. **Evaluation and Grading** — Please refer to pages 24-25 in this catalog for a description of the College grading system.

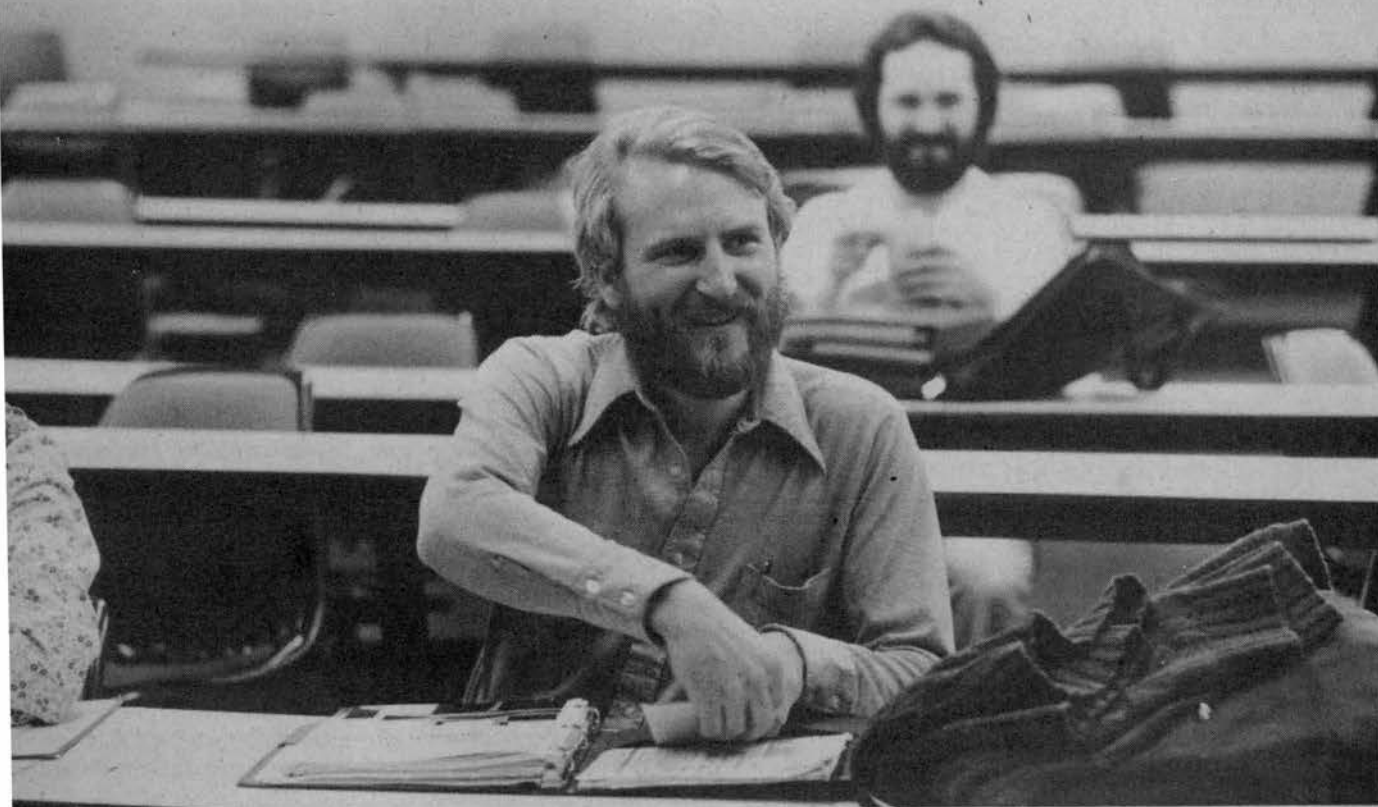
2. Grade Point Average

Under this system, grade points measure the achievement of the student for the number of credit hours he has taken. They are determined by multiplying the grade points per credit hour by the credit hour value of the course taken. The following example will enable the student to compute his grade point average.

Course	Completed Credit Hours	Final Grade	Grade Points
English	3	A	4 grade points (4x3) equals 12
Mathematics	3	B	3 grade points (3x3) equals 9
Electronics	2	A	4 grade points (2x4) equals 8
Physics	5	C	2 grade points (5x2) equals 10
Physical Education	3	D	1 grade point (3x1) equals 3
	14		42

Total grade points are divided by total credit hours to compute the grade point average. For example, 42 divided by 14 equals a 3.0 grade point average. The cumulative grade point average is the total number of grade points recorded divided by the total number of credit hours.

A current term GPA (that which appears on the transcript) of 2.0 must be maintained. Any veteran whose current term GPA is less than 2.0 will be placed on probation for the following term, during which time he should achieve at least a 2.0 GPA. Should he fail to achieve a 2.0 GPA for that probationary term, the veteran's certification section will terminate his certification effective the last day of class of the probationary term, and counseling and approval must be received from the Veterans Administration in order for his certification to be reinstated for any subsequent term.



3. Non-Punitive Grades

- A. NC (No Credit) The student has remained enrolled in the course, but has not, for whatever reason, demonstrated achievement of course objectives. As a non-punitive grade symbol, it cannot be used in determining progress toward fulfillment of requirements toward graduation, and according to V.A. regulations, veterans affected by this symbol must have their certification adjusted back to the beginning day of the term in which this grade is received.
- B. WX (Veteran withdrawal after the Add-Drop period) When a student veteran officially withdraws (totally or partially) after the twelfth day of classes, a grade of "WX" will be recorded on the student's institutional (internal) record. The "WX" will be considered a non-punitive grade and except for mitigating circumstances, benefits for that course will be terminated back to the first day of class. If a student veteran stops attending class but does not officially withdraw, he is considered as "non-attending," may be dropped administratively and his VA certification adjusted accordingly. Such an administrative drop will be initiated by the instructor.

4. Other Special Grades

- A. AU Grade — a grade symbol of "AU" (Audit) indicates that the student audited the course. No credit is allowed for audited courses.
- B. I Grade — Incomplete — Please refer to page 25 in this catalog for a description of this grade symbol. An incomplete grade (I) must be made up before the end of the following term (fall or spring) or it will be recorded as an "NC" and veterans certification will be adjusted back to the beginning day of the term in which this grade is received.

5. Attendance

Veterans attendance records showing each absence from regularly scheduled classes are required, and the College is required to document such attendance records.

6. Mitigating Circumstances (as defined by P.L. 94-502) are those which directly hinder eligible veteran's or other person's pursuit of a course and which are judged to be out of the student's control. Following are some general categories of mitigating circumstances (this list is not all-inclusive):

- A. Serious illness of the eligible veteran or person.
- B. Serious illness or death in the eligible veteran's or other person's immediate family.
- C. Immediate family or financial obligations which require a change in terms, hours, or place of employment which precludes pursuit of course.



- D. Discontinuance of a course by a school.
- E. Active military duty, including active duty training.
- F. Withdrawal from a course or receipt of nonpunitive grade upon completion of a course due to unsatisfactory work may be considered to be under mitigating circumstances if student can demonstrate good faith pursuit of the course up to the point of withdrawal completion and the student submits evidence that he or she applied for tutorial aid, consulted a Veterans Administration counselor, consulted a school academic counselor/advisor regarding an attempt to remedy unsatisfactory work before withdrawal completion.

When mitigating circumstances prevail, the College will attempt to intervene on behalf of the veteran with the Veterans Administration.

VCIP (Veterans Cost of Instruction Program)
Comprehensive services are provided to veterans at three campuses and through a community-based outreach program.

Educational Support Services

In addition to the programs of study which are available at the College, a variety of special services are provided to assist students in achieving their educational and career objectives.

Advising

The faculty of the College is guidance-oriented and has a major commitment to help each student plan an appropriate program of study to fulfill the student's educational and career goals.

Students are assisted in program planning and course selection by the instructional staff and in the case of "undecided" students, a counselor helps to develop their program.

It is the student's responsibility to:

1. Meet with the instructor/counselor identified as your advisor, to discuss the most appropriate classes for your educational and career objectives.
2. Discuss your specific program and classes prior to each registration and work out an appropriate class schedule.
3. Contact your instructor/counselor when problems arise in your program. The instructor should also be informed if you change your program of study. A change in program usually involves a change in advisor.

4. Make certain you are fulfilling your specific department's requirements for graduation.

Students who have not selected a program of study, or who are uncertain of the program they want to follow are urged to contact the Counseling Center.

Educational Planning

The professional advising staff is dedicated to helping students receive the types of educational and career planning services they need to attain their educational goals. Advising is available during the day and some evenings for program and career planning, and for discussion of personal, financial and social concerns. These sessions are confidential.

Students who have not selected a program of study, or who are uncertain of the program they want to follow, should make an appointment with a member of the professional staff.

The Advisement Center is open from 8:00 a.m. until 9:00 p.m., Monday through Thursday, and until 5:00 p.m. on Friday. Special attention is given to academic-educational problems, career-vocational planning and personal-social adjustment.



Center for the Physically Disadvantaged

It is the policy of the Community College of Denver to provide equitable opportunities for physically disabled students to pursue education in regular classes, without discrimination. In order to accomplish this goal to the optimum benefit of the handicapped student, the utmost effort has been made to provide an appropriate physical, attitudinal, and supportive environment.

Accessible Facilities and Support Systems.

All facilities of the College are of recent construction, with barrier-free design being a prime factor in the planning. Because mainstreaming has been an integral part of the philosophy of the College since its inception in 1968, handicapped students have access to one of the most comprehensive support systems available at any post-secondary institution in the nation. More than one hundred different auxiliary services are provided to assist the disabled client in the obtainment of his educational objectives.

This combination of highly functional barrier-free facilities, faculty orientation to the mainstreaming concept, and auxiliary services has attracted large numbers of handicapped candidates to the Community College of Denver. To accommodate this component of the student body the College has established a Center for the Physically Disadvantaged, through which approximately 30 professional and paraprofessional personnel offer services on the three campuses of the College.

Services include:

- Arrangement for early registration.
- Complete vocational evaluation.
- Curriculum adaptation and adapted scheduling.
- Equipped and staffed Resource Center.
- Interpreting service for the deaf.
- Job placement for disabled students.
- Liaison with rehabilitation centers.
- Modifications of classroom setting.
- Notetakers.
- Parking privileges.
- Readers and Braille transcribers.
- Rehabilitation health maintenance and nursing service.
- Specialized counseling.
- Specialized media.
- Tutorial assistance.

A copy of a brochure fully describing the CPD program is available on all three campuses.

Mainstreaming Required

It is recognized that some candidates seeking admission to or presently pursuing studies at the College cannot succeed in this particular mainstreamed environment despite the accessible programs and facilities, the broad choice of career options open to everyone

and the full range of supportive services available. It must be emphasized that, because mainstreaming in regular classes is an integral part of the College philosophy, retention of the candidate is based upon the student's capability for receiving training in regular classes.

The majority of candidates presently served are clients of a referral agency such as the State Department of Vocational Rehabilitation or Veterans Administration. The assistance of the client, the referral source and all other sources or information the client volunteers to offer toward the mutual effort of determining whether the Community College of Denver's program and services will meet the individual's needs and career goals will be utilized. An excellent evaluation system, nationally developed to aid handicapped clients in the selection of appropriate training, is also made available to enrolled students on an optional basis.

Disability Groups Served

Within the above guidelines, persons with the following disabilities are typical of those who have been successfully accommodated:

Spinal cord injuries (paraplegia, quadriplegia and other wheelchair conditions).

Amputations or congenital absence of limbs (bilateral or combinations).

Cardio-vascular limitations and malfunctions.

Profound deafness and hearing impairments.

Blindness and visual impairments, diseases of the eye.

Impairment of function of one or more extremities.

Multiple Sclerosis, Parkinson's Disease, Muscular Dystrophies.

Disabilities affiliated with gastro-intestinal and genitourinary illness.

Trunk, spine, abdominal defects (including fusion, Spina Bifida, etc.).

Speech impairments.

Systemic disease, including malignancies, diabetes, malaria, arthritis, etc.

Endocrine limitations such as little people, giant cretins.

Epilepsy and head injuries, with residual effects.

Lung and asthmatic conditions.

Cerebral Palsy, including spasticity, ataxia, etc.

Multiple handicaps.



Learning Development Center

The Learning Development Centers (LDC) on all three campuses provide free learning assistance to all Community College of Denver students. The Centers are set up to help the student enter and complete the educational program of his/her choice.

There is no established timetable for completion of individual programs in the LDC; students are permitted to use the LDC for as long as they wish.

Testing and tutoring are available on a one-to-one basis and in small groups. The purpose of testing is to diagnose skill and/or achievement levels, and to assess learning styles. The purpose of tutoring is to:

1. Achieve proficiency in basic skills and study skills.
2. Apply basic skills and study skills to course work.
3. Prepare to challenge a course for credit.
4. Clear an in-complete grade.

Free assistance in the following areas:

Reading-English (A,N,R)
Reading Comprehension
Writing
Listening
Spelling and Word Study
Speed Reading
English as a Second Language
Grammar and Usage
Reading Skills for Any Course

Language (A,R)
French, German, Spanish
Vocabulary Building
Grammar
Conversation
Individual Tutoring
French-German-Spanish Tapes
SL Tutoring and Tapes

Health Occupations (A)
Basic Skills in Nursing Fundamentals

Math (A,N,R)
Math Anxiety Reduction
Algebra
Geometry
Trigonometry
Calculus
Statistics
Applied Math

Writing Skills (A,N,R)
Writing
Editing
Motivation
Reading
Punctuation
Mechanics



Electronics
Food Service
Physics
Chemistry

Social Science (R)

Psychology-Philosophy
Sociology
Economics
History
Geography
Political Science
Anthropology

Testing (A,N,R)

Entry-Level Assessment
Basic Skills Diagnosis (Reading, Math, English)
G.E.D. pre-test
Make-up exams
Vocational Interest Exams
Achievement Testing
Learning Potential Battery

G.E.D. Preparation (A,N,R)

Social Studies
Science
Mathematics
Reading Skills
Writing Skills

Study Skills (A,N,R)

Test Taking
Note Taking
Time Management
Textbook Reading
Memory Techniques
Research Techniques

Learning Development Center Course Offerings

In addition to free LCD services, students may register for non-credit courses (North and Red Rocks only). Tuition and fees will be assessed after initial testing to determine skill deficiencies.

LDC 071 — Basic Skills in Reading (N,R)

(1-3 tuition hours) Personalized learning programs designed to improve ability in reading speed, comprehension, vocabulary, and study skills. (2-6 contact hours per week.)

LDC 073 — Basic Skills in Writing (N,R)

(1-3 tuition hours) Individual programs directed to meet student writing needs in the academic or vocational worlds. (2-6 contact hours per week.)

LDC 081 — Basic Skills in Math (N,R)

(1-3 tuition hours) Individualized assistance planned to improve skills in arithmetic, algebra. (2-6 contact hours per week.)

LDC 090 — General Skills (N,R)

(0 tuition hours) Individualized assistance in any of the skills areas for no tuition charge.

Note: At Auraria campus, these courses are offered for credit through Developmental Studies.

Individual instruction and sample testing are combined to help students achieve their GED Certificate. Students prepare for the GED test by registering for a maximum of three of the following courses in any one semester. (At Auraria, equivalent GED courses are offered through Developmental Studies.)

LDC 091 — GED Preparation in Social Studies (N,R)

(1-5 tuition hours) Covers knowledge and reading comprehension of history, economics, geography, political science, and behavioral science. (2-9 contact hours per week.)

LDC 092 — GED Preparation in Reading Skills (N,R)

(1-5 tuition hours) Covers reading comprehension and interpretation of practical, general, and literary selections. (2-9 contact hours per week.)

LDC 093 — GED Preparation in Science (N,R)

(1-5 tuition hours) Covers knowledge and reading comprehension in biology and physical sciences. (2-9 contact hours per week.)

LDC 094 — GED Preparation in Writing Skills (N,R)

(1-5 tuition hours) Covers spelling, capitalization, punctuation, grammatical usage, diction and style, sentence structure, logic and organization. (2-9 contact hours per week.)

LDC 095 — GED Preparation in Mathematics (N,R)

(1-5 tuition hours) Covers arithmetic, algebra, and geometry. (2-9 contact hours per week.)

Testing

The College provides a voluntary testing program to assist students in clarifying interests and assessing general aptitudes. With this information, counselors are better able to assist individual students in making their educational and career choices and making optimum use of the resources available. Services include:

Diagnostic Testing — for classes or individual instruction.

Cognitive Mapping Inventory — describing how student learns best.

Make-up Tests — for classes.

Testing Center (Auraria)

The testing center, which is located in Room 139, is open daily. The main testing areas include:

Achievement testing — primarily for counselors' use.

Vocational interest testing — for individual and counseling purposes.

The Testing Center is currently working in conjunction with the rest of the LDC in developing tests and instruction for the learning disabled.

Learning Materials Center

The Learning Materials Centers (LMC) which are located on all three campuses, are a combination of a library, audiovisual department and independent learning center. They provide learning materials, audiovisual equipment, study facilities and staff services to supplement and support the curriculum of the College. Program production facilities are also available in the Learning Materials Centers on the North and Red Rocks campuses and in the Auraria Media Center (AMC) on the Auraria campus. The LMC's also make available resources of a cultural and recreational nature not necessarily stemming from the curriculum, and cooperates with other educational agencies in sharing resources. To provide the student with additional learning materials, books, periodicals and audiovisual materials are exchanged among campuses and borrowed from other libraries.

The LMC's assist students in using their varied resources, and to increase skills in exploring and finding answers to many questions concerned with their studies.

To meet the needs of a diverse student population, the LMC's provide a variety of educational materials consisting of: books, periodicals, newspapers, microforms, audio and videotapes, films, filmstrips, slides, transparencies, recordings, realia and multi-media kits.

The Learning Materials Centers are open to the public and provide extended hours in order to serve the working student and the community.

Bookstores

Auraria Book Center

Serving the Auraria Campus.

Telephone: 629-3230

Location: Lawrence at 10th St. in the Student Center

Hours: Please call for information.

North Campus Bookstore

Serving the North Campus.

Telephone: 466-8811

Location: 3645 W. 112th Ave. in the Student Center.

Hours (during class sessions): 9:00 a.m.-8:30 p.m.

Mon.-Thur.; 9:00 a.m.-3:00 p.m. Fri.

Red Rocks Bookstore

Serving the Red Rocks Campus

Telephone: 988-6160

Location: 12600 W. 6th Ave. on the Bridge.

Hours (during class sessions): 9:00 a.m.-8:30 p.m.

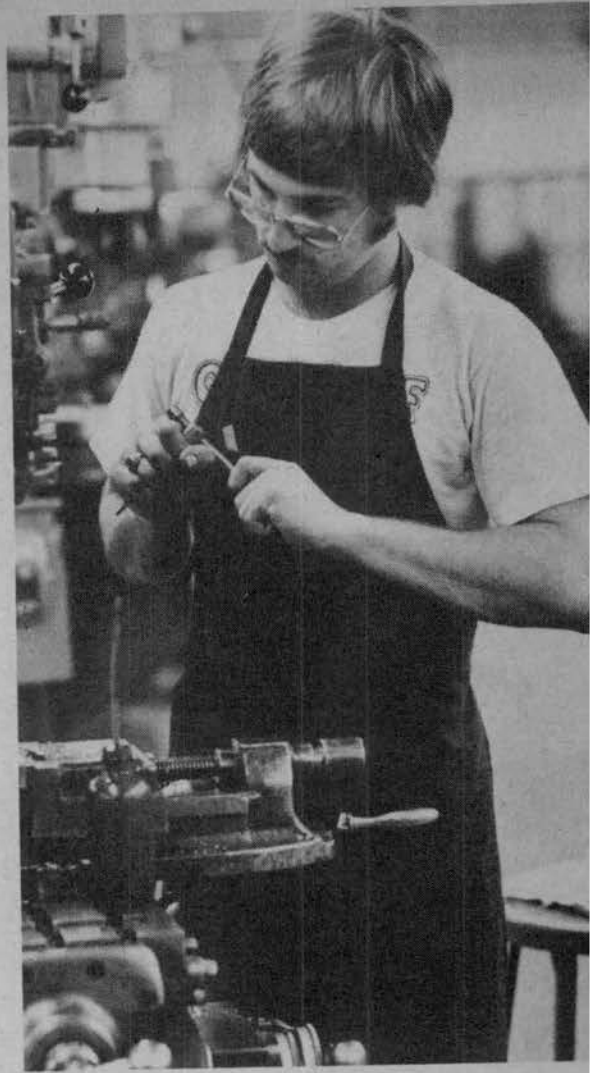
Mon.-Thur.; 9:00 a.m.-5:00 p.m. Fri.

The Bookstores are the student source for all required and non-required educational materials —used and new textbooks, dictionaries and reference books, school and course related supplies.

The Bookstores are also a source for College imprinted items, art and drafting supplies, office supplies, drugs and sundries, gift items, greeting cards, candy and soft goods.

Services offered by the Bookstores include special orders, used book buy, limited check cashing, photo finishing, postage stamps, graduation announcements and class rings. Hole punches, pencil sharpeners and staplers are always available for student use.





Additional Student Services



Career Center

The Career Center provides services to assist students and community members to make an occupational choice and act on it. Reference materials are available for exploring careers and educational opportunities. COCIS, a computerized information system, provides facts about job duties, skills, licensing, preparation, salary and projected job openings for specific careers. At various times career planning classes are offered on a credit or non-credit basis to assist people in making a career decision. Interest inventories are given to help people clarify their work-related interests. A Vocational Guidance Specialist works with people individually or in groups, assisting each person to make a career decision and develop a plan of action. Most Career Center services are free. A minimal fee may be charged for testing.

Job Development and Placement

The Job Development and Placement Office on the two campuses and the instructional departments maintain continued contact with business and industry concerning employment opportunities and training needs. As

a result of the Placement Office and instructional departments' efforts, a wide range of full-time, part-time and temporary jobs are usually available to currently enrolled students or graduates of CCD.

Related employment-seeking and assessment services which are provided by the Job Development and Placement Office are:

1. Resume writing, job applications aid and interviewing assistance;
2. Class presentations, speakers from business and industry and on-campus recruiters.
3. Follow-up surveys of graduates to assist the College in evaluating its programs.

While the College and the Placement Office cannot guarantee the student a job, every effort will be made to secure appropriate employment for the student and graduates of CCD who are registered with the Job Development and Placement Office.

College Center

The College Center houses the Student Activities Office, club rooms, student council offices, activity rooms, game rooms, lounges and pub lounges at the Auraria and Red Rocks campuses. The Bookstore and Health Office are also located in the College Center on the Auraria Campus.

Food Service

Automated food service is provided on all campuses in the food service area and cafeteria.

Health Services

Student Health Services is designed to foster and maintain proper attitudes and habits of personal and community health. Various programs and activities related to current health problems are planned each semester. These programs are designed to educate students, faculty and staff regarding health problems and the means of preventing them.

Since the College carries *no* accident insurance for students, expenses resulting from instructional and/or recreational injuries are the sole responsibility of the student and his insurance company.

An accident and sickness insurance plan is available to students at reasonable cost. Applications for such insurance for students and their dependents are provided at the time of registration. Those who enroll after the regular registration periods may request an application form from the Health Center on the campus.

Housing

Students who attend the Community College of Denver commute. The College does not operate a residence hall program and students are expected to arrange their own housing. Those desiring assistance in locating housing may contact the Office of Student Activities.

Women's Centers

The Women's Centers, located on all three campuses, serve to maximize the potential of women of all races, ages, economic and ethnic backgrounds. Short courses, special programs, films, workshops, "brown bag" lunch programs as well as mini-courses, rap-sessions and workshops for women "in transition" are some of the services provided by the Women's Centers. Individual assessment and referral to existing services regarding employment, counseling, education, tutoring and training which are available at the College and in the community are also provided.

The Women's Centers act as clearing houses for information which provides services and data relevant to women and their needs. Each campus has programs designed to serve the unique needs of their particular campus community. The Centers also work with faculty and administrators to develop an awareness on the campus and in the community regarding the special needs of women.

Students are encouraged to contact the Women's Center on their campus for more specific information.

Auraria Campus — 629-3302

North Campus — 466-8811, X466

Red Rocks Campus — 988-6160, X213

Student Activities

The College cooperates in the development of those student-initiated activities which supplement the more formal instructional program. Such activities are expected to provide constructive experiences which will stimulate personal growth and social development and add to the student's enjoyment of life. Opportunities for the development of leadership, cooperative planning and special interests are fostered through participation in these activities. All student activities are coordinated through the Office of Student Activities.

Student Government Association

The purpose of the Student Government is to represent the student body through effective communication with all members of the college community. It encourages the development of campus organization and activities which meet the needs and interests of the students. The Student Government also attempts to represent and interpret student opinion in the formation of campus policy. Student Activities funds are used to provide a variety of extra-curricular and co-curricular educational and social opportunities for students, and to promote unity and fellowship among students of the campus community.

Student Publications

A school newspaper and other publications are produced under the sponsorship of the Board of Publications, with the cooperation of the Student Activities Office.



Special Programs

The following are some of the sponsored programs which currently serve College students:

Disadvantaged Supplemental Services

Services and instruction are provided to disadvantaged occupational students including guidance, tutoring, testing and cooperative work experience.

Educational Opportunity Center

The Center, in cooperation with Metropolitan State College and the University of Colorado at Denver, provides assessment and guidance services to prospective students in the five-county Denver Metropolitan area.

ROTC Information

Community College of Denver students can participate in two Army ROTC programs which lead to a commission in the active Army, the Army Reserve or the Colorado National Guard.

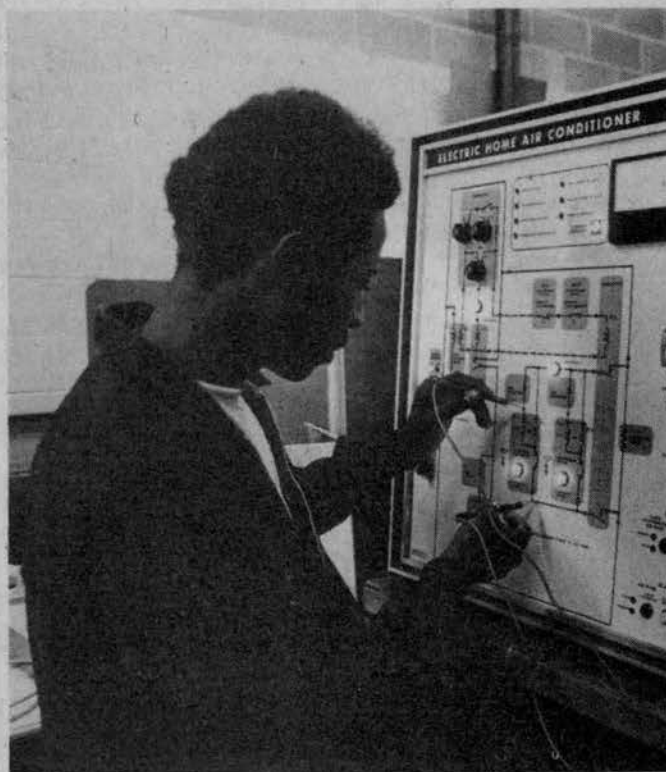
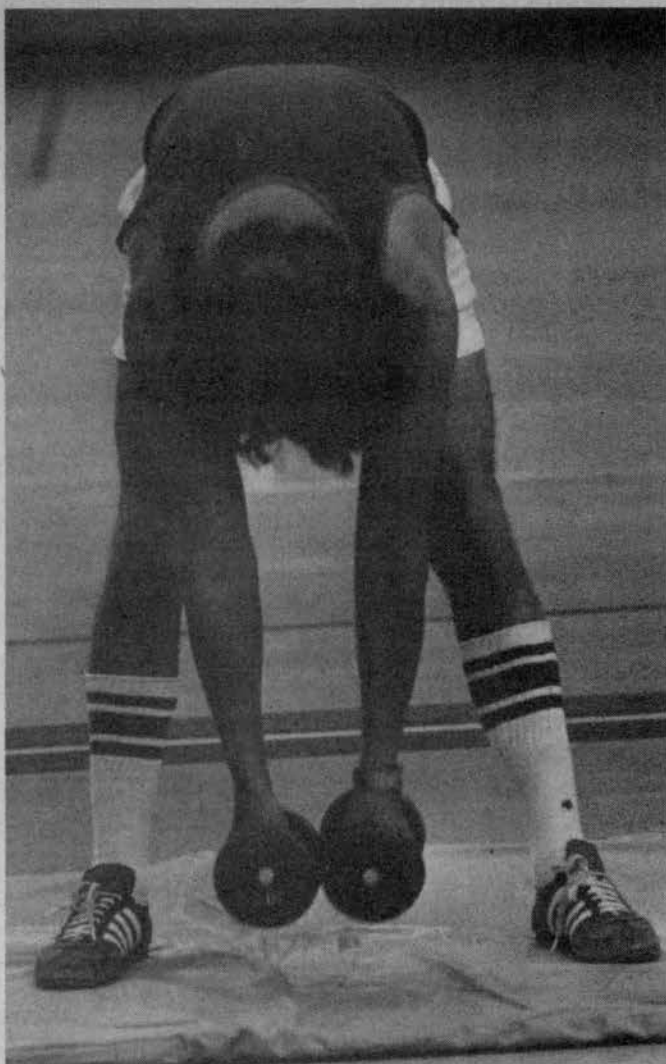
Four-year Program. The standard four-year program consists of two phases. The basic course consists of courses in Military Science, Officer Career Development, Leadership Theory and Management. The advanced course subject areas include Psychology and Methods of Instruction, Tactics and Unit Operations, Military Law, Military History, National Strategy and Army Policies. Completion of a six-week advanced camp during the summer is required prior to commissioning.

Two-year Program. The abbreviated two-year program consists of the same courses offered in the advanced course. Students may become qualified for this program by successful completion of a six-week summer camp, or an academic summer program taken in conjunction with summer school. If selected for the abbreviated program under these options, students may receive an early commission with the Reserve or National Guard while continuing their college education. Students who are veterans of military service, participated in Junior ROTC, Civil Air Patrol or similar organizations, may have a portion or all of the basic course requirements waived by the Professor of Military Science. Community College students may enroll, if qualified in the advanced course curriculum. Students desiring active duty service will be required to complete a baccalaureate degree at a 4-year institution.

Flight Training. Students selected for the advanced course may become qualified, as a cadet, to participate in the Army Aviation Program. Individuals selected for the program will attend flight school after completion of their officer's Basic Course while on active duty.

Financial Benefits. All required books and uniforms are provided without charge. Advanced course students receive a monthly stipend of \$100 during the academic year. Cadets are paid while attending the Basic and the Advanced Camps during the summer.

Information. Students at all three CCD campuses participate, through cross-enrollment procedures, in the ROTC program. For specific information regarding the program please call Major Jim Kavanagh at 492-5555.



Consortium of Ethnic Studies

The College offers the Associate of Arts Degree with an emphasis in Black Studies or Chicano Studies on the Aurora campus. Program requirements for these degrees are in the Instructional Programs section in the catalog.

The following ethnic studies courses are offered and course descriptions may be found under the departmental listings in the Course Descriptions section:

Note: All of the courses are 3 credit hours.

ANT 150	Ethnography of the North American Indian
ART 195	The Art of Africa and Black Americans
ART 196	Chicano Art History
ART 197	Native American Arts and Contemporary Development
COM 109	Barriology Communications
DRA 131	Practicum in Teatro I
ECO 165	Economics and The Chicano
ECO 265	Black Economic Development
HIS 116	The Native American Experience and Indian History
HIS 130	The Southwest United States
HIS 135	Introduction to Latin American History
HIS 140	Caribbean Culture and The Cuban Revolution
HIS 228	The Black People and The American Frontier
HIS 241	Black Civilization — Africa
HIS 242	Black Civilization — America
HIS 243	Land Grants and Their Relationship To The Contemporary Chicano
HIS 246	Mexico
HIS 271	Middle America (Meso)
HUM 115	Introduction to Chicano Studies
HUM 120	The Native American Perspective: Arts and Ideas
HUM 126	Folklore of Mexico and the Southwest
HUM 127	Indigenismo and The Chicano
HUM 225	Contemporary Chicano
HUM 226	Comidas Chicano
HUM 251	Curanderismo
LIT 125	Introduction to Chicano Literature
LIT 126	Native American Literature
LIT 128	Black Literature in America
LIT 228	Contemporary Chicano Literature
MUS 101	History of Afro-American Music I
MUS 102	History of Afro-American Music II
MUS 120	The Music of Mexico and The Southwest
POS 206	Federal Indian Policies
POS 230	Chicano and The Law
POS 251	Chicano Political Experience
POS 253	Third World Policies and The Chicanos
POS 265	Black Political Thought and Experience
PSY 255	Psychological Development of The Black Personality
PSY 260	Psychology of The Chicano
PSY 265	Social Psychology of The Native American
PSY 266	Chicano Community Mental Health
SOC 165	Movimiento Estudiantil Chicano De Aztlan
SOC 230	La Familia Chicana
SOC 236	The Chicano and The Schools
SOC 238	Field Work in Barrio Studies
SOC 241	Sociology of the Black Community I
SOC 242	Sociology of the Black Community II
SOC 266	The Contemporary Native American
SOC 267	The Native American in Urban America

Developmental Studies Program

The Developmental Studies Program (on the Auraria campus only) is designed for students who desire to strengthen their learning skills. Students will find courses which assist them in successfully reaching both vocational and educational goals. Students may take Developmental Studies courses which focus on basic skills, and refresher courses which provide missing skills or which students take for personal satisfaction. Students may enter this program at various levels based on assessment recommendations or through personal choice. In addition, they may take courses concurrently with courses in their major program areas. Students will find a variety of instructional methods. These methods may include small classes allowing for individual attention, open entry/open exit, tutorial assistance, self-paced lab study, variable credit offerings, and techniques for reducing anxiety and increasing success. Since all Developmental Studies courses are based on a mastery learning system, students will work at their own pace until they achieve the course objectives.

The following developmental studies courses are offered and course descriptions may be found under the departmental listings in the Course Descriptions section:

090	2-5 Credit Hours	English as a Second Language I	REA 091	4 Credit Hours	Introduction to Reading and Study Skills
091	2-5 Credit Hours	English as a Second Language II	REA 100	3 Credit Hours	Basic Reading Skills
092	2-5 Credit Hours	English as a Second Language III	REA 101	3 Credit Hours	Skills for College Reading I
099	1-3 Credit Hours	Sound and Spelling	REA 102	3 Credit Hours	Skills for College Reading II
101	3 Credit Hours	Workshop in Language Fundamentals I	REA 103	1-3 Credit Hours	Workshop in Reading, Writing and Speaking
102	3 Credit Hours	Workshop in Language Fundamentals II	REA 104	1 Credit Hour	Skill in Test-Taking
103	1-3 Credit Hours	Workshop in Reading, Writing and Speaking	REA 105	1-5 Credit Hours	Study Skills
105	1-5 Credit Hours	Study Skills	REA 106	1 Credit Hour	Vocabulary Development
010	5 Credit Hours	GED Preparation: Reading and Writing Skills	REA 109	3 Credit Hours	Reading Efficiency
011	5 Credit Hours	GED Preparation: Mathematics	REA 110	3 Credit Hours	Advanced College Reading
090	3 Credit Hours	Introduction to Mathematical Operations	REA 299	1-3 Credit Hours	Independent Study
100	3 Credit Hours	Basic Mathematical Skills			
101	1-3 Credit Hours	Applied Mathematics I			
102	1-3 Credit Hours	Applied Mathematics II			
105	1-2 Credit Hours	Mathematics for the Physical Sciences			
107	5 Credit Hours	Mathematics for Electronics			
099	3 Credit Hours	Job Search Technique Workshop			
108	3 Credit Hours	Vocational Exploration			
090	3 Credit Hours	Introduction to Basic Reading Skills			



Graduation Requirements and Degrees



Degree and Certificate Requirements

Minimum Degree Requirements for:

- Associate of Arts (AA)
- Associate of Science (AS)
- Associate of Applied Science (AAS)
- Associate of General Studies (AGS)

To receive the *Associate Degree*, a student shall:

1. Complete a minimum of sixty (60) semester hours, including the specific subject or course requirements as prescribed by the specific degree program. Certain programs may require more than the minimum of sixty hours.
2. Earn an overall grade point average of 2.0 (C) in all credit counted toward the degree.
3. Complete appropriate general education requirements for the degree.
4. Complete at least fifteen (15) semester hours in residence at the Community College of Denver. (In mitigating circumstances, certain portions of

this requirement may be waived by the Dean of Instruction.)

5. File an "Application for Graduation" form no later than the deadline for graduation applications published in the semester schedule of courses. This form is available from the Office of Admissions and Records.

Certificates

To receive a CERTIFICATE a student shall:

1. Complete the specified subject matter or course requirements of an approved vocational or technical program as set forth in the catalog. For programs longer than one semester, at least fifteen (15) credit hours must be earned at the Community College of Denver.
2. Earn an overall grade point average of 2.0 (C) in all credit counted toward the certificate.
3. File the "Application for Graduation" form when registering for the final semester. This form is available from the Office of Admissions and Records.

Recognition of Achievement

The College offers many courses, conferences, workshops and seminars for upgrading job skills as well as for personal enrichment. Successful completion of courses of this type may result in the granting of a "Recognition of Achievement." This may be requested from the appropriate instructional division.

1. General Education Requirements including: see page 46	
Core Requirements	12 credits
Distribution Requirements	15 credits
Interdisciplinary Requirements	3 credits
	<hr/>
Total	30 credits
2. Science and Mathematics **	20 credits
3. Electives *	10 credits
	<hr/>
Total	60 credits

* Excluding nontransferable courses and limited to no more than 3 credits in physical education.

** Students should consult with their advisor as some science and mathematics courses may also meet the general education distribution and interdisciplinary requirements.

Associate of Arts and Associate of Science Degrees

The Associate of Arts (AA) and the Associate of Science (AS) Degrees are intended to provide educational opportunities in preparation for a baccalaureate degree.

Students should review the catalog of the institution which they plan to transfer in order to determine specific course requirements. Information concerning transfer to Colorado universities and colleges is available at each campus in the Office of Student Services.

Students are urged to seek the advice of the division directors and faculty members in the selection of transfer courses.

Associate of Arts Degree

The Associate of Arts (AA) Degree is designed for the student whose major emphasis of study is in arts, communication, and/or social sciences.

Prerequisite Requirements

Successful completion of a *minimum* of sixty (60) semester credits in transfer course work including the following:

1. General Education Requirements including: see page 46	
Core Requirements	12 credits
Distribution Requirements	15 credits
Interdisciplinary Requirements	3 credits
	<hr/>
Total	30 credits
2. Electives to complete student's transfer program *	30 credits
	<hr/>
Total	60 credits

* Excluding nontransferable courses and limited to no more than 3 credits in physical education.

Associate of Science Degree

The Associate of Science (AS) Degree is designed for the student whose major emphasis of study is in science or mathematics.

Prerequisite Requirements

Successful completion of a *minimum* of sixty (60) semester credits in transfer course work including the following:



Associate of Applied Science Degree

The Associate of Applied Science (AAS) Degree prepares students for (a) entry-level employment in a given occupation, or (b) upgrading/stabilizing employment. The occupational courses in this program are not intended for transfer to baccalaureate institutions. However, in some programs occupational courses are transferrable; therefore, the student should check with the receiving institution.

Degree Requirements

Successful completion of a *minimum* of sixty (60) semester credits including the following:

- General Education Requirements including: see below

Core Requirements	12 credits
Specific Program Requirements	48 credits
Total	60 credits

NOTE: Most AAS programs require more than 60 credits.

Associate of General Studies Degree

The Associate of General Studies (AGS) Degree is available for students who want to complete a broad program of courses without the constraints of specialization. *This degree is not intended for transfer.* Depending upon the acceptance of the receiving institution, individual courses within the degree *may* be transferable. Students who desire transfer information may obtain counseling in the Office of Student Services.

Degree Requirements

Successful completion of a *minimum* of sixty (60) semester credits including the following:

- General Education Requirements including: see below

Core Requirements	12 credits
Distribution Requirements	4-6 credits
	16-18 credits
 - Electives 42-44 credits
May be selected from transfer or occupational courses.
- Total 60 credits

General Education Requirements

	Core	Inter-disciplinary	Distribution	Total
AA	12	3	15	30
AS	12	3	15	30
AAS	12	0	0	12
AGS	12	0	4-6	16-18

The general education requirements are specified below. Students seeking the AA, AS, AAS, or AGS degrees should be familiar with these requirements.

STUDENTS SEEKING THE A.A. OR A.S. DEGREE WHO PLAN TO TRANSFER TO A COLLEGE OR UNIVERSITY SHOULD CONSULT THEIR ADVISOR FOR THE TRANSFER GUIDE, AND THE COLLEGE OR UNIVERSITY CATALOG WHEN SELECTING COURSES TO SATISFY THE CORE, INTERDISCIPLINARY AND DISTRIBUTION REQUIREMENTS TO BE SURE THAT THE COURSES SELECTED WILL TRANSFER.

- A. Core Credit Requirements — 3 credits must be completed from each of the four areas.
- Communication Skills — 3 credits are required. These courses are designed to improve the student's competence in reading, writing, speaking and listening.
 - Interpersonal Skills — 3 credits are required. These courses are designed to explore values and ethics related to individual rights and responsibilities involved in spiritual, preference, cultural backgrounds and lifestyles.
 - Computation Skills — 3 credits are required. These courses review basic arithmetic operations, develop number sense, identify situations requiring use of mathematical concepts and operations, analyze problems, use logic and estimation techniques and apply basic algebraic thinking.
 - Scientific and Critical Thinking Skills — 3 credits are required. These courses teach understanding, evaluation and applying information to problem solving.

NOTE: SEE ADVISOR FOR THE SPECIFIC LIST OF COURSES WHICH WILL SATISFY THE CORE CREDIT REQUIREMENTS.

- B. Interdisciplinary Credit Requirements
Associate of Arts and Associate of Science Degree — 3 credits

Students must select an interdisciplinary course and three additional credits for the AA and AS Degree. These courses should be selected in consultation with an advisor. There is an advantage to selecting an interdisciplinary course which will meet the distribution requirements as well.

- C. Distribution Credit Requirements
- | | |
|-------------------------------------|-------------|
| Associate of Arts Degree | 15 credits |
| Associate of Science Degree | 15 credits |
| Associate of General Studies Degree | 4-6 credits |

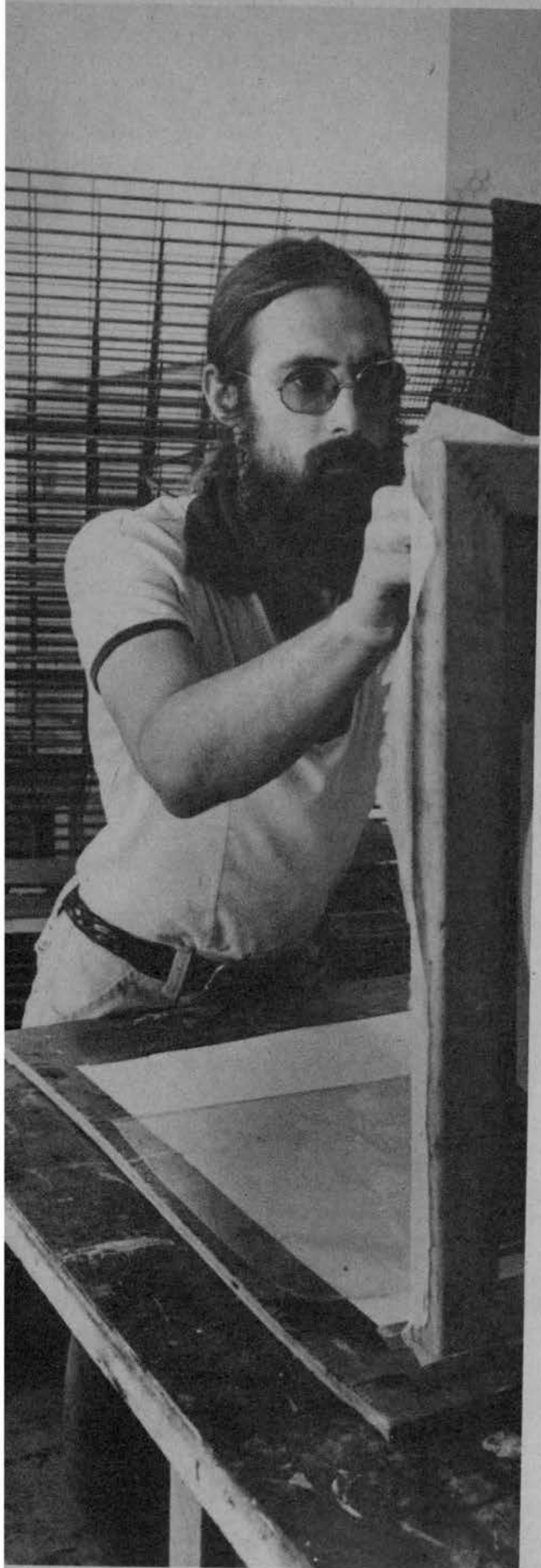
Students may select any 15 credit hours of transfer courses with a *minimum* of 3 credit hours from each of the following areas:

- Social Sciences (ANT, ECO, GEO, HIS, POL, PSY, SOC, SOS)
- Communications (COM, ENG, JOU, LIT, SP, FRE, GER, SPA)
- Humanities and the Arts (ART, DRA, HUM, MUS, PHI)
- Science and Mathematics (BIO, CHE, COS, EAS, MAT, PHY, SCI)

NOTE: GEO 111, 112 and ANT 201, 202, may be taken for science credit by non-science majors.

Plus 3 credit hours of the student's choice from each of the above four areas.

Students planning on transferring to a college or university should consult their advisor and the college or university catalog when selecting distribution credit requirements.



Petitioning For Waivers and/or Program Substitutions

Students who, due to extenuating circumstances, wish to petition for a waiver and/or substitution of program requirements must complete a "Waiver/Program Substitution Request Form." The form is available in each division office.

The student should complete the request and have it approved by the program coordinator, the division director and the instructional dean. The form will then be kept on file in the campus Registrar's office.

Aurora Education Center

The Aurora Education Center (AEC), an extension of CCD which is located at 9859 East 16th Ave., serves the eastern part of the Denver metropolitan area.

Courses which may be offered include the following instructional areas:

- Accounting
- Anthropology
- Art
- Biology
- Business
- Computer Science
- Communications
- Credit Management
- Criminal Justice
- Dietetic Technology
- Drama
- Early Childhood Education and Management
- Earth Science
- Economics
- English
- Environmental Technology
- Fire Science Technology
- Geography
- History
- Humanities
- Industrial Management
- Journalism
- Literature
- Management
- Marketing
- Mathematics
- Music
- Philosophy
- Physical Education
- Physics
- Political Science
- Psychology
- Reading
- Real Estate
- Science
- Social Science
- Sociology
- Solar Energy Installation
and Maintenance
- Spanish
- Speech
- Supervisory Management

Specific courses which may be offered at the Aurora Education Center are designated in the Course Description section by the initials "AEC."

Cooperative Program with the Warren Occupational Technical Center

The Warren Occupational Technical Center, which is a part of the Jefferson County R-1 School District, is located at 13300 West Ellsworth Ave., Golden, Colorado, adjacent to Community College of Denver, Red Rocks campus.

The Community College of Denver has established a cooperative exchange agreement with the Warren Occupational Technical Center.

Who May Enroll and How

Any post-secondary student desiring to take daytime occupational courses at the Warren Occupational Technical Center should follow the admissions procedures as outlined in the Community College of Denver 1980-81 catalog. For enrollment in a specific course at the Warren Occupational Technical Center, please contact the Community College of Denver — Red Rocks Campus, 988-6160 ext. 210 for information regarding availability of desired courses, possible changes, and assistance in registering.

Upon completion of courses at the Warren Occupational Technical Center, grades are forwarded to Community College of Denver — Red Rocks Campus where they are incorporated in the College record system and grade slips are mailed to students.

Program Offerings

- Computer Occupations
- Data Entry
- Copy Preparation
- Litho Preparation
- Offset Printing
- Machine Tool Technology
- Sheet Metal
- Upholstery
- Cosmetology
- Health Occupations
- Appliance and/or Refrigeration Repair
- Radio and TV Technician
- Restaurant Arts (Quantity Food Production, Linecooking & Tableservice)
- Urban Horticulture (Landscaping) (Greenhouse)
- Auto Body Trades
- Small Engine Repair



Instructional Programs and Majors

Auto Body Painting (N) 9 Month Certificate

This program provides you with job entry skills for the auto body painting trades and upgrading for those in the field who need to acquire more skill.

Demonstrated mastery of skills is required. The program is open-entry and open-exit. Therefore, you may complete some of the courses, enter the work force, then return at any time to complete the program for a certificate or to upgrade specific skills.

Required Major Courses

Course No.	Title	Credits	Ct. Hrs.
ABP 100	Orientation on Shop Policy and Auto Body Painting Safety	1	15
ABP 101	Sanding	2	45
ABP 102	Priming	3	60
ABP 103	Painting Acrylic Lacquer	3	60
ABP 104	Spot Painting with Acrylic Lacquer	3	60
ABP 105	Painting with Acrylic Enamel and Enamel	3	60
ABP 111	General Refinishing I	3	60
ABP 112	General Refinishing II	3	60
ABP 113	General Refinishing III	3	60
ABP 114	General Refinishing IV	3	60
ABP 115	General Refinishing V	3	60
		30	600

Auto Body Service (N) Certificate or Associate of Applied Science Degree

This program provides you with job entry skills for the auto body service trades and upgrading for those in the field who need to acquire more skill.

Demonstrated mastery of skills is required. Programs are open-entry and open-exit. Therefore, you may complete some of the courses, enter the work force, then return at any time either to complete the program for a certificate or degree, or to upgrade specific skills.

Required Major Courses

Course No.	Title	Credits	Ct. Hrs.
ABS 100	Orientation	5	10
ABS 105	Remove and Replace Front Sheet Metal and Bolt-on Body Parts	2.5	50
ABS 107	Remove and Replace Hardware, Trim, and Glass	3	60
ABS 108	Metal Repair	3	60
ABS 109	Heat Distortion and Shrinking and Gas Welding	3	60

ABS 115	Patch Weld Repairs Oxy-Acetylene, TIG and MIG Welding	3	60
ABS 116	Use of Plastic Filler	3	60
ABS 117	Pull Rod and Pry Bar Repair	3	60
ABS 118	Minor Dent Repair I	3	60
ABS 119	Minor Dent Repair II	3	60
ABS 200	Body Alignment	3	60
ABS 201	Frame Repair	3	60
ABS 202	Major Damage Repairs I	3	60
ABS 203	Major Damage Repairs II	3	60
ABS 204	Major Damage Repairs III	3	60
ABS 205	Major Damage Repairs IV	3	60
ABS 211	General Auto Body Repair I	3	60
ABS 212	General Auto Body Repair II	3	60
ABS 213	General Auto Body Repair III	3	60
ABS 214	General Auto Body Repair IV	3	60
ABS 215	General Auto Body Repair V	3	60
		60	1200
	Required General Education Courses	12	180
	Total Required Hours	72	1380

Additional Major Courses

ABS 130	Fiberglass Repair	3	60
ABS 135	Fiberglass Panel Replacement	3	60
ABS 136	Cleaning, Leak Testing, Soldering (Radiator)	3	60
ABS 137	Repair, Recore (Radiator)	3	60
ABS 139	Used Car Detailing — Interior	3	60
ABS 140	Used Car Detailing — Exterior	3	60
ABS 145	Glass Installation	3	60

Fiberglass Repair 6 Week Certificate

Course No.	Title	Credits	Ct. Hrs.
ABS 130	Fiberglass Repair	3	60
ABS 135	Fiberglass Panel Replacement	3	60

Radiator Repair 6 Week Certificate

Course No.	Title	Credits	Ct. Hrs.
ABS 136	Cleaning, Leak Testing, Soldering (Radiator)	3	60
ABS 137	Repair, Recore (Radiator)	3	60

**Used Car Detailing
6 Week Certificate**

Course No.	Title	Credits	Ct. Hrs.
ABS 139	Used Car Detailing — Interior	3	60
ABS 140	Used Car Detailing — Exterior	3	60

**Frame Repair
3 Week Certificate**

Prerequisites: ABS 100, 109, and 200

Course No.	Title	Credits	Ct. Hrs.
ABS 204	Frame Repair	3	60

**Glass Installation
3 Week Certificate**

Course No.	Title	Credits	Ct. Hrs.
ABS 145	Glass Installation	3	60

**Accounting (A,N,R)
Certificate**

This program is designed to prepare individuals with entry-level skills for employment in basic bookkeeping and related positions.

Required Major Courses

Course No.	Title	Credits	Ct. Hrs.
ACC 109	Bookkeeping and Accounting	3	45
ACC 110	Payroll and Pegboard Systems	3	45
ACC 111	Accounting Principles I	5	75
		11	165

Required Related Courses

BSI 115	Business Machines	1	15
BUS 110	Business Math	3	45
CPB 100	Introduction to Computer Programming	4	60
ENG 109	Business Communications	3	45
MAN 105	Introduction to Business	3	45
SEC 101	Typewriting I	4	75
	Elective (1)	3	45
		21	330

Total Required Hours 32 495

(1) Elective to be chosen with advisor approval.

Accounting (A,N,R)

Associate of Applied Science Degree

This program is designed to prepare individuals to obtain employment and to advance, with experience, to full-charge bookkeeping or junior accountant positions.

Required Major Courses

Course No.	Title	Credits	Ct. Hrs.
ACC 111	Accounting Principles I	5	75
ACC 112	Accounting Principles II	5	75
ACC 211	Intermediate Accounting I	5	75
ACC 221	Cost Accounting	4	60
		19	285

Accounting Electives — Selection of 9-12 hours with advisor approval.

ACC 212	Intermediate Accounting II	3	
ACC 215	Accounting Systems or Systems (N)	3	
BUS 215	Governmental Accounting	3	
ACC 231	★ Individual Income Tax I (R) (1)	3	
ACC 232	Individual Income Tax II (R) (1)	2	
ACC 233	Tax Service (R)	3	
		9-12	135-180

Required Related Courses

BUS 110	★ Business Math	3	
BUS 136	★ Business Communications Application	3	
CPB 100	Introduction to Computer Programming	4	
ECO 201	★ Principles of Economics (Macro)	3	
ENG 109	★ Business Communications	3	
MAN 105	★ Introduction to Business	3	
MAN 115	Principles of Management	3	
MAN 206	★ Business Law	4	
SPE 111	★ Introduction to Speech	3	
	Approved Electives (2)	3-5	45-
		32-35	480-540

Total Required Hours 60-66 900-945

(1) Taken concurrently at Red Rocks

(2) Chosen with advisor approval

★ Meets general education requirements.

**Administrative Support
Occupations (A,N,R)**

These programs are designed to prepare students entry-level positions and/or advancement in business governmental agencies and other institutions where employ persons in the administrative support area. Depending upon your program option, you should be prepared to enter these positions in a specific industry.

Core Courses Common to all Programs

Course No.	Title	Credits	Ct. Hrs.
ACC 109	Bookkeeping & Accounting		
or			
ACC 111	Principles of Accounting I	3-5	45
BSI 115	Business Machines	1	
BUS 110	★ Business Mathematics or		
BUS 115	Bus. Math by Machines	3-4	45
BUS 136	★ Business Communications Applications	3	
ENG 109	★ Business Communications	3	
MAN 105	★ Introduction to Business	3	
SEC 101	Typewriting I or	4	
SEC 102	Typewriting II	4	
SEC 105	Filing & Records Control	2	
SEC 200	Office Procedures or		
BUS 297	Cooperative Work Experience	3	
		29-32	555-

★ Meets general education requirements.

Administrative Secretary (A,N,R)

Associate of Applied Science Degree

Course No.	Title	Credits	Ct. Hrs.
Core Course Requirements		29-32	555-600
Plus			
Stenographic Option		13	195
MAN 115	Principles of Management	3	45
MAN 116	Principles of Supervision	3	45
MAN 206	★ Business Law	4	60
ECO 201	★ Principles of Economics (Macro)	3	45
CPB 100	Introduction to Computer Programming	4	60
SPE 111	★ Introduction to Speech	3	45
		20	300
Total Hours		61-65	1035-1095

★ Meets general education requirements.

Legal Option (A,N,R)

Associate of Applied Science Degree

Course No.	Title	Credits	Ct. Hrs.
Core Course Requirements		29-32	555-600
Plus			
MAN 206	★ Business Law	4	60
PAR 107	Para Legal Research	3	45
SEC 209	Legal Terminology	2	30
SEC 210	Legal Dictation and Transcription	3	45
SEC 111	Alpha Shorthand I (or)		
SEC 121	Gregg Shorthand I	5	75
SEC 112	Alpha Shorthand II (or)		
SEC 122	Gregg Shorthand II	4	60
SEC 116	Mag Card Typewriting II	3	45
MT 103	Business Materials Use	1	15
SEC 130	Machine Transcription	4	60
Electives		2-4	30-60
		60-65	1020-1095

★ Meets general education requirements.

Medical Option (A)

Associate of Applied Science Degree

Course No.	Title	Credits	Ct. Hrs.
Core Course Requirements		29-32	555-600
Plus			
IOC 100	Medical Terminology	1	15
MOM 201	Medical Office Procedures & Ethics	3	45
MOM 203	Insurance Methods and Claims	3	45
CPB 100	Introduction to Computer Programming	4	60
ACC 110	Payroll Accounting & Pegboard Systems	3	45
EC 111	Alpha Shorthand I	5	75
EC 112	Alpha Shorthand II (or)		
EC 103	Typewriting III	4	60
EC 116	Magnetic Card Typewriting	3	45
EC 130	Machine Transcription	4	60
Science Elective		3-4	45-60
		33-34	495-510
Total		62-66	1050-1110

Secretarial-Bilingual Office Careers Option (N)

Associate of Applied Science Degree

Course No.	Title	Credits	Ct. Hrs.
Core Course Requirements		29-32	555-600
SEC 100	Spanish Typewriting	4	60
SEC 260	Spanish Business Correspondence & Documentation	3	45
SEC 256	Spanish Business Terminology & Translation Techniques	2	30
		38-41	690-735
SEC 130	Machine Transcription/ or Shorthand	4	60
SPA 111	Spanish — First Year or Intermediate Spanish I	3	45
SPA 212	Intermediate Spanish II	3	45
* Electives		11	165
		60-62	1005-1050

* Electives Options — to be selected with advisor approval.

Secretarial Option (A,N,R)

Associate of Applied Science Degree

Course No.	Title	Credits	Ct. Hrs.
Core Course Requirements		29-32	555-600
CPB 100	Introduction to Computer Programming	4	60
MAN 206	Business Law	4	60
SEC 111	Alpha Shorthand I (or)		
SEC 121	Gregg Shorthand I	5	75
SEC 112	Alpha Shorthand II (or)		
SEC 122	Gregg Shorthand II	4	60
SEC 103	Typewriting III	4	75
SEC 130	Machine Transcription	4	60
SEC 116	Mag Card Typewriting	3	45
SEC 123	Shorthand Speed Building	4	60
		61-64	1050-1095

Word Processing Option (R)

Associate of Applied Science Degree

Required Major Courses

Course No.	Title	Credits	Ct. Hrs.
ACC 109	Bookkeeping and Accounting (or)		
ACC 111	Accounting Principles I	3-5	45-75
BUS 115	Business Math by Machines	4	60
BUS 136	★ Business Communications Applications	3	45
CPB 100	Introduction to Computer Programming	4	60
MAN 105	★ Introduction to Business	3	45
MAN 116	Principles of Supervision	3	45
MAN 206	★ Business Law	4	60
SEC 101	Typewriting I	4	75
SEC 102	Typewriting II	4	75
SEC 103	Typewriting III	4	75
SEC 105	Filing and Records Control	2	30
SEC 117	CRT Typing	3	45

SEC 119	Introduction to Word Processing	3	45
SEC 130	Machine Transcription	4	60
SEC 205	Office Simulation (or)		
BUS 297	Cooperative Work Experience	3	45-135
		50-53	795-930

Required Related Courses

ENG 109 ★	Business Communications Fundamentals	3	45
SPE 111 ★	Introduction to Speech	3	45
	Electives (1)	4-6	60-90
		10-12	150-180
	Total Required Hours	60-65	945-1110

(1) Electives chosen with advisor approval.

★ Meets general education requirements.

Chiropractic Option (A) Certificate

(not yet approved by State agencies)

Course No.	Title	Credits	Ct. Hrs.
Core Course Requirements			
Except MAN 105, BUS 136, and SEC 200			20-23
HOC 100	Medical Terminology	1	420-465
MOM 201	Medical Office Procedures & Ethics	3	15
MOM 203	Insurance Methods and Claims	3	45
CPA 101	Chiropractic Modalities I	3	45
CPA 102	Chiropractic Modalities II	3	45
CPA 103	Chiropractic Modalities III	3	45
DIT 108	Nutrition for Health Occupations	3	45
RAT 100	Radiographic Technique I	3	60
RAT 105	Radiographic Positioning I	3	60
	Science Elective	3-4	45-60
		28-29	450-465
	Total	48-52	870-930

Clerical Option (A,N,R) Certificate

Core Course Requirements	29-32	555-600
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Credit Operations Option (A) Certificate

Course No.	Title	Credits	Ct. Hrs.
Core Course Requirements			
			29-32
Plus			
CRM 111	Financial Institutions	2	30
CRM 112	Credit Fundamentals	3	45
CRM 205	Credit Management Problems	3	45
	Electives (1)	3	45
		11	165
	Total	40-43	720-765

Medical Option (A) Certificate

Course No.	Title	Credits	Ct. Hr.
ACC 109	Bookkeeping and Accounting (or)		
ACC 111	Accounting Principles I	3-5	45-7
ACC 110	Payroll Accounting & Pegboard Systems	3	4
BSI 115	Business Machines	1	1
BUS 110	Business Mathematics	3	4
ENG 109	Business Communications	3	4
SEC 101	Typewriting	4	6
SEC 102	Typewriting	4	6
SEC 105	Filing and Records Control	2	3
HOC 100	Medical Terminology	1	1
MOM 201	Medical Office Procedures & Ethics	3	4
MOM 203	Insurance Methods and Claims	3	4
SEC 116	Magnetic Card Typewriting (or)		
SEC 130	Machine Transcription	3-4	45-
	Science Elective	3-4	45-
	Total	36-40	540-6

Stenographic Option (A,N,R) Certificate

Course No.	Title	Credits	Ct. H
Core Course Requirements			
			29-32
Plus			
SEC 111	Alpha Shorthand I (or)		
SEC 121	Gregg Shorthand I	5	555-6
SEC 112	Alpha Shorthand II or		
SEC 122	Gregg Shorthand II	4	
SEC 130	Machine Transcription	4	
	Total Required Hours	42-45	750-



Airframe Power Plant (A)

Associate of Applied Science Degree

Students interested in the Airframe Power Plant Program may register for these courses at Emily Griffith Opportunity School. Upon completion of these courses at Opportunity School, an FAA certificate, and twelve (12) semester hours (consisting of at least 3 semester hours of English and the remainder electives), the student may receive an associate degree from Community College of Denver — Auraria campus in the Airframe Power Plant field. (Opportunity School credits are quarter hours. When application is made for the associate degree these quarter hours will be computed as semester hours.)

Appliance and Refrigeration Technology (A)

Certificate or Associate of Applied Science Degree

Commercial-Industrial Refrigeration, Heating and Air Conditioning Option (A)

The certificate programs consist of the 200 level courses only and requires basic knowledge of electricity and refrigeration for entry.

The Associate of Applied Science Degree programs have no prerequisites and provide basic trade skills.

Both programs prepare you with job entry skills in the fields of commercial-industrial refrigeration, heating and conditioning.

Demonstrated mastery of skills is required. Programs are open-entry and open-exit. You may complete some of the courses, enter the work force, then return at any time to either complete the program for a certificate or degree or to upgrade specific skills.

In order to satisfy the requirements for an Associate Degree, the following courses must be taken in the listed sequence (courses required for the certificate program are indicated with an asterisk *):

Required Courses

Course No.	Title	Credits	Ct. Hrs.
C 100	Orient., Safety & Tools.....	3	60
C 105	Tubing, Piping & Fittings	3	60
C 106	Fund. of Refrigeration	3	60
Gen. Ed.	Computation	3	45
Gen. Ed.	Communications	3	45
C 110	Fund. of Electricity I.....	3	60
C 115	Fund. of Electricity II	3	60
C 116	Fund. of Refrigeration II	3	60
C 109	Solid State Fund.....	3	60
PHY 101	Fund. of Physics	3	45
ACC 200	Refrig. Sys. Comp. & Applications.....	3	60
ACC 205	Refrig. Heat Loads & System Development	3	60
ACC 206	Install. & Startup	3	60
ACC 207	Troubleshooting & Service	3	60
ACC 208	Special Refrig. Systems.....	3	60

*RAC 209	Fund. of Air Conditioning	3	60
*RAC 210	Unitary & Central Station Systems	3	60
*RAC 215	Air Flow Principles	3	60
*RAC 216	Control Systems	3	60
*RAC 217	Troubleshooting & Svc.....	3	60
		60	1155

Additional Required Courses

(To be taken at any time)

ACC 109	Bookkeeping & Acctg.....	3	45
MAN 205	Small Business Mgmt.....	3	45
	General Education.....	12	200
	Total Required Hours	78	1445

Major Appliance Repair Option (A)

In order to satisfy the requirements for an Associate Degree, the following courses must be taken in the listed sequence (courses required for the certificate program are indicated with an asterisk *):

Required Courses

Course No.	Title	Credits	Ct. Hrs.
RAC 100	Orient., Safety & Tools.....	3	60
RAC 105	Tubing, Piping & Fittings	3	60
RAC 106	Fund. of Refrigeration I	3	60
Gen. Ed.	Computation	3	45
Gen. Ed.	Communications	3	45
RAC 111	Fund. of Electricity I.....	3	60
RAC 112	Fund. of Elect. II	3	60
RAC 116	Fund. of Refrig. II.....	3	60
ELT 109	Solid State Fund.....	3	60
PHY 101	Fund. of Physics	3	45
*APT 218	Automatic Washers I	3	60
*APT 219	Clothes Dryers I.....	3	60
*APT 220	Kitchen Equipment I.....	3	60
*APT 225	Refrig./Freezers I	3	60
*APT 226	Room Air Conditioning	3	60
*APT 227	Automatic Washers II	3	60
*APT 228	Clothes Dryers II	3	60
*APT 229	Kitchen Equipment II	3	60
*APT 230	Refrig./Freezers II	3	60
*APT 235	Automatic Washers III	3	60
		60	1155

Additional Required Courses

(To be taken at any time)

ACC 109	Bookkeeping & Acctg.....	3	45
MAN 205	Small Business Mgmt.....	3	45
	General Education	6	90
	Total Required Hours	72	1335



Art (A,N,R)

The following selection of courses is recommended for an Associate of Arts Degree with an emphasis in Art. A student interested in obtaining a baccalaureate degree should consult a CCD advisor, the Transfer Guide, and the current catalog of the receiving institution.

Course No.	Title	Credits	Ct. Hrs.
ART 101	Basic Design I	3	90
ART 102	Basic Design II	3	90
ART 111	Basic Drawing I	3	90
ART 112	Basic Drawing II	3	90
ART 141	Oil & Acrylic I	3	90
ART 142	Oil & Acrylic II	3	90
ART 191	Survey of Masterpieces I	3	90
ART 192	Survey of Masterpieces II	3	90
ART 221	Figure Drawing I	3	90
ART 222	Figure Drawing II	3	90
	or		
ART 211	Second Year Drawing	3	90
ART 271	Printmaking I	3	90
ART 241	Second Year Oil & Acrylic	3	90
	or		
ART 272	Printmaking II	3	90
COA 100	Lettering & Typography	4	100
TEI 201	Airbrush I	3	60
GEM	General Education Electives	12	180
	General Education Interdisciplinary and Distribution	18	270
Program Total		73	1690

Architectural Technology (N)

Associate of Applied Science Degree

This program provides you with entry level skills as a drafting technician in architectural offices and related building construction industries.

Demonstrated mastery of skills is required. The program is open-entry and open-exit. Therefore, you may complete some of the courses, enter the work force, then return at any time to complete the program for a degree, or to upgrade specific skills.

Required Major Courses

Course No.	Title	Credits	Ct. Hrs.
ATE 100	Basic Architectural Techniques	3	60
ATE 106	Construction Drawing Fundamentals	3	60
ATE 107	Residential Construction Drawings	6	120
ATE 108	Residential Construction Details	3	60
ATE 109	Light Commercial Construction Drawings	6	120
ATE 110	Light Commercial Construction Details	6	120
ATE 115	Three Dimensional Drawing Methods	3	60

ATE 200	Preliminary Working Drawing Development	6	120
ATE 205	Structural Materials	3	60
ATE 206	Structural Framing Systems	3	60
ATE 207	Heating, Ventilating, Air Conditioning systems (VAC)	3	60
ATE 208	Electrical Systems	3	60
ATE 209	Plumbing Systems	3	60
ATE 210	Building Specialties	6	120
ATE 215	Planned Building Groups	3	60
	Required General Education Courses	12	180
Total Required Hours		72	1380

Automotive Mechanics (N)

Certificate or Associate of Applied Science Degree

This program provides you with job entry skills for the automotive trade and upgrading for those in the field who need to acquire more skill.

Demonstrated mastery of skills is required. The program is open-entry and open-exit. Therefore, you may complete some of the courses, enter the work force, then return at any time to complete the program for a certificate or degree, or to upgrade specific skills.

Automotive Mechanics (N)

Associate of Applied Science Degree and Certificates

Required Major Courses

Course No.	Title	Credits	Ct. Hrs.
AUM 100	Principles of Engine Operation, Basic Electricity & Ignition Systems	6	120
AUM 106	Starting & Charging Systems	3	60
AUM 107	Fuel Systems	3	60
AUM 110	Electronic Testing & Emission Controls	3	60
AUM 115	Drum Brake Systems	3	60
AUM 116	Disc Brake Systems	3	60
AUM 117	Wheel Alignment	3	60
AUM 118	Wheel Balance & Suspension	3	60
AUM 119	Manual & Power Steering Gears	3	60
AUM 205	Clutches & Manual Transmissions	3	60
AUM 206	Drive-Lines and Differentials	3	60
AUM 207	Automatic Transmissions, Theory & Maintenance	3	60
AUM 208	Automatic Transmission, Rebuild	6	120
AUM 215	Engine Operation, Diagnosis, Disassembly, & Measurement	6	120

UM 216	Engine Recondition & Assembly	3	60
UM 217	Air Conditioning, Theory, Service, & Safety	3	60
UM 218	General Service Repair, OR one of the following: Elective, Cooperative Work Experience, or Independent Study	3	60
	Required General Education Courses	12	180
	Total Required Hours	72	1380

Additional Major Courses

UM 120	Auto Mechanics for Mechanical Trades (R)	3	60
UM 219	Customer Service	6	120
UM 220	Front Wheel Drive	6	120
UM 297	Cooperative Work Experience	3	105
UM 299	Independent Study	3	90

**Tune-Up and Emission Controls
15-Week Certificate**

Course No.	Title	Credits	Ct. Hrs.
UM 105	Principles of Engine Operation, Basic Electricity and Ignition Systems	6	120
UM 106	Starting and Charging Systems	3	60
UM 107	Fuel Systems	3	60
UM 110	Electronic Testing and Emission Control	3	60

Check with advisor for prerequisites.

**Drum and Disc Brakes
6-Week Certificate**

Course No.	Title	Credits	Ct. Hrs.
UM 115	Drum Brake Systems	3	60
UM 116	Disc Brake Systems	3	60

Check with advisor for prerequisites.

**Automatic Transmissions
9-Week Certificate**

Course No.	Title	Credits	Ct. Hrs.
UM 207	Automatic Transmissions, Theory and Maintenance	3	60
UM 208	Automatic Transmission, Rebuild	6	120

Check with advisor for prerequisites.

**Wheel Alignment and Suspensions
9-Week Certificate**

Course No.	Title	Credits	Ct. Hrs.
UM 117	Wheel Alignment	3	60
UM 118	Wheel Balance and Suspension	3	60
UM 119	Manual and Power Steering Gears	3	60

Check with advisor for prerequisites.

**Air Conditioning
3-Week Certificate**

Course No.	Title	Credits	Ct. Hrs.
AUM 217	Air Conditioning Theory, Service and Safety	3	60

Automotive Mechanics (R)

Certificate or Associate of Applied Science Degree

This program provides the student with job-entry skills for the automotive trades and upgrading for those in the field who need to acquire more skill.

Required Major Courses

Course No.	Title	Credits	Ct. Hrs.
First Year			
*AUM 105	Basic Electricity and Ignition Systems	3	60
*AUM 106	Starting and Charging Systems	3	60
*AUM 107	Carburetor Service	3	60
*AUM 108	Oscilloscopes and Electronic Testing	3	60
*AUM 109	Emission Control	3	60
*AUM 125	Drum and Disc Brake Systems	6	120
*AUM 126	Wheel Alignment, Balance and Suspension	6	120
*AUM 127	Steering Gears and Systems	3	60
*Certificate	Requirements		
Second Year			
AUM 205	Clutches and Manual Transmissions	3	60
AUM 206	Drivelines and Differentials	3	60
AUM 207	Automatic Transmissions, Theory, and Maintenance	3	60
AUM 208	Automatic Transmission Rebuild	6	120
AUM 215	Engine Operation, Diagnosis, Disassembly and Measurement	6	120
AUM 216	Engine Recondition and Assembly	3	60
AUM 217	Air-Conditioning Theory, Service and Safety	3	60
AUM 218	General Service Repair or one of the following: Elective, Cooperative Work Experience or Independent Study	3	60
		60	1200

General Education Courses

English Elective	3	45
Math Elective	3	45
Social Science Elective	3	45
Elective	3	45
	12	180

Total Required Hours . . . 72 1380

Additional Courses

AUM 120	Auto Mechanics for Mechanical Trades (R)	3	60
AUM 210	Automotive Diesel Service	3	60
AUM 219	Customer Service	7	140
AUM 225	Advanced Automatic Transmissions (R)	7	140
AUM 226	Advanced Emission Controls Service	7	140
AUM 297	Cooperative Work Experience	3	105
AUM 299	Independent Study	3	90
FLP 120	Fluid Power for Mechanical Trades I	3	60
FLP 121	Fluid Power for Mechanical Trades II	3	60

AVT 299 Independent Study 2-6 45-13
 *Students who are not presently employed in the profession will be required to take a minimum of 6 credit hours of AVT 297, Cooperative Work Experience before they can receive their associate degree.
 General Education 12 18

Additional AVT Courses

AVT 118	Darkroom Procedures	1	1
AVT 217	Audio Equipment Maintenance	4	6
AVT 221	Video Equipment Maintenance I	4	7
AVT 222	Video Equipment Maintenance II	4	6

Audiovisual Technology (R)

Associate of Applied Science Degree

At the completion of this program the student should be able to effectively provide services in the areas of equipment operation, basic maintenance, media production and media utilization. The student should be employable in public educational, medical, or governmental agencies or private businesses and industries.

Required Major Courses

Course No.	Title	Credits	Ct. Hrs.
AVT 105	Audiovisual Equipment Utilization	3	60
AVT 108	Introduction to Audiovisual Photography	5	90
AVT 109	Graphic Techniques for Media Productions	4	83
AVT 125	AV Projection Equipment Maintenance	5	90
AVT 202	Slide/Tape Production I	4	68
AVT 206	AV Audio Production	5	90
AVT 211	AV Television Production I	6	113
AVT	Elective Courses	14	218-443
		<u>46</u>	<u>842-1037</u>

Elective Courses

AVT 100	Introduction to Educational Media	2	30
AVT 113	Script Visualization	1	15
AVT 115	Basic Video Production	1	15
AVT 201	Intermediate AV Photography	5	90
AVT 212	AV Television Production II	4	83
AVT 219	Slide Duplication	1	15
AVT 231	Audiovisual Design I	4	83
AVT 232	Audiovisual Design II	4	83
* AVT 297	Cooperative Work Experience	2-6	90-270

Buildings and Grounds Management (A)

Certificate

This program familiarizes the student with building and grounds maintenance, supervision, and equipment necessary to maintain the enterprise.

Required Major Courses

Course No.	Title	Credits	Ct. Hrs.
BGM 100	Institutional Budgeting	2	
BGM 105	Building and Grounds Management Operations	3	
BGM 110	Maintenance Equipment for Building and Grounds	3	
BGM 115	Physical Maintenance Control	3	
BGM 117	Care of Outside Area	3	
BGM 119	Basic Interior Decorating	3	
BGM 125	Sanitation and Surgical Cleaning	3	
BGM 126	Purchasing Economics for Bldgs. & Grounds	2	
BGM 297	Cooperative Work Experience	3-6	135-2
		<u>25-28</u>	<u>490-6</u>

Required Related Courses

MAN 115	Principles of Management	3	
MAN 200	Human Resources Management	3	
	English Elective	3	
	Elective	3	
		<u>12</u>	<u>1</u>
Total		37-40	670-8

Biology (A,N,R)

The following selection of courses is recommended for an Associate of Science Degree with an emphasis in General Biology. A student interested in obtaining a baccalaureate degree should consult a CCD advisor, the Transfer Guide, and the current catalog of the receiving institution.

First Year

First Semester	Credits
General Education Core	3
Social Sciences Elective	3
CHE 111 Coll. Chem I	5
BIO 131 Gen. Coll. Bio. I	4
MAT 111 Intro. Algebra	3
Total — 18 credits	

Second Semester	Credits
General Education Core	3
Humanities Elective	3
CHE 112 Coll. Chem. II	5
BIO 132 Gen. Coll. Bio. II	4
MAT 112 Intermediate Algebra	3
Total — 18 credits	

Second Year

Third Semester	Credits
General Education Core	3
Interdisciplinary Gen. Ed.	3
Communication Elective	3
BIO 216 Cell Biology	4
PHY 151 Gen. Physics I	4
Total — 18 credits	

Fourth Semester	Credits
General Education Core	3
MAT 207 Statistics (Elect.)	4
Communication Elective	3
BIO 246 Genetics	3
PHY 152 Gen. Physics II	4
Total — 17 credits	

Program Total — 71 credits

The following selection of courses is recommended for an Associate of Science Degree with an emphasis in Human Biology. A student interested in obtaining a baccalaureate degree should consult a CCD advisor, the Transfer Guide, and the current catalog of the receiving institution.

First Year

First Semester	Credits
General Education Core	3
Social Sciences Elective	3
BIO 111 Human Anatomy & Physiology I	4
CHE 111 College Chemistry I	5
BIO 157 Drugs: Use and Abuse or	3
BIO 167 Biology of Women	3
Total — 18 credits	

Second Semester	Credits
General Education Core	3
Humanities Elective	3
Interdisciplinary Gen. Ed.	3
BIO 112 Human Anatomy & Physiology II	4
CHE 112 College Chemistry II	5

Total — 18 credits

Second Year

Third Semester	Credits
General Education Core	3
Social Sciences Elective	3
BIO 216 Cell Biology	4
MAT 121 College Algebra	4
CSC 111 Intro. Computers	4
Total — 18 credits	

Fourth Semester	Credits
General Education Core	3
Communication Elective	3
Social Sciences Elective	3
BIO 246 Genetics	3
MAT 122 Trigonometry	4
Total — 16 credits	

Program Total — 70 credits

Black Studies (A)

The following selection of courses is recommended for an Associate of Arts Degree with an emphasis in Black Studies. A student interested in obtaining a baccalaureate degree should consult a CCD advisor, the Transfer Guide, and the current catalog of the receiving institution.

Course Requirements		Credits	Ct. Hrs.
Course No.	Title		
HIS 241	Black Civilization — Africa	3	45
HIS 242	Black Civilization — America	3	45
PSY 255	Psychological Development of the Black Personality	3	45
LIT 229	Contemporary Black Literature	3	45
SOC 241	Sociology of the Black Community I	3	45
SOC 242	Sociology of the Black Community II	3	45
ECO 265	Black Economic Development	3	45
POS 265	Black Political Thought & Experience	3	45
	General Education Courses	12	180
	General Education Interdisciplinary and Distribution Courses	24	360
	Program Total	60	900

Business Machine Technology (A)

Certificate or Associate of Applied Science Degree

This program teaches the student to maintain, troubleshoot, and repair a specific range of modern business machines. The two-semester, nine-month program consists of the 100-level courses only. The complete, two-year program results in an Associate Degree.

First Semester

Course No.	Title	Credits	Ct. Hrs.
BMT 100	Introduction to Manual Typewriters	3	60
BMT 104	IBM C&D Electric Typewriter	3	60
BMT 105	IBM C&D Operation and Adjustment Theory	3	60
BMT 106	IBM C&D Disassembly and Reassembly	3	60
BMT 107	Adler "21" and Royal "270" Electric Typewriter	3	60
	<u>15</u>		<u>300</u>

Second Semester

BMT 108	Adler "21" and Royal "970" Operation and Adjustment Theory	3	60
BMT 109	Adler "21" and Royal "970" Disassembly and Reassembly	3	60
BMT 110	IBM "Selectric" Electric Typewriter and Operation Theory	3	60
BMT 115	IBM "Selectric" Disassembly and Reassembly	3	60
BMT 116	Troubleshooting Procedures and Customer Relations	3	60
	<u>15</u>		<u>300</u>

Third Semester

BMT 201	Spirit Duplicators	3	60
BMT 202	Electric Adders	3	60
BMT 205	Basic Electricity for Office Machine Repair	3	60
BMT 206	Basic Electronic Theory	6	120
	<u>15</u>		<u>300</u>

Fourth Semester

BMT 207	Schematic, Oscilloscope, and VOM	3	60
BMT 208	Digital and Logic Theory	3	60
BMT 209	Seiko Printer Model "104" and "300"	3	60
BMT 210	Dictation Machine	3	60
BMT 215	Victor Electronic Calculator Model "1900"	3	60
	<u>15</u>		<u>300</u>

Required Related Courses

BSI 115	Business Machine	1	30
BSI 117	Personal Typewriting	1	30
	General Education	12	36

Bricklaying (R)

Certificate or Associate of Applied Science Degree

This program provides you with job entry skills in brick and block laying for residential construction fireplace design and construction and teaches flagstone, mosaic rock and advanced masonry techniques.

First Year

Required Major Courses

Course No.	Title	Credits	Ct. Hr.
*BRI 100	Safety, History, Glossary, Use of Mason Tools and Related Equipment Used by a Brickmason	6	12
*BRI 105	Safety Codes Used in Masonry, State of Colorado	1	2
*BRI 106	Spreading Mortar, Laying to Line, Use of Masonry Tools, Basic Leads, Masonry Walls	6	12
*BRI 107	Bonded Brick Leads, Joints, Striking and Brushing	2	4
*BRI 109	Masonry Piers, Pilasters, Solid and Hollow Masonry, Bonds, Floors, and Masonry Walls	6	12
*BRI 110	Laying to the Line, Headers, Soldiers, Sailors, Rollock, Miter Corners	6	12
*BRI 115	Through-the-Wall Units, Laying to the Line	2	4
*BRI 116	Masonry Codes	1	2
*Certificate Requirements			

Second Year

BRI 200	Mortar Types, Masonry Cement and Fireplace Basics	6	1
BRI 206	Fireplace Construction and Heatilator Construction	6	1
BRI 207	Chimney Construction, Flashing and Cooping	2	
BRI 208	Masonry Materials	1	
BRI 210	Fireplace Codes, Flagstone and Moss Rock	6	1
BRI 215	Reinforced Masonry and Over-the-Wall Construction	5	1
BRI 217	Mason Tender	3	
BRI 218	Building Codes	1	
	<u>60</u>		<u>12</u>

General Education Requirements

Math Elective	3	45	
English Elective	3	45	
Social Science Elective	3	45	
Electives	6	90	
	15	225	
Total Required Hours	75	1425	

Additional Courses

RI 120	Bricklaying for Construction Trades	3	60
RI 125	Bricklaying for Solar	3	60
RI 126	Solar Walls and Fireplaces	3	60
RI 297	Cooperative Work Experience	2-9	60-375
RI 299	Independent Study	3	90
PR 125	Blueprint Reading for Construction Trades	4	68
PR 126	Blueprint Reading for Mechanical Trades	4	68
PR 127	Building Inspection for Construction Trades	4	68
PR 128	Estimating Residential Construction Costs	4	68
PR 129	Construction Materials I	4	68
PR 130	Construction Materials II	4	68
PR 140	Carpentry, Electrical and Plumbing Fields	4	68

Carpentry (R)

Certificate or Associate of Applied Science Degree

The Carpentry Program provides theory, techniques and laboratory training for job-entry skills to enter the residential carpentry field and job upgrading and refresher courses for people already employed in the industry.

Required Major Courses First Year

Course No.	Title	Credits	Ct. Hrs.
AR 100	Orientation, Safety and Construction Materials	3	60
AR 105	Hand and Power Tools	3	60
AR 106	Plans, Specifications and Uniform Building Code	3	60
AR 107	Site Layout and Concrete Forms for Footing	3	60
AR 108	Concrete Forms for Foundation Walls	3	60
AR 109	Sill and Floor Framing	4	80
AR 110	Wall and Partition Framing	5	100
AR 115	Stair and Roof Framing	6	120

Certificate Requirements

Second Year

CAR 200	Exterior Trim	3	60
CAR 205	Exterior Doors and Windows	4	80
CAR 206	Exterior Wall Coverings	4	80
CAR 207	Roof Coverings	4	80
CAR 208	Interior Trim Work	4	80
CAR 209	Cabinetmaking	4	80
CAR 210	Plastic Laminates	3	60
CAR 215	Cabinet Installation	4	80
		60	1200

General Education Requirements

Math Elective	3	45
English Elective	3	45
Social Science Elective	3	45
Electives	6	120
	15	255
Total Required Hours	75	1455

Additional Courses

CAR 125	Structural Carpentry for Solar Energy	3	60
CAR 216	Drywall Construction	4	80
CAR 217	Advanced Cabinetmaking	8	160
CAR 219	Advanced Stair and Roof Framing	8	160
CAR 297	Cooperative Work Experience	2-9	60-375
CAR 299	Independent Study	3	90
DPR 125	Blueprint Reading for Construction Trades	4	68
DPR 126	Blueprint Reading for Mechanical Trades	4	68
DPR 127	Building Inspection for Construction Trades	4	68
DPR 128	Estimating Construction Costs	4	68
DPR 129	Construction Materials I	4	68
DPR 130	Construction Materials II	4	68



Chemical Operators Training Program (R)

Certificate (Contact the Science and Technology Division for information on this program.)

Civil Engineering Technology (R)

Certificate or Associate of Applied Science Degree

An intensive preparation for individuals to fill positions as construction or engineering assistants, draftsmen, and laboratory aides in the broad field of civil engineering.

Required Major Courses

Course No.	Title	Credits	Ct. Hrs.
CET 101	Structures I	3	53
CET 107	Civil Engineering Technology Laboratory	3	60
CET 201	Structures II	3	53
CET 205	Applied Hydrology	3	53
SUR 100	Surveying Field Work, Elementary	11	218
SUR 201	Surveying Calculations II	3	49
SUR 205	Photogrammetry for Surveyors	6	109
DRI 105	Introduction to Drafting	6	120
DRI 205	Introduction to Architectural-Structural Plans and Details	6	120
		<u>44</u>	<u>835</u>

Required General Education and Related Courses

EAS 111	Physical Geology	4	90
MAT 121	College Algebra	4	60
MAT 122	Trigonometry and Functions	3	45
ENG	Approved English Electives	6	90
CHE	Approved Chemistry Elective	2	60
CSC	Approved Computer Science Elective	4	90
	Approved Electives	6	90
		<u>29</u>	<u>525</u>

Total 73 1360

Additional Major Courses

CET 105	Contracts & Specifications	3	45
CET 207	Route Surveys and Design	3	60
CET 297	Cooperative Work Experience	2-9	60-375
CET 299	Independent Study	3	90
DPR 128	Estimating Residential Construction Costs	4	68
SUR 200	Surveying Fieldwork, Advanced	11	218

Chemistry (A,N,R)

The following selection of courses is recommended for an Associate of Science Degree with an emphasis in Chemistry. A student interested in obtaining a baccalaureate degree should consult a CCD advisor, the Transfer Guide, and the current catalog of the receiving institution.

First Year

First Semester	Credits
General Education Core	3
BIO 132 Gen. Coll. Bio. II	4
MAT 201 Calculus I	5
PHY 151 Gen. Physics I	4

Total — 16 credits

Second Semester	Credits
General Education Core	3
Humanities Elective	3
Social Sciences Elective	3
PHY 152 Gen. Physics II	4
MAT 202 Calculus II	5

Total — 18 credits

Second Year

Third Semester	Credits
General Education Core	3
Interdisciplinary Gen. Ed.	3
Communication Elective	3
CHE 111 Gen. Coll. Chem. I	5
MAT 203 Calculus III	4

Total — 18 credits

Fourth Semester	Credits
General Education Core	3
Social Sciences Elective	3
Communication Elective	3
CHE 112 Gen. Coll. Chem. II	5
PHY 153 Gen. Physics III	4

Total — 18 credits

Program Total — 70 credits

Chicano Studies (A)

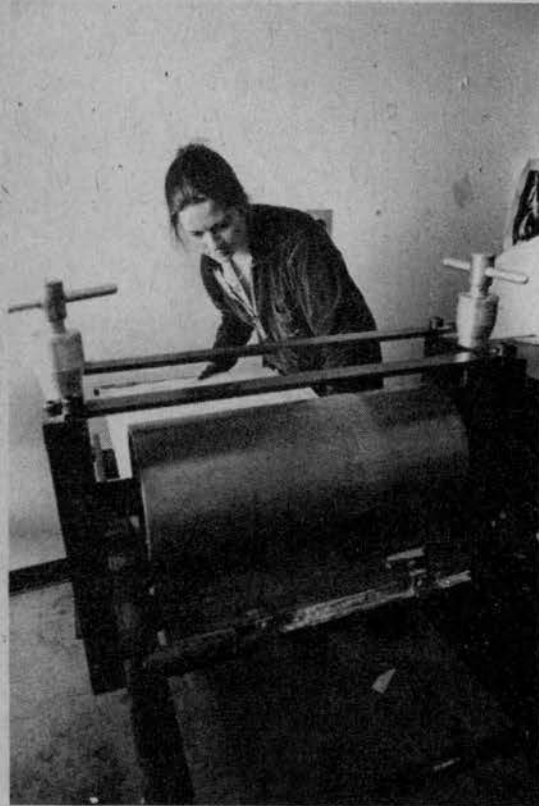
The following selection of courses is recommended for an Associate of Arts Degree with an emphasis in Chicano Studies. A student interested in obtaining a baccalaureate degree should consult a CCD advisor, the Transfer Guide, and the current catalog of the receiving institution.

Course Requirements

Course No.	Title	Credits	Ct. Hrs.
HIS 271	History of Middle America	3	
HUM 115	Introduction to Chicano Studies	3	
HUM 127	Indigenismo and the Chicano	3	

AT 125	Introduction to Chicano Literature	3	45
JM 225	Contemporary Chicano	3	45
AT 228	Contemporary Chicano Literature	3	45
DC 210	La Familia Chicano	3	45
	General Education		
	Electives	12	180
	General Education Interdisciplinary and Distribution Courses	18	270
PA 111	First Year Spanish	5	75
PA 112	First Year Spanish	5	75
	Program Total	61	915

Required Major Courses			
Course No.	Title	Credits	Ct. Hrs.
COA 100	Lettering and Typographic Design	4	100
COA 105	Advertising Typography and Layout	4	100
COA 106	Descriptive Drawing	4	100
COA 107	Rendering for Advertising Design	4	100
COA 200	Advertising Design and Rendering	4	100
COA 205	Creative Graphic Design	4	100
COA 206	Art Preparation for Reproduction	4	100
COA 207	Advanced Art Prep. for Reproduction	4	100
ART 101	Basic Design I	3	90
ART 102	Basic Design II	3	90
ART 111	Basic Drawing I	3	90
ART 112	Basic Drawing II	3	90
ART 271	Printmaking	3	90
PHO 100	Fundamentals of Photography	4	80
GRA 120	Process Camera and Halftones	6	120
COA 297	Cooperative Work Experience	4	100
	or		
ART	any	3	90
	or		
PHO	any	4	80
	General Education	12	180
	Program Total	72-73	1710-1730



Commercial Art (A)

Associate of Applied Science Degree

This program is designed to give students the skills necessary for entry into the field of commercial art. The commercial art field broadly covers: production or paste art, graphic or advertising design and illustration. Each of these broad specialties overlap and specialization in one area requires special talent. The Commercial Art program covers all three specialties and allows the student to develop basic skills common to all three while developing an emphasis in one.

Students are expected to buy their own tools and materials. The beginning program courses require an investment of about \$100 and the student is expected to purchase needed tools and materials as the program progresses.

Additional Major Electives

COA 208	Illustration	4	100
COA 209	Three Dimensional Advertising	4	100

Communications (A,N,R)

The following selection of courses is recommended for an Associate of Arts Degree with an emphasis in Communications. A student interested in obtaining a baccalaureate degree should consult a CCD advisor, the Transfer Guide, and the current catalog of the receiving institution.

1. General Education Requirements	12 hours
2. Interdisciplinary Requirements*	3 hours
3. Distribution Requirements*	15 hours
	<hr/> 30 hours

*(Students should contact faculty advisor for specific course selection.)

4. Communication Major Requirements	30 hours
A. Nucleus Courses	Credits

COM 111	Survey of Communication	3
COM 121	Interpersonal Communication	3
COM 251	Intro. to Radio & TV	3
JOU 111	Intro. to Journalism	3
SPE 111	Intro. to Speech	3
SPE 121	Oral Interpretation or any drama course	3
		<hr/> 18

B. Requirements for Area of Emphasis

Communication and Speech		Credits
COM 241	Introduction to Discussion	3
SPE 231	Voice and Diction	3
COM 131	Intro. to Semantics	3
SPE 211	Advanced Public Speaking	3
or		
SPE 214	Professional and Business Speaking	3
		12

Drama		Credits
SPE 231	Voice and Diction	3
and any three of the following:		
DRA 101	Intro. to Theatre Arts	3
DRA 102	Intro. to Theatre Arts	3
DRA 121	Reader's Theatre	3
DRA 131	Practicum in Teatro	3
DRA 201	Survey of the Theatre	3
DRA 221	Theatre Improvisation	3
COM 231	Image and Meaning	3
SPE 121	Oral Interpretation	3
		12

Radio & TV Mass Communication		Credits
SPE 231	Voice and Diction	3
COM 255	The Movies	3
COM 256	Media Survey	3
DRA 121	Reader's Theatre	3
		12

Journalism		Credits
JOU 112	Introduction to Journalism	4
JOU 221	Reporting and Editing	3
JOU 221	Reporting and Editing	3
PHO 100	Fundamentals of Photography	4
		14

Computer Programming for Business (N)

Associate of Applied Science Degree

The objective of this program is to prepare the student as an entry-level programmer, programmer trainee, or junior programmer. Upon completion of this degree program the student will have completed a minimum of 40 programs ranging from simple business programs to the design and completion of a complex business system.

Required Major Courses		
Course No.	Title	Ct. Hrs.
CPB 100	Introduction to Computer Programming	4 60
CPB 104	Flowcharting and Structured Design	3 45
CPB 105	Assembler Language	3 45
CPB 106	COBOL	4 60
CPB 108	BASIC	3 45
CPB 206	Advanced COBOL	3 45
CPB 220	Systems Analysis and Design	5 75
	* Electives	6 90

Select 2 from below:

CPB 209	FORTRAN (3)		
CPB 208	RPG (3)		
CPB 215	Operating Systems and JCL (3)		
			31
			465

Required General Education Courses

MAN 105	★ Introduction to Business	3	45
SPE 111	★ Introduction to Speech	3	45
MAT 111	Introductory Algebra	3	45
	* Elective	3	45
			12
			180

Required Related Courses

ACC 111	Accounting I	5	75
ACC 112	Accounting II	5	75
ENG 109	★ Business Communications		
or			
ENG 111	English Composition I	3	45
BUS 136	★ Business Communications Applications		
or			
ENG 112	English Composition II	3	45
BUS 137	Listening	2	30
MAT 225	Introductory Statistics	3	45
			21
			330

Total Required Hours

		64	975
★ Meets General Education Requirements			
* Electives options — to be selected with advisor approval.			

CPB 095 Computer Programming Lab

Lab is required for students taking CPB courses. One (1) credit hour per course per semester. These credits are not counted in fulfilling the residency requirement of 15 credits or calculated in the total required hours calculated above. They are counted for VA purposes. CPB LAB is not required for CPB 220 Systems Analysis and Design.

Computer Science (A)

The following selection of courses is recommended for an Associate of Science Degree with an emphasis in Computer Science. A student interested in obtaining a baccalaureate degree should consult a CCD advisor, the Transfer Guide, and the current catalog of the receiving institution.

First Year

First Semester	Credits
General Education Core	3
Communication Elective	3
CSC 111 Intro. Computers	4
MAT 201 Calculus I	5

Total — 15 credits

Second Semester	Credits
General Education Core	3
Communication Elective	3
CSC 150 Fortran IV	4
or	
CSC 155 PASCAL	4
CSC 200 Intro. Comp. Sci.	3
MAT 202 Calculus II	5
Total — 18 credits	

Second Year

Third Semester	Credits
General Education Core	3
PHY 161 Physics (Elec.)	5
CSC 210 Prog. Assem. Lang.	4
MAT 203 Calculus III	4
Total — 16 credits	

Fourth Semester	Credits
General Education Core	3
PHY 162 Physics (Elec.)	5
Interdisciplinary Gen. Ed.	3
CSC 216 Data Structure	3
MAT 205 Diff. Equations	3
Total — 17 credits	

Program Total — 66 credits

Criminal Justice (R)

Associate of Applied Science Degree — Law Enforcement

This course of study is designed to prepare individuals with job-entry skills in the Criminal Justice field. Emphasis is on law enforcement functions.

Completion of the degree requires courses in the following three groups.

Required Major Courses

Course No.	Title	Credits	Ct. Hrs.
J 110	Intro. to Criminal Justice	4	60
J 115	Criminal Law	3	45
J 116	Constitutional Law	3	45
J 126	Patrol Procedures	4	75
J 201	Introduction to Criminal Investigation	4	75
J 202	Advanced Investigation	4	75
J 210	Community Relations	3	45
J 220	Traffic Enforcement	3	53
J 297	Cooperative Work Experience	1-4	45-180
		32	653
	General Education Electives	12	180
	An additional 16 credits in major courses are required.		
	Total	60	

Additional CRJ Major Courses

J 117	Civil Law	3	45
J 118	Rules of Evidence	3	45
J 119	The Juvenile in the Criminal Justice System	3	45
J 120	Corrections	3	45

CRJ 125	Intro. to Industrial Security	3	45
CRJ 127	Probation, Pardon and Parole	3	53
CRJ 128	Correctional Services in the Community	3	53
CRJ 129	The Court System	3	45
CRJ 135	Police Armament	4	75
CRJ 136	Public Service Dispatch Procedures	3	53
CRJ 137	Police Photography	4	75
CRJ 139	Terrorism	3	45
CRJ 146	Current Police Practices	1-3	15-68
CRJ 149	Criminal Justice Reports and Records	3	45
CRJ 155	Physical Security	3	53
CRJ 156	Loss Prevention	3	53
CRJ 205	Interview, Interrogation and Confession	3	45
CRJ 206	Organized Crime: Concepts and Control	3	45
CRJ 207	Police Administration	3	45
CRJ 208	Criminal Justice; Personal Administration	3	45
CRJ 209	Police Supervision	3	45
CRJ 215	Community Crime Prevention	3	45
CRJ 216	Rights and Responsibilities in Public Safety Management	3	45
CRJ 217	Narcotics and Drugs	3	53
CRJ 225	Breath Examiner Specialist	4	75
CRJ 226	Child Abuse — Etiology and Response	3	45
CRJ 227	Emergency Techniques for Police Officers	3	45
CRJ 235	Hazardous Police Tactics	4	68
CRJ 236	Fraud Investigation	3	53
CRJ 237	Accident Investigation	3	53
CRJ 238	Police Self Defense	3	45
CRJ 299	Independent Study	1-6	22-135

Certificate — Corrections

This course of study permits the student to specialize in the area of corrections.

Course No.	Title	Credits	Ct. Hrs.
CRJ 110	Intro. to Criminal Justice	4	60
CRJ 115	Criminal Law	3	45
CRJ 116	Constitutional Law	3	45
CRJ 119	The Juvenile in the Criminal Justice System	3	45
CRJ 120	Corrections	3	45
CRJ 127	Probation, Pardon and Parole	3	53
CRJ 128	Correctional Services in the Community	3	53
CRJ 149	Reports & Records	3	45
CRJ 201	Intro. to Investigation	4	75
	Total	29	466

Certificate — Industrial Security

This course of study will acquaint the student with the functions and procedures used in the growing field of industrial security.

Course No.	Title	Credits	Ct. Hrs.
CRJ 110	Intro. to Criminal Justice	4	60
CRJ 115	Criminal Law	3	45
CRJ 125	Intro. to Industrial Security	3	45
CRJ 126	Patrol Procedures	4	75
CRJ 149	Reports & Records	3	45
CRJ 201	Intro. to Investigations	4	75
CRJ 227	Emergency Techniques for Police	3	45
CRJ 155	Physical Security	3	53
CRJ 156	Loss Prevention	3	53
		<u>30</u>	<u>496</u>

Certificate — Investigations

This course of study permits the students to specialize in the area of criminal and other investigations.

Course No.	Title	Credits	Ct. Hrs.
CRJ 110	Intro. to Criminal Justice	4	60
CRJ 115	Criminal Law	3	45
CRJ 116	Constitutional Law	3	45
CRJ 118	Rules of Evidence	3	45
CRJ 129	Court Systems	3	45
CRJ 149	Reports & Records	3	45
CRJ 201	Intro. to Investigations	4	75
CRJ 202	Advanced Investigations	4	75
CRJ 205	Interview, Interrogation and Confession	3	45
		<u>30</u>	<u>480</u>



Dental Assisting (N)

Associate of Applied Science Degree

The program is designed to prepare students for employment in general and specialized practice dental offices. Graduates of the program are eligible to take the examination for certification.

Required Major Courses

Course No.	Title	Credits	Ct. Hrs.
DEA 100	Orientation to Dental Assisting	2	30
DEA 105	Intro. to Dental Operatory Procedures	4	75
DEA 106	Science of Dental Materials	3	60
DEA 107	Dental Science	3	45
DEA 108	Dental Chairside Procedures I	2	37.5
DEA 109	Applied Science of Dental Materials	3	60
DEA 110	Dental Office Bookkeeping	3	60
DEA 115	Odontology	3	60
DEA 200	Dental Roentgenology	4	75
DEA 205	Dental Chairside Procedures II	5	120
DEA 206	Emergency Measures for Dental Assistants	1	15
DEA 207	Pharmacology for Dental Assistants	1	15
DEA 208	Advanced Laboratory Procedures	2	45
DEA 210	Clinical Practicum	10	450
DEA 215	Clinical Review	2	23
DEA 216	Dental Office Management	2	45
		<u>50</u>	<u>1215.5</u>

Required General Education Courses

BIO 108	Introduction to Human Biology	3	45
	English Elective (required)	3	45
DIT 105	Basic Nutrition	2	30
BIO 105	Microbiology for Dental Assistants	1	30
	Psychology Elective (required)	3	30
		<u>12</u>	<u>180</u>
	Total Required Hours	<u>62</u>	<u>1395.5</u>

Additional Major Courses

DEA 209	Advanced Operatory Procedures	3	60
DEA 225	Rubber Cup Pumice Prophylaxis	3	60
DEA 226	Placing and Finishing Amalgam and Composite Restorations	4	75
DEA 227	Oral Surgery Assisting	2	30
DEA 228	Hospital Surgical Procedures	3	45
DEA 229	Minor Dental Laboratory Repairs in Acrylics	2	30
DEA 230	Office Management and Supervision	2	30
DEA 235	Preventive Therapy I	1	15
DEA 236	Preventive Therapy Counseling II	1	15

Dietetic Technology (N)

Certificate Program — Dietetic Assistant Food Management Major

This allied health program is planned to provide entry level skills and/or upgrading for food service workers in health care areas. The training of the graduate emphasizes food service management where nutrition care is the prime objective.

Required Major Courses

Course No.	Title	Credits	Ct. Hrs.
DIT 100	Dietetics Orientation	1	15
DIT 105	Sanitation, Safety, Tools & Equipment	3	60
DIT 108	Nutrition for Health	3	45
DIT 109	Volume Food Prep. & Service	3	60
DIT 110	The Modified Diet & Its Service	4	68
DIT 121	Clinical Experience	4	150
DIT 135	Purchasing & Stock Record Control	3	45
DIT 215	Personnel, Labor Relations & Supervision	3	45
DIT 220	Menus & Their Operational Implications	3	45
		<u>27</u>	<u>533</u>

Required Related Courses

PSY 115	Psychology of Personal Adjustment	3	45
PE 111	Intro. to Speech	3	45
		<u>6</u>	<u>90</u>
		<u>33</u>	<u>623</u>

Dietetic Technology (N)

Associate of Applied Science Degree Food Management Major

This allied health program is planned to provide entry level skills and/or upgrading for food service workers in health care areas. The training of the graduate emphasizes food service management where nutrition care is the prime objective. 12 Hours of General Education are required.

Required Major Courses

Course No.	Title	Credits	Ct. Hrs.
DIT 100	Dietetics Orientation	1	15
DIT 105	Sanitation, Safety, Tools & Equipment	3	60
DIT 108	Nutrition for Health	3	45
DIT 109	Volume Food Preparation & Service	3	60
DIT 110	The Modified Diet & Its Service	4	68
DIT 121	Clinical Experience	12	450

DIT 135	Purchasing & Stock Record Control	3	45
*DIT 212	Nutrition Care Seminar	3	45
DIT 215	Personnel, Labor Relations & Supervision	3	45
DIT 220	Menus & Their Operational Implications	3	45
*DIT 240	Food Management Seminar	3	45
*DIT 250	Dietetic Seminar	3	45
DIT 256	Specifics of Food Operation Management	3	45
	DIT Elective	4	90
		<u>51</u>	<u>1103</u>

*Seminars must be scheduled concurrently with clinical experiences.

Required Related Courses

BIO 108	Introduction to Human Biology	3	45
ACC 109	Bookkeeping & Accounting	3	45
SPE 111	Intro. to Speech	3	45
PSY 115	Psychology of Personal Adjustment	3	45
SOC 111	Intro. to Sociology	3	45
		<u>15</u>	<u>225</u>
		<u>66</u>	<u>1328</u>

Diesel Power Mechanics (R)

Certificate or Associate of Applied Science Degree

This program is designed to train individuals for entry into the diesel power mechanics of heavy duty mechanic field. In addition, courses are offered for job refreshing and upgrading.

Required Major Courses

Course No.	Title	Credits	Ct. Hrs.
First Year			
* DPE 100	Safety, Tools, Bolts, Bearings, Gaskets and Seals	3	60
* DPE 105	Four-Cycle Engine Overhaul	6	120
* DPE 106	Two-Cycle Engine Overhaul	6	120
* DPE 107	Clutches and Manual Transmissions	9	180
* DPE 108	Power-Shift Transmissions	6	120
*Certificate Requirements			

Second Year			
DPE 200	Differentials	3	60
DPE 201	Chassis Components and Suspension Systems	6	120
DPE 202	Steering Systems	6	120
DPE 205	Brake Systems (Air Hydraulic)	3	60
DPE 208	Electrical Troubleshooting	6	120
DPE 210	Practical Shop Experience	6	120
		<u>60</u>	<u>1200</u>

Required General Education and Related Courses			
FLP 100	Safety — Intro. and Orientation	3	60
	English Elective	3	45
	Math Elective	3	45
	Social Science Elective	3	45
	Elective	3	45
		<u>15</u>	<u>240</u>
	Total Required Hours	75	1440

Additional Courses			
DPE 211	Intro. to Engine and Fuel System Design Relationships	1	20
DPE 215	Advanced Engine Study — Caterpillar	3	60
DPE 216	Advanced Engine Study — Cummins	3	60
DPE 217	Advanced Engine Study — Detroit Diesel	4	80
DPE 218	Advanced Engine Study — Allis Chalmers	3	60
DPE 219	Advanced Fuel Systems — Cummins	3	60
DPE 220	Advanced Fuel Systems — Roosamaster	3	60
DPE 225	Advanced Fuel Systems — Caterpillar	3	60
DPE 226	Advanced Fuel Systems — American Bosch	3	60
DPE 227	Advanced Fuel Systems — Robert Bosch	2	20
DPE 228	Advanced Fuel Systems — Detroit	3	60
DPE 229	Advanced Troubleshooting and Tune-up	7	140
DPE 235	Air-Conditioning Systems	3	60

Drafting

Certificate or Associate of Applied Science Degree

The Drafting Program includes four options:

- Drafting for Industry (A,R)
- Drafting for Construction (R)
- Drafting for Civil/Topographic Mapping (A,R)
- Technical Illustration (A)

Passive Solar Energy Drafting and Design — See Solar Energy Installation and Maintenance Program, page 98.

Drafting for Industry — Option A (A,R)

Certificate or Associate of Applied Science Degree

The Drafting for Industry option prepares you for job entry positions on drafting and design teams in industrial plants, engineering and manufacturing firms and government agencies.

First Semester

Course No.	Title	Credits	Ct. H
* DRI 105	Intro. to Drafting	6	1
* DRI 106	Basic Descriptive Geometry and Auxiliary View Projection	3	
* DRI 107	Drafting and Dimensioning Practices	5	1
* DRI 108	Inking Methods	1	
		<u>15</u>	<u>3</u>
* SCI 105	The Metric System	1	
* ENG	English Elective (COM 107 Occupational Communication or ENG 231 Technical Writing suggested)	3	
	Total	19	3

Second Semester

*DRI 109	Intersections and Developments	3	
*DRI 110	Intro. to Assembly and Weldment Drawing	3	
*DRI 115	Perspective Drawing	3	
*DRI 116	Mechanical Assembly and Detail Projects	6	
		<u>15</u>	
* MAT	Math Elective Trigonometry Required (MAT 101, 102, or 122)	3	
	Total	18	
	*Certificate Requirements		

Third Semester

DRI 200	Industrial Plant Development	6	1
DRI 205	Intro. to Architectural-Structural Plans and Details	6	1
DRI 206	Industrial Piping and Utility Consideration	3	
		<u>15</u>	<u>3</u>
PHY 101	Fundamentals of Physics	4	
	Total	19	3

Fourth Semester

DRI 207	Large Mechanical Equipment	6	120
DRI 208	Material Handling and Conveying Methods	6	120
DRI 209	Installation Plans and Details	3	60
		15	300
	Social Studies Elective	3	45
	Total	18	345
	Total All Units	73	1440
	General Elective (Taken any time)	3	45
	Total All Units	77	1530

Optional Courses

DRI 210	Mechanical Technical Project	3-6	60-120
DRI 297	Cooperative Work Experience	2-9	60-375
DRI 299	Independent Study	3	90

Drafting for Construction — Option B (R)

Certificate or Associate of Applied Science Degree

The Drafting for Construction option prepares you for job entry positions on drafting and design teams for engineering construction firms, steel fabricating companies, public utilities, and government agencies.

First Semester

Course No.	Title	Credits	Ct. Hrs.
DRI 105	Intro. to Drafting	6	120
DRI 106	Basic Descriptive Geometry and Auxiliary View Projection	3	60
DRI 107	Drafting and Dimensioning Practices	5	100
DRI 108	Inking Methods	1	20
		15	300
SCI 105	The Metric System	1	15
ENG	English Elective (COM 107 Occupational Communication or ENG 231 Technical Writing suggested)	3	45
	Total	19	360

Second Semester

DRI 109	Intersections and Developments	3	60
DRI 110	Intro. to Assembly and Weldment Drawings	3	60
DRI 115	Perspective Drawings	3	60
DRC 116	Intro. to Architectural Drafting, Frame Construction	6	120
	Total	15	300

* MAT	Math Elective — Trigonometry Required (MAT 101, 102 or 122)	3	45
	Total	18	345

*Certificate Requirements

Third Semester

DRC 200	Intro. to Commercial Architecture — Masonry Construction	6	120
DRI 205	Intro. to Architectural-Structural Plans and Details	6	120
DRI 206	Industrial Piping and Utility Consideration	3	60
	Total	15	300
PHY 101	Fundamentals of Physics	4	90
	Total	19	390

Fourth Semester

DRC 207	Architectural Development of an Industrial/Commercial Facility	6	120
DRC 208	Structural Development of an Industrial/Commercial Facility	6	120
DRC 209	Finalizing the Industrial/Commercial Facility Project	3	60
	Total	15	300
	Social Studies Elective	3	45
	Total All Units	73	1475
	General Elective (Taken any time)	3	45
	Total	77	1530

Optional Courses

DRC 210	Architectural Technical Project	3-6	60-120
DRI 297	Cooperative Work Experience	2-9	60-375
DRI 299	Independent Study	3	90

Additional Courses

DPR 125	Blueprint Reading for Construction Trades (R)	4	68
DPR 126	Blueprint Reading for Mechanical Trades (R)	4	68
DPR 127	Building Inspection for Construction Trades (R)	4	68
DPR 128	Estimating Residential Construction Costs (R)	4	68
DPR 129	Construction Materials I (R)	4	68
DPR 130	Construction Materials II (R)	4	68
DPR 135	Blueprint Reading (A)	3	60
DRI 210	Mechanical Technical Project	3-6	60-120
DRC 210	Architectural Technical Project	3-6	60-120

DRM 210	Civil-Mapping Technical Project	3-6	60-120
DRS 210	Solar Drafting Technical Project	6	120
DRI 297	Cooperative Work Experience	2-9	60-375
DRI 299	Independent Study	3	90

Drafting for Civil / Topographic Mapping — Option C (A,R)

Certificate or Associate of Applied Science Degree

The Drafting for Civil/Topographic Mapping option prepares you for job entry positions on drafting and design teams for local, state, and federal government agencies, petroleum, geological, civil engineering, mineral development and planning companies.

First Semester

Course No.	Title	Credits	Ct. Hrs.
* DRI 105	Intro. to Drafting	6	120
* DRI 106	Basic Descriptive Geometry and Auxiliary View Projection	3	60
* DRI 107	Drafting and Dimensioning Practices	5	100
* DRI 108	Inking Methods	1	20
Total		15	300
* ENG 111	English Composition or		
* ENG 231	Technical Writing	3	45
* SCI 105	The Metric System	1	15
Total		19	360

Second Semester

* DRI 109	Intersections and Developments	3	60
* DRI 110	Intro. to Assembly and Weldment Drawings	3	60
* DRI 115	Perspective Drawings	3	60
* DRM 116	Intro. to Civil/Topographic Mapping	6	120
Total		15	300
* MAT 113	Intro. to Geometry	3	45
Total		18	345

Third Semester

DRM 200	Map Construction Techniques	9	180
PHY 101	Fundamentals of Physics	4	90
DRI 297 or MAT 122	Cooperative Work Experience Trigonometry and Functions	3	45-120
EAS 107	Airphoto Interpretation	3	105
Total		19	420-495

Fourth Semester

DRM 205	Advanced Map Construction Techniques	6	120
DRI 297 or MAT 122	Cooperative Work Experience Trigonometry and Functions	3-6	60-240
ENG 112 or ENG 232	English Composition Technical Writing Social Studies Elective	3	45
Total		18-21	255-450
Total All Units		77-80	1425-1680

Optional Courses

DRM 210	Civil-Mapping Technical Project	3-6	60-120
DRI 299	Independent Study	3	90

Technical Illustration — Option D (A)

Associate of Applied Science Degree

The Technical Illustration program prepares student for entry level positions as members of drafting and illustration teams in the technical illustration field, working with trade publications, annual reports, presentations proposals, and product information.

First Semester

Course No.	Title	Credits	Ct. Hr.
DRI 105	Intro. to Drafting	6	120
DRI 106	Basic Descriptive Geometry and Auxiliary View Projection	3	60
DRI 107	Drafting and Dimensioning Practices	5	100
DRI 108	Inking Methods	1	20
Total		15	300
SCI 105	The Metric System	1	15
ENG	English Elective (COM 101, 103 Occupational Communication or ENG 231 Technical Writing suggested)	3	45
Total		19	360

Second Semester

DRI 109	Intersections and Developments	3	60
DRI 110	Intro. to Assembly and Weldment Drawings	3	60
DRI 115	Perspective Drawings	3	60
GRA 120	Process Camera and Halftones	6	120
Total		15	300
General Education		3	45
Total		18	345

Third Semester

Prerequisite: Completion of DRI 105 through DRI 115 and GRA 120.

EI 200	Airbrush I	6	120
EI 205	Airbrush II	3	60
RT 101	Basic Design	3	90
RT 111	Basic Drawing	3	90
AOA 200	Advertising Design and Rendering	4	80
Total		19	440

Fourth Semester

EI 207	Special Problems	6	60
RT 112	Basic Drawing II	3	90
AOA 205	Creative Graphic Design	3	80
Total		12	290
General Education		6	90
Program Total		74	1125

Early Childhood Education and Management (A,N,R)

Certificate or Associate of Applied Science Degree

The Early Childhood Education and Management program is designed to meet the vocational training needs for personnel involved in the care of young children (0-6) and to meet State Social Services licensing requirements.

Required Major Courses

Course No.	Title	Credits	Ct. Hrs.
ECE 100	Intro to Early Childhood Education	3	45
ECE 101	Child Study and Observation I	6	90
ECE 105	Supv. Lab Exper. and Sem.	8	165
ECE 110	Supv. Ed. Internship and Seminar	6	120
ECE 115	Classroom Curriculum Development	5	75
ECE 150	Nutrition for Young Children	2	30
ECE 206	Child Study and Observation II	3	45
ECE 210	Supv. Ed. Internship and Seminar	8	165
ECE 215	Admin. I — Patient Involvement and Staff Development	3	45
ECE 216	Admin. II — Child Care Business Operation	3	45
Two of the following courses are required		6	90
ECE 102	Applied Child Growth and Development		
ECE 116	Creative Activities		
ECE 117	Motor Development and Movement Exploration (R)		

*ECE 125	Classroom Application of Language and Cognition		
*ECE 126	Classroom Application of Music and Movement		
*ECE 127	Classroom Application of Science and Math		
ECE 146	Safety and the Preschool Child		
*ECE 196	Classroom Management Techniques		
*ECE 201	Workshop of Ideas		
*ECE 202	Workshop of Things		
Total		53	915

General Education Courses

Selection of 12 semester hours from the following core curriculum. Three semester hours of the 12 hours must be English which is required for an Associate Degree.

Course No.	Title	Credits	Ct. Hrs.
	Communications	12	180
	Social Sciences		
	Science & Math		
Total Required Hours		65	1095

Infant/Toddler Option (N)

With permission from an instructor a substitution of the following courses for those with an * above will lead to an Infant/Toddler specialization certificate and/or degree.

Course No.	Title	Credits	Ct. Hrs.
ECE 109	Home Center Coordination	3	45
ECE 130	Developmental Issues & Activities	3	45
ECE 132	Supv. Lab. Experience: Infant/Toddler	8	165
Additional Major Courses			
ECE 118	Community Resources for Parents I	2	30
ECE 119	Community Resources for Parents II	2	30
ECE 133	Supervised Education Internship and Seminar I	8	165
ECE 134	Home-Center Coordination II	3	45
ECE 136	Infant/Toddler Seminar for Parents I	3	45
ECE 138	Infant/Toddler Seminar for Parents II	3	45
ECE 165	Initial Assessment for Child Development Associate	2	38
ECE 194	Introduction to Early Childhood Education for the Day Care Home Provider	2	30
ECE 195	Infant Stimulation	3	53
ECE 197	Cooperative Work Experience	2-4	45-90

ECE 198	Specialized Learning Environments — Outdoors	3	45
ECE 199	Independent Study	2-6	30-90
ECE 228	Classroom Applications of Language and Cognition II	3	45
ECE 230	Classroom Applications of Science and Math II	3	45
ECE 235	Specialized Learning Environments — Special Needs	3	45
ECE 297	Cooperative Work Experience II	2-4	45-90
ECE 299	Independent Study	2-6	30-90

ECE 206	Child Study & Observation II	3	45
ECE 216	Child Care Business Operations	3	45
	Elective	3	45
DIT 105	Basic Nutrition	2	30
		<u>53</u>	<u>972</u>

*Certificate Requirements

	One of the following courses is required	3	45
ECE 116	Creative Activities		
ECE 117	Motor Development & Movement Exploration (R)		
ECE 125	Classroom App. to Language & Cognition		
ECE 126	Classroom App. to Music & Movement		
ECE 127	Classroom App. to Science & Math		
ECE 201	Workshop of Ideas		
		<u>56</u>	<u>1017</u>

Child Development Associate (N)

Competency Based Curriculum Certificate or Associate Degree

The Early Childhood Education Program is designed around a core curriculum. The Core curriculum can be achieved/earned through two approaches. The regular traditional on-campus approach or the innovative on-site field based CDA (Child Development Associate) like approach.

Required Major Courses

Course No.	Title	Credits	Ct. Hrs.
ECE 102	Applied Child Growth & Development	3	45
* ECE 165	Initial Assessment for the Child Development Associate	2	38
* ECE 175	Learning Environments for the Child Development Associate	5	98
* ECE 176	Physical & Intellectual Development for the Child Development Associate	5	98
* ECE 177	Self Concept & Individual Strengths for the Child Development Associate	5	98
* ECE 178	Children & Adults in Groups for the Child Development Associate	5	98
* ECE 179	Admin. I Home-Center/Parent Involvement Coordination for the Child Development Associate	5	98
* ECE 180	Admin. II Staff Development for the Child Development Associate	5	98
ECE 185	Child Abuse & Neglect for the Child Development Associate	5	98
* ECE 190	Final Assessment for the Child Development Associate	2	38

General Education Courses

Selection of 12 semester hours from the following core curriculum. Three semester hours of the 12 hours must be in English which is required for an Associate Degree.

Course No.	Title	Credits	Ct. Hrs.
	Communications	12	180
	Social Sciences		
	Math & Science		
	Total Required Hours	<u>68</u>	<u>1197</u>

Early Childhood Education Assisting (A)

Certificate Program

Upon completion of this program, the graduate will be prepared for assistant level positions in day care and preschool centers.

Required Major Courses

Course No.	Title	Credits	Ct. Hrs.
ECE 100	Introduction to Early Childhood Education	3	45
ECE 101	Child Study & Development	6	90
ECE 105	Supv. Lab Experience & Seminar	8	168
ECE 110	Supv. Ed. Internship & Seminar I	6	120
ECE 115	Classroom Curriculum Development	3	45

One of the following:

ECE 116	Creative Activities
ECE 125	Classroom Application to Language & Cognition

CE 126	Classroom Application to Music & Movement		
CE 127	Classroom Application to Science & Math		
CE 196	Classroom Management Techniques	3	45
	Total	31	540

Second Semester		Credits
	Com. and Arts Elective	3
	GEM Elective	3
ACC 112	Accounting Principles II	5
ECO 202	Principles of Economics	3
ECO 285	Dynamics of Economics	1-3
	Total	15-17

Additional Major Courses

Course No.	Title	Credits	Ct. Hrs.
CE 102	Applied Child Growth & Development	3	45
CE 109	Home Center Coordination	3	45
CE 118	Community Resources for Parents I	2	30
CE 109	Community Resources for Parents II	2	30
CE 135	Specialized Learning Environments — Home	3	45
CE 150	Nutrition for Young Children	2	45
CE 194	Intro. to Early Childhood Education for the Day Care Home Provider	2	30
CE 197	Cooperative Work Experience	2-4	30-60
CE 198	Specialized Learning Environment — Outdoors	3	45
CE 199	Independent Study	2-6	30-90

Economics (A,N,R)

The following selection of courses is recommended for an Associate of Arts Degree with an emphasis in Economics. A student interested in obtaining a baccalaureate degree should consult a CCD advisor, the Transfer Guide, and the current catalog of the receiving institution.

First Year

First Semester		Credits
ENG 111	English Composition	3
MAT 111	Introductory Algebra	3
ECO 120	Consumer Economics	3
ECO 109	Applied Economics	3
	GEM Elective	3
	Total	15

Second Semester		Credits
ENG 112	English Composition	3
MAT 112	Intermediate Algebra	3
ECO 118	Labor Relations	3
ECO 175	Government and the U.S. Economy	3
	GEM Elective	3
	Total	15

Second Year

First Semester		Credits
	GEM Elective	3
MAT 117	Survey of Calculus	4
ACC 111	Accounting Principles I	5
ECO 201	Principles of Economics	3
	Total	15

Total 60-62 credits

Electronic Digital Technology (R)

Certificate or Associate of Applied Science Degree

A comprehensive program designed to give a thorough understanding of digital electronics for job entry positions in companies which utilize digital electronics and computer concepts, or to give job upgrading and refresher courses for people already employed in the field.

Required Major Courses

Course No.	Title	Credits	Ct. Hrs.
*EDT 110	Fundamentals of AC/DC Circuits for Electronics	9	180
*EDT 120	Solid State Devices & Circuits for Electronics	6	120
*EDT 130	Digital Logic Devices & Circuits for Electronics	9	180
*EDT 140	Operational Amplifiers and A to D Converters for Electronics	6	120
EDT 210	Introduction to Computers	9	180
EDT 220	Computer Troubleshooting	6	120
EDT 230	Interfacing/Computer Peripheral	9	180
EDT 240	Microprocessors	6	120
	Total	60	1200

General Education Courses

ENG 231	Technical Report Writing	3	45
MAT 111	Math Elective	3	45
PSY 270	Industrial Psychology	3	45
PHY 101	Fundamentals of Physics	4	60
	Total	12	200

* Certificate Requirements
Total Required Hours 73 1400

Additional Major Courses

EDT 118	Basic of AC-DC Electronics	3	60
EDT 214	Introduction to Micro-Processors	3	60
EDT 215	Micro-Processor Programming	3	60
EDT 216	Practicum of Micro-Processors Hardware	3	60
EDT 217	PDP-11 Computer Programming/Basic Hardware	6	120
EDT 218	PDP-11 Computer Interfacing	3	60

EDT 219	Focal Programming (Self Paced)	3	60
EDT 225	Mini Computers (Self Paced)	3	60
EDT 226	Disk Concepts (Self Paced)	2	40
EDT 227	Tape Concepts (Self Paced)	2	40
EDT 228	Magnetic Recording (Self Paced)	2	40
EDT 229	Data Communications (Self Paced)	2	40
EDT 235	PDP-11 Computer (Self Paced)	3	60
EDT 299	Independent Study	3	60

NOTE: First digit indicates the year. The second digit indicates the sequence of that year. All mandatory electronic classes end with the third digit equal to zero "0." Example: EDT 120 equals First year, second required course.

Electricity Industrial / Commercial (R)

Certificate or Associate of Applied Science Degree

This program is designed to give skills for job-entry employment as an electrical apprentice, wiring residences, commercial and industrial installations, under the supervision of a licensed journeyman electrician, using the latest techniques of installation according to the National Electric Code.

Required Major Courses First Year

Course No.	Title	Credits	Ct. Hrs.
* ELF 100	Fundamentals of AC/DC Electricity	9	180
* ELF 105	Solid State Devices and Circuits	6	120
* EIC 105	Electrical Blueprint Reading	3	45
* EIC 115	Electrical Planning	3	45
* EIC 121	Electrical Installations I	3	60
* EIC 122	Electrical Installations II	3	60
* EIC 131	National Electric Code I	3	45

*Certificate Requirements

Second Year

EIC 132	National Electric Code II	3	45
EIC 200	Electrical Calculations	4	60
EIC 201	Transformer Installation and Theory	3	60
EIC 202	AC and DC Machines, Installation and Theory	3	60
EIC 203	Polyphase Rotating Machines and Transformers	3	60

EIC 207	Electrical Control Wiring for Plumbing, Heating, Air-Conditioning Trades	3	60
EIC 211	Installation and Operation of Distribution Systems I	3	60
EIC 212	Installation and Operation of Distribution Systems II	3	60
EIC 215	Advanced Electrical Installation	3	60
EIC 216	Advanced Electrical Planning	3	45
		61	1125

General Education Courses

Math Elective	3	45
English Elective	3	45
Social Science Elective	3	45
Electives	6	90
	15	225
Total Required Hours	76	1350

Additional Courses

EIC 111	Solid State Devices for Electricians I	3	60
EIC 112	Solid State Devices for Electricians II	3	60
EIC 118	Basics of AC and DC Electricity	3	60
EIC 141	Electricity for Automotive Students I	3	60
EIC 142	Electricity for Automotive Students II	3	60
EIC 143	Solid State Devices for Automotive Students	3	60
EIC 208	Advanced National Electrical Code	3	45
EIC 209	Advanced Code Calculations	3	45
EIC 297	Cooperative Work Experience	2-9	60-375
EIC 299	Independent Study	3	90
DPR 125	Blueprint Reading for Construction Trades	4	68
DPR 126	Blueprint Reading for Mechanical Trades	4	68
DPR 127	Building Inspection for Construction Trades	4	68
DPR 128	Estimating Residential Construction Costs	4	68
DPR 129	Construction Materials I	4	68
DPR 130	Construction Materials II	4	68
DPR 140	Overview of Bricklaying, Carpentry, Electrical, and Plumbing Fields	4	68

Electronics Technology (A)

Associate of Applied Science Degree

This program is designed to prepare individuals with entry skills in assembly, test, repair and maintenance as well as basic knowledge to advance into more detailed specific areas with further training and experience.

Required Major Courses

First Semester

Course No.	Title	Credits	Ct. Hrs.
ELT 100	DC Fundamentals	3	60
ELT 105	DC Circuits and Magnetism	3	60
ELT 106	AC Fundamentals	3	60
ELT 107	AC Circuits	3	60
ELT 108	Vacuum Tubes	3	60
	General Education	6	120
Sub-Total		21	420

Second Semester

ELT 109	Solid State Fundamentals	3	60
ELT 110	Transistor Amplifiers	3	60
ELT 115	Transistor Oscillators and FETs	3	60
ELT 116	SCR, UJT and Special Devices	3	60
ELT 117	IC Operational Amplifiers	3	60
	General Education	3	60
Sub-Total		18	360

Third Semester

ELT 200	Instruments and Measurements	6	120
ELT 206	Digital Fundamentals	3	60
ELT 207	Digital Circuits	3	60
ELT 208	Microprocessor Fundamentals	3	60
	General Education	3	60
Sub-Total		18	360

Fourth Semester

ELT 205	Communications Systems	3	60
ELT 209	Trouble-shooting Techniques	3	60
ELT 210	Electronic Fabrication Techniques	6	120
ELT 216	Introduction to Electro-Mechanical Devices	3	60
Sub-Total		15	300

Total Required Hours 72 1380

Certificate Programs (A)

The seven programs listed below include requirements for obtaining certificates. The programs can be grouped as needed for a certificate; however, all one-hundred level courses have as a prerequisite the preceding course or proof of competency is required.

Basic Electronics

Course No.	Title	Credits	Ct. Hrs.
ELT 100	DC Fundamentals	3	60
ELT 105	DC Circuits and Magnetism	3	60
ELT 106	AC Fundamentals	3	60
ELT 107	AC Circuits	3	60
Total		12	240

Vacuum Tube Techniques

Course No.	Title	Credits	Ct. Hrs.
ELT 108	Vacuum Tube Fundamentals and Circuits	3	60
Total		3	60

Solid State Theory

Course No.	Title	Credits	Ct. Hrs.
ELT 109	Solid State Fundamentals	3	60
ELT 110	Transistor Amplifier	3	60
ELT 115	Transistor Oscillators and FETs	3	60
Total		9	180

Transistors Special Devices

Course No.	Title	Credits	Ct. Hrs.
ELT 116	SCR, UJT	3	60
ELT 117	IC Operational Amplifiers	3	60
Total		6	120

Equipment Servicing

Course No.	Title	Credits	Ct. Hrs.
ELT 200	Instruments and Measurements	6	120
ELT 209	Troubleshooting Techniques	3	60
Total		9	180

Digital Fundamentals

Course No.	Title	Credits	Ct. Hrs.
ELT 206	Pulse and Digital Fundamentals	3	60
ELT 207	Digital Circuits	3	60
ELT 208	Microprocessor Fundamentals	3	60
Total		9	180

Layout and Fabrication

Course No.	Title	Credits	Ct. Hrs.
ELT 210	Electronic Fabrication Techniques	6	120
ELT 216	Introduction to Electro-Mechanical Devices	3	60
Total		9	180

Electronics Technology (N)

Certificate or Associate of Applied Science Degree

This program provides you with job entry skills in assembly, test, repair, and maintenance areas and basic knowledge to advance into more detailed and specific areas with further training and experience.

Demonstrated mastery of skills is required. The program is open-entry and open-exit. Therefore, you may complete some of the courses, enter the work force, then return at any time to complete the program for a certificate or degree, or to upgrade specific skills.

Required Major Courses			
Course No.	Title	Credits	Ct. Hrs.
ELT 100	DC Fundamentals	3	60
ELT 105	DC Circuits and Magnetism	3	60
ELT 106	AC Fundamentals	3	60
ELT 107	AC Circuits	3	60
ELT 108	Vacuum Tube Fundamentals and Circuits	3	60
ELT 109	Solid State Fundamentals	3	60
ELT 110	Transistor Amplifiers	3	60
ELT 115	Transistor Oscillators and FETs	3	60
ELT 116	SCRs, UJTs, and Special Devices	3	60
ELT 117	IC Operational Amplifiers	3	60
ELT 200	Instruments and Measurements	6	120
ELT 205	Communications Systems, OR one of the following: Independent Study or an approved elective	3	60
ELT 206	Digital Fundamentals	3	60
ELT 207	Digital Circuits	3	60
ELT 208	Microprocessor Fundamentals	3	60
ELT 209	Trouble-shooting Techniques	3	60
ELT 210	Electronic Fabrication Techniques	6	120
ELT 218	Microprocessor Applications	3	60
		<u>60</u>	<u>1200</u>
Required General Education Courses		<u>12</u>	<u>180</u>
Total Required Hours		<u>72</u>	<u>1380</u>

Additional Major Courses

ELT 219	FCC 2nd Class Radio	8	120
ELT 299	Independent Study	3	60

Solid State Devices

(15 Credit Certificate)

Course No.	Title	Credits	Ct. Hrs.
ELT 109	Solid State Fundamentals	3	60
ELT 110	Transistor Amplifiers	3	60
ELT 115	Transistor Oscillators and FETs	3	60
ELT 116	SCR, UJT, and Special Devices	3	60
ELT 117	IC Operational Amplifiers	3	60

Check with advisor for prerequisites

Digital/Microprocessors

(12 Credit Certificate)

Course No.	Title	Credits	Ct. Hrs.
ELT 206	Digital Fundamentals	3	60
ELT 207	Digital Circuits	3	60
ELT 208	Microprocessor Fundamentals	3	60
ELT 218	Microprocessor Applications	3	60

Check with advisor for prerequisites

Printed Circuit Development

(6 Credit Certificate)

Course No.	Title	Credits	Ct. Hrs.
ELT 210	Electronic Fabrication Techniques	6	120

Check with advisor for prerequisites



English (A,N,R)

The following selection of courses is recommended for Associate of Arts Degree with an emphasis in English Humanities. A student interested in obtaining a baccalaureate degree should consult a CCD advisor, the Transfer Guide, and the current catalog of the receiving institution.

First Year

First Semester	Credits
ENG 111	3
GEN ED Requirement	3
LIT 105 or 106 or 107 or 110* and/or	3
HUM 111*	3
General Education Interdisciplinary distributive courses	3

Total — 15 credits

Second Semester	Credits
ENG 112	3
GEN ED Requirement	3
LIT 105 or 106 or 107 or 110* and/or	3
HUM 112*	3
General Education Interdisciplinary distributive courses	3

Total — 15 credits

Second Year

First Semester	Credits
* ENG 115 or 125 or 211 or 231 or	
* LIT 241 or 251 or 261 or	3-6
* HUM 211 or 215	
GEN ED Requirement	3
General Education Interdisciplinary distributive Courses	6
COM 246 or 230 or Elective	3

Total — 15 credits

Second Semester	Credits
* ENG 215 or 225 or 211 or 231 or	
* LIT 242 or 252 or 262 or	3-6
* HUM 212 or 215	
GEN ED Requirement	3
General Education Interdisciplinary distributive courses	6
Elective	3

Total — 15 credits

Total Credits: 60

Selection depends on area of emphasis or personal interest.

Environmental Technology (R)

Associate of Applied Science Degree

This program is designed to prepare individuals with job entry skills for the environmental field. The Program places emphasis on air, noise, water and solid waste pollution.

Required Major Courses

Course No.	Title	Credits	Ct. Hrs.
EVT 100	Introduction to Environment	3	45
EVT 105	Environmental Problems	3	45
EVT 106	Noise Pollution	3	45
EVT 107	Introduction to OSHA-COSH	3	45
EVT 108	Solid Waste Pollution	3	45
EVT 109	Water Pollution	3	45
EVT 200	Environmental Decision Making	4	60
EVT 205	Land Use and the Quality of Life	5	83
EVT 206	Industrial Hygiene	3	45
EVT 207	Atmospheric Pollution	5	83
EVT 208	Pollution Control Systems	4	60
EVT 209	Data Collection and Evaluation	3	45
EVT 217	Map Reading and Photo Interpretation	3	45
EVT 297	Coop. Work Experience	1-4	45-180
		46-50	736-885

Required General Education Courses

English Composition	3	45
Technical Communication — Introduction to Technical Writing	3	45
Math Elective	3	45
Science Elective (MAT, CHE, BIO, EAS or PSY)	3	45
Social Science Elective (PSY, POS, SOC)	6	90
	18	270

Total Required Hours 64-68 1020-1155

Foreign Automotive Mechanics (A)

Certificate or Associate of Applied Science Degree

This program provides the student with job entry skills for the foreign automotive trade and upgrading for those in the field who need to acquire more skill.

Required Major Courses

Course No.	Title	Credits	Ct. Hrs.
* FAM 100	Orientation, Safety, Basic Electrical and Ignition Systems	3	60
* FAM 105	Starting and Charging Systems	3	60
* FAM 106	Carburetor Service	3	60
* FAM 107	Oscilloscopes and Electronic Testing	3	60
* FAM 108	Emission Control	3	60
* FAM 109	Drum Brake Systems	3	60
* FAM 110	Disc Brake Systems	3	60
* FAM 115	Wheel Alignment	3	60
* FAM 116	Wheel Balance and Suspension	3	60
* FAM 117	Steering Gears and Systems	3	60
FAM 200	Clutches and Manual Transmissions	3	60

FAM 205	Drive Lines and Differentials	3	60	FLP 208	Cylinders, Motors, Pneumatics	3	60
FAM 206	Automatic Transmission Theory and Maintenance	3	60	FLP 209	Piping, Hose, Fitting, Pneumatic Systems	3	60
FAM 207	Automatic Transmission Rebuilding	6	120	FLP 210	Pressure Control Valves, Pneumatic Systems	3	60
FAM 208	Engine Operation, Diagnosis, Disassembly and Measurement	6	120	FLP 215	Pneumatic Logic Controls	3	60
FAM 209	Engine Reconditioning and Assembly	3	60	FLP 216	Troubleshooting, Print Reading	3	60
FAM 210	Air Conditioning Theory, Service and Safety	3	60	FLP 217	Basic Fluidics	3	60
FAM 215	General Service Repair or one of the following: inter-department elective or cooperative work experience	3	60			60	1200
	General Education	12	180				
	Total	72	1380				

Required General Education Courses

Math Elective	3	45
English Elective	3	45
Social Science Elective	3	45
Electives	6	90
	15	225
Total Required Hours	75	1425

* Certificate Program

Fluid Power (R)

Certificate or Associate of Applied Science Degree

The Fluid Power Program is designed to prepare students to enter the field as a hydraulic and/or pneumatic mechanic in an overhaul and repair shop for industrial equipment and to provide job upgrading or refresher courses for people already employed in the field.

Required Major Courses

Course No.	Title	Credits	Ct. Hrs.
Hydraulics			
FLP 100	Safety — Introduction and Orientation	3	60
FLP 105	Basic Principles of Hydraulics	3	60
FLP 106	Fluids for Hydraulics, Sealing Devices	3	60
FLP 107	Source of Hydraulic Power	3	60
FLP 108	Control of Hydraulic Power	3	60
FLP 109	Hydraulic Actuators — Motors — Cylinders	3	60
FLP 110	Distribution of Hydraulic Power	3	60
FLP 115	Conditioning Power Fluids	3	60
FLP 116	Pump, Overhaul and Testing	3	60
FLP 117	Components, Overhaul and Testing	3	60
Pneumatics			
FLP 200	Basic Pneumatics — Safety	3	60
FLP 205	Compressors	3	60
FLP 206	Primary, Secondary Air Treatment	3	60
FLP 207	Directional Control Valves	3	60

Additional Courses

FLP 120	Fluid Power for Mechanical Trades I	3	60
FLP 121	Fluid Power for Mechanical Trades II	3	60
FLP 125	Analyzing Hydraulic Circuits	3	60
FLP 126	Hydraulic Schematics	3	60
FLP 127	Hydrostatic Drives	3	60
FLP 218	Advanced System Components and Circuits	3	60
FLP 219	Advanced Trouble- shooting — Safety	3	60
FLP 220	Advanced Fluid Power, Hydraulic and Pneumatic Maintenance	3	60
FLP 221	Fluid Power Instrumentation	3	60
FLP 225	Air Brake and Anti-Skid Systems	3	60
FLP 230	Compressor Overhaul	3	60
FLP 297	Cooperative Work Experience	2-9	60-375
FLP 299	Independent Study	3	90

Fluid Power (R)

Certificate or Associate Degree

The Fluid Power Program is in two parts, FLP 100s and FLP 200s. The FLP 100s deal with hydraulics and the FLP 200s deal with pneumatics. Each consists of ten modules which consist of three week periods. The student has the option of which of the programs to start with, FLP 100 or FLP 200. As stated before, the Fluid Power Program is two years in length; one year of hydraulics and one year of pneumatics. Our certificate program consists of either one year in the FLP 100s or one year in the FLP 200s. The Associate Degree will require 15 credits of electives — math, English, social science, etc.

Food Service Production (N)

Certificate

This program provides entry level and upgrading training for students to gain knowledge to prepare in the hospitality industry.

Required Major Courses

Course No.	Title	Credits	Ct. Hrs.
FSM 105	Sanitation, Safety, Tools & Equipment	3	60
FSM 110	Pantry Station Work Duties	3	60
FSM 115	Basic Baking & Fry Cook Duties	3	60
FSM 120	Volume Food Preparation & Service	3	60
FSM 125	Volume Food Production I	3	60
FSM 130	Meat Identity & Cookery	3	60
FSM 135	Short Order Cook Station Duties	3	60
FSM 140	Volume Food Display & Production	3	60
FSM 145	First Cook Station Duties	3	60
FSM 150	Food Production II	3	60
FSM 197	Cooperative Work Study	4	150
		34	750
Required Related Courses			
ENG 102	3	45
MAT 106	3	45
		6	90
	Total	40	840

Fire Science Technology (R)

Associate of Applied Science Degree Fire Suppression

Completion of this curriculum will prepare individuals for entry in a fire protection career. This option places emphasis on modern methods of suppression and management of fire protection.

Required Major Courses

Course No.	Title	Credits	Ct. Hrs.
FST 100	Fire Protection	3	45
FST 105	Fire Apparatus & Equip	3	45
FST 106	Fire Prevention	2	30
FST 107	Related Codes & Ordinances	3	45
FST 108	Fire Hydraulics	4	68
FST 109	Building Plans & Construction	3	45
FST 121	Hazardous Materials	4	68
FST 141	Automatic Sprinkler Systems	1	15
FST 142	Special Automatic Protection Systems	1	15
FST 143	Portable Fire Extinguishers	1	15
FST 144	Automatic Fire Detection Systems	1	15

FST 145	Firefighter Respiratory Protection	3	45
FST 215	Strategy & Tactics	3	45
FST 216	Rescue Procedures	3	45
FST 217	Operating & Driving Procedures	4	68
FST 218	Fire Service Management	3	45
FST 286	Firefighter Safety	3	45
FST 297	Coop. Work Experience	4	120
FST 299	Independent Study	1-6	23-164
		48-53	812-953

NOTE: Individuals not employed in the suppression field will be required to enroll for a minimum of 4 credit hours of cooperative work experience. Individuals employed in the suppression field may substitute an additional major course.

Required General Education Courses

Mathematics	3	45
Chemistry	3	45
Physics	3	45
English	3	45
	12	180

Total Required Hours 60-65 992-1133

Associate of Applied Science Degree Fire Prevention

Completion of this curriculum will prepare individuals for entry in a fire protection career. Emphasis is placed on life and safety and protection of buildings using related codes and ordinances.

Required Major Courses

Course No.	Title	Credits	Ct. Hrs.
FST 100	Fire Protection	3	45
FST 105	Fire Apparatus & Equipment	3	45
FST 106	Fire Prevention	2	30
FST 107	Related Codes & Ordinances	3	45
FST 108	Fire Hydraulics	4	68
FST 109	Building Plans & Construction	3	45
FST 121	Hazardous Materials	4	68
FST 141	Automatic Sprinkler Systems	1	15
FST 142	Special Automatic Protection Systems	1	15
FST 143	Portable Fire Extinguishers	1	15
FST 144	Automatic Fire Detection Systems	1	15
FST 145	Firefighter Respiratory Protection	1	15
FST 205	Fire Safety Education	3	45
FST 206	Fire Investigation	3	45
FST 207	Comprehensive Planning for Fire Protection	3	45
FST 208	Building Inspections for Fire Protection	3	45
FST 286	Firefighter Safety	3	45
FST 297	Coop. Work Experience	4	120
FST 299	Independent Study	1-6	23-165
		47-52	789-931

Required General Education Courses

Speech	3	45
Mathematics	3	45
Chemistry	3	45
Physics	3	45
English	3	45
	15	225
Total Required Hours	<u>62-67</u>	<u>1014-1156</u>

Additional Major Courses

FST 111	Fire Service Forensic Photography I	4	68
FST 112	Fire Service Forensic Photography II	4	68
FST 115	Photography for Fire Evidence	1	15
FST 116	Walkthrough Review of Uniform Building Code	2	30
FST 117	Firefighter and Fire Dept. Liability	1	15
FST 118	Fireground Tactics	1	15
FST 146	Pesticide Fire & Spill Control	1	15
FST 220	Structural Preplanning for The Fire Service	3	45
FST 226	Fire Command Officers School	1	15
FST 227	Emergency Medical Technician	4	60
FST 228	Underwater Recovery	3	45
FST 229	Hazardous Materials Seminar	3	45
FST 230	Aircraft Fire/Rescue	3	45
FST 242	Supervision for Fire Services	1	15
FST 243	Stress Management	1	15
FST 244	Personnel Management	1	15
FST 285	Wildland Fires	3	45
FST 286	Firefighter Safety	3	45
FST 287	Automatic Extinguishing Systems-Design	3	45

Fire Service Training (R)

The State of Colorado offers a program of Fire Service Training to all fire service units.

This training consists of an instructor being sent into the area fire departments to drill fire fighters with their own apparatus and equipment. Special workshops and seminars are also scheduled throughout the year.

For information on costs and scheduling, contact:
Joe Lewand, director of Fire Service Training
988-6160 Ext. 320

Geography (A,N,R)

The following selection of courses is recommended for an Associate of Arts Degree with an emphasis in Geography. A student interested in obtaining a baccalaureate degree should consult a CCD advisor, the Transfer Guide, and the current catalog of the receiving institution.

First Year

First Semester	Credits
General Education Core	3
Communication Elective	3
MAT 111 Intro. Algebra (Elec.)	3
GEO 105 Fundamental Geo.	1
GEO 108 Maps & Compasses	1
GEO 111 Physical Geo. (Land)	4
Total — 15 credits	

Second Year	Credits
General Education Core	3
Communication Elective	3
MAT 112 Intermed. Algebra (Elec.)	4
GEO 112 Physical Geo.	4
GEO 121 Geo. of Man	3
Total — 17 credits	

Total — 17 credits

Second Year

Third Semester	Credits
General Education Core	3
Interdisciplinary Gen. Ed.	3
BIO 125 Urban Ecol. (Elect.)	3
GEO 150 World Geo.	4
GEO 165 Geo. of Latin Amer.	3
Total — 16 credits	

Total — 16 credits

Fourth Semester	Credits
General Education Core	3
GEO 210 Geo. of Econ.	3
GEO 220 Many Colorados	3
GEO 235 Urban Geo.	3
POS or ECO Elective	3
Total — 15 credits	

Total — 15 credits

Program Total — 63 credits

Gerontology / Geriatric Activity Directing (A)

Certificate

Upon completion of this program, graduates will be prepared for entry level positions in activity directing in a variety of facilities designed to meet the needs of senior citizens.

Required Major Courses

Course No.	Title	Credits	Ct. Hrs.
GGA 100	Introduction to Gerontology	3	45
GGA 101	Physical, Psychological and Social Implications of Aging I	5	75
GGA 102	Activities Directing for Senior Citizens I	3	45
GGA 105	Nutrition for the Elderly	4	65
GGA 107	Emergency Procedures and Professional Relationships	3	60
GGA 109	Activities of Daily Living	3	60
GGA 111	Physical, Psychological and Social Implications of Aging II	5	75
GGA 112	Activities Directing for Senior Citizens II	7	225
	Program Total	33	650

Graphic Arts (A)

Certificate or Associate of Applied Science Degree

This program will prepare the student with job entry skills to accomplish most operations necessary on the process camera and the offset press, and to function in the areas of basic bindery, stripping and general layout and composition work. Students completing the program will be equipped to enter positions with commercial print shops, trade shops, in-plant print shops and any other operation requiring printers.

Required Courses

Course No.	Title	Credits	Ct. Hrs.
* GRA 100	Intro to Graphic Arts	3	60
* GRA 105	Beginning Process Camera I	3	60
* GRA 106	Halftones on Process Camera	3	60
* GRA 107	Composition I	3	60
* GRA 108	Process Camera II, Composition II	3	60
* GRA 109	Beginning Offset Presses	3	60
* GRA 110	Stripping and Small Bindery	3	60
* GRA 115	Intermediate Offset Presses	3	60
* GRA 116	Paper, Management and Production	3	60
* GRA 117	Inks, Plates and Intro/Large Bindery	3	60
GRA 200	Process Color Separation	3	60
GRA 205	Process Color Printing	3	60
GRA 206	Computerized Typesetting	3	60
GRA 207	Raised Printing	3	60
GRA 208	Basic Machine Maintenance	3	60
GRA 209	Silkscreening for Graphic Arts	1	20
GRA 299	Independent Study	5	75
General Education Electives		12	180
COA 105	Typography and Layout	4	100
PHO 100	Fundamentals of Photography	4	80
SEC 110	Typing I	4	75
TEI 201	Airbrush I	3	60
Program Total		78	1490

* Certificate program courses.

Heavy Equipment Operation and Preventive Maintenance (R)

Certificate or Associate of Applied Science Degree

This program is designed to train a person with job-entry skills to enter the heavy equipment operation field.

Required Major Courses

First Year

Course No.	Title	Credits	Ct. Hrs.
* HEO 100	Safety Orientation and Starting Procedures	3	60
* HEO 105	Maintenance and Adjustments	3	60
* HEO 106	Operating Equipment	3	60

* HEO 107	Field Tasks — Initial Grading	3	60
* HEO 108	Field Tasks — Subgrading	3	60
* HEO 109	Field Tasks — Initial Finish Work	3	60
* HEO 110	Field Tasks — Dozer Equipment	3	60
* HEO 115	Field Tasks — Scraper Equipment	3	60
* HEO 116	Field Tasks — Grader Equipment	3	60
* HEO 117	Field Tasks — Loader and Backhoe Equipment	3	60

* Certificate Requirements

Second Year

HEO 118	Advanced Maintenance	3	60
HEO 119	Advanced Field Tasks — Finish Grade	3	60
HEO 120	Advanced Field Tasks — Special Projects	3	60
WEF 108	S.M.A.W. Safety and Electrode Identification Padding	3	60
WEF 109	S.M.A.W. Joint Designs, All Electrodes	3	60
WEF 110	S.M.A.W. Joint Designs, All Positions	3	60
WEF 116	A.S.M.E. Section IX Test E6010	3	60
WEF 117	A.S.M.E. Section IX Test E7018	3	60
FLP 105	Basic Principles of Hydraulics	3	60
FLP 107	Source of Hydraulic Power	3	60
		60	1200

General Education Requirements

Math Elective	3	45	
English Elective	3	45	
Social Science Elective	3	45	
Elective	3	45	
		12	180
Total Required Hours		72	1380

Additional Courses

FLP 200	Basic Pneumatics — Safety	3	60
FLP 205	Compressors	3	60
HEO 297	Cooperative Work Experience	2-9	60-375
HEO 299	Independent Study	3	60

History (A,N,R)

The following selection of courses is recommended for an Associate of Arts Degree with an emphasis in History. A student interested in obtaining a baccalaureate degree should consult a CCD advisor, the Transfer Guide, and the current catalog of the receiving institution.

Required Courses

Course No.	Title	Credits	Ct. Hrs.
HIS 150	Contemporary World History	3	45
HIS 211	The United States to 1865	3	45
HIS 212	The United States, 1865 to Pres.	3	45
HIS 220	Colorado History	3	45
HIS	Electives	18	270
	General Education Core	12	180
	General Education Interdisciplinary	3	45
	General Education Distribution	15	225
Program Total		60	900

Hotel Motel Management (A)

Associate of Applied Science Degree

This program prepares students for entry level management positions in the hotel-motel industry with emphasis in either food and beverage management, front office operations or administrative support.

Required Major Courses

Course No.	Title	Credits	Ct. Hrs.
HMM 110	Intro. to the Hospitality Industry	3	45
HMM 115	Food and Beverage Management and Science	3	45
HMM 120	Waitress and Bartending	3	60
HMM 125	Maintenance and Engineering for Hotel-Motel	3	45
HMM 130	Front Office Operations	3	60
HMM 297	Cooperative Work Experience	3-6	135-270
Total		18-21	390-525

Emphasis: Food and Beverage Management

Course No.	Title	Credits	Ct. Hrs.
HMM 200	Basic Sanitation for Food Service Employees	3	45
HMM 201	Advance Sanitation for Food Service Employees	3	45
HMM 203	Food and Beverage Buying	3	45
HMM 204	Profitable Catering	3	45
HMM 205	Dining Room Service	3	45

HMM 206	Practical Wine Knowledge	3	45
HMM 207	Food and Beverage Controls	3	45
		21	315

Required Related Courses

MAN 115	Principles of Management	3	45
	General Education	12	180
	Electives*	6-15	90-225
Totals		60-72	1020-1290

*Electives must be approved by program advisors.

Emphasis: Front Office Operations

Course No.	Title	Credits	Ct. Hrs.
HMM 220	Front Desk Auditing	3	45
HMM 221	Accounting Practices for the Hospitality Industry	5	75
		8	135

Required Related Courses

ACC 110	Payroll Accounting and Pegboard Systems	3	45
BSI 115	Business Machines	1	20
CPB 100	Intro. to Computer Programming	4	60
	General Education	12	180
SEC 101	Typewriting I	4	70
MAN 115	Principles of Management	3	45
	Electives*	6	90
		33	525
Totals		62	1150

*Electives must be approved by program advisors.

Emphasis: Administrative Support

Course No.	Title	Credits	Ct. Hrs.
HMM 221	Accounting Practices for the Hospitality Industry	5	75
HMM 240	Hotel Motel Sales	3	45
HMM 241	Hotel Motel Law	3	45
HMM 242	Hotel Motel Property Management	3	45
HMM 243	Hotel Motel Security	3	45
		17	255

Required Related Courses

MAN 115	Principles of Management	3	45
	General Education	12	180
	Electives*	9	135
		24	360
Totals		62	1110

*Electives must be approved by program advisors.

Hotel Motel Management Certificate (A)

This program is designed to give entry level training in Hotel Motel operations with specific emphasis in front desk, night auditor or bar/lounge operations.

Required Major Courses			
Course No.	Title	Credits	Ct. Hrs.
HMM 110	Intro. to the Hospitality Industry	3	45
HMM 297	Cooperative Work Experience	3-6	135-270
HMM	Electives*	21-27	315-405
		27-36	495-720

*Electives must be approved by program advisors.

Required Related Courses			
PSY 100	Human Relations in Business & Industry	3	45
Totals		30-39	540-765

Human Services (A)

Associate of Applied Science Degree

This program prepares individuals for entry-level employment in communities and institutions that serve clients with a variety of human needs. Students may choose through the selection of elective and specialized courses to focus on specific skill areas, such as social service agencies, health care centers, youth services, substance abuse programs, geriatric centers.

Required Major Courses			
Course No.	Title	Credits	Ct. Hrs.
HSE 105	Intro. to Social Welfare	3	45
HSE 106	Survey of Human Services	3	45
HSE 107	Interviewing of Principles & Practices	3	45
HSE 108	Intro. to Therapeutic Systems	3	45
HSE 109	Human Services for Individuals	3	45
HSE 115	Human Services Practicum I	4	150
HSE 205	Human Services for Groups	3	45
HSE 206	Human Services for Families	3	45
HSE 207	Community Organization	3	45
HSE 208	Social Welfare Policy	3	45
HSE 209	Crisis Theory & Intervention	3	45
HSE 211	Human Services Practicum II	4	150
HSE 212	Human Services Practicum III	7	285
	General Education	12	180
	Electives	6	90
Program Total		63	1305

Industrial Maintenance Technology (R)

Certificate or Associate of Applied Science Degree

This program is designed for improving the general knowledge required for the technician to advance into positions of increasing responsibility in the field of industrial process control and AC power technology.

Required Major Courses

First Year			
Course No.	Title	Credits	Ct. Hrs.
ELF 100	Fundamentals of AC/DC Electricity	9	180
ELF 105	Solid State Devices and Circuits	6	120
ELF 106	Digital Logic Devices and Circuits	9	180
ELF 107	Operational Amplifiers and A to D Converters	6	120
Second Year			
IMA 200	Electronic/Pneumatic Instrumentation	9	180
EIC 201	Transformer Installation and Theory	3	60
EIC 202	AC and DC Machines, Installation and Theory	3	60
EIC 203	Polyphase Rotating Machines and Transformers	3	60
IMA 205	Industrial Control Systems	9	180
	Technical Elective (advisor's approval required)	3	60
		60	1200

General Education Requirements

PHY 101	Fundamentals of Physics I	3	45
	Math Electives	6	90
	English Elective	3	45
	Elective	3	45
		15	225
Total Required Hours		75	1425

Additional Courses

IMA 206	Automatic Control Loops	6	120
IMA 207	Industrial Process Control Loops	6	120
IMA 297	Cooperative Work Experience	2-9	60-375
IMA 299	Independent Study	3	90



Industrial Mechanical Drafting Technology (N)

Associate of Applied Science Degree

This program provides you with job entry skills for the mechanical drafting field, help in reading blueprints and upgrading for those in the field who need to acquire more skill.

Demonstrated mastery of skills is required. Programs are open-entry and open-exit. You may complete some of the courses, enter the work force, then return at any time either to complete the program for a degree or to upgrade specific skills.

Required Major Courses

Course No.	Title	Credits	Ct. Hrs.
IMD 101	Mechanical Drafting Theory and Techniques I	3	60
IMD 102	Mechanical Drafting Theory and Techniques II	3	60
IMD 103	Mechanical Drafting Theory and Techniques III	3	60
IMD 111	Machine Detail and Assembly Drawing I	3	60
IMD 112	Machine Detail and Assembly Drawing II	3	60
IMD 113	Machine Detail and Assembly Drawing III	3	60
IMD 114	Machine Detail and Assembly Drawing IV	3	60
IMD 121	Intro. to Inking	3	60
IMD 122	Intro. to Sheet Metal Drawing	3	60
IMD 123	Intro. to Electro-Mechanical Drawing	3	60
IMD 200	Intro. to Casting	3	60
IMD 205	Intro. to Technical Illustration	3	60
IMD 206	Intro. to Gears and Cams	3	60
IMD 207	Intro. to Pipe Drawing	3	60
IMD 208	Intro. to Welding Drawing	3	60
IMD 211	Industrial Drafting Technology I	3	60
IMD 212	Industrial Drafting Technology II	3	60
IMD 213	Industrial Drafting Technology III	3	60
IMD 214	Industrial Drafting Technology IV	3	60
IMD 215	Industrial Drafting Technology V	3	60
		60	1200
	Required General Education Courses	12	180
	Total Required Hours	72	1380

Second-Year Option in Industrial Pipe Drafting and Design Associate of Applied Science Degree

This program provides the student with job entry skills in the pipe drafting field.

Prerequisites: Completion of the first two semesters of industrial mechanical drafting or proof of life experiences in some field equivalent to drafting requirements.

Required Courses

Course No.	Title	Credits	Ct. Hrs.
IPD 201	Industrial Pipe Drafting I	3	60
IPD 202	Industrial Pipe Drafting II	3	60
IPD 203	Industrial Pipe Drafting III	3	60
IPD 204	Industrial Pipe Drafting IV	3	60
IPD 205	Industrial Pipe Drafting V	3	60
PPD 211	Process Piping Design I	3	60
PPD 212	Process Piping Design II	3	60
PPD 213	Process Piping Design III	3	60
PPD 214	Process Piping Design IV	3	60
PPD 215	Process Piping Design V	3	60
		30	600
	Required General Education Courses	12	180
	Total Required Hours	72	1380

Second-Year Option in Machine Drafting Technology Associate of Applied Science Degree

This program provides the student with job entry skills as a mechanical technician in the machine drafting field.

Required Major Courses

Course No.	Title	Credits	Ct. Hrs.
IMD 101	Mechanical Drafting Theory and Techniques I	3	60
IMD 102	Mechanical Drafting Theory and Techniques II	3	60
IMD 103	Mechanical Drafting Theory and Techniques III	3	60
IMD 111	Machine Detail and Assembly Drawing I	3	60
IMD 112	Machine Detail and Assembly Drawing II	3	60
IMD 113	Machine Detail and Assembly Drawing III	3	60
IMD 114	Machine Detail and Assembly Drawing IV	3	60
IMD 121	Introduction to Inking	3	60
IMD 122	Introduction to Sheet Metal Drawing	3	60

MD 123	Introduction to Electro-Mechanical Drawing	3	60
MAS 100	Introduction to Machine Shop	3	60
MAS 101	Engine Lathe Setups and Operations	3	60
MAS 111	Vertical Mill Setups and Operations	3	60
MAS 115	Horizontal Mill Setups and Operations	3	60
MAS 201	Surface Grinder Setups and Operations	3	60
MDT 201	Machine Drafting Technology I	3	60
MDT 202	Machine Drafting Technology II	3	60
MDT 203	Machine Drafting Technology III	3	60
MDT 204	Machine Drafting Technology IV	3	60
MDT 205	Machine Drafting Technology V	3	60
		<u>60</u>	<u>1200</u>
Required General Education Courses		<u>12</u>	<u>180</u>
Total Required Hours		<u><u>72</u></u>	<u><u>1380</u></u>

Required Related Courses			
SEC 101	Typewriting I	4	75
		<u>4</u>	<u>75</u>
Total		<u><u>24-29</u></u>	<u><u>410-635</u></u>

**Library Media Technician II
Associate of Applied Science Degree**

Required Major Courses			
Completion of courses required for Library Media Technician I.			
		24-29	410-635

Plus			
Course No.	Title	Credits	Ct. Hrs.
IMT 201	Library Special Operations	3	50
IMT 203	Library Community Service Seminar	3	50
IMT 205	Data Entry Systems for Libraries	3	50
Required Related Courses			
SEC 102	Typewriting II	4	75
General Education Courses			
		12	180
	Electives	11	165
Totals		<u>60-65</u>	<u>980-1205</u>

**Microfilm and Records Technician (A)
Certificate**

This program prepares students for entry-level positions as microfilm and records technicians.

Required Major Courses			
Course No.	Title	Credits	Ct. Hrs.
IMT 101	Intro. to Library Resources	1	20
IMT 143	Word Processing Management	3	45
IMT 141	Information Center Management	3	45
IMT 131	Microfilm & Records Filing	2	40
IMT 133	Microfilm Skills Production	4	75
IMT 135	Forms Design & Management	4	75
IMT 145	Information Systems (Micromedia)	3	45
IMT 205	Data Entry Systems	3	50
IMT 297	Cooperative Work Experience	1-6	15-240
		<u>24-29</u>	<u>410-635</u>



Information Media Technology (A)

Certificate or Associate of Applied Science Degree

The Information Media Technology Program includes three options:

- Library Media Technician I
- Library Media Technician II
- Microfilm and Records Technician

These options prepare students with skills necessary to function as technicians in libraries in either the public or private sectors.

**Library Media Technician I
Certificate**

Required Major Courses

Course No.	Title	Credits	Ct. Hrs.
MT 101	Intro. to Library Resources	1	20
MT 111	Library Public Services	3	50
MT 113	Library Technical Services	3	50
MT 115	Library Catalog Services	3	50
MT 117	Audio Visual Skills	3	50
MT 119	Library Reference Skills	3	50
MT 121	Library Selection Skills	3	50
MT 297	Cooperative Work Experience	1-6	15-240
		<u>20-25</u>	<u>335-560</u>

Industrial Management (R)

Associate of Applied Science Degree

This program provides the student with a broadly based exposure to general business functions and fundamental industrial management concepts. Upon completion of the program the student should qualify for job entry into a wide variety of lower level general production management positions which carry initial functional administrative responsibility. Students already employed should acquire background necessary for personal development directed to job advancement.

Required Major Courses

Course No.	Title	Credits	Ct. Hrs.
BUS 110 ★	Business Mathematics	3	45
BUS 136 ★	Business Communications Applications	3	45
INM 211	Production Management I	3	45
INM 212	Production Management II	3	45
INM 215	Production Management Case Study	2	30
MAN 105 ★	Intro. to Business	3	45
MAN 116	Principles of Supervision	3	45
MAN 206 ★	Business Law	4	60
MAN 225	Managerial Finance	3	45
		<u>27</u>	<u>405</u>

Required Related Courses

ACC 111	Accounting Principles I	5	75
ACC 112	Accounting Principles II	5	75
CPB 100	Intro. to Computer Programming	4	60
ECO 201 ★	Principles of Economics (Macro)	3	45
ENG 109 ★	Business Communications Fundamentals	3	45
MAR 107	Principles of Marketing	3	45
MAT 111	Introductory Algebra	3	45
MAT 225	Statistics	3	45
SPE 111 ★	Intro. to Speech	3	45
	Minimum of 1 Elective Course*	2-3	30-45
		<u>34-35</u>	<u>510-525</u>

Total Required Hours

61-62 915-930

*Electives Options — to be selected with advisor approval.

★ Meets general education requirements.

Management (A,N,R)

Associate of Applied Science Degree

This program provides the student with a broadly based exposure to general business functions and fundamental management concepts. Upon completion the student should qualify for job entry into a wide variety of lower level general business positions which carry initial functional administrative responsibility. Students already employed in these areas should acquire background necessary for personal development directed to job advancement.

Required Major Courses

Course No.	Title	Credits	Ct. Hrs.
MAN 105 ★	Introduction to Business	3	45
MAN 115	Principles of Management	3	45
MAN 116	Principles of Supervision	3	45
MAN 206 ★	Business Law	4	60
MAN 225	Managerial Finance	3	45
MAN 239	Management Policies & Systems	3	45
MAN 240	Management Policies & Systems Application or Management Elective	3	45
		<u>22</u>	<u>330</u>

Required Elective Courses

ACC 111	Accounting Principles I	5	75
ACC 112	Accounting Principles II	5	75
BUS 110 ★	Business Mathematics	3	45
BUS 136 ★	Business Communications Applications	3	45
CPB 100	Introduction to Computer Programming	4	60
ECO 118	Labor Relations or Elective	3	45
ECO 201 ★	Principles of Economics (Macro)	3	45
ENG 109 ★	Business Communications Fundamentals	3	45
MAT 111	Introduction to Algebra	3	45
MAR 107	Principles of Marketing	3	45
SPE 111 ★	Introduction to Speech	3	45
	Electives (1)	2-5	30-75
		<u>40-43</u>	<u>600-645</u>
Total Required Hours		<u>62-65</u>	<u>930-975</u>

(1) Electives to be chosen with advisor approval.

★ Meets general education requirements.



Marketing (A,N,R)

Associate of Applied Science Degree

This program provides the student with a broadly based exposure to general business functions and fundamental management concepts, with emphasis on the marketing function. Upon completion of the program, the student should qualify for job entry into a wide variety of lower level general business positions, particularly those with sales and initial marketing administration or support responsibility. Students already employed in these areas should acquire background necessary for personal development directed to job advancement in marketing related areas.

Required Major Courses

Course No.	Title	Credits	Ct. Hrs.
MAN 105 ★	Introduction to Business	3	45
MAN 115	Principles of Management	3	45
MAN 206 ★	Business Law	4	60
MAR 107	Principles of Marketing	3	45
MAR 108	Principles of Salesmanship	3	45
MAR 109	Advertising & Promotion	3	45
MAR 215	Retail Management	3	45
MAR 216	Principles of Purchasing	3	45
		<u>25</u>	<u>375</u>

Required Related Courses

ACC 111	Accounting Principles I	5	75
BUS 110 ★	Business Math	3	45
BUS 136 ★	Business Communications Applications	3	45
CPB 100	Introduction to Computer Programming	4	60
ECO 201 ★	Principles of Economics (Macro)	3	45
ENG 109 ★	Business Communications Fundamentals	3	45
SPE 111 ★	Introduction to Speech	3	45
		<u>24</u>	<u>360</u>

★ Meets general education requirements.

Electives — to be selected with advisor approval:

BUS 137	Listening Skills		
BUS 297	Cooperative Work Experience		
MAN 116	Principles of Supervision		
MAN 205	Small Business Management		
MAR 115	Visual Merchandising		
MAR 207	Marketing Seminar		
MAR 208	Sales Seminar		
MAR 211	Wholesaling and Distribution		
PSY 100	Human Relations in Business & Industry		
Required Electives (Minimum)		11	165
Total Required Hours		60	900

Machine Shop (N)

Certificate or Associate of Applied Science Degree

This program provides job entry skills for the machine trades field and upgrading for those in the field who need to acquire more skill.

Demonstrated mastery of skills is required. The program is open-entry and open-exit. Therefore, you may complete some of the courses, enter the work force, then return at any time to complete the program for a certificate or degree, or to upgrade specific skills.

Required Major Courses

Course No.	Title	Credits	Ct. Hrs.
MAS 100	Introduction to Machine Shop	3	60
MAS 101	Engine Lathe Setups and Operations I	3	60
MAS 102	Engine Lathe Setups and Operations II	3	60
MAS 103	Engine Lathe Setups and Operations III	3	60
MAS 104	Engine Lathe Setups and Operations IV	3	60
MAS 105	Blueprint Reading	3	45
MAS 111	Vertical Mill Setups and Operations I	3	60
MAS 112	Vertical Mill Setups and Operations II	3	60
MAS 115	Horizontal Mill Setups and Operations	3	60
MAS 116	Milling Machine Setups and Operations	3	60
MAS 201	Surface Grinder Setups and Operations	3	60
MAS 202	Cylindrical Grinder and Tool and Cutter Grinder	3	60
MAS 205	Tracing Lathe Setups and Operations	3	60
MAS 206	Turret Lathe and Automatic Screw Machines	3	60
MAS 207	Point-to-Point Numerical Control	3	60
MAS 211	Job Shop Machining I	3	60
MAS 212	Job Shop Machining II	3	60
MAS 213	Job Shop Machining III	3	60
MAS 214	Job Shop Machining IV	3	60
MAS 215	Job Shop Machining V, OR a MAS Elective	3	60
		<u>60</u>	<u>1185</u>
Required General Education Courses		12	180
Total Required Hours		72	1365

Additional Major Courses

MAS 216	Grinding Machine Setups and Operations	6	120
MAS 217	Introduction to Structure of Metals	3	45
MAS 218	Introduction to Diemaking	6	120
MAS 219	Machine Maintenance and Repair	3	45

MAS 226	Turning Machine Theory	3	45
MAS 227	Milling Machine Theory	3	45
MAS 228	Grinding Machine Theory	3	45
MAS 229	Using Machine Shop Formulas	3	45
MAS 230	Machine Shop Measuring Instrument Theory	3	45

Lathe Operator

27 Week Certificate

Course No.	Title	Credits	Ct. Hrs.
MAS 100	Introduction to Machine Shop	3	60
MAS 101	Engine Lathe Setups and Operations I	3	60
MAS 102	Engine Lathe Setups and Operations II	3	60
MAS 103	Engine Lathe Setups and Operations III	3	60
MAS 104	Engine Lathe Setups and Operations IV	3	60
MAS 105	Blueprint Reading	3	60
MAS 205	Tracing Lathe Setups and Operations	3	60
MAS 206	Turret Lathe and Automatic Screw Machines	3	60
MAS 211	Job Shop Machining I	3	60

Check with advisor for prerequisites

Mill Operator

24 Week Certificate

Course No.	Title	Credits	Ct. Hrs.
MAS 105	Blueprint Reading	3	60
MAS 111	Vertical Mill Setups and Operations I	3	60
MAS 112	Vertical Mill Setups and Operations II	3	60
MAS 115	Horizontal Mill Setups and Operations	3	60
MAS 116	Milling Machine Setups and Operations	3	60
MAS 207	Point-to-Point Numerical Control	3	60
MAS 212	Job Shop Machining II	3	60

Check with advisor for prerequisites

Mathematics (A,N,R)

The following selection of courses is recommended for an Associate of Science Degree with an emphasis in Mathematics. A student interested in obtaining a baccalaureate degree should consult a CCD advisor, the Transfer Guide, and the current catalog of the receiving institution.

First Year

First Semester	Credits
General Education Core	3
Communication Elective	3
CHE 111 Coll. Chem. (Elec.)	5
MAT 201 Calculus I	5

Total — 16 credits

Second Semester

General Education Core
Communication Elective
CHE 112 Coll. Chem. (Elec.)
MAT 202 Calculus II
Social Science Distribution
Total — 19 credits

Second Year

Third Semester

General Education Core
Interdisciplinary Gen. Ed.
MAT 203 Calculus III
CSC 111 Intro. Computers
BIO 131 Gen. Coll. Bio.
Total — 18 credits

Fourth Semester

General Education Core
MAT 205 Diff. Equations
MAT 206 Linear Algebra
CSC 150 Fortran IV
or
CSC 160 PASCAL
BIO 132 Gen. Coll. Bio.
Total — 17 credits

Program Total — 70 credits

**Continuing Education for Nurses (A,N,I)
Certificate Program**

Continuing education will be offered, as indicated by community needs, to augment the knowledge and skill of practitioners in nursing. These courses will enable the practitioner to acquire an increased depth of knowledge in basic practice areas, an awareness of progress, developments and new therapy measures, and to meet requirements for Continuing Education Units.

Course No.	Title	Credits	Ct. Hrs.
HOC 100	Medical Terminology I	1	1
HOC 110	Medical Terminology II	1	1
HOC 105	Intro. to Pathology	1	1
NCE 200	Registered Nurse Refresher Course	13	24
NCE 201	Pre and Post Op Patient Teaching	1	1
NCE 202	Psychiatric Nursing Review	1	1
NCE 203	Medical-Surgical Nursing Review	2	3
NCE 204	Maternal Child Nursing Review	1	1
NCE 205	The Ups and Downs of Depression	1	1
NCE 206	Applied Physiology for Nurses	4	6
NCE 207	Acute Care of the Med. Surg. Patient	3	4
NCE 208	Basic EKG Interpretation	2	3
NCE 209	Clinical Interpretation of Lab Test	2	3

NCE 210	Physical Assessment of Adult	3	45	NCE 255	Problem Oriented Medical Records	1	15
NCE 211	Auscultation of Breath and Heart Sounds	1	15	NCE 256	Interpretation of Vital Signs	1	15
NCE 212	Managing the Hypertension Patient	1	15	NCE 257	Selected Emergency Care	1	15
NCE 213	Primary Crisis Intervention	2	30	NCE 259	Aging Process	1	15
NCE 214	Spiritual Care of the Patient	1	15	NCE 260	Pediatric Emergency Care	2	30
NCE 215	Cardiopulmonary Resuscitation	1	15	NCE 265	Emergency Care	4	75
NCE 216	Orthopedic and Neurological Nursing	2	30	NCE 266	Mgmt. in Long Term Care	1	15
NCE 217	Pharmacodynamics and Drug Interaction	3	45	NCE 267	Care of Patient with Open Heart Surgery	1	15
NCE 218	Legal Aspects of Charting	1	15	NCE 268	Quality Assurance in Long Term Care	1	15
NCE 219	Nursing Leadership and Management	2	30	NCE 269	Nutrition	1	15
NCE 220	Legal Aspects of Nursing	2	30	NCE 270	Emergency Drugs	1	15
NCE 221	Wellness	2	30	NCE 276	Drugs and the Elderly	1	15
NCE 222	Auscultation of Heart Sounds	1	15	NCE 277	Cardiovascular Nursing Care	2	30
NCE 223	Auscultation of Breath Sounds	1	15	NCE 278	Rehabilitation Nursing	2	30
NCE 224	The Faces of Drug Abuse: Caring and Coping	1	15	NCE 279	Immunization Laws and Child Care	1	15
NCE 225	Body Mechanics for Nurses	1	15	NCE 280	Nursing Skills	1	15
NCE 226	I.V. Therapy	1	15	NCE 295	Psych. Aspects of Patient Care	2	30
NCE 227	Communication Skills for Nurses	1	15	NCE 296	Common Childhood Illnesses	2	30
NCE 228	Hyperalimantation	1	15	NCE 297	Stress Management for Nurses	1	15
NCE 229	Fluid and Electrolytes	1	15	NCE 298	Vital Issues in Nursing	1	15
NCE 230	Emergency Nursing Assessment	1	15				
NCE 231	Nurse's Personal Finances	1	15				
NCE 232	Preventing the Burnout Syndrome	1	15				
NCE 235	Emergency Trauma Nursing	2	30				
NCE 236	Physical Assessment of the Child	2	30				
NCE 237	Basic Spanish for Nurses	3	45				
NCE 238	Interviewing Techniques for Nurses	1	15				
NCE 239	Blood Gases	1	15				
NCE 240	Assertiveness for Nurses	2	30				
NCE 245	Intermediate EKG Interpretation	2	30				
NCE 247	Intro. to Critical Care	2	30				
NCE 248	Psychiatric Nursing Update	2	30				
NCE 249	Sexual Aspects of Patient Care	2	30				
NCE 250	Tubes and Intubation	1	15				

Nuclear Medicine Technology (A)

Certificate or Associate of Applied Science Degree

Upon completion of this program, the graduate will be eligible to write the certifying examination in Nuclear Medicine Technology given by the Nuclear Medicine Technology Certification Board, American Registry of Radiologic Technologists, or the Board of Registry of the American Society of Clinical Pathologists.

Course No.	Title	Credits	Ct. Hrs.
HOC 106	Basic Patient Care	2	40
HOC 107	Orientation to Clinical Practicum	1	40
HOC 108	Positioning and Techniques	3	45
RAT 200	Survey of Medical & Surgical Diseases	2	30
* NMT 200	Clinical Applications I	1	21
* NMT 205	Statistics of Radioactive Counting	1	15
* NMT 206	Radiation Physics for Nuclear Medicine	3	45
* NMT 207	Nuclear Medicine Instrumentation	4	68
* NMT 208	Clinical Practicum I	9	375
* NMT 209	Clinical Applications II	4	60
* NMT 210	Clinical Practicum II	8	360

*NMT 215	Computers in Nuclear Medicine	3	45
*NMT 216	Clinical Practicum III	15	680
*NMT 217	Radiopharmaceutical Preparations	4	68
*NMT 218	Radioassay Procedures	4	68
*RTT 215	Radiation Biology and Pathology	2	30
Required Related Courses			
BIO 111	Human Anatomy and Physiology I	4	90
BIO 112	Human Anatomy and Physiology II	4	90
CHE 101	Fundamentals of Chemistry I	4	90
MAT 121	College Algebra	4	60
PHY 115	Intro. to Medical Physics	4	60
	GEM Core	12	180
	Total Hours	98	2575

*Certificate Requirements

Nursing — (A)

Certificate in Practical Nursing or Associate of Applied Science Degree

Nursing as a career includes a variety of employment opportunities and patterns of educational preparation. This nursing program enables the student to choose the career approach most appropriate to individual goals and needs, whether this career be as a practical nurse or associate degree nurse.

The graduate with an associate of applied science degree is eligible to take the examination for licensure as a Registered Nurse.

After successful completion of the first year, the student will receive a certificate in Practical Nursing and is eligible to take the examination for licensure as a Licensed Practical Nurse.

Required Major Courses

Course No.	Title	Credits	Ct. Hrs.
* NUR 100	Intro. to Nursing	3	45
* HOC 116	Intro. to Pharmacology	2	30
* NUR 111	Nursing Concepts I	10	195
* NUR 112	Nursing Concepts II	14	270
NUR 115	Socialization into Nursing I	1	15
NUR 201	Advanced Pharmacology	2	30
NUR 211	Comprehensive Nursing I	12	230
NUR 212	Comprehensive Nursing II	14	270
NUR 214	Socialization into Nursing II	1	15
NUR 215	Socialization into Nursing III	1	15
		60	1100

Required Related Courses

BIO 111	Human Anatomy & Physiology I	4	90
* BIO 112	Human Anatomy & Physiology II	4	90
BIO 115	Intro. to Microbiology	3	75
BIO 211	Advanced Physiology & Pathogenesis	3	45
	*General Education Courses	6	90
	General Education Courses	6	90
	Total	86	158

*Required for Certificate

Advanced Placement

Advanced placement into Level II is available for graduates of approved schools of practical nursing. All applicants must complete the required Level I General Education Courses plus NUR 120 and 126 (NUR 120 requirements may be met by an approved general education course) before entry into Level II. Placement will be made based on clinical availability in the fall or spring semester.

Course No.	Title	Credits	Ct. Hrs.
BIO 111	Human Anatomy & Physiology I	4	90
BIO 112	Human Anatomy & Physiology II	4	90
GEM*	General Education Courses	12	180
NUR 120	Psychosocial Concepts in Nursing	2	30
NUR 126	Nursing Process: Concepts & Skills	4	60

*12 credit hours in general education required.

Additional Major Courses

NUR 109	Concentrated Nursing Skills	3-9	105-31
NUR 110	Review of Nursing Concepts	2	30
NUR 209	Review of Nursing Principles	2	30
NUR 210	Advanced Nursing Skills	5-15	105-31
NUR 199	Independent Study	2-8	30-18
NUR 259	Medical-Surgical Nursing Seminar	2-4	30-6
NUR 269	Pediatric Nursing Seminar	2-4	30-6
NUR 279	Psychiatric Nursing Seminar	2-4	30-6
NUR 289	Obstetrical Nursing Seminar	2-8	30-18
NUR 299	Independent Study	2-8	30-18

Nursing — (N)

Certificate in Practical Nursing

or

Associate of Applied Science Degree

Nursing as a career includes a variety of employment opportunities and patterns of educational preparation. This nursing program enables the student to choose the career approach most appropriate to individual goals and needs, whether this be a career as a practical nurse or registered nurse.

After successful completion of the first year (courses indicated below by asterisk), the student will receive a certificate in Practical Nursing and is eligible to take the examination for licensure as a licensed practical nurse.

After successful completion of the second year, the student will receive an Associate of Applied Science Degree and is eligible to take the examination for licensure as a Registered Nurse.

Required Major Courses

Course No.	Title	Credits	Ct. Hrs.
NUR 116	Medical Terminology	1	15
NUR 101	Pharmacology I	2	30
NUR 105	Basic Concepts of Nursing	6	120
NUR 106	Basic Concepts of Family Centered Maternal-Newborn Nursing	4	75
NUR 107	Basic Concepts of Nursing of Children	4	75
NUR 108	Basic Concepts of Nursing of Adults	10	198
NUR 130	Socialization into Nursing I	1	15
NUR 201	Pharmacology II	2	30
NUR 206	Comprehensive Concepts in Family Centered Maternal-Newborn Nursing	4	70
NUR 207	Comprehensive Nursing of Children	3	65
NUR 208	Comprehensive Nursing of Adults	6	120
NUR 216	Comprehensive Nursing of the Emotionally Ill	6	113
NUR 217	Comprehensive Nursing of Older Adults	8	165
NUR 231	Socialization into Nursing II	1	15
NUR 232	Socialization into Nursing III	1	15
		<u>59</u>	<u>1121</u>

Required General Education Courses

BIO 111	Human Anatomy and Physiology I	4	90
BIO 112	Human Anatomy and Physiology II	4	90
DIT 115	Nutrition	1	15
ENG	English (elective)	3	45

BIO 115	Intro. to Microbiology	3	75
BIO 211	Advanced Physiology	3	45
PSY 235	Psychology of Human Growth and Development	3	45
		<u>21</u>	<u>405</u>

Nursing Electives

NUR 109	Concentrated Nursing Skills	3-9	
NUR 110	Review of Nursing Concepts	2	
NUR 199	Independent Study	Variable	
NUR 209	Review of Nursing Principles	2	
NUR 210	Advanced Nursing Skills	5-15	
NUR 259	Medical-Surgical Nursing Seminar	2-4	
NUR 269	Pediatric Nursing Seminar	2-4	
NUR 279	Psychiatric Nursing Seminar	2-4	
NUR 289	Obstetrical Nursing Seminar	2-4	
NUR 299	Independent Study	Variable	

Recommended Sequencing

Level I

Fall	Credits	Spring	Credits
NUR 101	2	NUR 130	1
NUR 105	6	NUR 107 (or 106)	4
NUR 106 (or 107)	4	NUR 108	10
NUR 116	1	BIO 112	4
BIO 111	4		<u>19</u>
ENG	3		
	<u>20</u>		

Level II

Fall	Credits	Spring	Credits
NUR 201	2	NUR 232	1
NUR 231	1	NUR 216	6
NUR 206	4	NUR 217	8
NUR 207	3	BIO 115	3
NUR 208	6		<u>18</u>
PSY 235	3		
BIO 211	3		
	<u>22</u>		

It is highly recommended that students begin work on general education courses before entering the nursing courses.

In accordance with the College policy related to Profit from Instruction and due to restricted clinical facilities, only one re-entry to a program can be provided after failure in a clinical nursing course.

Advanced Placement

Advanced Placement through transfer or ACT examination is available to Licensed Practical Nurses and nursing students from other schools.

Optometric Assisting (N)

Certificate

This program is designed to provide the job entry skills for employment in optometric offices or clinics.

Required Major Courses

Course No.	Title	Credits	Ct. Hrs.
NUR 116	Medical Terminology	1	15
OPA 100	Ocular Anatomy, Physiology, Pathology	3	45
OPA 105	Visual Science, Optics and Frame Mechanics	5	90
OPA 106	Preliminary Examination Techniques	4	68
OPA 107	Optometric Office Management	4	60
OPA 108	Facial Analysis — Frame Selection and Adjustment	2	30
OPA 109	Contact Lenses	5	90
OPA 110	Pharmacology — Emergency Measures for Optometric Assistants	2	30
OPA 115	Clinical Practicum	8	300
OPA 116	Clinical Seminar	1	15
		<u>35</u>	<u>743</u>

Required Related Courses

SEC 101	Typewriting I or	4	75
BSI 126	Refresher Typewriting	1	15
		<u>1 or 5</u>	<u>15 or 75</u>

Total Required Hours 36 or 39 758 or 818

Additional Major Courses

OPA 117	Introduction to Optometrics	1	15
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Paralegal (A)

Certificate or Associate of Applied Science Degree

This program is designed to prepare individuals with job entry skills for the general paralegal field. Emphasis is placed on practical skills such as interviewing, research, and document drafting. Programs may be designed with areas of specialization in the following: bilingual paralegal, research specialist, criminal law specialist, public law specialist, or probate and estate planning specialist.

Required Courses

Course No.	Title	Credits	Ct. Hrs.
* PAR 100	Intro to Paralegal	3	45
PAR 105	Torts	3	53
PAR 106	Contracts	3	53
* PAR 107	Legal Research	3	53
* PAR 108	Civil Procedures	3	53
PAR 109	Property	3	53
PAR 110	Business Organizations	3	53
PAR 115	Domestic Relations	3	53
PAR 116	Commercial Law	3	53
PAR 117	Constitutional Law	3	53
PAR 118	Criminal Law and Procedures	3	53
PAR 119	Probate	3	53

PAR 129	Administrative Law	3	5
	or		
PAR 130	Real Estate and Land Use Law	3	5
	or		
PAR 207	Legal Research Seminar I	3	5
	or		
PAR 208	Legal Research Seminar II	3	5
* PAR 210	Paralegal Workshop	6	9
PAR 219	Paralegal Seminar	3	5
GEM	General Education Electives	12	18
	Total	<u>60</u>	<u>100</u>

* Certificate program consists of those courses marked with an * plus 18 hrs. of PAR electives.

Petroleum Technology

Petroleum Technology — Exploration (R)

Associate of Applied Science Degree

The Petroleum Technology — Exploration option is designed to prepare and to provide upgrading in the petroleum exploration field. Geologic mapping and interpretation, seismic data, well log analysis, evaluation of drilling, and well test data.

Required Major Courses

Course No.	Title	Credits	Ct. Hrs.
PET 105	Petroleum Industry	3	4
PET 105	Geological (map) Drafting I	6	12
PET 107	Petroleum Exploration Lab I	6	12
PET 108	Geophysical Concepts	3	4
PET 205	Geological Drafting II	6	12
PET 206	Land & Legal Aspects	3	4
PET 207	Petroleum Exploration Lab II	6	12
PET 208	Hydrocarbon Accumulation	3	4
PET 209	Exploration Case Studies	3	4
PET 218	Petroleum Economics	3	4
		<u>42</u>	<u>75</u>

Required General Education and Related Courses

EAS 111	Physical Geology	4	9
ENG 103	Occupational Communications	3	4
**	Mathematics	6	9
***	Science Elective	9-12	135-180
	Computer Science (CSC 105; CSC 201)	3-4	75-90
	Petroleum Elective	6	10

Total Required Hours 73-77 1290-1350

** Mathematics: MAT 106, 111, 112, 113, 121 up to and including 122.

*** Science Elective: Earth Science, Physics Chemistry or Surveying.

Additional Major Courses

ET 219	Petroleum Company Procedures	3	45
ET 299	Independent Study	3	90

Petroleum Technology — Production (R)

Associate of Applied Science Degree

The Petroleum Technology — Production option offers desk related technology courses in reservoir characteristics, drilling and producing wells, and petroleum economics.

Required Major Courses

Course No.	Title	Credits	Ct. Hrs.
ET 105	Petroleum Industry	3	45
ET 106	Geological (map) Drafting I	6	120
ET 107	Petroleum Exploration Lab I	6	120
ET 108	Geophysical Concepts	3	45
ET 215	Petroleum Production I	6	105
ET 216	Petroleum Production II	6	105
ET 217	Petroleum Production III	6	105
ET 218	Petroleum Economics	3	45
		<u>39</u>	<u>690</u>

Required General Education and Related Courses

AS 111	Physical Geology	4	90
ENG 103	Occupational Communications	3	45
**	Mathematics	14	210
***	Science Elective	7-8	135-150
	Computer Science (CSC 105; CSC 201)	3-4	75-90
	Petroleum Elective	6	90

Total Required Hours 76-78 1335/1365

* Mathematics: MAT 106, 111, 112, 113, 121 up to and including 201.

** Science Elective: Physics, Chemistry or Computer science.

Photography (A)

Certificate or Associate of Applied Science Degree

This program provides a well rounded course of technical and aesthetic training to prepare graduates with the skills necessary to enter the field of professional photography. Students completing this program will be prepared to enter into positions in photo-journalism, commercial photography, freelance photography, portrait photography, wedding photography and other similar areas of application.

Required Major Courses

Course No.	Title	Credits	Ct. Hrs.
PHO 100	Fundamentals of Photography	4	80
PHO 105	Advanced Photography	4	80

*PHO 106	Fundamentals of Photography	4	80
*PHO 107	History of Photography	4	80
*PHO 200	Advanced Color Photography	4	80
PHO 205	Documentary Photography	4	80
PHO 206	Portrait Photography	4	80
PHO 207	Commercial Photography	4	80
PHO 208	Environmental Photography	4	80
PHO 209	The Art of Photography	4	80
GEM	General Ed. Electives	12	180
*ART 101	Basic Design I	3	45
ART 102	Basic Design II	3	45
COA 105	Typography and Layout	4	100
GRA 120	Process Camera and Halftones	6	120
*MAN 105	Introduction to Business	3	45
	or		
MAR 109	Principles of Advertising	2	30
	Program Total	<u>70-71</u>	<u>1320-1335</u>

* The certificate program consists of those courses marked with an * plus two courses from the PHO 200 series.



Physics (A,N,R)

The following selection of courses is recommended for an Associate of Science Degree with an emphasis in Physics. A student interested in obtaining a baccalaureate degree should consult a CCD advisor, the Transfer Guide, and the current catalog of the receiving institution.

First Year

First Semester	Credits
General Education Core	3
Communication Elective	3
CHE 111 Coll. Chem. (Elec.)	5
MAT 201 Calculus I	5
Total — 16 credits	

Second Semester	Credits
General Education Core	3
CHE 112 Coll. Chem. (Elec.)	5
MAT 202 Calculus II	5
PHY 161 Physics for Sci/Eng.	5
Total — 18 credits	

Second Year

Third Semester	Credits
General Education Core	3
Communication Elective	3
PHY 162 Physics for Sci/Eng.	5
CSC 111 Intro. Computers	4
Social Science Distribution	3
Total — 18 credits	

Fourth Semester	Credits
General Education Core	3
Interdisciplinary Gen. Ed.	3
PHY 163 Physics for Sci/Eng.	4
CSC 150 Fortran IV	4
or	
CSC 160 PASCAL	4
MAT 203 Calculus III	4

Total — 18 credits

Program Total — 70 credits

Plumbing (R)

Certificate or Associate of Applied Science Degree

This program is designed to prepare individuals with basic job-entry skills for plumbing. It is also intended for job upgrading in special areas and preparation of plumbers for city or state journeyman tests.

Required Major Courses

First Year

Course No.	Title	Credits	Ct. Hrs.
*PLU 100	Orientation of Tools, Basic Plumbing and Drawings	3	60
*PLU 105	Basic Waste Layout and Code Regulations	3	60
*PLU 106	Basic Venting and Code Requirements	3	60
*PLU 107	Water Piping Methods	3	60
*PLU 108	Gas Pipe, Code and Sizing	3	60
*PLU 109	Residential Plumbing	3	60
*PLU 110	Finish and Installation of Plumbing Fixtures	3	60

*PLU 115	Rough-In and Setting of Special Fixtures	3	60
*PLU 116	Plumbing Repair	3	60
*PLU 117	Plumbing Repair — Commercial and Industrial	3	60

* Certificate Requirements

Second Year

PLU 200	Plumbing Business Requirements and Coast Estimating	3	60
PLU 206	Hot Water Heating — Installation and Maintenance	3	60
PLU 207	Basic Solar Energy	3	60
PLU 208	Advanced Solar Energy	3	60
PLU 209	Lead Repairing, Silver Brazing and Welding	3	60
PLU 210	Commercial Layout and Code, Multi-Story Projects	3	60
PLU 215	Colorado State Code Requirements	3	40
PLU 216	Uniform Plumbing Code	3	40
PLU 217	Foreman and Superintendent Training	3	40
PLU 220	City of Denver Code	3	40
		60	1140

Required General Education Courses

Math Elective	3	40
English Elective	3	40
Social Science Elective	3	40
Electives	6	90
	15	220

Total Required Hours 75 1420

Additional Courses

PLU 118	Lawn Sprinkler — Design and Repair	3	60
PLU 120	Plumbing for Construction Trades	3	60
PLU 205	Advanced Isometric Blueprint Reading and Layout	3	60
PLU 218	Control for Heating, Air-Conditioning and Plumbing	3	60
PLU 297	Cooperative Work Experience	2-9	60-375
PLU 299	Independent Study	3	60
DPR 125	Blueprint Reading for Construction Trades	4	60
DPR 126	Blueprint Reading for Mechanical Trades	4	60
DPR 127	Building Inspection for Construction Trades	4	60
DPR 128	Estimating Residential Construction Costs	4	60
DPR 129	Construction Materials I	4	60
DPR 130	Construction Materials II	4	60
DPR 140	Overview of Bricklaying, Carpentry, Electrical and Plumbing Fields	4	60

Political Science (A,N,R)

The following selection of courses is recommended for an Associate of Arts Degree with an emphasis in Political Science. A student interested in obtaining a baccalaureate degree should consult a CCD advisor, the Transfer Guide, and the current catalog of the receiving institution.

Required Major Courses

Course No.	Title	Credits
POS 111	Introduction to Political Science	3
POS 121	American National Government	3
POS 122	American State and Local Government	3
POS 201	Comparative Politics	3
POS 205	International Relations	3
POS 215	Current Political Issues	2
POS 210	U.S. Constitution	2
POS 247	Colorado Politics	3
	POS Electives	8
		30
	Gen. Ed. Requirements	12
	Interdisciplinary Requirements	3
	Distribution Requirements	15
		60

Psychiatric Technician Program (A)

Certificate

The graduate of this program will be prepared for psychiatric technician positions in any health care facility. Open to LPNs. (Open to others with special permission.)

One Semester Program Required Major Courses

Course No.	Title	Credits	Ct. Hrs.
PST 205	Communication Skills	2	30
PST 206	Assertive Training	2	30
PST 207	Legal Aspects in Working with the Mentally Ill	1	15
PST 208	Group Process	1	15
PST 209	Comprehensive Approach to Psychiatric Nursing	3	45
PST 210	Psychiatric Treatment Modalities	11	220
	Total Required Hours	20	355

Public Administration (R)

Associate of Applied Science Degree

This program is designed to equip the student with skills necessary to function successfully at various levels in the public sector. It provides fundamental training for persons interested in managerial, administrative or technical positions.

Required Major Courses

Course No.	Title	Credits	Ct. Hrs.
ACC 111	Accounting Principles I	5	75
ACC 216	Governmental Accounting	3	45
BUS 110 ★	Business Mathematics	3	45
BUS 136 ★	Business Communications Applications	3	45
CPB 100	Introduction to Computer Programming	4	60
MAN 105 ★	Introduction to Business	3	45
MAN 115	Principles of Management	3	45
MAN 116	Principles of Supervision	3	45
MAN 206 ★	Business Law	4	60
MAN 239	Management Policies & Systems	3	45
	Business Elective*	3	45
		37	555

Required Related Courses

ECO 201 ★	Principles of Economics (Macro)	3	45
ENG 109 ★	Business Communications Fundamentals	3	45
POS 111	Introduction to Political Science	3	45
POS 121	American National Government	3	45
POS 122	American State & Local Government	3	45
SPE 111 ★	Introduction to Speech Electives (1)	3 6	45 90
		24	360
	Total Required Hours	61	915

(1) Electives Options — to be selected with advisor approval.

★ Meets general education requirements.



Diagnostic Radiologic Technology (A) (X-Ray)

Associate of Applied Science Degree

Upon completion of this program, the graduate will be eligible to write the certification examination given by the American Registry of Radiologic Technologists.

Required Major Courses

Course No.	Title	Credits	Ct. Hrs.
HOC 100	Medical Terminology I	1	15
HOC 106	Basic Patient Care	2	40
RAT 100	Radiographic Technique I	3	60
RAT 105	Radiographic Positioning I	3	60
RAT 106	Clinical Laboratory Experience I	5	120
RAT 108	Radiographic Positioning II	3	60
RAT 109	Radiographic Physics Technique	3	45
RAT 110	Clinical Practicum I	5	240
RAT 115	Radiographic Positioning III	4	60
RAT 116	Clinical Practicum II	5	240
RAT 200	Survey of Medical and Surgical Diseases	2	30
RAT 205	Special Procedures & Techniques	3	45
RAT 206	Clinical Practicum III	11	480
RAT 207	Radiographic Technique II	3	45
RAT 208	Clinical Practicum IV	12	540
RAT 210	Clinical Practicum V	12	540
		77	2620

Required Related Courses

BIO 109	Human Biology for Health Sciences	4	75
PHY 105	Topics in the Physical Sciences	3	75
GEM	Gen. Ed. Courses	12	180
		19	330
	Total Required Hours	96	2950

Real Estate (R)

Associate of Applied Science Degree

This program will prepare a student to work in real estate sales and real estate related fields, and financial institutions relating to real estate.

Required Major Courses

Course No.	Title	Credits	Ct. Hrs.
REE 100	Real Estate Fundamentals	3	45
REE 105	Real Estate Finance	3	45
REE 111	Real Estate Law	3	45
REE 115	Real Estate License Preparation	3	45
REE 200	Principles of Insurance	2	30
REE 205	Real Estate Appraisal	4	60
REE 207	Real Estate Investments	3	45

REE 209	Real Estate Closings	3
REE 210	Real Estate Tax Factors	3
REE 215	Real Estate Exchanging	3
REE 216	Real Estate Listings & Selling Techniques	4
REE 217	Real Estate Contracts	3
		37

Required General Education and Related Courses

ACC 109	Bookkeeping & Accounting	3
BUS 115	Business Mathematics by Machines	4
DPR 127	Building Inspection for Construction Trades	4
ECO 119	Applied Economics	3
ENG 109	Business Communications	3
MAN 105	Intro. to Business	3
MAN 115	Princ. of Management	3
	Elective*	3
		26

Total Required Hours

63
*Electives Options — to be selected with advisor approval.

Recreational Leadership (R)

Associate of Applied Science Degree

The Recreational Leadership program is designed specifically to meet the needs of individuals participating in the profession. The program places emphasis on techniques, planning and organization in the field of recreation.

Required Major Courses

Course No.	Title	Credits	Ct. Hrs.
REL 110	Intro. to Recreation Service	3	
REL 111	Field Work	3	
REL 112	Field Work	3	
REL 113	Field Work	3	
REL 121	Sports Officiating	5	
REL 125	Dance Activities	5	
REL 126	Tumbling and Gymnastics	2	
REL 145	Arts and Crafts	2	
REL 201	Team Sports	2	
REL 205	Group Leadership	3	
REL 207	Elementary Games & Activities	5	
REL 208	Programming Aquatic Activities	2	
REL 209	Creative Dramatics	5	
REL 211	Individual Lifetime Sports	2	
REL 215	Recreational Equipment & Facilities	3	
REL 216	Recreation in Special Settings	2	
REL 217	Techniques in Program Planning & Org.	3	
REL 218	Outdoor Recreation & Camping	2	
		55	

Required General Education Courses

English	3	45
Social Science	3	45
Accounting	4	60
Music	3	45
Total Required Hours	68	1102

Additional Major Courses

REL 122	Sports Officiating	5	98
REL 123	Sports Officiating	5	98
REL 147	Social Recreation	3	45
REL 202	Team Sports	2	30
REL 203	Team Sports	2	30
REL 212	Individual Lifetime Sports	2	30
REL 213	Individual Lifetime Sports	2	30
REL 299	Independent Study	2-6	45-135

Recreational Wilderness Experience

(R)

Certificate — One Year Program

The recreational wilderness program is designed specifically to meet the needs of individuals participating in the profession. The program places emphasis on techniques, planning and organization in the field of wilderness recreation.

Required Major Courses

Course No.	Title	Credits	Ct. Hrs.
REL 110	Intro. to Recreation Services	3	45
REL 180	Basic Mountaineering	3	45
REL 181	Beginning Rock Climbing	2	30
REL 185	Snow & Glacier Climbing	3	45
REL 186	Orienteering	2	30
REL 187	Map & Compass for the Outdoorsman	3	45
REL 188	Backpacking	2	30
REL 190	Snowshoeing	1	15
REL 191	Bicycle Camping	2	30
REL 192	Guide to Hiking/Camping	1	15
REL 220	Wilderness Equipment and Facilities	3	45
REL 221	Mountaineering Teaching Concepts	3	45
REL 222	Basic Search and Rescue	3	45
REL 223	Wilderness Nutrition	1	15
REL 280	Wilderness Ethics	2	30
REL 281	Wilderness Survival	3	45
REL 285	Mountaineering Photography	3	45
REL 285	Mountaineering Photography	3	45
		40	600

Additional Major Courses

REL 182	Intermediate Rock Climbing	2	30
REL 183	Basic Ice Climbing	1	15
REL 189	Climbing/Backpacking Expedition	3	45

REL 224	Colorado's Fourteeners	1	15
REL 225	Routefinding	1	15
REL 226	Wilderness Dangers	1	15
REL 227	Advanced Mountaineering	2	30
		11	165

Respiratory Therapy Technology (N)

Associate of Applied Science Degree

The program in Respiratory Therapy Technology is designed to prepare the student for employment as a registry-eligible Respiratory Therapist under the supervision of a physician. Upon completion of the program the student is eligible to take the Registry Examination offered by the National Board for Respiratory Therapy.

Required Major Courses

Course No.	Title	Credits	Ct. Hrs.
NUR 116	Medical Terminology	1	15
RIT 106	Basic Patient Care	1	30
RIT 100	Respiratory Technology	4	75
RIT 205	Intro. to Critical Care	3	45
RIT 206	Clinical Practicum	6	280
RIT 207	Pulmonary Function	2	30
RIT 208	Respiratory Pathophysiology	3	45
RIT 209	Pharmacology for Respiratory Therapy	2	30
RIT 210	Respiratory Critical Care	11	405
RIT 215	Department Management	2	30
RIT 216	Therapy Seminar	11	405
RIT 217	Pediatric Respiratory Therapy	2	30
RIT 220	Registration and Certification Review	3	45
		51	1465

Required General Education Courses

BIO 111	Anatomy and Physiology I	4	90
CHE 101	Fundamentals of Chemistry I	4	90
ENG	English (elective) required	3	30
PSY 226	Coping with Stress, Crisis and Dying	3	45
BIO 112	Anatomy and Physiology II	4	90
PHY 101	Fundamentals of Physics I	3	75
MAT 111	Introductory Algebra	3	45
BIO 115	Microbiology	3	75
		27	540

Total Required Hours

78

Additional Major Courses

RIT 227	EKG Analysis	2	30
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Radiation Therapy Technology (A)

Certificate or Associate of Applied Science Degree

Upon completion of this program the graduate will be eligible to write the certification examination of the American Registry of Radiologic Technologists for Radiation Therapy.

Required Major Courses

Course No.	Title	Credits	Ct. Hrs.
HOC 106	Basic Patient Care	2	40
HOC 107	Orientation to Clinical Practicum	1	40
HOC 108	Positioning Techniques	3	45
RAT 200	Survey of Medical and Surgical Diseases	2	30
RTT 125	Radiation Therapy Practicum I	4	200
*RTT 200	Physics of Radiation Therapy I	2	30
*RTT 205	Radiation Therapy Methodology	2	30
*RTT 206	Radiation Oncology I	3	45
*RTT 207	Radiation Therapy Practicum II	11	496
*RTT 208	Physics of Radiation Therapy II	2	30
*RTT 209	Radiation Dosimetry	2	30
*RTT 210	Radiation Oncology II	1	15
*RTT 215	Radiation Biology and Pathology	2	30
*RTT 216	Radiation Therapy Practicum III	11	500
*RTT 217	Selected Topics in Radiation Therapy	3	45
*RTT 218	Radiation Therapy Practicum IV	14	644
		65	2250
Required Related Courses			
BIO 111	Anatomy and Physiology I	4	90
BIO 112	Anatomy and Physiology II	4	90
General Education Courses			
		12	180
MAT 121	College Algebra	4	60
PHY 115	Introduction to Medical Physics	4	90
CHE 101	Fundamentals of Chemistry	4	90
		32	600
	Total Required Hours	97	2850

* Certificate Requirements



Sport Crafts and Specialty Area Mechanics (N)

Certificate or Associate of Applied Science Degree

This program provides you with job entry skills in small engines and the specialty area mechanics field. This program places emphasis on comprehensive small engine repair with second year options in lawn and garden equipment repair, outboard repair, snowmobile repair and motorcycle repair.

Demonstrated mastery of skills is required. The program is open-entry and open-exit. Therefore, you may complete some of the courses, enter the work force, then return at any time to complete the program for a certificate or degree, or to upgrade specific skills.

Required Major Courses

Course No.	Title	Credits	Ct. Hrs.
SCS 100	Basic Engines, Tools, and Safety	3	
SCS 105	Engine Rebuild and Special Tools	3	
SCS 106	Carburetion and Fuel Systems	3	
SCS 107	Basic Electrical Theory and Test Equipment	3	
SCS 108	Ignition Systems	3	
SCS 109	Charging and Starting Systems	3	
SCS 110	Engine Control Systems	3	
SCS 115	Engine Troubleshooting and Tune-up	3	
SCS 116	General Service I	3	
SCS 117	General Service II	3	
SCS 200	Clutches, Transmissions, and Drive Systems	3	
SCS 205	Basic Hydraulics Service and Repair	3	
SCS 206	Brake Systems, Service and Repair	3	
SCS 207	Hydrostatic Drive, Service and Repair	3	
SCS 208	Rotary and Reel Mowers, Service and Repair	3	
SCS 209	Roto-tillers and Snow Blowers	3	
SCS 210	Garden Tractors and Rider Mowers	3	
SCS 215	Chainsaws, Edgers, and Power Trimmers	3	
SCS 216	Front Axles and Steering Systems	3	
SCS 217	Customer Service	3	
		60	12
	Required General Education Courses	12	1
	Total Required Hours	72	13

Basic Engines, Electrical and Carburetion Systems (30 Week Certificate)

Course No.	Title	Credits	Ct. Hrs.
CS 100	Basic Engines, Tools and Safety	3	60
CS 105	Engine Rebuild and Special Tools	3	60
CS 106	Carburetion and Fuel Systems	3	60
CS 107	Basic Electrical Theory and Test Equipment	3	60
CS 108	Ignition Systems	3	60
CS 109	Charging and Starting Systems	3	60
CS 110	Engine Control Systems	3	60
CS 115	Engine Troubleshooting and Tune-up	3	60
CS 116	General Service I	3	60
CS 117	General Service II	3	60

SCS 230	Japanese Two-Cycle Engines	3	60
SCS 235	Harley-Davidson	3	60
SCS 251	General Service and Repair	3	60
SCS 255	Motorcycle General Service and Repair	3	60

Outboard Service and Repair (30 Week Certificate)

Course No.	Title	Credits	Ct. Hrs.
SCS 240	Electrical Systems	3	60
SCS 245	Carburetor and Fuel System Service and Repair	3	60
SCS 246	Power Heads through 18 HP	3	60
SCS 247	Power Heads 20 HP and Up	3	60
SCS 248	Lower Drive Units	3	60
SCS 249	Steering and Remote Control Systems	3	60
SCS 250	Troubleshooting and Repair	3	60
SCS 251	General Service and Repair	3	60
SCS 252	Outboard Customer Service and Repair I	3	60
SCS 253	Outboard Customer Service and Repair II	3	60

Lawn and Garden Equipment Service and Repair (30 Week Certificate)

Course No.	Title	Credits	Ct. Hrs.
SCS 200	Clutches, Transmissions and Drive Systems	3	60
SCS 205	Basic Hydraulics	3	60
SCS 206	Brake Systems, Service and Repair	3	60
SCS 207	Hydrostatic Drive, Service and Repair	3	60
SCS 208	Rotary and Reel Mowers, Service and Repair	3	60
SCS 209	Roto-tillers and Snow Blowers	3	60
SCS 210	Garden Tractors and Rider Mowers	3	60
SCS 215	Chainsaws, Edgers and Power Trimmers	3	60
SCS 216	Front Axles and Steering Systems	3	60
SCS 217	Customer Service	3	60

Snowmobile Service and Repair (6 Week Certificate)

Course No.	Title	Credits	Ct. Hrs.
SCS 260	Snowmobile Suspension Systems	3	60
SCS 265	Snowmobile Drive Mechanisms	3	60

Motorcycle Service and Repair (30 Week Certificate)

Course No.	Title	Credits	Ct. Hrs.
SCS 220	Brake and Suspension Systems	3	60
SCS 225	Motorcycle Drive Systems	3	60
SCS 226	Electrical System Troubleshooting and Service	3	60
SCS 227	Carburetor Service and Repair	3	60
SCS 228	Japanese Single Cylinder Four-Cycle Engines	3	60
SCS 229	Japanese Multi-Cylinder Four-Cycle Motorcycles	3	60



Solar Energy Installation and Maintenance (R)

Certificate or Associate of Applied Science Degree Option A

The program is designed to provide the student with the knowledge and skills for job entry into the solar energy field, in the area of installation and maintenance, and to provide upgrading and refresher courses for people already employed in the field.

Required Major Courses

Course No.	Title	Credits	Ct. Hrs.
SOM 220	Basic Solar Systems	3	60
SOM 221	Solar Engineering Technology I	4	68
SOM 222	Solar Engineering Technology II	4	68
SOM 225	Solar System Design & Layout	3	60
SOM 226	Solar Panel Arrays	3	60
SOM 227	Domestic Hot Water Systems	3	60
SOM 228	Solar System Estimating and Maintenance Techniques	3	60
SOM 229	Solar Panel Installation	3	60
SOM 235	Basic Solar Controls	3	60
SOM 236	Advanced Solar Controls	3	60
SOM 237	Passive Solar Systems	3	60
SOM 238	Alternative Support Systems for Solar Energy	3	60
SOM 239	Intro. to Wind Energy	3	60
SOM 260	Computer and Calculator Techniques for Solar Energy	2	30
PLU 100	Orientation of Tools, Basic Plumbing and Drawings	3	60
PLU 107	Water Piping Methods	3	60
PLU 206	Hot Water Heating Installation and Maintenance	3	60
BRI 125	Bricklaying for Solar	3	60
DPR 125	Blueprint Reading for Construction Trades	4	68
CAR 125	Structural Carpentry for Solar Energy	3	60
SHM 100	Basic Sheet Metal for Solar Energy	3	60
		65	1254

NOTE: A minimum of 30 credit hours is required for a Certificate.

Required General Education Courses

Math Elective	3	4
English Elective	3	4
Social Science		
Elective	3	4
Electives	4	6
	13	19
	78	144

Additional Courses

SOM 223	Solar Engineering Technology III	4	6
SOM 240	Advance Passive Solar Systems	3	6
SOM 245	Greenhouses	4	6
SOM 246	Agricultural Appls. of Renewable Energy Resources	4	6
SOM 247	Site Built Solar Systems	3	6
SOM 248	Solar Greenhouse Construction	3	6
SOM 249	Earth Shelter Dwellings	4	6
SOM 250	Residential Energy Audit and Conservation	3	5
SOM 265	Intro. to Photovoltaics	3	5
SOM 297	Cooperative Work Experience	1-15	40-60
SOM 298	Solar Lab	3-12	60-24
SOM 299	Independent Study	3-6	90-54

Passive Solar Energy Drafting and Design (R)

Associate of Applied Science Degree Option B

The program is designed to provide the student with the knowledge and skills for job entry into the solar energy field, in the area of passive drafting and design, and to provide upgrading and refresher courses for people already employed in the field.

Required Major Courses

Course No.	Title	Credits	Ct. Hr.
SOM 220	Basic Solar Systems	3	6
SOM 237	Passive Solar Systems	3	6
SOM 240	Advance Passive Solar Systems	3	6
SOM 245	Greenhouses	4	6
SOM 247	Site Built Solar Systems	3	6
SOM 248	Solar Greenhouse Construction	3	6
SOM 249	Earth Shelter Dwellings	4	6
SOM 260	Computer and Calculator Techniques for Solar Energy	2	3
BRI 125	Bricklaying for Solar	3	6
BRI 126	Solar Walls and Fireplaces	3	6

DRI 105	Intro. to Drafting	6	120
DRI 115	Perspective Drawing	3	60
DRC 116	Intro. to Architectural/Drafting — Frame Construction	6	120
DRC 200	Intro. to Commercial Architecture — Masonry Construction	6	120
DRI 206	Industrial Piping and Utility Consideration	3	60
DRS 210	Solar Drafting Technical Project	6	120
		<u>61</u>	<u>1186</u>

Required General Education Courses

Math Elective	3	45
English Elective	3	45
Social Science Elective	3	45
Electives	6	90
	<u>15</u>	<u>225</u>
	76	1411

Additional Courses*

*Please see Drafting Section for DRI / DRS Course Descriptions.

Social Science (A,N,R)

The following selection of courses is recommended for an Associate of Arts Degree with an emphasis in Social Science. A student interested in obtaining a baccalaureate degree should consult a CCD advisor, the Transfer guide, and the current catalog of the receiving institution.

Course No.	Title	Credits	Ct. Hrs.
PSY 111	or		
SOC 111		3	45
PSY 112	or		
SOC 112		3	45
PSY 115	or		
SOC 215		3	45
	Soc. or Psych.		
	Electives	12	135
	Soc. or Psych.		
	Ethnic Studies Course	3	45
	Related Subject		
	Area Electives	6	90
	General		
	Education Courses	30	450
		<u>60</u>	<u>855</u>

Spanish (A,N,R)

The following selection of courses is recommended for an Associate of Arts Degree with an emphasis in Spanish. A student interested in obtaining a baccalaureate degree should consult a CCD advisor, the Transfer Guide, and the current catalog of the receiving institution.

Courses

Requirements	Credits	Ct. Hrs.
1. General Education Core Courses	12	180
2. General Education Interdisciplinary and Distributive Courses	18	270

3. Required Spanish Courses:		
SPA 111	First Year Spanish	5
	or	
SPA 121	Spanish for the Chicano	3
SPA 112	First Year Spanish	5
	or	
SPA 122	Spanish for the Chicano	3
SPA 211	Intermediate Spanish	3
SPA 212	Intermediate Spanish	3
SPA 220	Dialects of the Southwest	3

4. In addition to the requirements listed above a minimum of 11 credit hours should be selected from the following list:		
HIS 130	History of the Southwest United States	3
HIS 135	Intro. to Latin American History	3
HIS 136	Historia de Latina America	3
HUM 115	Intro. to Chicano Studies	3
HUM 126	Folklore of Mexico and the Southwest	3
LIT 125	Intro. to Chicano Literature	3
LIT 228	Contemporary Chicano Literature	3
MUS 120	Intro. to Chicano Music	3
PSY 260	Psychology of the Chicano	3
PSY 266	Chicano Community Mental Health	3
SOC 230	Sociology of the Chicano	3
SOC 238	Field Work in Barrio Studies	3
	Program Total	<u>60</u>
		900

Surgical Technology (A)

Certificate Program

Upon completion of this program, the graduate will be eligible to write the surgical technician national certifying examination and to fill entry level surgical technology positions.

Required Major Courses

Course No.	Title	Credits	Ct. Hrs.
HOC 100	Medical Terminology I	1	15
HOC 106	Basic Patient Care	2	40
STE 100	Intro. to Surgical Technology	4	60
STE 105	Pharmacology for Surgical Technologists	2	30
STE 106	Surgical Skills	6	120
STE 107	Surgical Instrumentation	3	60
STE 108	Surgical Trends	2	30
STE 109	Surgical Laboratory Experience	5	115

STE 110	Surgical Technician Practicum	7	325
STE 115	Surgical Pathology and Intervention	4	60
STE 119	Selected Topics in Surgical Technology	2	30
		<u>38</u>	<u>885</u>

Required Related Courses

BIO 111	Human Anatomy & Physiology I	4	90
BIO 112	Human Anatomy & Physiology II	4	90
PSY 225	Psychology of Death & Dying	3	45
ENG 106	Technical Writing for the Health Occupations	3	45
		<u>14</u>	<u>270</u>

Total Required Hours	<u><u>52</u></u>	<u><u>1155</u></u>
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Surveying (R)

Associate of Applied Science Degree

The Surveying Program provides theoretical training and field practice for a surveyor to enter and succeed in employment in the surveying profession. Parts of this program can be taken for upgrading within the profession.

Required Major Courses

Course No.	Title	Credits	Ct. Hrs.
SUR 100	Surveying — Field Work, Elementary	11	218
SUR 101	Surveying Calculations I	4	64
SUR 105	Surveying Drafting	8	160
SUR 200	Surveying — Field Work, Advanced	11	218
SUR 201	Surveying Calculations II	3	49
SUR 202	Surveying Calculations III	3	49
SUR 203	Surveying Calculations IV	3	49
SUR 204	Surveying Computer Applications	4	60
SUR 205	Photogrammetry for Surveyors	6	109
SUR 206	Legal Aspects of Surveying	3	45
		<u>56</u>	<u>1021</u>

Required General Education and Related Courses

MAT 121	College Algebra	4	60
MAT 122	Trigonometry and Functions	3	45
MAN 116	Principles of Supervision	3	45
ENG 231	Technical Writing Math, Science, or Social Science Elective	3	45
		<u>6</u>	<u>90</u>
		<u>19</u>	<u>285</u>
Total		<u><u>75</u></u>	<u><u>1306</u></u>

Additional Courses

SUR 120	Surveying for Construction & Technical Trades	3	6
SUR 216	Surveying Calculation Refresher	4	6

**Consumer Electronics Technology (N)
Certificate or Associate of Applied Science Degree**

This program provides you with job entry skills diagnosing, troubleshooting, and repairing selected consumer entertainment and home electronics products.

Demonstrated mastery of skills is required. The program is open-entry and open-exit. Therefore, you may complete some of the courses, enter the work force, then return at any time to complete the program for a certificate or degree, or to upgrade specific skills.

Required Major Courses

Course No.	Title	Credits	Ct. Hrs.
TCE 100	Analyze and Troubleshoot DC Circuits	3	6
TCE 105	Analyze and Troubleshoot AC Circuits	3	6
TCE 106	Analyze and Troubleshoot Vacuum Tube Circuits	3	6
TCE 107	Operations of Transistor Circuits	3	6
TCE 108	Troubleshoot Solid State Circuits	3	6
TCE 109	Troubleshoot Other Solid State Devices and Power Supplies	3	6
TCE 110	Troubleshoot and Repair VT Radios	3	6
TCE 115	Troubleshoot and Repair Solid State AM Radios	3	6
TCE 116	Troubleshoot and Repair FM Radios	3	6
TCE 117	Troubleshoot and Repair Stereo Audio Amplifiers	3	6
TCE 200	Symptom Diagnose Monochrome TV	3	6
TCE 205	Troubleshoot and Repair Monochrome TV and Principles of Color TV	3	6
TCE 206	Troubleshoot and Repair Color TV	3	6
TCE 207	Peak and Sweep Alignment	3	6
TCE 208	Troubleshoot and Repair Picture Tube Circuits, Video and AGC	3	6
TCE 209	Troubleshoot and Repair Chroma Circuits	3	6

TCE 210	Troubleshoot and Repair VIF, Tuner and Sound	3	60
TCE 215	Troubleshoot and Repair MPX Stereo Receivers (OR a TCE elective)	3	60
TCE 216	Troubleshoot and Repair CB Transceivers (OR a TCE elective)	3	60
TCE 217	Troubleshoot and Repair Tape Recorders and Stereos (OR a TCE elective)	3	60
		<u>60</u>	<u>1200</u>
Required General Education Courses	12	<u>180</u>	
Total Required Hours	72		<u>1380</u>

Additional Major Courses

TCE 218	Troubleshoot and Repair Automatic Record Changers	3	60
TCE 219	Design and Install MATV	3	60
TCE 220	Transmission Lines and Antennas	3	60
TCE 227	Troubleshoot and Repair TV Remote Control	3	60
TCE 230	Basic Operation of Home Video Cassette Recorder (HVCR)	3	60
TCE 235	Diagnose, Troubleshoot and Repair Home Video Cassette Recorders	3	60
TCE 237	Associated Certified Electronics Technician	3	60
TCE 238	Journeyman Certified Electronics Technician	3	60
TCE 299	Independent Study	6	120

**Auto Electronics Entertainment
(39 Week Certificate)**

Course No.	Title	Credits	Ct. Hrs.
TCE 100	Analyze and Troubleshoot DC Circuits	3	60
TCE 105	Analyze and Troubleshoot AC Circuits	3	60
TCE 106	Analyze and Troubleshoot Vacuum Tube Circuits	3	60
TCE 107	Operations of Transistor Circuits	3	60
TCE 108	Troubleshoot Solid State Circuits	3	60
TCE 109	Troubleshoot Other Solid State Devices, Power Supplies, Microphones and Speakers	3	60
TCE 110	Troubleshoot and Repair TV Radios	3	60
TCE 115	Troubleshoot & Repair Solid State Radios	3	60
TCE 116	Troubleshoot and Repair FM Radios	3	60
TCE 117	Troubleshoot and Repair AM/FM Radios	3	60
TCE 215	Troubleshoot & Repair MPX Stereo Receivers	3	60
TCE 216	Troubleshoot & Repair CB Transceivers	3	60
TCE 217	Troubleshoot and Repair Tape Recorders or TCE electives	6	120

Check with advisor for prerequisites.

**Security System Specialist
(30 Week Certificate)**

Course No.	Title	Credits	Ct. Hrs.
TCE 100	Analyze and Troubleshoot DC Circuits	3	60
TCE 105	Analyze and Troubleshoot AC Circuits	3	60
TCE 106	Analyze and Troubleshoot Vacuum Tube Circuits	3	60
TCE 107	Operations of Transistor Circuits	3	60
TCE 108	Troubleshoot Solid State Circuits	3	60
TCE 109	Troubleshoot Other Solid State Devices, Power Supplies, Microphones and Speakers	3	60
TCE 110	Troubleshoot and Repair TV Radios	3	60
TCE 200	Symptom Diagnosis Monochrome TV	3	60



TCE 205	Troubleshoot and Field Repair Monochrome TV and Principles of Color TV	3	60
TCE 206	Troubleshoot and Repair Color TV	3	60
TCE 228	Analyze Digital Logic Circuits	3	60
TCE 229	Troubleshoot and Repair Consumer Digital Logic Circuits	3	60
TCE 225	Install, Test and Repair Security System	3	60
TCE	Electives	6	120

Check with advisor for prerequisites.

**Microwave Oven
(24 Week Certificate)**

Course No.	Title	Credits	Ct. Hrs.
TCE 100	Analyze and Troubleshoot DC Circuits	3	60
TCE 105	Analyze and Troubleshoot AC Circuits	3	60
TCE 106	Analyze and Troubleshoot Vacuum Tube Circuits	3	60
TCE 107	Operations of Transistor Circuits	3	60
TCE 108	Troubleshoot Solid State Circuits	3	60
TCE 109	Troubleshoot Other Solid State Devices, Power Supplies, Microphones and Speakers	3	60
TCE 228	Analyze Digital Logic Circuits	3	60
TCE 229	Troubleshoot and Repair Consumer Digital Logic Circuits	3	60
TCE 226	Troubleshoot & Repair Microwave Oven	3	60
TCE	Electives	6	120

Check with advisor for prerequisites.

Traffic Engineering Technology (R)

Associate of Applied Science Degree

This program is intended to prepare students for job entry skills in the area of city, county and regional traffic engineering in both the public and private sectors. The primary emphasis of this program is dealing with automotive traffic and the problems associated with it.

Required Major Courses

Course No.	Title	Credits	Ct. Hrs.
TET 100	Intro. to Traffic Engineering	3	45
TET 105	Traffic Engineering Studies I	3	45
TET 106	Traffic Engineering Studies II	3	45
TET 107	Traffic Admin. and Safety	3	45

TET 108	Control Devices	5	9
TET 109	Traffic Engineering Psychology	3	4
TET 110	Traffic Laws, Ordinances and Regulations	3	4
TET 201	Geometric Design I	5	9
TET 202	Geometric Design II	6	10
TET 205	Traffic Accident Reporting and Analysis	3	4
TET 211	Urban Transportation Planning I	3	4
TET 212	Urban Transportation Planning II	3	4
TET 219	Traffic Engineering Problems	3	4
		46	73

Required General Education and Related Courses

English Elective	3	4
English Elective	3	4
Math Elective	12	18
Social Science Elective	3	4
	21	31
Total Required Hours	67	105

Additional Major Courses

TET 207	Data Collection Techniques and Evaluation	3	4
TET 215	Data Processing for Traffic Engineers	3	4
TET 216	Pictorial Drafting	3	4
TET 217	Map Reading and Photo Interpretation	3	4
TET 218	Land Use and the Quality of Life	6	10
TET 225	Constructive Devices for Traffic Control	2	30
TET 226	Advanced Constructive Devices for Traffic Control	4	60
TET 297	Cooperative Work Experience and Practical Training	1-6	45-270
TET 299	Independent Study	2-6	45-135

Traffic and Transportation Management (A)

Associate of Applied Science Degree

This program is designed to prepare students for careers in the transportation of goods and related areas at entry level positions as well as preparing them for examinations given by the American Society of Traffic and Transportation.

Required Major Courses

Course No.	Title	Credits	Ct. Hrs.
TTM 101	Fundamentals of Commercial Transportation I	3	45
TTM 102	Fundamentals of Commercial Transportation II	3	45
TTM 151	Freight Rates I	2	30

TTM 152	Freight Rates II	2	30
TTM 211	Economics of Transportation I	2	30
TTM 212	Economics of Transportation II	2	30
TTM 221	Transportation Regulations I	3	45
TTM 222	Transportation Regulations II	3	45
TTM 231	Transportation Management I	2	30
TTM 232	Transportation Management II	2	30
	Transportation Electives	2-6	30-90
		26-30	390-450

Required Related Courses

ACC 111	Accounting Principles I (or GEM)	5	75
BUS 110	Business Math (or GEM)	3	45
BUS 136	Business Communications Applications	3	45
ECO 118	Labor Relations	3	45
ENG 109	Business Communications (or GEM)	3	45
MAN 105	Intro. to Business (or GEM)	3	45
MAN 115	Principles of Management	3	45
MAN 206	Business Law (or GEM)	4	60
MAR 107	Principles of Marketing	3	45
	Electives (or GEM)	4	60
		34	510
Total Required Hours		60-64	900-960

Travel and Tourism Occupations (A)

Certificate

This program is designed to prepare students for entry level employment in travel agencies, airlines and tourist offices.

Required Major Courses

Course No.	Title	Credits	Ct. Hrs.
TTO 101	Geography for Travel and Tourism	4	60
TTO 102	Domestic Travel and Tariffs	4	60
TTO 103	International Travel and Tariffs	4	60
TTO 104	Travel Agency Management and Procedures	4	60
TTO 297	Cooperative Work Experience (or Elec.)	1-6	15-270
		17-22	255-510

Required Related Courses

ACC 109	Bookkeeping and Accounting	3	45
BSI 115	Business Machines	1	25
SEC 101	Typewriting I	4	75
	English Elective	3	45
	Elective	3	45
		14	235
Total Hours		31-36	490-745

Urban Planning Technology (R)

Associate of Applied Science Degree

This program is designed to prepare individuals with job-entry skills for the urban planning field. The program is intended to prepare the student for private sector and public sector employment. It will deal with local, county, regional and state concerns.

Required Major Courses

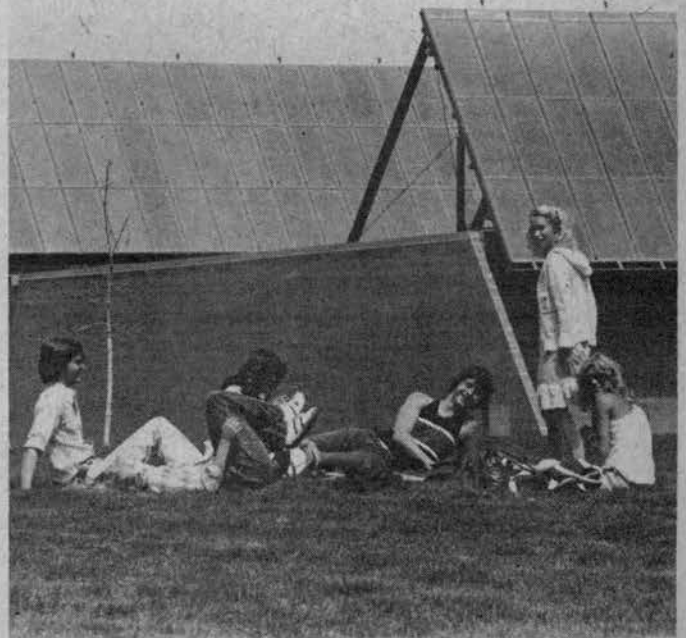
Course No.	Title	Credits	Ct. Hrs.
UPT 100	Intro. to Planning	3	45
UPT 105	Data Collecting Techniques and Evaluation I	5	90
UPT 106	Data Collecting Techniques and Evaluation II	5	90
UPT 108	Problems in Urban Planning	3	45
UPT 109	Statistics for Planners	3	45
UPT 115	Data Processing for Planners	5	90
UPT 201	Map Reading and Photo Interpretation I	5	90
UPT 202	Map Reading and Photo Interpretation II	5	90
UPT 205	Drafting for Urban Planning	6	105
UPT 206	Planning Law	3	45
UPT 207	Transportation Planning	3	45
		46	780

Required General Education and Related Courses

English Elective	6	90
Math Elective	12	180
Social Science Elective	3	45
Total Required Hours	67	1095

Additional Major Courses

UPT 215	Planning for Solid Waste	3	45
UPT 216	Urban Environment Decision Making	3	45
UPT 217	Land Use and the Quality of Life	6	105



Urban Horticulture (N)

Certificate or Associate of Applied Science Degree

This program provides entry level and upgrading training for nurserymen, greenhouse workers, golf course, park or landscape workers. The graduate may specialize in Greenhouse and Garden Center Management, Landscape Construction, Landscape Design, Nursery Management, and Turf and Landscape Management.

Greenhouse and Garden Center Management (N)

This program is designed to prepare the student with the basic knowledge and skills to work as an assistant grower in a greenhouse, garden center employee or as a gardener-florist.

A Certificate is awarded upon completion of required URH courses.

An Associate of Applied Science Degree, AAS, is awarded upon completion of required URH courses, 30 credits of suggested optional URH courses, plus 12 credits of general education.

Required URH Courses

Course No.	Title	Credits	Ct. Hrs.
URH 101	Plant Science I	4	68
URH 106	Landscape Plant Materials	4	75
URH 125	Soils and Fertilizers	4	75
URH 200	Greenhouse and Field Experience	3	60
URH 215	Greenhouse Management	3	45
URH 204	Garden Center Operations	2	30
URH 212	Garden Management	3	45
URH 226	Horticulture Business Operations	3	53
URH 235	Diseases & Pests	4	68
		30	469

Suggested Optional URH Courses

URH 100	Rocky Mountain Horticulture	2	30
URH 102	Plant Science II	4	75
URH 115	Plant Usage	4	75
URH 135	Plant Propagation	4	75
URH 155	Arboriculture	3	53
URH 107	Plants in the Landscape	2	30
*URH 206	Interior Landscape Design	3	53
URH 210	Landscape Management	3	45
URH 240	Preparation for Commercial Appl. Cert.	3	45
URH 245	Turf Production and Management	4	75
URH 255	Horticulture Management	2	30
URH 297	Cooperative Work Experience	4	150

*Required of Associate of Applied Science Degree students.

Required General Education Courses

Required general education courses for an Associate of Applied Science Degree is a selection of 12 semester hours of credit from the following divisions. The semester hours of the 12 hours must be English.

Business Division	
Electives	6
Arts and Humanities/	
Science and Health	6
	12

Total Required Hours 72

Landscape Construction (N)

This program is designed to prepare students work in the landscape construction industry.

A Certificate is awarded upon completion of required URH courses.

An Associate of Applied Science Degree, AAS, awarded upon completion of required URH courses, 30 credits of suggested optional URH courses, plus 12 credits of general education.

Required URH Courses

Course No.	Title	Credits	Ct. Hrs.
URH 101	Plant Science I	4	68
URH 106	Landscape Plant Materials	4	75
URH 125	Soils & Fertilizers	4	75
URH 145	Sprinkler System Design	3	60
URH 146	Sprinkler System Installation	3	60
URH 216	Landscape Grading	3	60
URH 225	Horticulture Equipment	4	75
URH 236	Basic Landscape Construction	4	75

Suggested Optional URH Courses

URH 100	Rocky Mountain Horticulture	2	30
URH 105	Intro. to Landscape Construction Drafting	3	45
URH 115	Plant Usage	4	75
URH 116	Landscape Planning	4	75
URH 126	Small Engine and Carburetor Repair for URH	3	60
URH 210	Landscape Management	3	45
URH 212	Garden Management	3	45
URH 226	Horticulture Business Operations	3	60
URH 235	Diseases & Pests	4	75
*URH 237	Bidding & Estimating	2	30
**URH 239	Advanced Landscape Construction	4-8	60-120
URH 245	Turf Production and Management	4	75
URH 255	Horticulture Management	2	30
URH 297	Cooperative Work Experience	4	150

*Required for Associate of Applied Science Degree students.

**Students selecting the Landscape Construction option must take 4-8 hours of URH 239, Advanced Landscape Construction. This course is offered in 5 week modules; each module worth 2 credits.

Required General Education Courses

Required general education courses for an Associate of Applied Science Degree is a selection of 12 semester hours of credit from the following divisions. Three semester hours of the 12 hours must be English.

Business Division	
Electives	6 90
Arts and Humanities/ Science and Health	6 90
	<u>12 180</u>
Total Required Hours	72

Landscape Design (N)

This program will prepare the student to work in the area of landscape design.

A Certificate is awarded upon completion of required URH courses.

An Associate of Applied Science Degree, AAS, is awarded upon completion of required URH courses, 30 credits of suggested optional URH courses, plus 12 credits of general education.

Required URH Courses

Course No.	Title	Credits	Ct. Hrs.
URH 101	Plant Science I.	4	68
URH 105	Intro. to Landscape Construction Drafting	3	60
URH 106	Landscape Plant Materials	4	75
URH 115	Plant Usage	4	75
URH 116	Landscape Planning	4	75
URH 125	Soils and Fertilizers	4	75
URH 236	Basic Landscape Construction	4	68
URH 256	Landscape Perspective Drawing	3	53
		<u>30</u>	<u>549</u>

Suggested Optional URH Courses

URH 100	Rocky Mountain Horticulture	2	30
URH 107	Plants in the Landscape	2	30
URH 145	Sprinkler System Design	3	53
URH 206	Interior Landscape Design	3	53
URH 210	Landscape Management	3	45
URH 212	Garden Management	3	45
URH 216	Landscape Grading	3	60
URH 226	Horticulture Business Operations	3	53
URH 235	Diseases & Pests	4	68
URH 237	Bidding & Estimating	2	30
URH 246	Advanced Landscape Planning	4	75
URH 297	Cooperative Work Experience	4	150

*Required of Associate of Applied Science Degree students.

Required General Education Courses

Required general education courses for an Associate of Applied Science Degree is a selection of 12 semester hours of credit from the following divisions. Three semester hours of the 12 hours must be English.

Business Division	
Electives	6 90
Arts and Humanities/ Science and Health	6 90
	<u>12 180</u>
Total Required Hours	72

Nursery Management (N)

This program is designed to prepare the student for job entry skills as a worker in the nursery industry.

A Certificate is awarded upon completion of required URH courses.

An Associate of Applied Science Degree, AAS, is awarded upon completion of required URH courses, 30 credits of suggested optional URH courses, plus 12 credits of general education.

Required URH Courses

Course No.	Title	Credits	Ct. Hrs.
URH 101	Plant Science I.	4	68
URH 106	Landscape Plant Materials	4	75
URH 125	Soils and Fertilizers	4	75
URH 146	Sprinkler System Installation	3	60
URH 155	Arboriculture	3	53
URH 205	Nursery Management	4	75
URH 225	Horticulture Equipment	4	75
URH 235	Diseases & Pests	4	68
		<u>30</u>	<u>549</u>

Suggested Optional URH Courses

URH 100	Rocky Mountain Horticulture	2	30
URH 102	Plant Science II	4	68
URH 107	Plants in the Landscape	2	30
URH 115	Plant Usage	4	75
URH 126	Small Engine and Carburetor Repair for URH	3	60
URH 135	Plant Propagation	4	75
URH 200	Greenhouse and Field Experience	3	60
URH 204	Garden Center Operations	2	30
URH 210	Landscape Management	3	45
URH 236	Basic Landscape Construction	4	68
URH 240	Preparation for Commercial Appl. Certification	3	45
URH 297	Cooperative Work Experience	4	150

Required General Education Courses

Required general education courses for an Associate of Applied Science Degree is a selection of 12 semester hours of credit from the following division. Three semester hours of the 12 hours must be English.

Business Division	6	90
Arts & Humanities/ Science & Health	6	90
	12	180
Total Required Hours	72	

Turf and Landscape Management (N)

This program is designed to provide the student with entry level job skills in the areas of golf course management, parks maintenance, lawn maintenance, and sprinkler installation.

A Certificate is awarded upon completion of required URH courses.

An Associate of Applied Science Degree, AAS, is awarded upon completion of required URH courses, 30 credits of suggested optional URH courses, plus 12 credits of general education.

Required URH Courses

Course No.	Title	Credits	Ct. Hrs.
URH 101	Plant Science I	4	68
URH 106	Landscape Plant Materials	4	75
URH 125	Soils and Fertilizers	4	75
URH 146	Sprinkler System Installation	3	53
URH 155	Arboriculture	3	53
URH 225	Horticulture Equipment	4	75
URH 235	Diseases & Pests	4	68
URH 245	Turf Production and Management	4	75
		30	542

Suggested Optional URH Courses

URH 100	Rocky Mountain Horticulture	2	30
URH 102	Plant Science II	4	68
URH 115	Plant Usage	4	75
URH 126	Small Engine and Carburetor Repair for URH	3	60
URH 145	Sprinkler System Design	3	53
URH 147	Sprinkler Service and Repair	2	30
URH 210	Landscape Management	3	45
URH 212	Garden Management	3	45
URH 216	Landscape Grading	3	60
URH 226	Horticulture Business Operations	3	53
URH 236	Basic Landscape Construction	4	68
URH 237	Bidding and Estimating	2	30

URH 240	Preparation for Commercial Appl. Certification	3	4
URH 255	Horticulture Management	2	3
URH 297	Cooperative Work Experience	4	15

Required General Education Courses

Required general education courses for an Associate of Applied Science Degree is a selection of 12 semester hours of credit from the following divisions. Three semester hours of the 12 hours must be English.

Business Division		9
Electives	6	9
Arts and Humanities/ Science and Health	6	9
	12	18
Total Required Hours	72	

Welding and Fabrication (A,N,R)

Certificate or Associate of Applied Science Degree

This program provides job entry skills in the welding trade and upgrading for those in the field who need to acquire more skill.

Demonstrated mastery of skills is required. Program are open-entry and open-exit. You may complete some of the courses, enter the work force, then return at a time either to complete the program for a certificate degree, or to upgrade specific skills.

Welding and Fabrication — (A)

Associate of Applied Science Degree Program

(*Courses WEF 100 through 117 comprise the nine-month certificate program.)

Required Major Courses

Course No.	Title	Credits	Ct. Hr
* WEF 100	Oxy-Acetylene Safety Cutting & Welding	3	6
* WEF 105	Oxy-Acetylene Welding Joints	3	6
* WEF 106	Brazing & Special Applications	3	6
* WEF 107	Blueprint Reading and Estimating	3	6
* WEF 108	S.M.A.W. Safety, Electrode Identification & Surface Padding	3	6
* WEF 109	S.M.A.W. Surface Padding	3	6
* WEF 110	S.M.A.W. Joints/3 Pos.	3	6
* WEF 115	A.S.M.E./A.W.S. Testing E7018, with Backing	3	6
* WEF 116	A.S.M.E./A.W.S. Testing E6010/6011, w/o Backing	3	6
* WEF 117	A.S.M.E./A.W.S. Testing E6010/11, E7018 w/o Backing	3	6
WEF 200	Pipe Joint Design & Fabrication, A.S.M.E./ A.W.S. Pipe Testing	3	6
WEF 205	Pipe Testing A.S.M.E./ A.W.S. — 5G Position	3	6

WEF 206	Pipe Testing A.S.M.E./ A.W.S. — 6G Position	3	60
WEF 207	G.T.A.W. Safety & Welding Joints	3	60
WEF 208	G.T.A.W. Welding Alloys & Joining Varied Shapes	3	60
WEF 209	G.M.A.W. — Pipe & Plate, A.S.M.E./A.W.S.	3	60
WEF 210	Structural Shapes & Joints Design — Project Development	3	60
WEF 215	Structural Project Layout and Fabrication	3	60
WEF 216	Structural Fabrication	3	60
WEF 217	Maintenance Welding & Repair, or one of the following: elective, independent study, or cooperative work experience	3	60
		60	1200

Required Related Courses

General Education	12	200
Total Required Hours	72	1400

Additional Electives

NEF 219	Certification Procedure and Preparation	3	60
NEF 297	Cooperative Work Experience	3	60
NEF 299	Independent Study	3	90

Welding and Fabrication — (N)

**Certificate or Associate of Applied Science Degree
Required Major Courses**

Course No.	Title	Credits	Ct. Hrs.
NEF 101	Fuel Gas, Safety, and Cutting	3	60
NEF 105	Oxy-Acetylene Welding Joints	3	60
NEF 106	Brazing & Special Applications	3	60
NEF 119	Metallurgy for Welders	3	60
NEF 118	Drafting & Blueprint Reading for Welders	3	45
NEF 125	S.M.A.W. Introduction and Safety	3	60
NEF 126	S.M.A.W. Joint Design, All Positions	3	60
NEF 127	A.W.S. Testing E-7018	3	60
NEF 128	A.W.S. Testing E-6010	3	60
NEF 129	Welding Light and Heavy Gauges	3	60
NEF 203	A.W.S. Pipe Testing 2G, 5G	3	60
NEF 204	A.W.S. Pipe Testing 6G	3	60
NEF 211	G.M.A.W./A.W.S. Pipe & Plate	3	60
NEF 226	G.T.A.W. Welding Alloys & Safety	3	60
NEF 227	G.T.A.W. Welding, All Joints	3	60

WEF 217	Maintenance Welding and Repair	3	60
WEF 221	Ornamental Iron I	3	60
WEF 222	Ornamental Iron II	3	60
WEF 223	Ornamental Iron III	3	60
WEF 220	General Shop and Improvement	3	60
			1185
Required General Education Courses		12	180
Total Required Hours		72	1365

**Gas Cutting and Welding
(9 Week Certificate)**

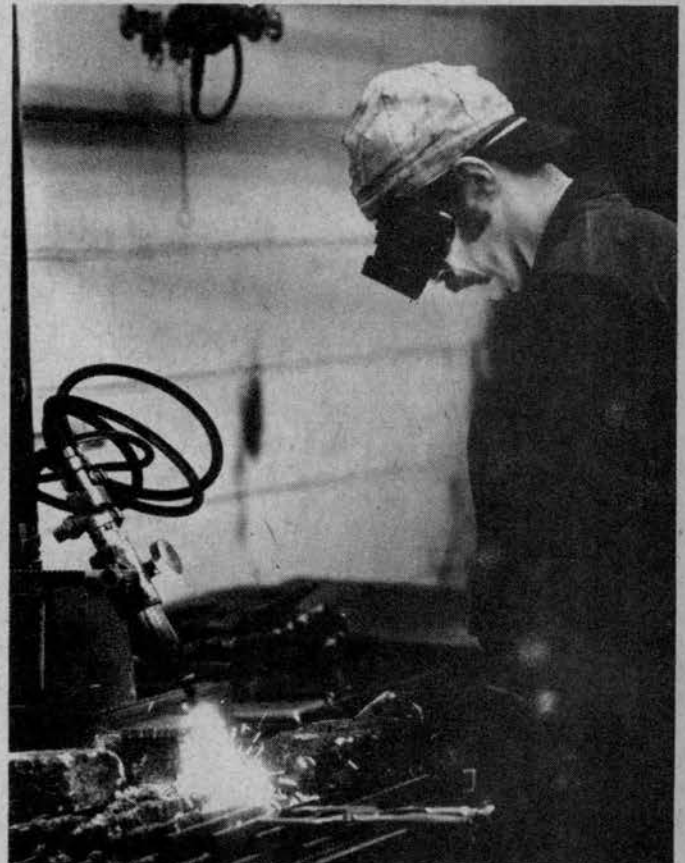
Course No.	Title	Credits	Ct. Hrs.
WEF 101	Fuel Gas, Safety, and Cutting	3	60
WEF 105	Oxy-Acetylene Welding Joints	3	60
WEF 106	Brazing and Special Applications	3	60
		9	180

Check with advisor for prerequisites.

**Arc Testing
(6 Week Certificate)**

Course No.	Title	Credits	Ct. Hrs.
WEF 127	A.W.S. Testing E-7018	3	60
WEF 128	A.W.S. Testing E-6010	3	60
		6	120

Check with advisor for prerequisites.



Pipe Welding

(6 Week Certificate)

Course No.	Title	Credits	Ct. Hrs.
WEF 203	A.W.S. Pipe Testing 2G-5G	3	60
WEF 204	A.W.S. Pipe Testing 6G	3	60
		6	120

Check with advisor for prerequisites.

G.M.A.W. (T.I.G.)

(6 Week Certificate)

Course No.	Title	Credits	Ct. Hrs.
WEF 226	G.T.A.W. Welding Alloys & Safety	3	60
WEF 227	G.T.A.W. Welding, All Joints	3	60
		6	120

Check with advisor for prerequisites.

G.M.A.W. (M.I.G.)

(3 Week Certificate)

Course No.	Title	Credits	Ct. Hrs.
WEF 211	G.M.A.W./A.W.S. Pipe & Plate	3	60

Check with advisor for prerequisites.

Ornamental Iron

(9 Week Certificate)

Course No.	Title	Credits	Ct. Hrs.
WEF 221	Ornamental Iron I	3	60
WEF 222	Ornamental Iron II	3	60
WEF 223	Ornamental Iron III	3	60
		9	180

Welding and Fabrication — (R)

Certificate or Associate of Applied Science Degree

Required Major Courses

First Year

Course No.	Title	Credits	Ct. Hrs.
* WEF 100	Oxy-Acetylene Safety/ Cutting/Welding	3	60
* WEF 105	Oxy-Acetylene Welding Joints	3	60
* WEF 106	Brazing and Special Applications	3	60
* WEF 107	Blueprint Reading and Estimating	3	60
* WEF 108	S.M.A.W. Safety and Electrode Identification Padding	3	60
* WEF 109	S.M.A.W. Joint Designs, All Electrodes	3	60
* WEF 110	S.M.A.W. Joint Designs, All Positions	3	60
* WEF 115	Special Applications in Arc Welding	3	60
* WEF 116	A.S.M.E. Section IX Test E6010	3	60
* WEF 117	A.S.M.E. Section IX Test E7018	3	60

Second Year

WEF 200	Pipe Joint Design and Fabrication	3	60
WEF 201	Pipe Preparations and Test A.S.M.E., Section IX, E6010	3	60
WEF 202	Pipe Test A.S.M.E. Section IX, E7018	3	60
WEF 235	Pipe Test A.S.M.E. Section IX, E6010 & E7018	3	60
WEF 236	Pipe Joint Design	3	60
WEF 207	G.T.A.W. Safety and Welding, All Joints	3	60
WEF 237	G.T.A.W. Plate and Pipe Test	3	60
WEF 238	G.M.A.W. Plate and Pipe A.S.M.E. Section IX	3	60
WEF 210	Structural Shapes and Joint Design	3	60
WEF 215	Structural Layout and Fabrication	3	60
		60	1200

* Certificate Program

Required General Education Courses

English Elective	3	48
Math Elective	3	48
Social Science Elective	3	48
Elective	3	48
	12	180

Total Required Hours 72

138

Additional Major Courses

WEF 120	Welding for Construction and Mechanical Trades	3	60
WEF 216	Structural Fabrication	3	60
WEF 217	Maintenance Welding and Repair	3	60
WEF 218	Heavy Equipment Welding Repair	3	60
WEF 225	General Fabrication and Design	4	80

Water-Wastewater Technology Program (R)

Associate of Applied Science Degree

This program is designed to prepare students for entry level employment in jobs related to various water wastewater treatment methods. Main emphasis is placed on water-wastewater plant operations, procedures problems and costs.

Required Major Courses

Course No.	Title	Credits	Ct. Hrs.
WWT 100	Introduction to Water-Wastewater	3	48
WWT 105	Specific Calculations for W/W	4	60
WWT 119	Basic Water Analysis	5	80
WWT 120	W/W Equipment Maintenance	5	80

WWT 200	Hydraulics for Water-Wastewater	5	90
WWT 206	Design Interpretation — W/W Systems	5	83
WWT 210	Advanced Water Analysis	5	83
WWT 216	Biological & Bacteriological Water Analysis	5	83
WWT 217	WWT — Disinfection Techniques	3	45
WWT 297	Cooperative Work Experience	4	180
WWT Electives	Selected from W/W Additional	10	150
	Required Major Courses	54	985

* Students who are not presently employed in the profession will be required to take a minimum of 4 credit hours of WWT 297 Cooperative Work Experience, before they can receive their associate degree.

Students currently employed in W/W Field will be required to complete 4 hrs. of additional major courses to satisfy Coop. Work Experience Requirements.

**Required General Education
and Related Courses**

Course No.	Title	Credits	Ct. Hrs.
ENG	English Composition	3	45
MAT	Introductory Algebra	3	45
Soc. Sci.	Political Science, Social Science	3	45
Elec.	Psychology		
Math/Sci	Biology, Chemistry, Math, Physics	3	45
Elec.	Computer Science, Earth Science	12	180
	Total Required Hours	66	1165

Additional Major Courses

WWT 106	Mechanical Physical Treatment	2	30
WWT 107	Sludge Treatment	3	45
WWT 108	Advanced Treatment	3	45
WWT 109	Water Distribution Systems	3	45
WWT 110	Meter Shop Operations	3	45
WWT 115	Water Sources & Supply	3	45
WWT 116	Water Pre-Treatment Processes	2	30
WWT 117	Filters & Filtration Practices	3	45
WWT 118	Wastewater Collection Systems	3	45
WWT 121	Public Relations for W/W	3	45
WWT 122	Basic Electricity for W/W	3	45
WWT 125	Water Certification Rev. (C&D)	3	45
WWT 126	Wastewater Certification Rev. (C&D)	3	45
WWT 127	Advanced Treatment II	3	45

WWT 128	Water-Wastewater Terminology	1	15
WWT 129	Records & Record- keeping for W/W	2	30
WWT 130	Industrial Water Treatment	2	30
WWT 205	Prime Movers & Liquid Trans	3	45
WWT 207	Biological Treatment	3	45
WWT 208	Water-Wastewater Admin. & Finance	3	45
WWT 209	Clarification Processes for Water	3	45
WWT 226	T.V. Surveillance of Collection Systems	3	45
WWT 235	Water Softening Processes	1	15
WWT 236	Safety Practices for W/W	1	15
WWT 237	Fluoridation Practices	1	15
WWT 238	Emergency Planning for W/W	1	15
WWT 239	Crossconnection Control	1	15
WWT 240	Taste & Odor Control	1	15
WWT 245	Drinking Water Standards	1	15
WWT 246	Corrosion & Corrosion Control	1	15
WWT 250	Water-Wastewater Discharge Standards	1	15
WWT 299	Independent Study	1-4	45-180

Water Distribution (R)

Certificate Program

This certificate program is designed to provide the student with a broadly based exposure to the general functions and fundamental concepts of the water distribution area of the water/wastewater industry. Students currently employed in the water/wastewater field should acquire background and refresher training suitable for personal development directed towards job advancement.

Required Major Courses

Course No.	Title	Credits	Ct. Hrs.
WWT 105	Specific Calculations for W/W	4	60
WWT 109	Water Distribution — Basic	3	45
WWT 110	Meter Shop Operations	3	45
WWT 128	Water/Wastewater Terminology	1	15
WWT 200	Hydraulic for W/W	5	90
WWT 206	Design Interpretation W/W System	5	83
WWT 236	Safety Practices for W/W	1	15
		22	353

Water Treatment (R)

Certificate Program

This certificate program is designed to provide the student with a broadly based exposure to the general functions and fundamental concepts of the water treatment area of the water/wastewater industry. Students currently employed in the water/wastewater field should acquire background and refresher training suitable for personal development directed towards job advancement.

Required Major Courses

Course No.	Title	Credits	Ct. Hrs.
WWT 105	Specific Calculations for W/W	4	60
WWT 116	Pretreatment Processes for W/W	3	45
WWT 117	Filters & Filtration	3	45
WWT 128	Water/Wastewater Terminology	1	15
WWT 209	Clarification Processes	3	45
WWT 217	Disinfection Techniques	3	45
WWT 235	Water Softening Processes	1	15
WWT 236	Safety Practices for W/W	1	15
WWT 240	Taste & Odor Control	1	15
WWT 246	Drinking Water Standards	1	15
		<u>21</u>	<u>315</u>

Wastewater Collection (R)

Certificate Program

This certificate program is designed to provide the student with a broadly based exposure to the general functions and fundamental functions of the wastewater collection area of the water/wastewater industry. Students currently employed in the water/wastewater field should acquire background and refresher training suitable for personal development directed towards job advancement.

Required Major Courses

Course No.	Title	Credits	Ct. Hrs.
WWT 105	Specific Calculations	4	60
WWT 118	Wastewater Collection Systems	3	45
WWT 128	Water/Wastewater Terminology	1	15
WWT 206	Design Interpretation W/W Systems	5	75
WWT 226	T.V. Surveillance of Collection Systems	3	45
WWT 236	Safety Practices for W/W	1	15
		<u>20</u>	<u>260</u>



Wastewater Treatment (R)

Certificate Program

This certificate program is designed to provide the student with a broadly based exposure to the general functions and fundamental functions of the wastewater treatment area of the water/wastewater industry. Students currently employed in the water/wastewater field should acquire background and refresher training suitable for personal development directed towards job advancement.

Required Major Courses

Course No.	Title	Credits	Ct. Hrs.
WWT 105	Specific Calculations for W/W	4	60
WWT 106	Mechanical Physical Treatment	2	30
WWT 107	Sludge Treatment	3	45
WWT 128	Water/Wastewater Terminology	1	15
WWT 207	Biological Treatment	3	45
WWT 217	Disinfection Techniques	3	45
WWT 236	Safety Practices for W/W	1	15
WWT 250	National Pollution Discharge Elimination System	1	15
		<u>18</u>	<u>270</u>

Water Quality Control (R)

Certificate Program

This certificate program is designed to provide the student with a broadly based exposure to the general functions and fundamental concepts of the water quality control area of the water/wastewater industry. Students currently employed in the water/wastewater field should acquire background and refresher training suitable for personal development directed towards job advancement.

Required Major Course

Course No.	Title	Credits	Ct. Hrs.
WWT 119	Basic Water Analysis	5	90
WWT 128	Water/Wastewater Terminology	1	15
WWT 210	Advanced Water Analysis	5	83
WWT 219	Biological & Bacteriological Water Analysis	5	90
WWT 239	Cross Connection Control	1	15
WWT 245	Drinking Water Standards	1	15
WWT 250	National Pollution Discharge Elimination System	1	15
SCI 105	The Metric System	1	15
ENG 219	Technical Communications Intro to Technical Writing	3	45
		<u>22</u>	<u>368</u>

Water/Wastewater

Administration & Finance (R)

Certificate Program

This certificate program is designed to provide the student with a broadly based exposure to the general functions of the administration & finance areas of the water/wastewater industry. Students currently employed in the water/wastewater field should acquire background and refresher training suitable for personal development directed towards job advancement.

Required Major Courses

Course No.	Title	Credits	Ct. Hrs.
WWT 121	Public Relations for W/W	3	45
WWT 129	Records & Record Keeping	2	30
WWT 208	W/W Admin. & Finance	3	45
WWT 236	Safety Practices for W/W	1	15
POS 122	American State & Local Government	3	45
ENG 111	English Composition	3	45
MAN 116	Principles of Supervision	3	45
SPE 101	Introduction to Speech	3	45
WWT 128	Water/Wastewater Terminology	1	15
		<u>22</u>	<u>330</u>





Course Descriptions

Auto Body Painting

ABP 100 ORIENTATION ON SHOP POLICY AND AUTO BODY PAINTING SAFETY (N)

1 Credit Hour

Prerequisites: None

Demonstrate a knowledge of school policy on safety, parking, shop clean-up and grading procedures, list tools and equipment used in Auto Body Painting, demonstrate their use and care for student safety, perform safe handling of solvents and other flammable liquids, and personal safety devices. This knowledge will be evidenced by scoring 90 percent on the unit test.

10 Theory Hours — 5 Lab Hours — 15 Contact Hours

ABP 101 SANDING (N)

2 Credit Hours

Prerequisites: None

Define terms associated with sanding painted surfaces and determine the sanding procedures necessary to prepare the surface for refinishing. He should be able to featheredge, block sand, hand sand, and use power sanding equipment to prepare the surface for paint. This knowledge will be evidenced through demonstration and by scoring 90 percent on the unit test.

15 Theory Hours — 30 Lab Hours — 45 Contact Hours

ABP 102 PRIMING (N)

3 Credit Hours

Prerequisites: None

Mix primers and sealers to paint company specifications, perform all paint gun and air line regulator adjustments, clean, assemble paint gun, apply primer surfacer for spot and panel repair. This knowledge will be evidenced through demonstration and by scoring 90 percent on the unit test.

20 Theory Hours — 40 Lab Hours — 60 Contact Hours

ABP 103 PAINTING WITH ACRYLIC LACQUER (N)

3 Credit Hours

Prerequisites: None

Apply acrylic lacquer color and top coats, list variable temperature changes for thinners and solvents, demonstrate hand and machine compounding. This knowledge will be evidenced through demonstration and by scoring 90 percent on the unit test.

20 Theory Hours — 40 Lab Hours — 60 Contact Hours

ABP 104 SPOT PAINTING WITH ACRYLIC LACQUER (N)

3 Credit Hours

Prerequisites: None

Prepare practice panels for spot painting, perform sanding procedures, apply blending and compounding techniques. This knowledge will be evidenced through demonstration and by scoring 90 percent on the unit test.

20 Theory Hours — 40 Lab Hours — 60 Contact Hours

ABP 105 PAINTING WITH ACRYLIC ENAMEL AND ENAMEL (N)

3 Credit Hours

Prerequisites: None

Apply acrylic enamel, enamel color and topcoats, demonstrate the different techniques in their application, list paint problems, their causes and cures. This knowledge will be evidenced through demonstration and by scoring 90 percent on the unit test.

20 Theory Hours — 40 Lab Hours — 60 Contact Hours

ABP

111-114 GENERAL REFINISHING I, II, III, AND IV (N)

3 Credit Hours Each Course

Prerequisites: None

Perform live work under closely related shop and business conditions with emphasis placed upon quality work and flat rate. The student should be able to perform all operations from ABP 100 through ABP 105. This knowledge will be evidenced through demonstration and by scoring 90 percent on the unit test.

20 Theory Hours — 40 Lab Hours — 60 Contact Hours

ABP 115 GENERAL AUTO REFINISHING V (N)

3 Credit Hours

Prerequisites: None

Perform more refinishing in specific area to overcome deficiencies or provide enrichment with emphasis placed upon quality work and flat rate. This knowledge will be evidenced through demonstration and by scoring 90 percent on the unit test.

20 Theory Hours — 40 Lab Hours — 60 Contact Hours

Auto Body Service

ABS 100 ORIENTATION (N)

5 Credit Hours

Prerequisites: None

The student should know shop policies on safety, parking, shop clean-up, grading procedures, identification, use and care of hand power tools, equipment, and complete nomenclature of auto body parts. Knowledge will be evidenced by scoring 90 percent on unit test.

6 Theory Hours — 4 Lab Hours — 10 Contact Hours

ABS 105 REMOVE AND REPLACE FRONT SHEET METAL AND BOLT-ON BODY PARTS (N)

2.5 Credit Hours

Prerequisites: None

The student should know how to disassemble and reassemble all brackets, braces, bumpers, radiators, inner pans, fenders, hoods, grills, doors, locks, regulators, hinges and trunk lids, and be able to select the tools to remove and replace any one or all parts within factory specifications and required flat rate time. The knowledge will be evidenced by demonstration and scoring 90 percent on the unit test.

10 Theory Hours — 40 Lab Hours — 60 Contact Hours

ABS 107 REMOVE AND REPLACE HARDWARE, TRIM, AND GLASS (N)

3 Credit Hours

Prerequisites: None

On completion of this module, the student should know how to remove and replace and align all interior and exterior trim and hardware including: moldings, handles, seat tracks, trim panels on doors, quarters, center post and cowl panel. Also, remove and replace door and quarter glass and be able to select the tools to remove and replace any one or all parts within factory specifications and required flat rate time. The knowledge will be evidenced by demonstration and scoring 90 percent on the unit test.

20 Theory Hours — 40 Lab Hours — 60 Contact Hours

ABS 108 METAL REPAIR (N)

3 Credit Hours

Prerequisites: None

On completion of this module, the student should be able to remove minor damage from sheet metal using the proper procedures of hammer, dolly blocks, files and power sanders, and be able to select the proper tools and rough out, smooth a minor dent in sheet metal without stretching the metal. The knowledge will be evidenced by demonstration and scoring 90 percent on the unit test.

20 Theory Hours — 40 Lab Hours — 60 Contact Hours

ABS 109 HEAT DISTORTION AND SHRINKING AND GAS WELDING (N)

3 Credit Hours

Prerequisites: None

The student should learn the safety rules and procedures of setting up an oxy-acetylene torch, lighting of torch, how to control distortion in metal caused by heat, and different methods of shrinking stretched metal, weld four different joints in four positions. The knowledge will be evidenced by demonstration and by scoring 90 percent on the unit test.

20 Theory Hours — 40 Lab Hours — 60 Contact Hours

ABS 115 PATCH WELD REPAIRS OXYACETYLENE TIG AND MIG WELDING (N)

3 Credit Hours

Prerequisites: None

On completion of this module, the student should know how to remove damaged area from a panel and patch weld in new metal by using an oxyacetylene torch and mild steel welding rod or by spotting metal with mild steel and finishing with a flux coated brass rod. The student should also learn to weld in all positions with a MIG "continuous wire welder." The knowledge will be evidenced by demonstration and scoring 90 percent on the unit test.

20 Theory Hours — 40 Lab Hours — 60 Contact Hours

ABS 116 USE OF PLASTIC FILLER (N)

3 Credit Hours

Prerequisites: None

The student should be able to prepare a damaged surface to be filled and mix the material to manufacturer's specification, apply and finish filler. The knowledge will be evidenced by demonstration and scoring 90 percent on the unit test.

20 Theory Hours — 40 Lab Hours — 60 Contact Hours

ABS 117 PULL ROD AND PRY BAR REPAIRS (N)

3 Credit Hours

Prerequisites: None

On completion of this module, the student should be able to use dent pullers, pry bars, and pull rods to repair small dents and creases on double panels and hard-to-get areas, and metal finish or fill with body filler. The knowledge will be evidenced by demonstration and scoring 90 percent on the unit test.

20 Theory Hours — 40 Lab Hours — 60 Contact Hours

ABS 118 MINOR DENT REPAIR (N)

3 Credit Hours

Prerequisites: None

The student should be able to repair a small area of damage by using hammer and dolly, pry bars, pull rods, dent pullers, using shrinking procedures and either metal finish or use of body filler. The knowledge will be evidenced by demonstration and scoring 90 percent on the unit test.

20 Theory Hours — 40 Lab Hours — 60 Contact Hours

ABS 119 MINOR DENT REPAIR (N)

3 Credit Hours

Prerequisites: None

On completion of this module, the student should be able to repair damaged areas by cutting out and patch welding in new metal, bumping out dents with hammer and dolly, using pry bars, pull rods, dent pullers and the use of all shrinking procedures and finish area with a body filler. The knowledge will be evidenced by demonstration and scoring 90 percent on the unit test.

20 Theory Hours — 40 Lab Hours — 60 Contact Hours

ABS 130 FIBERGLASS REPAIR (N)

3 Credit Hours

Prerequisites: None

The student should identify types of material and equipment used for fiberglass repair and also demonstrate such repairs on fiberglass panels. The knowledge will be evidenced by demonstration and scoring 90 percent on the unit test.

20 Theory Hours — 40 Lab Hours — 60 Contact Hours

ABS 135 FIBERGLASS PANEL REPLACEMENT (N)

3 Credit Hours

Prerequisites: None

The student should be able to identify different panels or sections that are used and demonstrate how to reinforce spliced areas for strength and safety, select the tools and material to replace or section a panel. The knowledge will be evidenced by demonstration and scoring 90 percent on the unit test.

20 Theory Hours — 40 Lab Hours — 60 Contact Hours

**ABS 136 CLEANING, LEAK TESTING,
SOLDERING RADIATORS (N)**

3 Credit Hours

Prerequisites: None

The student should know all the safety factors of working with overheated radiators and the caustics used in cleaning a radiator for repair. They should know the technique in cleaning a radiator inside and out, and how to test it to locate a leak and be able to solder the leak and test their repair. The knowledge will be evidenced by demonstration and scoring 90 percent on the unit test.

20 Theory Hours — 40 Lab Hours — 60 Contact Hours

ABS 137 REPAIR, RECORE (RADIATOR) (N)

3 Credit Hours

Prerequisites: None

The student should know the selection of tools and how to straighten fins of a radiator, how to repair leaks, recore a radiator, how to repair upper and lower tanks boilout, rodout, back flush, and repair or replace damaged areas using all safety precautions. The knowledge will be evidenced by demonstration and scoring 90 percent on the unit test.

20 Theory Hours — 40 Lab Hours — 60 Contact Hours

ABS 139 USED CAR DETAILING — INTERIOR (N)

3 Credit Hours

Prerequisites: None

The student should be able to select tools and materials to clean and refinish engine and luggage compartment, upholstery, rugs, and glass. The knowledge will be evidenced by demonstration and scoring 90 percent on the unit test.

20 Theory Hours — 40 Lab Hours — 60 Contact Hours

ABS 140 USED CAR DETAILING — EXTERIOR (N)

3 Credit Hours

Prerequisites: None

The student should be able to select tools and materials for cleaning and polishing chrome, glass, vinyl tops, tires, and painted areas. The knowledge will be evidenced by demonstration and scoring 90 percent on the unit test.

20 Theory Hours — 40 Lab Hours — 60 Contact Hours

ABS 145 GLASS INSTALLATION (N)

3 Credit Hours

Prerequisites: None

The student should be able to select tools and materials to remove and replace necessary trim, stationary, moveable glass, both glue in and gasket-held windshields. The knowledge will be evidenced by demonstration and scoring 90 percent on the unit test.

20 Theory Hours — 40 Lab Hours — 60 Contact Hours

ABS 200 BODY ALIGNMENT (N)

3 Credit Hours

Prerequisites: None

The student should be able to identify damaged area and align body using hydraulic jacks, tram gauge, alignment equipment, read and use measuring devices. The knowledge will be evidenced by demonstration and scoring 90 percent on the unit test.

20 Theory Hours — 40 Lab Hours — 60 Contact Hours

ABS 201 FRAME REPAIR (N)

3 Credit Hours

Prerequisites: None

The student should be able to select the hookups using portable rail and power post to straighten and align frames on conventional and unitized type construction to manufacturer's specifications. The knowledge will be evidenced by demonstration and scoring 90 percent on the unit test.

20 Theory Hours — 40 Lab Hours — 60 Contact Hours

ABS

202-205 MAJOR DAMAGE REPAIRS I, II, III, IV (N)

3 Credit Hours Each Unit

Prerequisites: None

The student should be able to perform repairs and align auto bodies, repair and align sheet metal with the use of different types of equipment, gauges, and measuring devices. The knowledge will be evidenced by demonstration and scoring 90 percent on the unit test.

20 Theory Hours — 40 Lab Hours — 60 Contact Hours

ABS

**211-215 GENERAL AUTO BODY REPAIR
I, II, III, IV, V (N)**

3 Credit Hours Each Unit

Prerequisites: None

The student should be able to use all types of equipment and tools necessary to make repairs on various types of auto bodies with emphasis on speed and quality work. The knowledge will be evidenced by demonstration and scoring 90 percent on the unit test.

20 Theory Hours — 40 Lab Hours — 60 Contact Hours

Accounting

**ACC 109 BOOKKEEPING AND ACCOUNTING
(A,N,R,AEC)**

3 Credit Hours

Prerequisites: None

A study of the basic elements of accounting. Course includes common bookkeeping procedures in handling cash receipts and disbursements; in dealing with accounts receivable and payable; in maintaining journals and ledgers. Emphasis on practice.

45 Theory Hours — 45 Contact Hours

**ACC 110 PAYROLL AND PEGBOARD SYSTEMS
(A,N,R,AEC)**

3 Credit Hours

Prerequisites: ACC 109 or consent of instructor

A study of various payroll systems including the study of related laws and practices. Includes practice in preparation of payrolls, as well as review and reinforcement of Accounts Payable and Accounts Receivable.

45 Theory Hours — 45 Contact Hours

ACC 111 ACCOUNTING PRINCIPLES I (A,N,R,AEC)

5 Credit Hours

Prerequisites: BUS 110 Business Math or equivalent

An introductory study of accounting principles to acquaint the student with the theory and logic that underlie accounting procedures. Course content includes the accounting cycle, periodic reporting, notes, inventory, systems and controls and plant assets.

75 Theory Hours — 75 Contact Hours

ACC 112 ACCOUNTING PRINCIPLES II (A,N,R,AEC)

5 Credit Hours

Prerequisites: ACC 111 Accounting Principles I

A continuation of Accounting Principles I with emphasis on partnership and corporation accounting, department and branch accounting, introduction to cost systems, management reports and special analysis.

75 Theory Hours — 75 Contact Hours

ACC 115 ADVANCED BOOKKEEPING AND ACCOUNTING (A,N,R)

2 Credit Hours

Prerequisites: ACC 109 or consent of instructor

This is a continuation of ACC 109. The course is designed to allow the student to complete the requirements for ACC 111. Upon completion of ACC 109 and ACC 115 a student can enroll in ACC 112.

30 Theory Hours — 30 Contact Hours

ACC 211 INTERMEDIATE ACCOUNTING I (A,N,R,AEC)

5 Credit Hours

Prerequisites: ACC 112 Accounting Principles II

A review of the accounting cycle. A detailed study of the conceptual framework of accounting as it relates to the corporate structure.

75 Theory Hours — 75 Contact Hours

ACC 212 INTERMEDIATE ACCOUNTING II (A,N,R,AEC)

3 Credit Hours

Prerequisites: ACC 211 Intermediate Accounting I

A continuation of the study of the framework of accounting as begun in Intermediate I.

45 Theory Hours — 45 Contact Hours

ACC 215 ACCOUNTING SYSTEMS (A,N,R, AEC)

3 Credit Hours

Prerequisites: ACC 112 Accounting Principles II, CPB 100 Introduction to Computer Programming

A study of the integration of computers and accounting, and the installation and control of accounting systems in business. Emphasis on utilization of a computer to prepare management reports.

45 Theory Hours — 45 Contact Hours

ACC 216 GOVERNMENTAL ACCOUNTING (A,N,R,AEC)

3 Credit Hours

Prerequisites: ACC 111 Accounting Principles I, or consent of instructor

A study of the budgeting and fund control at the local, state, and federal levels. Includes the forecast and preparation of the budgetary requirement and anticipated revenue at each level of government. The accounting principles and procedures related to the government law, appropriate to the execution of the public law, concerning public funds are presented.

45 Theory Hours — 45 Contact Hours

ACC 221 COST ACCOUNTING (A,N,R,AEC)

4 Credit Hours

Prerequisites: ACC 112 Accounting Principles II

A study of the cost accumulation methods and the management reports. The concepts and principles of job order, process, standard and direct cost system; budgeting; planning and control of costs are included.

60 Theory Hours — 60 Contact Hours

ACC 231 INDIVIDUAL INCOME TAX I (A,N,R,AEC)

3 Credit Hours

Prerequisites: None

Designed to familiarize the student with the most frequently used tax forms, tax information and procedures. Coverage is limited to individual income tax preparation as required by the Internal Revenue Service and the Income Tax Division of the Colorado Revenue Department.

45 Theory Hours — 45 Contact Hours

ACC 232 INDIVIDUAL INCOME TAX II (A,N,R,AEC)

2 Credit Hours

Prerequisites: ACC 231 (N.A.)

Co-requisite: ACC 231 at Red Rocks.

A continuation of ACC 231; Individual Income Tax I. Includes in-depth study of gains and losses emphasizing business and investment property, problems will be solved through student research.

30 Theory Hours — 30 Contact Hours

ACC 233 INCOME TAX SERVICE (R)

3 Credit Hours

Prerequisites: None

This course offers the student the opportunity to prepare state and federal returns. This is a hands-on experience.

45 Theory Hours — 45 Contact Hours

Anthropology**ANT 105 AMERICAN DEAF CULTURES (N)**

3 Credit Hours

Prerequisite: None

The application of ethnographic principles and methods to deaf communities. Focus is upon language as the major vehicle for examining deaf and hearing community interaction while attempting to discover native categories, rules and strategies that affect adaptation in a hearing world.

45 Contact Hours

**ANT 111 PRINCIPLES OF ANTHROPOLOGY
(A,N,R,AEC)**

3 Credit Hours

Prerequisite: None

Introduces the study of culture. Highlights the nature of language, myths and key issues in the evolution of technology and the social institutions of man.

45 Contact Hours

**ANT 112 PRINCIPLES OF ANTHROPOLOGY
(N,R,AEC)**

3 Credit Hours

Prerequisites: None

An introductory study of culture including language, technology, social structure, arts and values.

45 Contact Hours

**ANT 119 ANTHROPOLOGY OF RELIGION
(A,R,AEC)**

3 Credit Hours

Prerequisite: None

Investigates the birth of religion in the life and experience of pre-literate and literate societies.

45 Contact Hours

**ANT 140 CONTEMPORARY AMERICAN CULTURE
(A,R,AEC)**

3 Credit Hours

Prerequisite: None

Studies and evaluates the evolution of cultural concepts and experiences in America.

45 Contact Hours

**ANT 150 ETHNOGRAPHY OF NORTH AMERICAN
INDIANS (A)**

3 Credit Hours

Prerequisite: None

Focuses on a comparative and analytical study of native North American Indian tribes, their relationships and characteristics.

45 Contact Hours

ANT 201 PHYSICAL ANTHROPOLOGY (N,R,AEC)

4 Credit Hours

Prerequisites: None

An introductory study of the fossil record, living animals, and cultural factors as they relate to human evolution. May be taken for science credit for non-science majors.

90 Contact Hours

ANT 202 PHYSICAL ANTHROPOLOGY (N,R,AEC)

4 Credit Hours

Prerequisites: None

An anthropological study of human variation, human biology, and the mechanics of evolution. May be taken for science credit for non-science majors.

90 Contact Hours

**ANT 205 ANTHROPOLOGY OF SEX AND GENDER
(N,R,AEC)**

3 Credit Hours

Prerequisites: None

A cross-cultural investigation of sexual roles in pre-industrial and industrial societies.

45 Contact Hours

**ANT 206 CULTURE IN THE WORLD TODAY: LATIN
AMERICA (R)**

3 Credit Hours

Prerequisites: None

A view of cultural dynamics.

45 Contact Hours

**ANT 207 CULTURE IN THE WORLD TODAY: THE
MIDDLE EAST (R)**

3 Credit Hours

Prerequisites: None

A view of cultural dynamics.

45 Contact Hours

**ANT 208 CULTURE IN THE WORLD TODAY:
AFRICA (R)**

3 Credit Hours

Prerequisites: None

A view of cultural dynamics.

45 Contact Hours

ANT 209 PRINCIPLES OF ARCHEOLOGY (R)

3 Credit Hours

Prerequisites: None

An introductory study of methods, techniques and theories of archeological investigation.

45 Contact Hours

ANT 215 THE NATURE OF LANGUAGE (R)

3 Credit Hours

Prerequisites: None

A survey of the basic structure, origin and development of language.

45 Contact Hours

ANT 216 PRINCIPLES OF ETHNOLOGY (R)

3 Credit Hours

Prerequisites: None

A view of the methods and concepts which anthropologists use in studying non-industrialized cultures.

45 Contact Hours

**ANT 225 CURRENT TOPICS IN ANTHROPOLOGY
(R)**

3 Credit Hours

Prerequisites: 6 Hours of Anthropology

An analysis of topics of anthropological interest varying from term to term.

45 Contact Hours



Appliance and Refrigeration Technology

APT 218 AUTOMATIC WASHERS I (A)

3 Credit Hours

Prerequisites: RAC 100 series or equivalent experiences

Examines control devices and the electrical circuits common to most automatic washers, and the methods of troubleshooting electrical circuits.

24 Theory Hours — 36 Lab Hours — 60 Contact Hours

APT 219 CLOTHES DRYERS I (A)

3 Credit Hours

Prerequisites: RAC 100 series or equivalent experiences

Examination of circuits, control devices, diagnostic and repair procedures on various makes of automatic electric clothes dryers.

24 Theory Hours — 36 Lab Hours — 60 Contact Hours

APT 220 KITCHEN EQUIPMENT I (A)

3 Credit Hours

Prerequisites: RAC 100 series or equivalent experiences

Examines the repair of automatic dishwasher, disposals and domestic water conditioners.

24 Theory Hours — 36 Lab Hours — 60 Contact Hours

APT 225 REFRIGERATORS/FREEZERS I (A)

3 Credit Hours

Prerequisites: RAC 100 series or equivalent experiences

Presents the study and repair of various makes and models of upright refrigerator/freezers and chest freezers.

24 Theory Hours — 36 Lab Hours — 60 Contact Hours

APT 226 ROOM AIR CONDITIONERS (A)

3 Credit Hours

Prerequisites: RAC 100 series or equivalent experiences

Presents circuits, control devices, diagnostic and repair procedures on various makes of room air conditioners.

24 Theory Hours — 36 Lab Hours — 60 Contact Hours

APT 227 AUTOMATIC WASHERS II (A)

3 Credit Hours

Prerequisites: RAC 100 series or equivalent experiences

Presents troubleshooting, and the methods and procedures to adjust, repair or replace components on General Electric, Westinghouse, Maytag, Kelvinator and D&M machines as available.

24 Theory Hours — 36 Lab Hours — 60 Contact Hours

APT 228 CLOTHES DRYERS II (A)

3 Credit Hours

Prerequisites: RAC 100 series or equivalent experiences

Presents a study of circuits, control devices, diagnostic and repair procedures on various makes of automatic gas clothes dryers.

24 Theory Hours — 36 Lab Hours — 60 Contact Hours

APT 229 KITCHEN EQUIPMENT II (A)

3 Credit Hours

Prerequisites: RAC 100 series or equivalent experiences

Presents the study and repair of gas and electric ranges and microwave ovens, and trash compactors.

24 Theory Hours — 36 Lab Hours — 60 Contact Hours

APT 230 REFRIGERATORS/FREEZERS II (A)

3 Credit Hours

Prerequisites: RAC 100 series or equivalent experience

Presents the study and repair of various makes and models of upright refrigerator/freezers and chest freezers.

24 Theory Hours — 36 Lab Hours — 60 Contact Hours

APT 235 AUTOMATIC WASHERS II (A)

3 Credit Hours

Prerequisites: RAC 100 series or equivalent experiences

Presents troubleshooting and the methods and procedures to adjust, repair or replace the components on Norge, Whirlpool, Speed Queen, Frigidaire and Franklin machines.

24 Theory Hours — 36 Lab Hours — 60 Contact Hours

Art

ART 101 BASIC DESIGN I (A,N,R,AEC)

3 Credit Hours

Prerequisites: None

Fundamentals of form, color, visual perception, principles of composition, organization and structure introduced with experimentation in two-dimensional design.

90 Contact Hours

ART 102 BASIC DESIGN (A,N,R,AEC)

3 Credit Hours

Prerequisites: ART 101 or permission of instructor. Continuation of ART 101.

90 Contact Hours

ART 111 BASIC DRAWING I (A,N,R,AEC)

3 Credit Hours

Prerequisites: None

Freehand drawing covering a selection of subjects, proportion perspective, line, texture, value and composition. Media includes pencil, conte crayon, charcoal, and ink.

90 Contact Hours

ART 112 BASIC DRAWING II (A,N,R,AEC)

3 Credit Hours

Prerequisites: ART 111 or permission of instructor.

Introduction of color into drawing. Drawing in varied and mixed media, emphasizing experimentation. Broad range of size and material stressing composition and concept. Introduction to drawing the human figure.

90 Contact Hours

ART 131 BASIC WATER COLOR AND WATER MEDIA (N,R)

3 Credit Hours

Prerequisites: None

Transparent and opaque water color painting.

90 Contact Hours

ART 132 BASIC WATER AND COLOR AND WATER MEDIA (N,R)

3 Credit Hours

Prerequisites: ART 131 or permission of instructor.

Continuation of ART 131.

90 Contact Hours

ART 141 OIL AND ACRYLIC PAINTING (A,N,R)

3 Credit Hours

Prerequisites: None

Investigation of the materials of the painter in controlling form and space.

90 Contact Hours

ART 142 OIL AND ACRYLIC PAINTING (A,N,R)

3 Credit Hours

Prerequisites: ART 141 or permission of instructor

Continuation of ART 141.

90 Contact Hours

ART 151 BASIC SCULPTURE (R)

3 Credit Hours

Prerequisites: None

A creative approach to three dimensional design in sculpture, modeling, assembling, and construction in a variety of materials.

90 Contact Hours

ART 152 BASIC SCULPTURE (R)

3 Credit Hours

Prerequisites: None

Continuation of ART 151.

90 Contact Hours

ART 161 POTTERY (N,R)

3 Credit Hours

Prerequisites: None

Design and construction of pottery using various hand-building methods.

90 Contact Hours

ART 162 POTTERY (N,R)

3 Credit Hours

Prerequisites: None

Introduction to throwing techniques using potter's wheel.

90 Contact Hours

ART 163 POTTERY (N,R)

3 Credit Hours

Prerequisites: None

Design and throwing of the basic forms with exploration in glazing techniques.

90 Contact Hours

ART 171 TEXTILE DESIGN AND WEAVING (R)

3 Credit Hours

Prerequisites: None

Looms, weaving and textile design techniques, studio experience in weaving, batik, and other textile design.

90 Contact Hours

ART 172 TEXTILE DESIGN AND WEAVING (R)

3 Credit Hours

Prerequisites: ART 171 or permission of instructor

Continuation of ART 171.

90 Contact Hours

ART 181 BASIC METAL TECHNIQUES IN JEWELRY DESIGN (R)

3 Credit Hours

Prerequisites: None

Construction of jewelry designs in precious metals and small casting techniques.

90 Contact Hours

ART 182 BASIC CASTING FOR JEWELRY DESIGN (R)

3 Credit Hours

Prerequisites: ART 181 or permission of instructor.

Continuation of ART 181. Centrifugal and vacuum casting of precious metals using lost-wax techniques, wax working techniques, mold making and wax injection.

90 Contact Hours

ART 190 ART APPRECIATION (A,N,R,AEC)

3 Credit Hours

Prerequisites: None

A study of the world's art masterpieces.

45 Contact Hours

ART 191 INTRODUCTION TO ART: A SURVEY OF THE MASTERPIECES OF THE WORLD (N,R,AEC)

3 Credit Hours

Prerequisites: None

Art appreciation and history of the masterpieces of the world from pre-history through the Renaissance.

45 Contact Hours

ART 192 INTRODUCTION TO ART: A SURVEY OF THE MASTERPIECES OF THE WORLD (N,R,AEC)

3 Credit Hours

Prerequisites: None

A continuation of ART 191, from baroque through modern art.

45 Contact Hours

ART 195 THE ART OF AFRICA AND BLACK AMERICANS (A)

3 Credit Hours

Prerequisites: None

A critical examination of the art of Africa and its relationship to the artistic development of the United States.

45 Contact Hours

ART 196 CHICANO ART HISTORY (A)

3 Credit Hours

Prerequisites: None

A critical examination of Chicano art and its relationship to the artistic development in the Third World. Will include a study of mural painting.

45 Contact Hours

ART 197 NATIVE AMERICAN ARTS AND CONTEMPORARY DEVELOPMENT (A)

3 Credit Hours
Prerequisites: None
History of Native American art with emphasis on painting sculpture, and crafts.
45 Contact Hours

ART 201 SECOND-YEAR BASIC DESIGN (R,AEC)

3 Credit Hours
Prerequisites: None
Applied techniques of layout and design.
90 Contact Hours

ART 202 SECOND-YEAR BASIC DESIGN (R,AEC)

3 Credit Hours
Prerequisites: None
Continuation of ART 201.
90 Contact Hours.

ART 211 SECOND-YEAR DRAWING (A,N,R,AEC)

3 Credit Hours
Prerequisites: None
Experimentation using a variety of media.
90 Contact Hours

ART 212 SECOND-YEAR DRAWING (A,N,R,AEC)

3 Credit Hours
Prerequisites: ART 211 or permission of instructor
Continuation of ART 211. Advanced concepts seeking more individualized solutions.
90 Contact Hours

ART 215 ADVERTISING DESIGN (R)

3 Credit Hours
Prerequisites: None
Basic class to prepare graphic design students for careers in the field of Advertising Design.
90 Contact Hours

ART 216 ADVERTISING DESIGN (R)

3 Credit Hours
Prerequisites: None
Continuation of ART 215.
90 Contact Hours

ART 217 LETTERING AND LAYOUT (R)

3 Credit Hours
Prerequisites: None
Basic class dealing with lettering types and styles and problems of layout as they apply to Advertising Design Students.
90 Contact Hours

ART 218 LETTERING AND LAYOUT (R)

3 Credit Hours
Prerequisites: None
Continuation of ART 217.
90 Contact Hours

ART 221 FIGURE DRAWING I (A,N,R,AEC)

3 Credit Hours
Prerequisites: None
Beginning drawing of the human figure.
90 Contact Hours

ART 222 FIGURE DRAWING II (A,N,R,AEC)

3 Credit Hours
Prerequisites: None
Continuation of ART 221.
90 Contact Hours

ART 231 SECOND-YEAR WATER COLOR (N,R)

3 Credit Hours
Prerequisites: None
Emphasis on solutions in water media on a more individualized basis.
90 Contact Hours.

ART 232 SECOND-YEAR WATER COLOR (N,R)

3 Credit Hours
Prerequisites: None
Continuation of ART 231.
90 Contact Hours

ART 241 SECOND-YEAR OIL AND ACRYLIC PAINTING I (A,N,R)

3 Credit Hours
Prerequisites: ART 142 or permission of instructor.
Mixed media through problems involving landscape, still life, abstraction and non-objective painting.
90 Contact Hours

ART 242 SECOND-YEAR OIL AND ACRYLIC PAINTING II (A,N,R)

3 Credit Hours
Prerequisites: None
Continuation of ART 241.
90 Contact Hours

ART 251 BASIC SCULPTURE I (N)

3 Credit Hours
Prerequisites: None
A creative approach to three dimensional design in sculpture, modeling, assembling, and construction in a variety of materials.
90 Contact Hours

ART 252 BASIC SCULPTURE II (N)

3 Credit Hours
Prerequisites: None
Continuation of ART 251.
90 Contact Hours

ART 261 SECOND-YEAR POTTERY (N,R)

3 Credit Hours
Prerequisites: None
Intermediate wheelwork with advanced throwing problems. Continuation involvement in glazing and firing techniques.
90 Contact Hours

ART 262 SECOND-YEAR POTTERY (N,R)

3 Credit Hours

Prerequisites: None

Continuation of ART 261. More advanced throwing problems in one of three areas: (1) tableware, (2) other functional forms, (3) art forms.

90 Contact Hours

ART 263 CERAMICS DESIGN (N,R)

3 Credit Hours

Prerequisites: None

Advanced study in throwing.

90 Contact Hours

ART 266 PRIMITIVE POTTERY (R)

3 Credit Hours

Prerequisites: None

Hand building and use of Primitive Firing Methods.

90 Contact Hours

ART 267 ADVANCED HAND BUILDING TECHNIQUES (R)

3 Credit Hours

Prerequisites: None

Advanced study in hand building. Building and firing large forms, including mold-making techniques.

90 Contact Hours

ART 268 RAKU POTTERY (R)

3 Credit Hours

Prerequisites: None

Raku as an art form with various hand building and throwing techniques.

90 Contact Hours

ART 269 GLAZE FORMULATION (R)

3 Credit Hours

Prerequisites: None

The study of glaze materials and various firing techniques. Loading and firing of kilns, formulating glazes.

90 Contact Hours

ART 271 PRINTMAKING I (A,N,R)

3 Credit Hours

Prerequisites: Basic Drawing and/or Basic Design

A study of hand printing techniques: silkscreen printing and intaglio. Emphasis in this class is on silkscreen to include glue, films and photographic with an introduction to intaglio to include etching and collographs. (Entry-level skills: drawing and/or design skills.)

90 Contact Hours

ART 272 PRINTMAKING II (A,N,R)

3 Credit Hours

Prerequisite: ART 271

A continuation of ART 271 with emphasis on intaglio, planographs, relief and stencil. Students will work with woodcuts, etchings and serigraphy with special attention on design and craftsmanship.

90 Contact Hours

ART 281 SECOND-YEAR METALSMITHING (R)

3 Credit Hours

Prerequisites: None

Creating hollow forms by raising, sinking, stretching, and polishing metals. Also includes pattern making for large hollow constructed forms.

90 Contact Hours

ART 282 SECOND-YEAR METALSMITHING (R)

3 Credit Hours

Prerequisites: None

Continuation of ART 281. Emphasis on advanced design and experimentation of advanced techniques.

90 Contact Hours

ART 291 HISTORY OF AMERICAN ART I (N,R)

3 Credit Hours

Prerequisites: None

Major artists and movements in America to 1865.

45 Contact Hours

ART 292 HISTORY OF AMERICAN ART II (N,R)

3 Credit Hours

Prerequisites: None

Continuation of ART 291. American artists and movements from 1865 to the present.

45 Contact Hours

ART 295 ART IN THE COMMUNITY (A)

3 Credit Hours

Prerequisites: ART 111 or ART 101 and 102 or permission of instructor.

Studies art for public spaces. Areas of application include both painting and sculpture for public buildings as well as design for community space. The emphasis is on environmental needs. (Entry-level skills: a fundamental knowledge of the principles of art.)

90 Contact Hours

ART 299 INDEPENDENT STUDY (A,N,R,AEC)

1-3 Credit Hours

Prerequisite: Consent of instructor

Please refer to the general description of Independent Study in this catalog.

45-90 Contact Hours

American Sign Language**ASL 100 INTRODUCTION TO SIGN LANGUAGE FOR EMERGENCY PERSONNEL (N)**

1 Credit Hour

Overview of deaf awareness and system of communication used by deaf individuals. Coursework includes non-verbal exercises, emergency situation role-plays and basic sign vocabulary for emergencies.

15 Theory Hours — 15 Contact Hours

ASL 101 BASIC AMERICAN SIGN LANGUAGE (N)

3 Credit Hours

Introduction to American Sign Language for enrichment and growth. A special unit is included each semester dealing with an area of particular interest to enrolled students.

45 Theory Hours — 45 Contact Hours

ASL 102 BASIC AMERICAN SIGN LANGUAGE (N)

3 Credit Hours

Prerequisite: ASL 101

Continuation of ASL 101.

45 Theory Hours — 45 Contact Hours

ASL 111 AMERICAN SIGN LANGUAGE I (N)

5 Credit Hours

Co-requisite: ANT 105

Basic course in American Sign Language with focus on grammatical structure and receptive skills. (For students in the Interpreter Training Program.)

60 Theory Hours — 23 Lab Hours — 83 Contact Hours

ASL 112 AMERICAN SIGN LANGUAGE II (N)

5 Credit Hours

Prerequisite: ASL 111

Continuation of American Sign Language I with more focus on expressive skills.

60 Theory Hours — 23 Lab Hours — 83 Contact Hours

ASL 201 STRUCTURE OF ASL I (N)

2 Credit Hours

Prerequisite: ASL 112

Co-requisite: ASL 211 or ASL 212

Introduction to the Sign Language Continuum and basic structure of the sign and grammatical categories in ASL.

30 Theory Hours — 30 Contact Hours

ASL 202 STRUCTURE OF ASL II (N)

3 Credit Hours

Prerequisite: ASL 210

The study of grammatical categories (continued from Structure of ASL I) and an introduction to the study of grammatical relations in ASL sentences.

45 Theory Hours — 45 Contact Hours

ASL 211 AMERICAN SIGN LANGUAGE III (N)

3 Credit Hours

Prerequisite: ASL 112 with B or better

Continuation of ASL 112 with focus on conversational skills and basic translation. Stokoe notation will be included.

45 Theory Hours — 45 Contact Hours

ASL 212 AMERICAN SIGN LANGUAGE IV (N)

3 Credit Hours

Prerequisite: ASL 211 with B or better or be enrolled in Sign Teacher Program (STP)

Subtleties of ASL for the skilled signer.

45 Theory Hours — 45 Contact Hours

Architectural Technology**ATE 100 BASIC ARCHITECTURAL TECHNIQUES (N)**

3 Credit Hours

Prerequisites: None

Given applicable instructional standards, the student should be able to demonstrate basic, professional, architectural drafting skills in areas of lettering, sketch technique, and formal instrument drawing; the latter to include proficiency in orthographic, oblique, isometric and "geometric construction" fundamentals.

20 Theory Hours — 40 Lab Hours — 60 Contact Hours

ATE 106 CONSTRUCTION DRAWING FUNDAMENTALS (N)

3 Credit Hours

Prerequisites: ATE 100 or consent of instructor.

With concept sketches and resource reference furnished, the student should be able to draw reproduce, and assemble a professional set of construction working drawings of a small wood frame structure.

20 Theory Hours — 40 Lab Hours — 60 Contact Hours

ATE 107 RESIDENTIAL CONSTRUCTION DRAWINGS (N)

6 Credit Hours

Prerequisites: ATE 106 or consent of instructor.

From either a concept sketch or set of preliminary drawings, the student should be able to draw the major portion of a set of professional construction working drawings for a residence.

40 Theory Hours — 80 Lab Hours

120 Contact Hours

ATE 108 RESIDENTIAL CONSTRUCTION DETAILS (N)

3 Credit Hours

Prerequisites: ATE 107 or consent of instructor.

Continuing with the same references as ATE 107, the student should be able to draw selected assigned detail for the residence started in ATE 107, arrange the total project in proper sequence, reproduce and bind same into a comprehensive set of prints.

20 Theory Hours — 40 Lab Hours — 60 Contact Hours

ATE 109 LIGHT COMMERCIAL CONSTRUCTION DRAWINGS (N)

6 Credit Hours

Prerequisites: ATE 108 or consent of instructor.

From given requirements such as a set of presentation drawing, the students should be able to draw the major portion of a professional set of construction working drawings for an assigned skeleton-framed building.

40 Theory Hours — 80 Lab Hours

120 Contact Hours

ATE 110 LIGHT COMMERCIAL CONSTRUCTION DETAILS (N)

6 Credit Hours

Prerequisites: ATE 109 or consent of instructor.

Given standard references for detailing a structure, the student should be able to draw selected, assigned details for the skeleton-framed building started in ATE 109; arrange the total project in proper sequence reproduce, and bind same into a comprehensive set of prints.

40 Theory Hours — 80 Lab Hours

120 Contact Hours



ATE 115 THREE-DIMENSIONAL DRAWING METHODS (N)

3 Credit Hours

Prerequisites: ATE 110 or consent of instructor.

The student should be able to draw assigned objects and buildings by perspective drawing methods, correctly adding shades and shadows thereon, to the professional standards provided and demonstrated by the instructor. Progressive proficiency in isometric and oblique methods should also be achieved.

20 Theory Hours — 40 Lab Hours — 60 Contact Hours

ATE 200 PRELIMINARY WORKING DRAWINGS DEVELOPMENT (N)

3 Credit Hours

Prerequisites: ATE 115 and math elective or consent of instructor.

Utilizing architectural sketches furnished, the student should be able to produce, to scale, preliminary plans developed in accordance with building codes, zoning ordinances, and regulatory agencies.

20 Theory Hours — 80 Lab Hours

20 Contact Hours

ATE 205 STRUCTURAL MATERIALS (N)

3 Credit Hours

Prerequisites: ATE 200 or consent of instructor.

Given load conditions super-imposed on building materials, the student should be able to detail structural components, reflecting basic standard strength of materials procedures.

20 Theory Hours — 40 Lab Hours — 60 Contact Hours

ATE 206 STRUCTURAL FRAMING SYSTEMS (N)

3 Credit Hours

Prerequisites: ATE 205 or consent of instructor.

Building plans furnished, the student should be able to draw framing plans, depicting the use of various structural materials, in accordance with standard construction practices.

20 Theory Hours — 40 Lab Hours — 60 Contact Hours

ATE 207 HEATING, VENTILATING, AIR CONDITIONING SYSTEMS (HVAC) (N)

3 Credit Hours

Prerequisites: ATE 206 or consent of instructor.

Using the assigned text as a guide, the student should be able to draw basic heating, ventilating, and air conditioning systems.

20 Theory Hours — 40 Lab Hours — 60 Contact Hours

ATE 208 ELECTRICAL SYSTEMS (N)

3 Credit Hours

Prerequisites: ATE 207 or consent of instructor.

Code requirements applied, the student should be able to design the distribution system of a commercial building.

20 Theory Hours — 40 Lab Hours — 60 Contact Hours

ATE 209 PLUMBING SYSTEMS (N)

3 Credit Hours

Prerequisites: ATE 208 or consent of instructor.

Given a building plan, the student should be able to layout waste and water lines according to codes.

20 Theory Hours — 40 Lab Hours — 60 Contact Hours

ATE 210 BUILDING SPECIALTIES (N)

6 Credit Hours

Prerequisites: ATE 209 or consent of instructor.

Examples provided, the student should be able to produce detailed drawings of assigned special equipment in buildings.

40 Theory Hours — 80 Lab Hours

120 Contact Hours

ATE 215 PLANNED BUILDING GROUPS (N)

3 Credit Hours

Prerequisites: ATE 210 or consent of instructor.

Conforming to regulatory agencies' requirements, the student should be able to produce a detailed site plan of an assigned building group.

20 Theory Hours — 40 Lab Hours — 60 Contact Hours

Automotive Mechanics

AUM 100 PRINCIPLES OF ENGINE OPERATION, BASIC ELECTRICITY, AND IGNITION SYSTEMS (N)

6 Credit Hours

Prerequisite: None

Read schematic diagrams, use test equipment, and diagnose probable causes of electrical failure in automotive electrical systems. This will be evidenced by demonstrations and a series of unit tests.

40 Theory Hours — 80 Lab Hours

120 Contact Hours

AUM 105 BASIC ELECTRICITY AND IGNITION SYSTEMS (R)

3 Credit Hours

Prerequisites: None

Through careful study of the material and proper use of the concepts, the student should be able to read schematic diagrams, use test equipment and diagnose probable causes of electrical failure in automotive electrical systems. This will be evidenced by demonstrations and a series of unit tests.

15 Theory Hours — 45 Lab Hours — 60 Contact Hours

AUM 106 CHARGING AND STARTING SYSTEMS (N,R)

3 Credit Hours

Prerequisites: None

Diagnose, repair and replace charging system components; also test, remove, and repair starters on domestic automobiles. This knowledge will be evidenced through demonstrations and unit tests.

20 Theory Hours — 40 Lab Hours — 60 Contact Hours

AUM 107 FUEL SYSTEMS (N,R)

3 Credit Hours

Prerequisites: None

Apply the theories of operation of automotive fuel systems to determine malfunctions in engine fuel systems; also rebuild and make proper adjustments on one, two and four barrel carburetors. This knowledge will be evidenced through unit tests and demonstrations.

20 Theory Hours — 40 Lab Hours — 60 Contact Hours

AUM 108 ELECTRONIC TESTING AND EMISSION CONTROLS (R)

3 Credit Hours

Prerequisites: None

After completion of this course, the student should understand how to operate all components on the oscilloscope and make proper tests using the electronic instruments. The student should learn how to hook up the oscilloscope to an automobile and be able to interpret malfunctions that appear on the screen. This knowledge will be demonstrated through unit tests and demonstrations of the performance abilities by properly operating the electronic test instruments.

15 Theory Hours — 45 Lab Hours — 60 Contact Hours

AUM 109 EMISSION CONTROL (R)

3 Credit Hours

Prerequisite: None

After completion of this course, the student should understand the theory of operation of emission control components. The student will demonstrate how to locate malfunctioning components and how to make proper replacements or repairs. Unit test and on-the-car testing will be conducted to evaluate the student's ability on emission control malfunctions.

15 Theory Hours — 45 Lab Hours — 60 Contact Hours

AUM 110 ELECTRONIC TESTING AND EMISSION CONTROLS (N)

3 Credit Hours

Prerequisites: None

Operate an electronic engine tester and interpret the test results. The student should also know the function of emission control components, operate and interpret the emission tester results and make the necessary repairs. These abilities will be evidenced by written and performance tests.

20 Theory Hours — 40 Lab Hours — 60 Contact Hours

AUM 115 DRUM BRAKE SYSTEMS (N)

3 Credit Hours

Prerequisites: None

To apply the theory of hydraulic principles, brake operation, and identify brake parts and define terms associated with brake systems. The student should demonstrate the ability to replace shoe and lining assemblies, recondition wheel cylinders and master cylinders and properly bleed a brake system. This knowledge will be evidenced by demonstration and a series of unit tests.

20 Theory Hours — 40 Lab Hours — 60 Contact Hours

AUM 116 DISC BRAKE SYSTEMS (N)

3 Credit Hours

Prerequisites: None

Describe the purpose and operation of disc brakes, identify parts and define terms associated with disc brake systems. The student should demonstrate the ability to remove and replace and overhaul a caliper assembly; replace brake pads, and properly bleed a disc brake system. This knowledge will be evaluated by demonstration and a series of unit tests.

20 Theory Hours — 40 Lab Hours — 60 Contact Hours

AUM 117 WHEEL ALIGNMENT (N)

3 Credit Hours

Prerequisites: None

Explain the principles and purpose of wheel alignment, and the various methods of adjustments. The student should demonstrate the ability to align an automotive front end system, identify the parts, and define terms associated with wheel alignment. This knowledge will be evidenced by demonstration and unit tests.

20 Theory Hours — 40 Lab Hours — 60 Contact Hours

AUM 118 WHEEL BALANCE AND SUSPENSION (N)

3 Credit Hours

Prerequisites: None

Explain the theory and purpose of wheel balance and suspension systems. The student should demonstrate the ability to balance wheels, replace suspension parts and identify parts and define terms associated with wheel balance and suspension systems. This knowledge will be evidenced by demonstration and unit tests.

20 Theory Hours — 40 Lab Hours — 60 Contact Hours

AUM 119 MANUAL AND POWER STEERING GEARS (N)

3 Credit Hours

Prerequisites: None

Identify the components and explain the purpose of the drive line and universal joints correctly, repair and replace; also be able to explain the purpose of the differential, identify the different types; remove, check, disassemble, reassemble, adjust, and replace a standard differential assembly. This knowledge will be evidenced through demonstration and unit tests.

20 Theory Hours — 40 Lab Hours — 60 Contact Hours

AUM 120 AUTO MECHANICS FOR MECHANICAL TRADES (R)

3 Credit Hours

Prerequisites: None

Orientation to the field of auto mechanics. General principles, initial techniques and skill development, and how auto mechanics relates to the various trades.

15 Theory Hours — 45 Lab Hours — 60 Contact Hours

AUM 125 DRUM AND DISC BRAKE SYSTEMS (R)

6 Credit Hours

Prerequisites: None

After completion of this course the student will be able to explain hydraulic principles, brake operation, and identify brake parts and define terms associated with brake systems.

30 Theory Hours — 90 Lab Hours

120 Contact Hours

AUM 126 WHEEL ALIGNMENT, BALANCE AND SUSPENSION (R)

6 Credit Hours

Prerequisites: None

After the completion of this course, the student will be able to explain the principles and purposes of wheel alignment and suspension, and the various methods of adjustments, and to explain the theory and purpose of wheel balance and suspension systems.

90 Theory Hours — 30 Lab Hours

120 Contact Hours

UM 205 CLUTCHES AND MANUAL TRANSMISSION (N,R)

Credit Hours

Prerequisites: None

Describe the construction and operation of the clutch assembly. The student should demonstrate the ability to move, inspect and correctly replace a clutch assembly. This knowledge will be evidenced through demonstration and unit tests.

20 Theory Hours — 40 Lab Hours — 60 Contact Hours

UM 206 DRIVE LINES AND DIFFERENTIALS (N,R)

Credit Hours

Prerequisites: None

Identify the components and explain the purpose of the drive line and universal joints correctly. The student should be able to repair or replace drive line components when necessary. Also, the student should be able to explain the purpose of the differential, identify the different types; remove, check, disassemble, reassemble, adjust, and replace a standard differential assembly. This knowledge will be evidenced through demonstration and unit tests.

20 Theory Hours — 40 Lab Hours — 60 Contact Hours

UM 207 AUTOMATIC TRANSMISSION, THEORY AND MAINTENANCE (N,R)

Credit Hours

Prerequisites: None

State the purpose and identify the component parts of an automatic transmission. Given a hydraulic circuit, test pressures and transmission symptoms, the student should be able to predict the probable cause or causes of automatic transmission failures three out of five times.

20 Theory Hours — 40 Lab Hours — 60 Contact Hours

UM 208 AUTOMATIC TRANSMISSION REBUILD (N,R)

Credit Hours

Prerequisites: None

Perform the checks, tests and adjustments associated with automatic transmission service. Given an automatic transmission in need of an overhaul, replacement parts and specifications, the student should be able to return the transmission to manufacturer's specifications within the flat rate time.

40 Theory Hours — 80 Lab Hours

20 Contact Hours

UM 210 AUTOMOTIVE DIESEL SERVICE (R)

Credit Hours

Prerequisites: None

This course is an introductory study of four-cycle Diesel engines, currently used in some automobiles. It includes fuel, coolant and lubricating systems, basic servicing and maintenance. This knowledge will be evidenced by unit testing.

45 Theory Hours — 45 Lab Hours — 60 Contact Hours

AUM 215 ENGINE OPERATION, DIAGNOSIS, DISASSEMBLY, AND MEASUREMENT (N,R)

6 Credit Hours

Prerequisites: AUM 105-108

Describe and explain the operation of an automobile engine and the function of components. The student should also be able to explain overhaul procedures, disassembly and measurement of engine parts with precision tools. To define terms and procedures associated with overhaul of cylinder heads and block assemblies. This knowledge will be evidenced through demonstration and unit tests.

40 Theory Hours — 80 Lab Hours

120 Contact Hours

AUM 216 ENGINE RECONDITION AND ASSEMBLY (N,R)

3 Credit Hours

Prerequisites: AUM 105-108

Explain overhaul and assembly procedures; identify the components and correct usage of assembly procedures. The student should also be able to time and make final adjustments to the engine. This knowledge will be evidenced by shop performance and unit tests.

20 Theory Hours — 40 Lab Hours — 60 Contact Hours

AUM 217 AIR CONDITIONING, THEORY, SERVICE AND SAFETY (N,R)

3 Credit Hours

Prerequisites: None

List the principles of air conditioning and define related terms; identify the components of a basic air conditioning unit and match the function to the component; identify tools and special equipment used for air conditioning service. The student should also be able to perform minor repairs, to discharge, evacuate, leaktest and charge a basic unit. This knowledge will be evidenced through performance and unit tests.

20 Theory Hours — 40 Lab Hours — 60 Contact Hours

AUM 218 GENERAL SERVICE REPAIR (N,R)

3 Credit Hours

Prerequisite: None

This module is designed for work on automobiles and any work in which the student needs to complete the program. It may include any work that fits the instructional program in which the student has had experience.

20 Theory Hours — 40 Lab Hours — 60 Contact Hours

AUM 219 CUSTOMER SERVICE (N,R)

7 Credit Hours

Prerequisite: None

This module is designed for the student desiring additional work experience in areas in which he feels deficient or in which he may want to specialize. This may be arranged on an hourly basis with permission of the instructor or instructors involved.

40 Theory Hours — 100 Lab Hours

140 Contact Hours

AUM 225 ADVANCED AUTOMATIC TRANSMISSION (R)

7 Credit Hours

Prerequisite: None

In this unit, the student will have advanced study diagnosing, removing, reconditioning and replacing automatic transmissions. This knowledge will be evidenced by performance and unit tests.

40 Theory Hours — 100 Lab Hours

140 Contact Hours

AUM 226 ADVANCED EMISSION CONTROL SERVICE (R)

7 Credit Hours

Prerequisite: None

In this unit, the student will have advanced study diagnosing emission control problems. This course is recommended for continuing students, individuals preparing for N.I.A.S.E. Testing and State Emission's Inspection Certification. This knowledge will be demonstrated by performance and unit testing.

40 Theory Hours — 100 Lab Hours

140 Contact Hours

AUM 297 COOPERATIVE WORK EXPERIENCE (N,R)

3 Credit Hours

Prerequisite: None

This is a program of study developed with coordinated college course work and industry work experience.

15 Theory Hours — 90 Lab Hours

105 Contact Hours

AUM 299 INDEPENDENT STUDY (N,R)

3 Credit Hours

Prerequisite: Instructor's consent

Individual study on a special project which is related to the Automotive Mechanics Program and is outside the program offering.

90 Hours Lab — 90 Contact Hours

Audio Visual Technology

AVT 100 INTRODUCTION TO EDUCATIONAL MEDIA (R)

2 Credit Hours

Prerequisites: None

This is an introductory course designed to enable the student to understand the aims, goals, and philosophy of the educational media field. Field trips will be made to schools where new media methods are being utilized. A survey of media currently utilized will be covered.

30 Theory Hours — 30 Contact Hours

AVT 105 AUDIOVISUAL EQUIPMENT UTILIZATION (R)

3 Credit Hours

Prerequisites: None

This course emphasizes set up, operation, and minor maintenance of various types of audiovisual equipment common to businesses and educational institutions. Projectors and basic audio and video recording systems will be covered.

15 Theory Hours — 45 Lab Hours — 60 Contact Hours

AVT 108 INTRODUCTION TO AUDIOVISUAL PHOTOGRAPHY (R)

5 Credit Hours

Prerequisites: None

Beginning black and white photography for the audiovisual technician. Operation of the camera, exposure film development, printing, basic studio lighting and the electronic flash will be covered.

45 Theory Hours — 45 Lab Hours — 90 Contact Hours

AVT 109 GRAPHIC TECHNIQUES FOR MEDIA PRODUCTIONS (R)

4 Credit Hours

Prerequisite: AVT 108 (AVT 109 may be taken concurrently with AVT 108)

Lay out and design, inking, lettering, coloring, copy stand photography, and transparency production will be covered. Students will work with a variety of graphic materials.

15 Theory Hours — 68 Lab Hours — 83 Contact Hours

AVT 113 SCRIPT VISUALIZATION (R)

1 Credit Hour

Prerequisites: None

A workshop focusing on the process of visualizing written scripts for media presentations. This class will explore and practice how to select and sequence appropriate pictures to support and reinforce a written script. Storyboard techniques and script formats will also be covered.

15 Theory Hours — 15 Contact Hours

AVT 115 BASIC VIDEO PRODUCTION (R)

1 Credit Hour

Prerequisites: None

A workshop on production techniques using a single camera portable video system. Planning, sequencing, shot selection, and in-camera editing are some of the topics to be covered. Designed for individuals who have access to a portable video recorder and camera.

15 Theory Hours — 15 Contact Hours

AVT 118 DARKROOM PROCEDURES (R)

1 Credit Hour

Prerequisites: None

Black and white film development, contact printing, and enlarging will be covered. Prior knowledge of exposure and camera operation is assumed. Students should have access to a 35mm camera.

8 Theory Hours — 10 Lab Hours — 18 Contact Hours

AVT 125 AV PROJECTION EQUIPMENT MAINTENANCE (R)

5 Credit Hours

Prerequisites: None

Basics of electricity, safety, optical systems, trouble shooting, and basic maintenance of projectors will be covered.

45 Theory Hours — 45 Lab Hours — 90 Contact Hours

AVT 201 INTERMEDIATE AV PHOTOGRAPHY (R)

5 Credit Hours

Prerequisite: AVT 108

An exciting course in slide photography. Visual literacy, visual statements, themes of photography, sequencing visuals, and photo essays will be some of the topics discussed and developed. Darkroom procedures for processing both black and white and color slides will be presented.

45 Theory Hours — 45 Lab Hours — 90 Contact Hours

AVT 202 SLIDE/TAPE PRODUCTION I (R)

4 Credit Hours

Prerequisite: AVT 105, AVT 109

Introduction to planning and producing a slide/tape presentation. Objectives, scriptwriting, storyboarding, slide photography, and basic sound track production will be covered.

45 Theory Hours — 23 Lab Hours — 68 Contact Hours

AVT 206 AUDIOVISUAL AUDIO PRODUCTION (R)

5 Credit Hours

Prerequisites: AVT 105, AVT 125

Equipment and techniques used in the production of sound tracks for various mediums. Mike selection, physical editing, mixing, and syncing sounds with visuals are some of the topics to be covered.

45 Theory Hours — 45 Lab Hours — 90 Contact Hours

AVT 211 AV TELEVISION PRODUCTION I (R)

3 Credit Hours

Prerequisites: AVT 105, AVT 125

Principles and operation of a closed-circuit television studio. Cameras, recorders, sound, and lighting equipment will be covered along with editing and production techniques.

45 Theory Hours — 68 Lab Hours — 113 Contact Hours

AVT 212 AV TELEVISION PRODUCTION II (R)

4 Credit Hours

Prerequisite: AVT 211

A continuation of AVT 211 with emphasis placed on the role of television as an educational or instructional tool. The student will work on producing and directing instructional video tapes. Field trips to local production facilities will be made.

45 Theory Hours — 68 Lab Hours — 83 Contact Hours

AVT 217 AUDIO EQUIPMENT MAINTENANCE (R)

4 Credit Hours

Prerequisites: AVT 105, AVT 125

This course will enable the student to attain basic knowledge and skills to troubleshoot audio amplifiers, tape recorders, public address systems, and other audio equipment.

45 Theory Hours — 23 Lab Hours — 68 Contact Hours

AVT 219 SLIDE DUPLICATION PROCEDURES (R)

1 Credit Hour

Prerequisites: None

A workshop exploring the equipment and procedures used in duplicating color slides and filmstrips. Filtering, exposure, flashing, and films will be covered. Competency in color slide photography is assumed.

45 Theory Hours — 15 Contact Hours

AVT 221 VIDEO EQUIPMENT MAINTENANCE I (R)

4 Credit Hours

Prerequisites: AVT 105, AVT 125

Analysis of signal flow in a complex video system. Set ups and adjustments of cameras, monitors, and recorders.

30 Theory Hours — 45 Lab Hours — 75 Contact Hours

AVT 222 VIDEO EQUIPMENT MAINTENANCE II (R)

4 Credit Hours

Prerequisite: AVT 221

Operation and basic installation of special effects generators, switchers, video distribution systems, etc.

60 Theory Hours — 60 Contact Hours

AVT 231 AUDIOVISUAL DESIGN I (R)

4 Credit Hours

Prerequisite: Instructor's Consent

A seminar/workshop on several aspects of media production. The student will be assigned to a "client" and will budget, plan and produce a media presentation to the client's specifications. A weekly meeting of all students will cover the problems students are experiencing. Students may produce programs in a variety of media formats depending upon client needs. The end result of this course should be the production of a portfolio quality program.

15 Theory Hours — 68 Lab Hours — 83 Contact Hours

AVT 232 AUDIOVISUAL DESIGN II (R)

4 Credit Hours

Prerequisite: Instructor's Consent

A continuation of AVT 231 providing additional opportunity for the student to refine his production techniques and abilities enabling him to work successfully for a client.

15 Theory Hours — 68 Lab Hours — 83 Contact Hours

**AVT 297 COOPERATIVE WORK EXPERIENCE/
PRACTICAL EXPERIENCE (R)**

2-6 Credit Hours

Prerequisite: Instructor's Consent

The student is assigned to a local audiovisual department and is given duties related to the Audiovisual Technology degree program. This practical training program is supervised and coordinated by a College instructor. The student works with an experienced pre-selected supervisor on the job who will grade his performance according to College standards. Regular school class attendance is required by all students participating in this course.

90-270 Contact Hours

AVT 299 INDEPENDENT STUDY (R)

2-6 Credit Hours

Prerequisite: Instructor's Consent

This course provides opportunity for a student to study intensively a topic of interest under the direction of a faculty member.

45-135 Contact Hours

Building and Grounds Management

BGM 100 INSTITUTIONAL BUDGETING (A)

2 Credit Hours

Prerequisite: None

Studies of budgeting forecasts and requirements related to labor, equipment and supplies. Analyzes the use and control of budgeting records.

30 Contact Hours

BGM 105 BUILDING AND GROUNDS MANAGEMENT OPERATIONS (A)

3 Credit Hours

Prerequisites: None

Introduces department organization, job allocations, classifications and descriptions. Work scheduling, controls and simplification are also presented.

45 Contact Hours

BGM 110 MAINTENANCE EQUIPMENT FOR BUILDING AND GROUNDS (A)

3 Credit Hours

Prerequisites: None

Introduces maintenance equipment and tools, safety standards, and cleaning compounds used for building maintenance.

50 Contact Hours

BGM 115 PHYSICAL MAINTENANCE CONTROL (A)

3 Credit Hours

Prerequisites: None

Presents the proper care and maintenance of floors, walls, carpeting and rooms. The course will emphasize the integration of physical and mechanical maintenance requirements, and the proper use of equipment and materials.

50 Contact Hours

BGM 117 CARE OF OUTSIDE AREA (A)

3 Credit Hours

Prerequisite: BGM 110

Emphasizes the proper care of surrounding grounds, the importance of scheduling for planting, cultivating, and care of the outside area. Maintenance for public safety is also considered.

50 Contact Hours



BGM 119 BASIC INTERIOR DECORATING (A)

3 Credit Hours

Prerequisites: None

Examines the necessary coordination of styles, color schemes, lighting, furnishings, and materials for sound interior decorating. Presents fabrics and their cleaning techniques.

50 Contact Hours

BGM 125 SANITATION AND SURGICAL CLEANING (A)

3 Credit Hours

Prerequisites: None

Presents the cleaning and sanitation techniques used in hospitals, hotels and other institutions where harmful germs are of particular or immediate danger to good health.

50 Contact Hours

BGM 126 PURCHASING ECONOMICS FOR BUILDING AND GROUNDS (A)

2 Credit Hours

Prerequisites: None

Examines purchasing policies and procedures related to the purchase of equipment, materials and supplies peculiar to the executive housekeeping field. The timing and economics of such purchases will be analyzed.

30 Contact Hours

BGM 297 COOPERATIVE WORK EXPERIENCE (A)

3-6 Credit Hours

Prerequisite: Consent of instructor

Practical on-the-job training with pay in the executive housekeeping field. Placements are arranged with the approval of the instructor. Course includes classroom seminar sessions.

135-270 Contact Hours

BGM 299 INDEPENDENT STUDY (A)

3 Credit Hours

Prerequisite: Consent of instructor

Provides students with the opportunity to study specific topics of interest related to building and grounds management. Projects must have prior approval of instructor.

45 Contact Hours

Biology

BIO 102 SANITARY MICROBIOLOGY (R)

3 Credit Hours

Prerequisites: None

A basic course emphasizing the procedure for isolating, identifying, and differentiating between those microorganisms found in water, waste water, solid waste, and those problems relating to waste water treatment, stream sanitation, and public health.

30 Theory Hours — 45 Lab Hours — 75 Contact Hours

BIO 105 MICROBIOLOGY FOR DENTAL ASSISTANTS (N)

1 Credit Hour

Prerequisites: None

A mini-course emphasizing microorganisms of importance to dentistry and methods of controlling bacteria.

15 Theory Hours — 15 Lab Hours — 30 Contact Hours

BIO 106 FUNDAMENTAL CONCEPTS OF BIOLOGY (A,N,R,AEC)

3 Credit Hours

Prerequisites: None

A survey course for students needing an understanding of basic biological and chemical concepts as applied to the study of living organisms. The basic cellular and chemical aspects of life are related to a brief survey of scientific methods. This course can be used by students with minimal science background preparatory to general college biology (BIO 131-132).

45 Theory Hours — 45 Contact Hours

BIO 107 VD AND YOU (A,N,R)

1 Credit Hour

Prerequisite: None

Studies the prevalent venereal diseases, causes of the VD epidemic in the world today, and personal and public preventative measures. Directions of this course are designed to detail biological modes of transmission and physiological sequencing.

15 Theory Hours — 15 Contact Hours

BIO 108 INTRODUCTION TO HUMAN BIOLOGY (A,N,R)

3 Credit Hours

Prerequisite: None

A survey of the basic concepts concerning human anatomy and physiology which includes cellular, biochemical and biological mechanisms found in health and disease. This course can be utilized by students with minimal science background as preparatory to human anatomy and physiology (BIO 111 and BIO 112).

15 Theory Hours — 45 Contact Hours

BIO 109 HUMAN BIOLOGY FOR HEALTH SCIENCES (A)

1 Credit Hours

Prerequisite: Consent of instructor

Details the entire human body, covering all body systems with an emphasis on anatomy. This course is a one semester study of the structure and function of the human body which satisfies the requirements of the Diagnostic Radiological Technology Program, Medical Secretary Program and Chiropractic Assisting Program.

5 Theory Hours — 30 Lab Hours — 75 Contact Hours

BIO 111 HUMAN ANATOMY AND PHYSIOLOGY I (A,N,R,AEC)

5 Credit Hours

Prerequisite: None although BIO 108 is helpful.

Details a two-semester study of the principles of human anatomy and physiology through an in-depth examination of anatomical structures and the relationship of these structures to their function. The areas in this first course include cytology, histology, skeletal system, muscular system, nervous system, endocrine system, and reproductive system.

5 Theory Hours — 45 Lab Hours — 90 Contact Hours

BIO 112 HUMAN ANATOMY AND PHYSIOLOGY II (A,N,R,AEC)

4 Credit Hours

Prerequisite: BIO 111

Continues BIO 111 and includes the reproductive system with emphasis on human development, urinary system, integumentary system, blood vascular system, lymph vascular system, digestive system, respiratory system, and homeostatic mechanisms.

45 Theory Hours — 45 Lab Hours — 90 Contact Hours

BIO 115 INTRODUCTION TO MICROBIOLOGY (A,N,R)

3 Credit Hours

Prerequisite: BIO 112 or consent of instructor.

Introduces microbiology with an emphasis on epidemiology of selected infections, body defenses and community control measures. This course is designed to show relationships to the health science occupations.

30 Theory Hours — 45 Lab Hours — 75 Contact Hours

BIO 121 INTRODUCTION TO THE ENVIRONMENT (A,N,R,AEC)

3 Credit Hours

Prerequisite: None

Contains a study of the basic principles of ecology, population dynamics, human impact upon natural ecosystems and possible solutions to the problems posed to and by man in his environment.

45 Theory Hours — 45 Contact Hours

BIO 125 URBAN ECOLOGY (A,N,R,AEC)

3 Credit Hours

Prerequisite: None although BIO 121 is helpful.

Studies urban environments, stressing basic ecological principles and comparing natural and urban ecosystems. Both physical aspects (geology, energy, water and air treatment, transportation and housing) and biological aspects (vegetation and animal characteristics) of urban areas will be included.

45 Theory Hours — 45 Contact Hours

BIO 126 FIELD BIOLOGY (A,N,R,AEC)

2 Credit Hours

Prerequisite: None although BIO 121 is helpful.

Covers a field study of the biomes, life zones and successions in the front range with an introduction to plant and animal identification and quantitative ecology. This course may also consist of field studies in ecosystems outside Colorado; for example, desert ecology, shore ecology, involving a week or more study during a semester break.

15 Theory Hours — 45 Lab Hours — 60 Contact Hours

BIO 127 MICROBES AND MAN (N,R)

2 Credit Hours

Prerequisite: None

Designed as an introductory microbiology course for nonscience majors, discussion will emphasize the biological activities and influences of major microorganisms on humans and their environment.

30 Theory Hours — 30 Contact Hours

BIO 130 ONE WORLD OR TWO (R)

3 Credit Hours

Prerequisites: None

An introduction to the neurological bases of human perception of the environment. The course will touch upon: the bases and evidence for dual specialization with the brain, a model for the evolution of this function, which is unique to humans, language and the mode of operation of so called "right and left brain perception."

45 Theory Hours — 45 Contact Hours

BIO 131 GENERAL COLLEGE BIOLOGY I (A,N,R,AEC)

4 Credit Hours

Prerequisite: None although BIO 106 is helpful.

Introduces biology and considers living systems from the environmental, evolutionary and behavioral points of view. Topics will include ecology, population dynamics, adaptation, microscopy and biological diversity and individual and social behaviors.

45 Theory Hours — 45 Lab Hours — 90 Contact Hours

BIO 132 GENERAL COLLEGE BIOLOGY II (A,N,R,AEC)

4 Credit Hours

Prerequisite: None although BIO 106 is helpful.

Deals with living systems from a functional and developmental point of view. Topics include cellular function and structure, major biochemical concepts, reproduction, heredity and evolutionary mechanisms.

45 Theory Hours — 45 Lab Hours — 90 Contact Hours

BIO 137 HUMAN SEXUALITY (A,N,R,AEC)

3 Credit Hours

Prerequisite: None

Deals with various physiological aspects of human reproduction as an introductory course. Topics include overpopulation, human sexual response (physical), pregnancy, birth, contraception and venereal diseases.

45 Theory Hours — 45 Contact Hours

BIO 147 HUMAN HEREDITY (A,N,R,AEC)

3 Credit Hours

Prerequisite: None

Considers the biological aspects of race and human heredity and includes genetic foundations, ranges of human variability, racial mixtures and the usefulness of biological factors in understanding racial differences.

45 Theory Hours — 45 Contact Hours

BIO 157 DRUGS: THEIR USE AND ABUSE (A,N,R,AEC)

3 Credit Hours

Prerequisite: None

Examines some of the drugs commonly used in society today and details the effects of these drugs on the human body. Drugs covered include alcohols, amphetamines, barbiturates, opiates, hallucinogens, marijuana, nicotine and street drugs.

45 Theory Hours — 45 Contact Hours

BIO 167 BIOLOGY OF WOMEN (A,N,R)

3 Credit Hours

Prerequisite: None

Deals with all biological aspects of a woman's life from the basis of female roles through anatomy and physiology, sexuality, childbearing, basic health and diet, and finally to suggested solutions to improve function and effectiveness of the female.

45 Theory Hours — 45 Contact Hours

BIO 177 INTRODUCTION TO BIOLOGY OF THE SEA (A,N,R)

3 Credit Hours

Prerequisite: None

Studies the various aspects of life in the oceans, including some of the different kinds of marine organisms, marine habitats, resources, pollution and the importance of the seas to human continued existence.

45 Theory Hours — 45 Contact Hours

BIO 206 ENVIRONMENTAL BIOLOGY (A,N,R,AEC)

4 Credit Hours

Prerequisite: BIO 131 or BIO 132 or consent of instructor

Details the study of ecological principles. Topics will include ecosystems, energy, population and community dynamics, cycling of elements and nutrients, water and air pollution, world biomes and distribution of plants and animals.

45 Theory Hours — 45 Lab Hours — 90 Contact Hours

BIO 211 ADVANCED PHYSIOLOGY AND PATHOGENESIS (A,N,R)

3 Credit Hours

Prerequisite: BIO 112

Studies the functions of the human body systems with emphasis on their inter-relationships in adaptation to stress and disease. Alterations of normal body functions, pathogenesis and pathophysiology are delineated.

45 Theory Hours — 45 Contact Hours

BIO 216 CELL BIOLOGY (A,N,R)

4 Credit Hours

Prerequisite: BIO 132 or consent of instructor

Details an introduction to the cell as the fundamental unit of function and structure in all living systems. Morphological and physiological characteristics common to all cells will be emphasized.

45 Theory Hours — 45 Lab Hours — 90 Contact Hours

BIO 226 DEVELOPMENTAL BIOLOGY (A,N,R)

4 Credit Hours

Prerequisite: BIO 112 or BIO 132 or consent of instructor

Introduces the changes occurring during organismic development and differentiation. Gene action, biochemical regulation and environmental factors will be stressed.

45 Theory Hours — 45 Lab Hours — 90 Contact Hours

BIO 246 GENETICS (A,N,R)

3 Credit Hours

Prerequisite: BIO 112 or BIO 132 or consent of instructor

Surveys the field of hereditary mechanisms for plants and animals. Topics will include transmission of traits, cellular aspects of heredity, mechanisms of gene action, population genetics, and relevant areas of human genetics.

45 Theory Hours — 45 Contact Hours

BIO 299 INDEPENDENT STUDY (A,N,R)

1-3 Credit Hours

Prerequisite: Consent of instructor

Please refer to the general description of Independent Study in this catalog.

45-135 Contact Hours

Business Machine Technology**BMT 100 INTRODUCTION TO MANUAL TYPEWRITERS (A)**

3 Credit Hours

Prerequisite: None

Introduces students to manual typewriters, their movement and machine adjustments.

25 Theory Hours — 35 Lab Hours — 60 Contact Hours

BMT 104 IBM C&D ELECTRIC TYPEWRITER (A)

3 Credit Hours

Prerequisite: None

Provides the student with proper classroom/lab safety and operational procedures; electrical and mechanical principles, and specific locations of all internal mechanisms of the IBM C&D Models.

20 Theory Hours — 40 Lab Hours — 60 Contact Hours

BMT 105 IBM C&D OPERATION AND ADJUSTMENT THEORY (A)

3 Credit Hours

Prerequisite: None

Provides the student with the operational and adjustment theories of each internal mechanism of the IBM C&D Models.

25 Theory Hours — 35 Lab Hours — 60 Contact Hours

BMT 106 IBM C&D DISASSEMBLY AND REASSEMBLY (A)

3 Credit Hours

Prerequisite: None

Provides the student with the proper disassembly and reassembly procedures for key internal mechanism of the IBM C&D Models.

15 Theory Hours — 45 Lab Hours — 60 Contact Hours

BMT 107 ADLER "21" AND ROYAL "970" ELECTRIC TYPEWRITERS (A)

3 Credit Hours

Prerequisites: None

Provides the student with electrical and mechanical principles, specific locations of all internal mechanisms of the Adler "21" and Royal "970," and a relevant working knowledge of the metric system of distance measurement.

20 Theory Hours — 40 Lab Hours — 60 Contact Hours

BMT 108 ADLER "21" AND ROYAL "970" OPERATION AND ADJUSTMENT THEORY (A)

3 Credit Hours

Prerequisites: None

Provides the student with the operational and adjustment theories of each internal mechanism of the Adler "21" and Royal "970."

20 Theory Hours — 40 Lab Hours — 60 Contact Hours

BMT 109 ADLER "21" AND ROYAL "970" DISASSEMBLY AND REASSEMBLY (A)

3 Credit Hours

Prerequisites: None

Provides the student with the proper disassembly and reassembly procedures for key internal mechanisms of the Adler "21" and Royal "970."

20 Theory Hours — 40 Lab Hours — 60 Contact Hours

BMT 110 IBM "SELECTRIC" ELECTRIC TYPEWRITER AND OPERATIONS THEORY (A)

3 Credit Hours

Prerequisites: None

Provides the student with the operation, electrical and mechanical principles and specific locations of all internal mechanisms of the IBM "Selectric."

25 Theory Hours — 35 Lab Hours — 60 Contact Hours

BMT 115 IBM "SELECTRIC" DISASSEMBLY AND REASSEMBLY (A)

3 Credit Hours

Prerequisites: None

Provides the student with proper disassembly and reassembly procedures for key internal mechanisms of the IBM "Selectric."

24 Theory Hours — 36 Lab Hours — 60 Contact Hours

BMT 116 TROUBLESHOOTING PROCEDURES AND CUSTOMER RELATIONS (A)

3 Credit Hours

Prerequisites: None

Provides the student with proper troubleshooting techniques and practice as well as proper attitudes to display while in a customer's offices.

24 Theory Hours — 36 Lab Hours — 60 Contact Hours

BMT 201 SPIRIT DUPLICATORS (A)

3 Credit Hours

Prerequisites: None

Examines disassembly and reassembly of all mechanisms of the Spirit Duplicators, using factory adjustments/troubleshooting techniques and preventive maintenance. Familiarizes the students with part(s), catalogs, part numbers and how to order part(s).

25 Theory Hours — 35 Lab Hours — 60 Contact Hours

BMT 202 ELECTRIC ADDERS (A)

3 Credit Hours

Prerequisites: None

Provides the student with the basics of the mechanical adding machines.

20 Theory Hours — 40 Lab Hours — 60 Contact Hours

BMT 205 BASIC ELECTRICITY FOR OFFICE MACHINES REPAIR (A)

3 Credit Hours

Prerequisites: None

Examines simple wiring circuits, magnetism, direct current, alternating current.

15 Theory Hours — 45 Lab Hours — 60 Contact Hours

BMT 206 BASIC ELECTRONIC THEORY (A)

6 Credit Hours

Prerequisites: None

Provides the student with basic electronic theory and familiarizes the student with field effect transistors as they pertain to the office machine field.

45 Theory Hours — 75 Lab Hours — 120 Contact Hours

BMT 207 SCHEMATIC-OSCILLOSCOPE AND VOM (A)

3 Credit Hours

Prerequisites: BMT 206

Presents the schematic symbols, lines in the schematic drawing, and troubleshooting electronic circuits.

20 Theory Hours — 40 Lab Hours — 60 Contact Hours

BMT 208 DIGITAL AND LOGIC THEORY (A)

3 Credit Hours

Prerequisites: BMT 206

Uses a digital training instrument and a workbook to get the understanding of digital and its relation in office machines.

10 Theory Hours — 50 Lab Hours — 60 Contact Hours

BMT 209 SEIKO PRINTER MODEL "104" AND "300" (A)

3 Credit Hours

Prerequisites: BMT 206

Gives the student an understanding of how the electronic unit makes the mechanical printer work and timing of the mechanical printer with the electronic circuit.

25 Theory Hours — 35 Lab Hours — 60 Contact Hours

BMT 210 DICTATION MACHINES (A)

3 Credit Hours

Prerequisites: BMT 206

Gives the student the basic theory of the dictation machines, troubleshooting and adjustments.

15 Theory Hours — 45 Lab Hours — 60 Contact Hours

BMT 215 VICTOR ELECTRONIC CALCULATOR MODEL 1900 (A)

3 Credit Hours

Prerequisites: BMT 206

Gives the student the operation and troubleshooting theory of the Victor Model "1900."

25 Theory Hours — 35 Lab Hours — 60 Contact Hours

BMT 299 INDEPENDENT STUDY (A)

3-12 Credit Hours

Prerequisites: BMT 206

Provides the student with the opportunity to pursue study on a special topic outside the regular offerings of the program.

90-360 Contact Hours

Bricklaying

BRI 100 SAFETY, HISTORY, GLOSSARY, USE OF MASON TOOLS AND RELATED EQUIPMENT USED BY A BRICKMASON (R)

6 Credit Hours

Prerequisites: None

In this class, the student is taught safety practices, history of masonry in Colorado, terms used by the brick mason, proper use and care of bricklaying tools, operation of the masonry saw, mortar mixer and scaffolds.

30 Theory Hours — 90 Lab Hours — 120 Contact Hours

BRI 105 SAFETY CODES USED IN MASONRY, STATE OF COLORADO (R)

1 Credit Hour

Prerequisites: None

This class presents the Safety Codes used in the masonry field as required by the State of Colorado.

20 Theory Hours — 20 Contact Hours

BRI 106 SPREADING MORTAR, LAYING TO LINE, USE OF MASONRY TOOLS, BASIC LEADS, MASONRY WALLS (R)

6 Credit Hours

Prerequisites: None

The student will be taught to use the trowel to spread mortar, lay brick and block to line, use of brickmason tools, and the layout and construction of basic brick and block leads in this class.

30 Theory Hours — 90 Lab Hours — 120 Contact Hours

BRI 107 BONDED BRICK LEADS, JOINTS, STRIKING AND BRUSHING (R)

2 Credit Hours

Prerequisites: None

This class presents layout and construction of bonded brickleads, different mortar joints, and methods used in tooling masonry walls.

10 Theory Hours — 30 Lab Hours — 40 Contact Hours

BRI 109 MASONRY PIERS, PILASTERS, SOLID AND HOLLOW MASONRY, BONDS, FLOORS, AND MASONARY WALLS (R)

6 Credit Hours

Prerequisites: None

Students in this class are taught layout, squaring and plumbing masonry piers and pilasters, solid and hollow masonry walls, identification of masonry bonds, laying out of masonry walls, and laying brick floors.

30 Theory Hours — 90 Lab Hours — 120 Contact Hours

BRI 110 LAYING TO THE LINE, HEADERS, SOLDIERS, SAILORS, ROLLOCK, MITER CORNERS (R)

6 Credit Hours

Prerequisites: None

Characteristics and skill development in laying brick in the various positions of the soldiers, sailors, rollock and the miter corner are presented to the student.

30 Theory Hours — 90 Lab Hours — 120 Contact Hours

BRI 115 THROUGH-THE-WALL UNITS, LAYING TO THE LINE (R)

2 Credit Hours

Prerequisites: None

In this unit, the student will learn the construction of leads using through-the-wall units, laying through-the-wall units to a line, and will be taught how to identify different types of through-the-wall bonding.

15 Theory Hours — 25 Lab Hours — 40 Contact Hours

BRI 116 MASONRY CODES (R)

1 Credit Hour

Prerequisites: None

Codes for cover brick veneer, solid masonry, fireplaces, and block laying with inspections on job sites, will be presented in this class.

5 Theory Hours — 15 Lab Hours — 20 Contact Hours

BRI 120 BRICKLAYING FOR CONSTRUCTION TRADES (R)

6 Credit Hours

Prerequisites: None

An orientation to the field of bricklaying is presented. Also, the general principles, initial techniques and skill development for bricklaying and how bricklaying relates to the various trades are presented.

5 Theory Hours — 45 Lab Hours — 60 Contact Hours

BRI 125 BRICKLAYING FOR SOLAR (R)

6 Credit Hours

Prerequisites: None

This class will present to the student the basic use of tools, laying brick and block to line and building masonry walls.

5 Theory Hours — 45 Lab Hours — 60 Contact Hours

BRI 126 SOLAR WALLS AND FIREPLACES (R)

6 Credit Hours

Prerequisites: None

In this class, the student is taught trombe wall and solid masonry construction and also fireplace construction that includes basic and special types with emphasis on heaters and heat exchangers.

5 Theory Hours — 45 Lab Hours — 60 Contact Hours

BRI 200 MORTAR TYPES, MASONRY CEMENT AND FIREPLACE BASICS (R)

6 Credit Hours

Prerequisites: None

Types, specifications, properties of mortar, skill development in mixing of mortar and masonry cement are presented to the student. Also, types, parts, terms associated with chimneys and fireplaces, factors to consider constructing fireplaces are presented.

10 Theory Hours — 90 Lab Hours — 120 Contact Hours

BRI 206 FIREPLACE CONSTRUCTION AND HEATILATOR CONSTRUCTION (R)

6 Credit Hours

Prerequisites: None

The characteristics of firebrick, procedures for buttering firebrick, and the construction of a firebox and fireplace will be taught. The student will also participate in installing heatilator fireplace using precast fireboxes.

10 Theory Hours — 90 Lab Hours — 120 Contact Hours

BRI 207 CHIMNEY CONSTRUCTION, FLASHING AND COOPING (R)

2 Credit Hours

Prerequisites: None

The layout and construction of masonry stack and the installation of flashing are presented in this class.

40 Lab Hours — 40 Contact Hours

BRI 208 MASONRY MATERIALS (R)

1 Credit Hour

Prerequisites: None

Masonry materials for all types of masonry will be covered in this class.

20 Lab Hours — 20 Contact Hours

BRI 210 FIREPLACE CODES, FLAGSTONE AND MOSS ROCK (R)

6 Credit Hours

Prerequisites: None

The student will be taught fireplace codes, types of mortar used in fireplaces, types of rocks will be identified, and will participate in the laying of flagstone in walls and walks along with the laying of moss rock.

30 Theory Hours — 90 Lab Hours — 120 Contact Hours

BRI 215 REINFORCED MASONRY AND OVER-THE-WALL CONSTRUCTION (R)

5 Credit Hours

Prerequisites: None

Orientation to the necessary materials used in reinforced brick masonry, importance of using different materials and skill development in constructing reinforced masonry walls. Laying brick in the "over-the-wall" construction method is stressed in this class.

10 Theory Hours — 90 Lab Hours — 100 Contact Hours

BRI 217 MASON TENDER (R)

3 Credit Hours

Prerequisites: None

Scaffolding construction, stocking scaffolding and type of masonry units are taught in this class.

15 Theory Hours — 45 Lab Hours — 60 Contact Hours

BRI 218 BUILDING CODES (R)

1 Credit Hour

Prerequisites: None

This class will cover the Building Codes in the masonry field.

5 Theory Hours — 15 Lab Hours — 20 Contact Hours

BRI 297 COOPERATIVE WORK EXPERIENCE (R)

2-9 Credit Hours

Prerequisites: None

This program of study is developed with coordinated college course work and industry work experience.

15 Theory Hours — 45-360 Lab Hours — 60-375 Contact Hours

BRI 299 INDEPENDENT STUDY (R)

3 Credit Hours

Prerequisites: None

The student participates in individual study on a special project which is related to the Bricklaying Program outside of the program offerings.

90 Lab Hours — 90 Contact Hours

Business Simulation and Internship

BSI 115 BUSINESS MACHINES (A,N,R,AEC)

1 Credit Hour

Prerequisites: None

One of several in the office job training projects. This unit will stress operating a 10-key calculator by the touch system for developing speed and accuracy. Timed tests will be periodically administered under office conditions and job application testing simulations.

15 Theory Hours — 10 Lab Hours — 25 Contact Hours

BSI 117 PERSONAL TYPEWRITING (A,N,R)

2 Credit Hours

Prerequisites: None

One of several in the office job training projects. This module is designed for those who have had little or no instruction in typewriting techniques. This course is organized into five parts, each representing a basic typewriting operation: Basic skill mastery drills, centering, manuscript, business letters and tabulation. (This does not substitute for the regular first semester of typewriting.)

30 Theory Hours — 20 Lab Hours — 50 Contact Hours

BSI 126 REFRESHER TYPEWRITING (A,N,R)

1 Credit Hour

Prerequisites: None

One of several in the office job training projects. This module is designed for those students who need review of the basic typewriting applications. Emphasis will be placed on speed building, centering, manuscripts, business letters and tabulations.

15 Theory Hours — 10 Lab Hours — 25 Contact Hours

BSI 127 REFRESHER SHORTHAND (A,N,R)

2 Credit Hours

Prerequisites: Minimum dictation speed of 50 words per minute

This course is designed to provide review of theory, brief forms and phrases. Some work will be done on grammar and punctuation. The major emphasis will be on speed-building, mailability and transcription.

30 Theory Hours — 20 Lab Hours — 50 Contact Hours

BSI 141 OFFICE ORIENTATION AND EXPLORATION I (R)

1 Credit Hour

Prerequisites: None

This course is designed to give each student enrolled the opportunity to become familiar with the services available to students at Red Rocks and to explore careers in office occupations. Resource persons from the campus and the business, industry and government communities will participate.

15 Theory Hours — 15 Contact Hours

BSI 142 OFFICE ORIENTATION AND EXPLORATION II (R)

1 Credit Hour

Prerequisites: None

This course is designed to assist students in preparing for the logistics of getting and keeping a job. Campus resources as well as business, industry and government personnel will participate.

15 Theory Hours — 15 Contact Hours

BSI 147 TYPING NUMBERS (A,N,R)

1 Credit Hour

Prerequisites: None

This course is designed to help students build skills in typing numbers. Students will type sample financial statements and other numerical data.

15 Lab/Theory Hours — 15 Contact Hours

BSI 148 COMMUNICATIONS IN THE OFFICE (A,N,R)

1 Credit Hour

Prerequisites: None

This course is designed to help students develop skills in verbal, telephone and mail communications.

15 Lab/Theory Hours — 15 Contact Hours

BSI 157 DICTATION TECHNIQUES (A,N,R)

1 Credit Hour

Prerequisites: None

This course covers the communication techniques used when dictating into recording equipment or in dictating to a secretary.

15 Lab/Theory Hours — 15 Contact Hours

Business

BUS 095 BUSINESS LABORATORY (A,N,R)

1 to 3 Credit Hours

Prerequisites: Enrollment in any accounting, secretarial or business course

The business lab provides facilities, equipment, and supplementary materials for students to use in completing assignments. Assistance is given on a one-to-one basis. For each credit hour the student is required to attend an average of one hour per week, however, the student may attend up to 3 hours per week. Grading is on a pass/fail basis.

45 to 135 Lab Hours — 45 to 135 Contact Hours

BUS 110 BUSINESS MATHEMATICS (A,N,R,AEC)

3 Credit Hours

Prerequisites: MAT 106 or consent of instructor.

Primarily directed to the needs of students in the Accounting and Management programs. This course emphasizes the development and understanding of concepts regarding various business applications. The students learn the mathematical problem solving in the area of merchandising, financial accounting, and general business areas.

45 Theory Hours — 45 Contact Hours

BUS 115 BUSINESS MATHEMATICS BY MACHINES (A,N,R,AEC)

1 Credit Hours

Prerequisites: MAT 106 or consent of instructor.

This course is designed to provide basic understanding of business mathematics and to develop the skills necessary to operate calculating machines efficiently.

10 Theory Hours — 60 Contact Hours

BUS 136 BUSINESS COMMUNICATION APPLICATIONS (A,N,R,AEC)

1 Credit Hours

Prerequisites: ENG 109 or ENG 111 or equivalent

Applied business technique of communications that require problem solving and an understanding of human relations in a business situation. Students compose and evaluate the various types of correspondence that are commonly used in business. Included will be the preparation and analysis of business reports, memos, etc. Emphasis will be placed on good writing principles. The course is designed primarily for accounting and management students and others who are interested in business.

5 Theory Hours — 45 Contact Hours

BUS 137 LISTENING SKILLS (A,N,R,AEC)

1 Credit Hours

Prerequisites: None

Principles and techniques useful in developing listening skills applicable to common business situations (specifically by acquiring the four central listening abilities — overcoming distractions, detecting central ideas, maintaining emotional control, and evaluating spoken messages) so as to enhance employability at all levels. Designed primarily for accounting and management students and others interested in business.

10 Theory Hours — 30 Contact Hours

BUS 215 SYSTEMS (N)

1 Credit Hours

Prerequisites: ACC 112 or MAN 112, EDP 100 and one programming language.

This systems course is designed to serve the needs of Data Processing, Accounting, and Management students. It is taught as follows:

1st 4 weeks — A data processing instructor teaches the steps to review and design a system.

2nd 4 weeks — An accounting instructor teaches the replay of the system review in conjunction with accounting needs.

3rd 4 weeks — A management instructor teaches the management interplay and supports the system review with emphasis on management information systems.

4th 3 weeks — Students complete a system review, revise, design, and present the new systems. This is a student team project, with team instruction from data processing, management, and accounting instructors.

15 Theory Hours — 75 Contact Hours

BUS 296 OFFICE OCCUPATIONS SEMINAR (A,N,R)

1 Credit Hour

Prerequisites: None

These seminars are designed to make the students specifically aware of expectations of the business, industry and government sectors. Additionally, these seminars are designed to help students attain skills and knowledge they might not have received in other course work.

15 Lab/Theory Hours — 15 Contact Hours

BUS 297 COOPERATIVE WORK EXPERIENCE (A,N,R,AEC)

1-6 Credit Hours

Prerequisites: Permission of the instructor and approval of the division director.

In some program areas, cooperative work experience is a part of the course of study. The student is placed at a work station which is related to his educational program and occupational objective. He works under the immediate supervision of experienced personnel at the business, industry or agency involved, with a college instructor providing general coordination.

45 to 270 Contact Hours

BUS 299 INDEPENDENT STUDY (A,N,R,AEC)

1 to 3 Credit Hours

Prerequisites: Permission of instructor and approval of division director.

Provides an opportunity for the student to engage in intensive study and research on a specific topic under the direction of a qualified faculty member. Conditions for electing this course are evaluated by the Director of Business Occupations, who will assist in selecting an advisor and determining the amount of credit granted for successful completion of the work.

15 to 45 Contact Hours

Carpentry

CAR 100 ORIENTATION, SAFETY AND CONSTRUCTION MATERIALS (R)

3 Credit Hours

Prerequisites: None

Occupational outlook in the carpentry trade, securing of employment, is presented to the student. Orientation to safety rules and practices required in the trade, identification of the grades of lumber and common defects, writing a bill of materials for ordering lumber, different fasteners and their uses are shown.

15 Theory Hours — 45 Lab Hours — 60 Contact Hours

CAR 105 HAND AND POWER TOOLS (R)

3 Credit Hours

Prerequisites: None

Basic rules for the care, safe and correct use of hand tools, skill development, identification and use of the power woodworking machines and tools, safety rules for each, and every skill development are presented the student.

15 Theory Hours — 45 Lab Hours — 60 Contact Hours

CAR 106 PLANS, SPECIFICATIONS AND UNIFORM BUILDING CODE (R)

3 Credit Hours

Prerequisites: None

The terminology associated with blueprint reading, drawing symbols, measure scaled drawings, and the Uniform Building Code are taught.

15 Theory Hours — 45 Lab Hours — 60 Contact Hours

CAR 107 SITE LAYOUT AND CONCRETE FORMS FOR FOOTING (R)

3 Credit Hours

Prerequisites: None

Surface aspects, services and zoning restrictions that influence the selection of a building site, locating the buildings using the plot plans, layout, and squaring the building with the use of batter boards, footing form terminology, styles of footings, constructing types of footing forms will be covered in this class.

15 Theory Hours — 45 Lab Hours — 60 Contact Hours

CAR 108 CONCRETE FORMS FOR FOUNDATION WALLS (R)

3 Credit Hours

Prerequisites: None

Steel reinforcements and installation along with identification and application of all foundation walls forms, built in place bulkheads, blockouts, architectural effects and other special modifications are taught.

15 Theory Hours — 45 Lab Hours — 60 Contact Hours

CAR 109 SILL AND FLOOR FRAMING (R)

4 Credit Hours

Prerequisites: None

Floor and sill framing terminology, framing members, styles of framing, and installation of floor joist and sub-flooring are taught.

20 Theory Hours — 60 Lab Hours — 80 Contact Hours

CAR 110 WALL AND PARTITION FRAMING (R)

5 Credit Hours

Prerequisites: None

Wall and partition members, framing terminology, layout, cutting and assembly are taught.

25 Theory Hours — 75 Lab Hours

100 Contact Hours

CAR 115 STAIR AND ROOF FRAMING (R)

6 Credit Hours

Prerequisites: None

Terminology of components of stairs, layout and construction of common types, roofing members and styles, determining rafter lengths, cutting and assembling various roof structures, estimating cost of material for each type of roof from a drawing, and the grades and types of shingles are taught.

30 Theory Hours — 90 Lab Hours

120 Contact Hours

CAR 125 STRUCTURAL CARPENTRY FOR SOLAR ENERGY (R)

3 Credit Hours

Prerequisites: None

Structural design, rafter layout, wall and floor layout basic framing and solar panel installation are taught.

20 Theory Hours — 40 Lab Hours — 60 Contact Hours

CAR 200 EXTERIOR TRIM (R)

3 Credit Hours

Prerequisites: None

Study materials that are used in exterior trim, and proper installation of soffit, fascia, freeze, brick mold and other exterior trim items are taught.

15 Theory Hours — 45 Lab Hours — 60 Contact Hours

CAR 205 EXTERIOR DOORS AND WINDOWS (R)

4 Credit Hours

Prerequisites: None

The study of existing and new exterior doors and windows on the market and proper installation of same are taught.

20 Theory Hours — 60 Lab Hours — 80 Contact Hours

CAR 206 EXTERIOR WALL COVERINGS (R)

4 Credit Hours

Prerequisites: None

This course covers terminology associated with exterior wall coverings, common and new materials used and proper installation of same.

20 Theory Hours — 60 Lab Hours — 80 Contact Hours

CAR 207 ROOF COVERINGS (R)

4 Credit Hours

Prerequisites: None

The study of roofing materials, estimating of materials and proper application of various roofing systems are taught in this class.

20 Theory Hours — 60 Lab Hours — 80 Contact Hours

CAR 208 INTERIOR TRIM WORK (R)

4 Credit Hours

Prerequisites: None

The study of interior trim materials, paneling, base moldings, casings, door, shelves, and proper installation of doors and all trim items are taught.

20 Theory — 60 Lab Hours — 80 Contact Hours

CAR 209 CABINETMAKING (R)

4 Credit Hours

Prerequisites: None

Components of a cabinet, types of materials used, constructions, installation of hardware and proper use of power tools are taught.

20 Theory Hours — 60 Lab Hours — 80 Contact Hours

CAR 210 PLASTIC LAMINATES (R)

3 Credit Hours

Prerequisites: None

This course covers terminology and types of plastic laminates available, proper handling, installation of laminated materials and installation of prefabricated countertops.

15 Theory Hours — 45 Lab Hours — 60 Contact Hours

CAR 215 CABINET INSTALLATION (R)

4 Credit Hours

Prerequisites: None

The proper installation of factory-built cabinets and a study of various cabinets on the market/arrangement are taught.

20 Theory Hours — 60 Lab Hours — 80 Contact Hours

CAR 216 DRYWALL CONSTRUCTION AND INTERIOR TRIM (R)

6 Credit Hours

Prerequisites: None

The terminology associated with drywall construction, estimating the materials needed, concealing joints and fasteners and interior trim are taught in this class.

20 Theory Hours — 60 Lab Hours — 80 Contact Hours

CAR 217 ADVANCED CABINETMAKING (R)

3 Credit Hours

Prerequisites: None

This course will expand on the basic skills taught in CAR 209. It will include a review of the types of joints, gluing and hardware used in cabinets. The student will become familiar with various types and designs of cabinets used in residential and commercial construction. Construction of shop-built cabinets may include panel doors with mouldings, glass doors, and will include the proper use of power tools for creating various designs. The uses and application of plastic laminates will be explored, and the student will learn the proper installation of shop-built cabinets.

10 Theory Hours — 120 Lab Hours

60 Contact Hours

CAR 219 ADVANCED STAIR AND ROOF FRAMING (R)

3 Credit Hours

Prerequisite: None

This is an advanced course for the student with the basic knowledge of carpentry. The student will learn the techniques of stair framing for stairs such as winders, bowed U-shaped or spiral and the attachment of handrails and Newel posts. The course will also cover framing for roofs such as hip, valley, gable, gambrel, mansard or multi-pitch.

10 Theory Hours — 120 Lab Hours

60 Contact Hours

CAR 297 COOPERATIVE WORK EXPERIENCE

39 Credit Hours

Prerequisites: None

The student will work with an outside contractor in a program of study that is developed with coordinated college course work and industry work experience.

15 Theory Hours — 45-360 Lab Hours

10-375 Contact Hours

CAR 299 INDEPENDENT STUDY (R)

3 Credit Hours

Prerequisites: None

The student participates in individual study on a special project which is related to the Carpentry Program outside the program offerings.

90 Lab Hours — 90 Contact Hours

Civil Engineering Technology**CET 101 STRUCTURES I (R)**

3 Credit Hours

Prerequisites: DRI 105 and MAT 111

Mechanical properties of materials, stresses and strain in members subjected to tension, compression and shear. Force systems, graphical analysis of space frames including trusses.

30 Theory Hours — 23 Lab Hours — 53 Contact Hours

CET 107 CIVIL ENGINEERING TECHNOLOGY LABORATORY (R)

3 Credit Hours

Prerequisites: None

Investigation of concrete, soils and bituminous materials, classification, strength and deformation characteristics, sampling and testing these materials for engineering purposes.

15 Theory Hours — 45 Lab Hours — 60 Contact Hours

CET 201 STRUCTURES II (R)

3 Credit Hours

Prerequisites: CET 101

Elementary structural analysis, including timber and steel structures, columns; riveted and bolted connections. Shear and moment diagrams, deflections, beam analysis and elementary design problems.

30 Theory Hours — 23 Lab Hours — 53 Contact Hours

CET 299 INDEPENDENT STUDY (R)

3 Credit Hours

Prerequisites: None

Individual study on a special project which is related to the Civil Engineering Technology Program, and is outside the program offering.

90 Contact Hours

Chemistry**CHE 101 FUNDAMENTALS OF CHEMISTRY (A,N,R)**

4 Credit Hours

Prerequisites: MAT 106 or MAT 111 or equivalent

A first course in the fundamentals of chemistry designed for nonscience majors, students in occupational programs, or students with no high school chemistry. The student completing the sequence of CHE 101 and CHE 102 will have a general background in basic chemistry and an introduction to organic and biochemistry.

45 Theory Hours — 45 Lab Hours — 90 Contact Hours

CHE 102 FUNDAMENTALS OF CHEMISTRY II (A,N,R)

4 Credit Hours

Prerequisites: CHE 101

A continuation of CHE 101

45 Theory Hours — 45 Lab Hours — 90 Contact Hours

CHE 109 PREPARATION FOR COLLEGE CHEMISTRY (A)

4 Credit Hours
Prerequisites: None

A one semester course designed primarily for students with some background in chemistry who need review or new information in specific background areas before they are prepared for the general college chemistry course (CHE 111). Instruction will concentrate on four major areas: inorganic nomenclature, stoichiometry, simple models of the chemical bond, and several types of chemical reactions.

45 Theory Hours — 45 Lab Hours — 90 Contact Hours

CHE 111 GENERAL COLLEGE CHEMISTRY I (A,N,R)

5 Credit Hours
Prerequisite: A satisfactory score on a Standardized Placement Exam and MAT 121 or equivalent.

The first semester of a two semester sequence in general college chemistry. Designed for science majors and students in pre-professional programs. The concepts presented in the two-semester sequence may include chemical equations, stoichiometry, thermochemistry, properties of gases, the kinetic molecular theory of atomic structure, chemical bonding, molecular geometry, and the liquid and solid phases, solutions, acids and bases, electrochemistry, kinetics and equilibrium concepts.

60 Theory Hours — 45 Lab Hours
105 Contact Hours

CHE 112 GENERAL COLLEGE CHEMISTRY II (A,N,R)

5 Credit Hours
Prerequisite: CHE 111
A continuation of CHE 111.

60 Theory Hours — 45 Lab Hours
105 Contact Hours

CHE 201 ORGANIC CHEMISTRY I (A,N,R)

5 Credit Hours
Prerequisites: CHE 112 or equivalent

CHE 201 and CHE 202 are a sequence in organic chemistry designed primarily for science majors, pre-medical and pre-dental students, and others who desire a knowledge of the chemistry of organic compounds. A structural and mechanistic approach to syntheses, properties and behavior of chemically and biologically important compounds is stressed. Laboratory emphasis is on basic techniques, synthetic procedures, and modern instrumental analyses.

45 Theory Hours — 90 Lab Hours
135 Contact Hours

CHE 202 ORGANIC CHEMISTRY II (A,N,R)

5 Credit Hours
Prerequisites: CHE 201
Continuation of CHE 201.

45 Theory Hours — 90 Lab Hours
135 Contact Hours

CHE 299 INDEPENDENT STUDY (A,N,R)

1-3 Credit Hours
Prerequisite: Consent of instructor
Please refer to the general description of Independent Study in this catalog.
45-135 Contact Hours

Commercial Art

COA 100 LETTERING AND TYPOGRAPHIC DESIGN (A)

4 Credit Hours
Prerequisite: None
Introduction to the concepts of typography as applied to graphic communication. Exercises in both layout and finished lettering for advertising and logo design. Study of type recognition and typographic technology. (Entry level skills: tenth grade reading level and aptitude for eye-hand coordination.)
30 Theory Hours — 70 Lab Hours — 100 Contact Hours

COA 105 ADVERTISING TYPOGRAPHY AND LAYOUT (A)

4 Credit Hours
Prerequisite: COA 100
Exercises in creating letterforms, indicating photograph and illustration and basic copy fitting methods. Stress given to creative solutions of graphic advertising skill (Entry level skills: tenth grade reading level and visualizing aptitude.)
30 Theory Hours — 70 Lab Hours — 100 Contact Hours

COA 106 DESCRIPTIVE DRAWING (A)

4 Credit Hours
Prerequisite: None
Introduction to methods of accurate drawing. Includes exercises in measuring, ruling, scaling, shading in ink and precise drawings of objects in two and three dimensions. (Entry level skills: good eye-hand coordination.)
30 Theory Hours — 70 Lab Hours — 100 Contact Hours

COA 107 RENDERING FOR ADVERTISING DESIGN (A)

4 Credit Hours
Prerequisite: COA 106
Introduction to product rendering in pen and ink, cut file wash and opaque water media for print reproduction. Both free hand and mechanical methods are explored.
30 Theory Hours — 70 Lab Hours — 100 Contact Hours

COA 200 ADVERTISING DESIGN (A)

4 Credit Hours
Prerequisites: COA 100-107
Introduces the student to the process of solving comprehensive advertising design problems. Student will gain experience in designing, advertising, marketing research, media considerations and developing concepts through to final presentation. (Entry level skills: Minimum tenth grade reading skills.)
30 Theory Hours — 70 Lab Hours — 100 Contact Hours

COA 205 CREATIVE GRAPHIC DESIGN (A)

Credit Hours

Prerequisite: COA 200 and COA 206

Designed to give the student further experience in designing trademarks, packaging, symbols, signing and resumes. The demonstration of job readiness is emphasized through portfolio preparation and presentation techniques.

Theory Hours — 70 Lab Hours — 100 Contact Hours

COA 206 ART PREPARATION FOR REPRODUCTION (A)

Credit Hours

Prerequisite: First year COA program.

Introduction to the production of type and paste up in simple one and two color printing. Emphasis placed on development of basic manual skills, precision measuring and copy proofing. Marking copy procedures are covered. (Entry level skills: Knowledge of advertising layout.)

Theory Hours — 55 Lab Hours — 100 Contact Hours

COA 207 ADVANCED ART PREPARATION FOR REPRODUCTION (A)

Credit Hours

Prerequisite: COA 206

Designed to develop further competency in skills acquired in COA 206, Art Preparation for Reproduction. Exploration and exercises in production of more complicated, camera-ready art, including four-color separations, ink and paper specification, type mark-up, computer type setting, packaging mechanicals and effects of printing production on design. (Entry level skills: some knowledge of paste up.)

Theory Hours — 55 Lab Hours — 100 Contact Hours

COA 208 ILLUSTRATION (A)

Credit Hours

Prerequisite: First year COA program

Designed as an additional major course for the Commercial Art student and working professional who wishes to develop further competencies in illustration. Current trends and printing production limitations are incorporated into exercises aimed at developing proficiency in a variety of traditional as well as experimental techniques. Entry level skills: Demonstrated drawing and layout skills.)

Theory Hours — 70 Lab Hours — 100 Contact Hours

COA 209 THREE DIMENSIONAL ADVERTISING (A)

Credit Hours

Prerequisite: First year COA program

Designed as an additional major course for the commercial art student as well as the working professional who is training in designing three dimensional advertising. The student will design point of purchase displays, counter or trade show exhibits and be introduced to visual merchandising. (Entry level skills: Knowledge of layout and basic design.)

Theory Hours — 70 Lab Hours — 100 Contact Hours

Communications**COM 100 COMMUNICATION AND STRESS MANAGEMENT FOR HEALTH OCCUPATIONS (N,AEC)**

3 Credit Hours

Prerequisite: None

Communication theory and practice, oral and written, with emphasis on stress situations in health occupations.

45 Contact Hours

COM 107 OCCUPATIONAL COMMUNICATION (N,R,AEC)

1-3 Credit Hours

Prerequisite: None

Oral communication: speaking and listening in chosen fields. (Can be taken as SPE 107.)

15-45 Contact Hours

COM 109 BARRIOLOGY COMMUNICATIONS (A)

3 Credit Hours

Prerequisite: None

A study of networks and modes of communication utilized in the Chicano community, including communication between the people and different public agencies which serve them. Basic communication theory will be examined and applied to communications channels in the barrio.

45 Contact Hours

COM 111 SURVEY OF COMMUNICATION (A,AEC)

3 Credit Hours

Prerequisite: None

Introduces through readings and class discussion the many facets of communication such as meaning of symbols, perception of life, non-verbal behavior and listening patterns. Offered normally Fall term.

45 Contact Hours

COM 117 CAREER COMMUNICATION (A)

3 Credit Hours

Prerequisite: None

Develops skills in communication especially speaking and listening with focus on interviewing, instruction giving, discussion and teamwork, with emphasis on practical application to career fields. Offered each term as needed by career areas.

45 Contact Hours

COM 121 INTERPERSONAL COMMUNICATION (A,R,AEC)

3 Credit Hours

Prerequisite: None

Explores basic principles of interpersonal communication theory and involves student in practicing skills to improve relationships with others. Offered normally Fall term.

45 Contact Hours

**COM 131 INTRODUCTION TO SEMANTICS
(A,R,AEC)**

3 Credit Hours

Prerequisite: None

Examines the interrelationships of language, thought and behavior in the study of language and the use of words. Offered normally Spring term.

45 Contact Hours

COM 141 AMERICAN SIGN LANGUAGE I (A,N,AEC)

3 Credit Hours

Prerequisite: None

A beginning course in the use of the basic signs and finger spelling used by the deaf.

45 Contact Hours

**COM 142 AMERICAN SIGN LANGUAGE II
(A,N,AEC)**

3 Credit Hours

Prerequisite: None

An extension in the development of signs and emphasis of idiomatic expression. Increased practice in the reading of signs.

45 Contact Hours

COM 185 FINGER SPELLING (A,N)

3 Credit Hours

Prerequisite: None

Develops speed and clarity with receptive and expressive finger spelling. Offered normally Fall term.

45 Contact Hours

**COM 186 SYSTEMS OF MANUAL
COMMUNICATION (A,N)**

3 Credit Hours

Prerequisite: COM 185 or permission of instructor

Introduces manually coded English systems and their use by schools and hearing-impaired persons. Offered normally Spring term.

45 Contact Hours

**COM 224 COMMUNICATION BETWEEN THE SEXES
(A,N,AEC)**

3 Credit Hours

Prerequisite: COM III or permission of instructor

Focuses upon interpersonal communication such as non-verbal, listening, conflict resolution as related to sexual identity. Offered periodically as need and interest arise.

45 Contact Hours

COM 231 IMAGE AND MEANING (A,AEC)

3 Credit Hours

Prerequisite: COM III or permission of instructor

Studies the relations between the visual and literary arts with special emphasis on film, poetry and short fiction. Offered normally Spring term.

45 Contact Hours

**COM 241 INTRODUCTION TO DISCUSSION AND
GROUP LEADERSHIP (A,AEC)**

3 Credit Hours

Prerequisite: COM III or permission of instructor

Explores group process such as structure, norms, communication through class problem solving and develops leadership techniques for small groups. Offered normally Fall term.

45 Contact Hours

**COM 251 INTRODUCTION TO TV AND RADIO
(A,AEC)**

3 Credit Hours

Prerequisite: COM III or permission of instructor

Examines the electronic media with emphasis upon applied theory in the medias' written, spoken, and technical aspects. Offered normally Fall term.

45 Contact Hours

COM 255 SURVEY OF THE MOVIES (A,AEC)

3 Credit Hours

Prerequisite: COM III or permission of instructor

Explores a variety of films in order to develop visual literacy and in order to provide a comprehensive view of the possibilities of this newer art form. Offered normally Spring term.

45 Contact Hours

COM 256 MEDIA SURVEY (A)

3 Credit Hours

Prerequisite: COM III or permission of instructor

Investigates the impact of print, movies, radio, and television on a consumer and develops skills of evaluation thinking relating to these media. Offered as need and interest arise.

45 Contact Hours

COM 257 THEMES AND GENRES IN FILM (A)

3 Credit Hours

Prerequisite: COM III or permission of instructor

Concentrates on specific types of film, such as comedy, the western, or the documentary and defines the themes which guide the establishment and development of each. Offered as need and interest arise.

45 Contact Hours

**COM 261 ORGANIZATIONAL COMMUNICATION
(A,AEC)**

3 Credit Hours

Prerequisite: COM III or permission of instructor

Studies communication within larger formalized groups with emphasis upon formal and informal patterns and effective methods for communication. Offered as need and interest arise.

45 Contact Hours

COM 299 INDEPENDENT STUDY (A,N,R,AEC)

1-3 Credit Hours

Prerequisite: Consent of instructor

Please refer to the general description of Independent Study in this catalog.

15-45 Contact Hours

Chiropractic Assisting (Program not yet approved by appropriate state agencies)

CPA 101 INTRODUCTION TO CHIROPRACTIC MODALITIES I (A)

Credit Hours

Prerequisites: None

A comprehensive study of the fundamental principles upon which the practice of chiropractic is based. A scientific study of the relationships between the articulation of the vertebral column and the nervous system and the role of these relationships in the restoration and maintenance of health. Instruction in the use of the various modalities such as ultrasound and diathermy is included.

5 Theory Hours — 45 Contact Hours

CPA 102 CHIROPRACTIC MODALITIES II (A)

Credit Hours

Prerequisites: CPA 101

Continuation of CPA 101.

5 Theory Hours — 45 Contact Hours

CPA 203 CHIROPRACTIC MODALITIES III (A)

Credit Hours

Prerequisites: CPA 102

Continuation of CPA 102.

5 Theory Hours — 45 Contact Hours

Computer Programming for Business

CPB 095 COMPUTER PROGRAMMING LAB (A,N,R)

1 Credit Hour (Per programming course per semester)

Prerequisites: None

Prerequisite: Enrollment in any CPB course

The lab provides facilities, equipment and supplementary materials for students to use in completing programming and other assignments. Assistance is given on a one-to-one basis. One hour of credit is granted on a Pass/No Pass basis for each programming course taken during a semester.

CPB 100 INTRODUCTION TO COMPUTER PROGRAMMING (A,N,R)

4 Credit Hours

Prerequisites: None

Introductory course in the use of computers in our society. The course covers a general overview of data processing, the vocabulary used in the field and a specific study of how to write computer programs using the language BASIC. It will provide the student with an understanding of what areas of business computers are used, the various languages used and what types of jobs are available in the field of data processing. It intends to remove the "mystery" of how a computer processes information. Students will be required to write and successfully run six programs in BASIC.

60 Theory Hours — 60 Contact Hours

CPB 104 FLOWCHARTING AND STRUCTURED DESIGN (A,N,R)

3 Credit Hours

Prerequisites: None

Co-requisite: CPB 100 Introduction to Computer Programming

An introduction in the development of computer program design using the concepts of structured programming and logic. Pseudocode, IPI charts, Flowcharts, and Decision Tables are some of the vehicles used in developing simple to complex logic designs including subtotal logic, multi-file processing logic, sort design logic, etc.

45 Theory Hours — 45 Contact Hours

CPB 105 ASSEMBLER LANGUAGE (N)

3 Credit Hours

Prerequisites: CPB 100 Introduction to Computer Programming

CPB 104 Flowcharting and Structured Design

An introduction to the coding and execution of simple business problems using IBM 370 Assembler Language. A minimum of six programs will be coded and executed using single assembly language instructions (standard and packed decimal instruction sets), macro instructions for the QSAM access method, macro instructions to generate dumps, and JCL for data sets using QSAM. Topics covered include: data representation, machine language instruction formats, arithmetic instructions, data manipulation instructions, branch instructions, editing data, ASAN macros, logical operations, and debugging.

45 Theory Hours — 45 Contact Hours

CPB 106 COBOL (A,N,R)

4 Credit Hours

Prerequisite: CPB 104 Flowcharting and Structured Design

CPB 100 Introduction to Computer Programming

An introduction to the coding and execution of business problems using COBOL. A minimum of nine programs will be coded, executed, and documented using structured programming techniques. Programs written will cover the topics of input and output operations, arithmetic verbs, report headings, report editing, control breaks, final total processing, use of nested IF's, and simple table-handling procedures.

60 Theory Hours — 60 Contact Hours



CPB 108 BASIC (A,N,R)

3 Credit Hours

Prerequisite: CPB 104 Flowcharting and Structured Design
CPB 100 Introduction to Computer Programming

An introduction to the coding and execution of business problems using BASIC. A minimum of 15 programs will be coded and executed using a PDP 11 computer or comparable equipment. Topics covered include: utilization of basic instructions, entering data from a terminal, building and reading files, finding and correcting records in a file, adding and deleting records, calculating subtotals, For/Next statements, one- and two-dimensional arrays, virtual file, and BASIC functions.

45 Theory Hours — 45 Contact Hours

CPB 206 ADVANCED COBOL (N)

3 Credit Hours

Prerequisite: CPB 106 Cobol

A continuation of CPB COBOL. Students will be required to design, code, execute, and document a business system composed of a minimum of six programs and related utilities. These programs will consist of the following: Table handling, magnetic tape sequential file creation, editing, and update; Creating, editing and updating an ISAM file both sequentially and randomly; report writer, sort utilities and various dump utilities.

45 Theory Hours — 45 Contact Hours

CPB 207 PL/1 (N)

3 Credit Hours

Prerequisites: CPB 100 Introduction to Computer Programming
CPB 104 Flowcharting and Structured Design

An introduction to the coding and execution of business problems using PL/1. A minimum of nine programs will be coded, executed, and documented using structured programming techniques. Topics covered include: Input/Output operations and file processing, arithmetic verbs, report heading, report editing, control breaks, final total processing, and simple table handling.

45 Theory Hours — 45 Contact Hours

CPB 208 REPORT PROGRAM GENERATOR (N)

3 Credit Hours

Prerequisite: CPB 100 Introduction to Computer Programming

An introduction to the coding and execution of business problems using Report Program Generator. A minimum of 12 programs will be coded, executed and documented. The topics covered include: arithmetic operations, comparing data items, printing reports with proper heading and editing, control breaks, group indication, handling multiple records, table handling, matching records in a sequential update, and creating and accessing indexed sequential files.

45 Theory Hours — 45 Contact Hours

CPB 209 FORTRAN (N)

3 Credit Hours

Prerequisites: CPB 100 Introduction to Computer Programming
CPB 104 Flowcharting and Structure Design

An introduction to the coding and execution of business problems using FORTRAN. A minimum of nine programs will be coded, executed and documented using structured programming techniques. The topics covered include: Input/output operations, arithmetic verbs, report headings, report editing, control breaks, final total processing, use of nested DP Loops, and simple table handling procedures.

45 Theory Hours — 45 Contact Hours

CPB 215 OPERATING SYSTEMS AND JCL (N)

3 Credit Hours

Prerequisites: CPB 100 Introduction to Computer Programming and at Least One Course Programming

An introductory course to the IBM OS/VS operating system and Job Control Language. Topics covered include: Components of the IBM OS/VS operating system, JOB and EXEC statements, DD statements for sequential, partitioned, indexed sequential, and direct access data sets, JCL statements for instream and catalogued procedures, JCL statements for utility routines, and functions of virtual storage.

45 Theory Hours — 45 Contact Hours

CPB 220 SYSTEMS ANALYSIS AND DESIGN (N)

5 Credit Hours

Prerequisites: CPB 100 Introduction to Computer Programming and at Least Two Courses in Programming

An introduction to the materials, techniques, and procedures to develop a computerized business system. The course requires the student to design an actual system. Topics covered include: the systems approach, fact gathering techniques, forms design, input/output, design, file organization, various charting techniques, system processing and controls, system presentation techniques, system audits and controls, project management, and implementation and evaluation.

45 Theory Hours — 45 Contact Hours

Criminal Justice**CRJ 110 INTRODUCTION TO CRIMINAL JUSTICE (R,AEC)**

4 Credit Hours

Prerequisites: None

An introduction to the components and procedures followed in the criminal justice system. Required of criminal justice majors.

60 Theory Hours — 60 Contact Hours

CRJ 115 CRIMINAL LAW (R,AEC)

3 Credit Hours

Prerequisites: None

An examination of the development, terms and concepts embodied in criminal law.

45 Theory Hours — 45 Contact Hours

CRJ 116 CONSTITUTIONAL LAW (R,AEC)

3 Credit Hours

Prerequisites: None

Provides an overview of constitutional considerations affecting the criminal justice enterprise. Landmark Supreme Court cases will be examined in detail.

5 Theory Hours — 45 Contact Hours

CRJ 117 CIVIL LAW (R,AEC)

3 Credit Hours

Prerequisites: None

The concepts of torts is developed as it may effect the criminal justice practitioner. Personal liability while acting in an official capacity is explored.

5 Theory Hours — 45 Contact Hours

CRJ 118 RULES OF EVIDENCE (R,AEC)

3 Credit Hours

Prerequisites: None

Different types of evidence and legal requirements for admission in court are presented. Court decisions regarding proper use and introduction are examined in detail.

5 Theory Hours — 45 Contact Hours

CRJ 119 THE JUVENILE IN THE CRIMINAL JUSTICE SYSTEM (R,AEC)

3 Credit Hours

Prerequisites: None

This course designed to prepare criminal justice practitioners for the complexity of laws and procedures involved in dealing with Children's Code is extensively examined.

5 Theory Hours — 45 Contact Hours

CRJ 120 CORRECTIONS (R,AEC)

3 Credit Hours

Prerequisites: None

An examination of the corrections components of the development of corrections and special programs. Treatment approaches and problems associated with certain offenses are presented.

5 Theory Hours — 45 Contact Hours

CRJ 125 INTRODUCTION TO INDUSTRIAL SECURITY (R,AEC)

3 Credit Hours

Prerequisites: None

An examination of arrest, search and seizure laws and legal restraints dealing with civilian security officers. Relationships between civilian security companies and law enforcement agencies are examined.

5 Theory Hours — 45 Contact Hours

CRJ 126 PATROL PROCEDURES (R,AEC)

3 Credit Hours

Prerequisites: None

The daily duties of a patrol officer are presented as well as techniques and tactics involved in conducting a patrol.

5 Theory Hours — 45 Lab Hours — 75 Contact Hours

CRJ 127 PROBATION, PARDON AND PAROLE (R)

3 Credit Hours

Prerequisites: None

Probation as a judicial process, parole as an executive function and the use of pardons are examined and reviewed.

30 Theory Hours — 23 Lab Hours — 53 Contact Hours

CRJ 128 CORRECTIONAL SERVICES IN THE COMMUNITY (R)

3 Credit Hours

Prerequisites: None

Community resources that can be brought to bear on the corrections function are examined. The role of vocational rehabilitation, welfare services, guidance clinics and other community agencies is presented.

30 Theory Hours — 23 Lab Hours — 53 Contact Hours

CRJ 129 THE COURT SYSTEM (R,AEC)

3 Credit Hours

Prerequisites: None

An examination of the U.S. court system at all levels. Emphasis is placed on procedures and jurisdictions of various courts.

45 Theory Hours — 45 Contact Hours

CRJ 135 POLICE ARMAMENT (R)

4 Credit Hours

Prerequisites: None

An examination of the devices and procedures available to police for control and restraint. The FBI pistol course will be included as well as armament from non-lethal restraints to automatic weapons. Student must furnish own ammunition.

30 Theory Hours — 45 Lab Hours — 75 Contact Hours

CRJ 136 PUBLIC SERVICE DISPATCH PROCEDURES (R)

3 Credit Hours

Prerequisites: None

An examination of single service and multi-service dispatch systems. Orientation on various computer terminals will be provided, as well as familiarization with different systems of communication.

30 Theory Hours — 23 Lab Hours — 53 Contact Hours

CRJ 137 POLICE PHOTOGRAPHY (R)

4 Credit Hours

Prerequisites: None

The course is designed to provide the police patrol officer with the necessary photographic skills to prepare evidence photographs for use in judicial proceedings. Black and white film and paper will be used with limited discussions of color.

30 Theory Hours — 45 Lab Hours — 75 Contact Hours

CRJ 139 TERRORISM (R)

3 Credit Hours

Prerequisites: None

Examination of duties, inter and intra national terrorism. Government and individual response and defense will be studied as well as asset and executive protection techniques.

45 Theory Hours — 45 Contact Hours

CRJ 146 CURRENT POLICE PRACTICES (R)

1-3 Credit Hours

Prerequisites: None

Discussion, role playing and other techniques to illustrate and offer possible solutions to problems found by police officers.

15-45 Theory Hours — 23-68 Lab Hours

15-68 Contact Hours

CRJ 149 CRIMINAL JUSTICE RECORDS AND REPORTS (R)

3 Credit Hours

Prerequisites: None

The procedures of report preparation with special emphasis on narrative and fill-in reports forms will be discussed in detail. Other forms, their recording and eventual use, as well as verbal skills in reporting information, will be presented.

45 Theory Hours — 45 Contact Hours

CRJ 155 PHYSICAL SECURITY (R)

The concept of physical security integrated with management systems; physical security requirements and standards; study of inanimate aspects, including alarm and surveillance devices; study of animate aspects of protection; planning and engineering.

30 Theory Hours — 23 Lab Hours — 53 Contact Hours

CRJ 156 LOSS PREVENTION (R)

3 Credit Hours

Prerequisites: None

An overview of the functional operations of various specialized areas of security such as, theft and risk control, security surveys and loss prevention management in proprietary and governmental institutions.

30 Theory Hours — 23 Lab Hours — 53 Contact Hours

CRJ 201 INTRODUCTION TO INVESTIGATION (R)

4 Credit Hours

Prerequisites: None

Preliminary investigative techniques to include crime scene preservation, interview of witnesses and collection of evidence are covered.

30 Theory Hours — 45 Lab Hours — 75 Contact Hours

CRJ 202 ADVANCED INVESTIGATION (R)

4 Credit Hours

Prerequisites: CRJ 201, or permission of instructor

Advanced investigative techniques are introduced to include facts and techniques peculiar to specific offenses. An examination of the scientific resources available to the investigator is offered.

30 Theory Hours — 45 Lab Hours — 75 Contact Hours

CRJ 205 INTERVIEW, INTERROGATION AND CONFESSION (R,AEC)

3 Credit Hours

Prerequisites: None

A course designed to present interview and interrogation techniques and differentiate between the two. Court decisions and other legal considerations bearing on obtaining and using confessions will be examined.

45 Theory Hours — 45 Contact Hours

CRJ 206 ORGANIZED CRIME: CONCEPTS AND CONTROL (R,AEC)

3 Credit Hours

Prerequisites: None

An examination of the known characteristics of organized crime is presented, along with some considerations appropriate for decrease or elimination.

45 Theory Hours — 45 Contact Hours

CRJ 207 POLICE ADMINISTRATION (R,AEC)

3 Credit Hours

Prerequisites: None

The administration of all the sub-units that comprise a police department is examined. Special emphasis will be placed on administration of the small and medium sized department which does not have the luxury of specialization.

45 Theory Hours — 45 Contact Hours

CRJ 208 CRIMINAL JUSTICE PERSONNEL ADMINISTRATION (R,AEC)

3 Credit Hours

Prerequisites: None

The personnel function of a police administrator is examined. Recruitment, training pay, retirement, benefit plans and collective bargaining will be presented.

45 Theory Hours — 45 Contact Hours

CRJ 209 POLICE SUPERVISION (R,AEC)

3 Credit Hours

Prerequisites: None

Line and mid-level supervision will be examined. Principles of management will be explored and modified as necessary to fit criminal justice situation.

45 Theory Hours — 45 Contact Hours

CRJ 210 COMMUNITY RELATIONS (R,AEC)

3 Credit Hours

Prerequisites: None

Presentation of the role of the individual officer in achieving and maintaining public support. Public information programs and relationships with complainants is discussed.

45 Theory Hours — 45 Contact Hours

CRJ 215 COMMUNITY CRIME PREVENTION (R,AEC)

3 Credit Hours

Prerequisites: None

An examination of alternatives to existing reactive police practices. Through examination of such concepts as citizen involvement, comprehensive prevention, planning and environmental crime deterrence, working models will be developed.

45 Theory Hours — 45 Contact Hours

CRJ 216 RIGHTS AND RESPONSIBILITIES IN PUBLIC SAFETY MANAGEMENT (R,AEC)

3 Credit Hours

Prerequisites: None

A course intended to prepare mid and upper-level management for the considerations involved in integrating the concept of collective bargaining and other organized labor practices into the unique requirements of the criminal justice enterprise.

45 Theory Hours — 45 Contact Hours

CRJ 217 NARCOTICS AND DRUGS (R)

3 Credit Hours

Prerequisites: None

This course will examine detection and investigation of drug dealers and users; behavior of the addict; prevention techniques and cooperation between federal agencies concerned with narcotics and drugs. Chemical properties and results of different narcotics will be presented.

30 Theory Hours — 23 Lab Hours — 53 Contact Hours

CRJ 220 TRAFFIC ENFORCEMENT (R,AEC)

3 Credit Hours

Prerequisites: None

Includes definition of the traffic problem, patrol procedures, accident investigation, traffic direction and other aspects of the traffic control function of a police department.

30 Theory Hours — 23 Lab Hours — 53 Contact Hours

CRJ 225 BREATH EXAMINER SPECIALIST (R,AEC)

3 Credit Hours

Prerequisites: None

Provides for the development of practical skills leading to certification as a breath examiner specialist. Includes basics of chemical testing, suspect processing and equipment operation.

30 Theory Hours — 45 Lab Hours — 75 Contact Hours

CRJ 226 CHILD ABUSE — ETIOLOGY AND RESPONSE (R)

3 Credit Hours

Prerequisites: None

Provides a multi-disciplinary examination including legal, medical, sociological, and psychological aspects of child abuse. Will provide an understanding of the etiology of the abuse syndrome, appropriate individual responses and supportive community sources. Designed for criminal justice personnel as well as others whose professions may include contact with children.

30 Theory Hours — 45 Contact Hours

CRJ 227 EMERGENCY TECHNIQUES FOR POLICE OFFICERS (R,AEC)

3 Credit Hours

Prerequisites: None

Presentation of medical skills often needed by police officers including first aid and emergency childbirth.

30 Theory Hours — 45 Contact Hours

CRJ 235 HAZARDOUS POLICE TACTICS (R)

3 Credit Hours

Prerequisites: None

High stress and high danger calls to stimulate student response. Areas of emphasis are officer assaults and deaths, examination of specific officer murders, response to high risk crimes in progress, inconspicuous and disguised weapons, sniper and ambush response, domestic crisis intervention, bombing and outlaw motorcycle gangs.

30 Theory Hours — 23 Lab Hours — 68 Contact Hours

CRJ 236 FRAUD INVESTIGATION (R)

3 Credit Hours

Prerequisites: None

Detection, investigation, and prosecution of fraud, forgery, deceptive practices, computer crime, confidence games and other scams.

30 Theory Hours — 23 Lab Hours — 53 Contact Hours

CRJ 237 ACCIDENT INVESTIGATION (R)

3 Credit Hours

Prerequisites: None

Principles of automobile accident investigation to include vector analysis to determine speed, skid mark measurement to determine reaction time and reporting procedures.

30 Theory Hours — 23 Lab Hours — 53 Contact Hours

CRJ 238 SELF DEFENSE FOR POLICE (R)

3 Credit Hours

Prerequisites: None

Techniques of prisoner handling, crowd control and personnel protection. A pragmatic approach to options short of deadly physical force.

45 Theory Hours — 45 Contact Hours

CRJ 297 COOPERATIVE WORK EXPERIENCE PRACTICAL TRAINING (R,AEC)

1-4 Credit Hours

Prerequisites: None

The student is placed in a work station in the Denver area which is related to his educational program and occupational goal. He works under the supervision of experienced personnel at the agency involved, with a college instructor providing coordination.

45-180 Contact Hours

CRJ 299 INDEPENDENT STUDY (R,AEC)

1-6 Credit Hours

Prerequisites: None

An opportunity for a student to intensively study a specific topic of interest under the supervision of a qualified faculty member.

22-135 Contact Hours

Credit Management**CRM 111 FINANCIAL INSTITUTIONS (A,AEC)**

2 Credit Hours

Prerequisite: None

A study of the functions and roles of various financial institutions as they interact with the commercial, consumer and economic environment.

30 Theory Hours — 30 Contact Hours

CRM 112 CREDIT FUNDAMENTALS (A,AEC)

3 Credit Hours

Prerequisites: None

A study of the development and growth of consumer and retail credit and its effect on the American life style. Studies are made of commercial and governmental uses of credit through an analysis of the actual operations of a retail, wholesale, and commercial credit department. Basis for credit-making decisions will be discussed as well as various aspects of collections, bankruptcy, and charge-offs.

45 Theory Hours — 45 Contact Hours

CRM 205 CREDIT MANAGEMENT PROBLEMS (A,AEC)

3 Credit Hours

Prerequisite: CRM 112 Credit Fundamentals

Case studies and discussions of credit department functions as they relate to the overall management of objectives of the business firm. Also explores the relationship of credit to other aspects of the business enterprise.

45 Theory Hours — 45 Contact Hours

CRM 206 CREDIT AND THE LAW (A,AEC)

3 Credit Hours

Prerequisites: CRM 112, MAN 106 or permission of instructor

A presentation of the legal aspects of credit as it relates to interest, collections, conditional sales and installment contracts, wage assignments and the basic rights of debtor and creditor.

45 Theory Hours — 45 Contact Hours

Computer Science

CSC 105 COMPUTERS AND YOU (A,R,AEC)

3 Credit Hours

Prerequisites: None

A course designed to familiarize all students with the computer and its application in today's home. Each student will work with the computer using pre-written programs and learn the basics of the logic used in programming a computer. Applications to be covered will include money and resource management, consumer affairs and the use of computers for entertainment.

30 Theory Hours — 45 Lab Hours — 75 Contact Hours

CSC 111 INTRODUCTION TO COMPUTING WITH BASIC (A,R)

4 Credit Hours

Prerequisite: MAT 112

An introductory course in computer programming that will acquaint the student with the elements of the BASIC language, elementary programming techniques, and how a computer operates. This course is a prerequisite for all other CSC courses.

45 Theory Hours — 45 Lab Hours — 90 Contact Hours

CSC 112 ADVANCED BASIC (A,R)

3 Credit Hours

Prerequisites: CSC 111 and MAT 121

A continuation of CSC 111 that will introduce the student to the more advanced features of today's extended BASICs. Topics will include numerical methods, string manipulations and use of sequential and random files.

45 Theory Hours — 45 Contact Hours

CSC 150 PROGRAMMING IN FORTRAN IV (A,R)

4 Credit Hours

Prerequisites: CSC 111 and MAT 121

An introduction to the FORTRAN language and the use of this language in advanced programming techniques including numerical methods, sub-routines, string handling and file manipulation.

45 Theory Hours — 45 Lab Hours — 90 Contact Hours

CSC 155 PROGRAMMING IN PASCAL (A,R)

4 Credit Hours

Prerequisites: CSC 111 and MAT 121

An introduction to the PASCAL language and the application of its structured nature to such areas as numerical methods, string handling, and file manipulation.

45 Theory Hours — 45 Lab Hours — 90 Contact Hours

CSC 200 INTRODUCTION TO COMPUTER SCIENCE (A,R,AEC)

3 Credit Hours

Prerequisites: CSC 112 or CSC 150 or CSC 160 or EDP 106

An introduction to the internal functions of a computer. Topics to be covered will include the various methods computers use for handling logic flow, storage and manipulation of numbers, variables, arrays, strings and subroutines.

45 Theory Hours — 45 Contact Hours

CSC 210 PROGRAMMING IN ASSEMBLER LANGUAGE (A,R)

4 Credit Hours

Prerequisites: CSC 112 or CSC 150 or CSC 160 or EDP 106

An introduction to assembly level programming for simple problems using the MACRO-11 Assembler on the PD 11/34A.

45 Theory Hours — 45 Lab Hours — 90 Contact Hours

CSC 215 INTRODUCTION TO COMPUTER HARDWARE (A,R)

3 Credit Hours

Prerequisite: CSC 200

An introduction to the electronics used in a computer system. The course will begin with elementary electronics, digital circuits, flip-flops, registers and then show how these elements are combined to form memory, input/output modules, the central processing unit, and finally the components that form a complete computer system.

30 Theory Hours — 45 Lab Hours — 75 Contact Hours

CSC 216 DATA STRUCTURES (A,R)

3 Credit Hours

Prerequisite: CSC 200

This course will provide the student with an introduction to data organization and manipulation. Topics to be covered will include queues, stacks, lists, trees, records and files. Various sorting and file handling techniques also be covered.

45 Theory Hours — 45 Contact Hours

CSC 217 OPERATING SYSTEMS (A,R)

3 Credit Hours

Prerequisite: CSC 200

This course will discuss the organization and design of several different operating systems ranging from a simple user system for micro-processors to a complex multi-user system on a multipurpose computer system.

45 Theory Hours — 45 Contact Hours

CSC 218 ADVANCED PROGRAMMING TECHNIQUES (A,R)

3 Credit Hours

Prerequisite: CSC 200

This course will be divided into two parts. The first third of the course will be an introduction to numerical analysis, plotting point mathematical packages, interpreters and compilers. The remaining two thirds of the course will be dedicated to applications of computers in the real world.

15 Theory Hours — 45 Contact Hours

CSC 221 INTRODUCTION TO COMPUTER OPERATION (A,R)

3 Credit Hours

Prerequisites: CSC 111 and permission of the Computer Center Coordinator

This course designed for student hands-on operation of both micro- and mini-computer systems. Students will learn "boot-up," operate and manage a computer system, and aid other students in the use of the computer systems.

15-135 Lab Hours (all lab's will be conducted in the computer Center) — 45-135 Contact Hours

CSC 222 COMPUTER OPERATIONS (A,R)

3 Credit Hours

Prerequisites: CSC 111 and permission of Computer Center Coordinator

This course has been designed to enable the student to become familiar with the operating system, command control language and system utilities on the PDP 11-4/A computer system and how they may be used to customize the operating system to satisfy specific needs.

15-135 Lab Hours — 45-135 Contact Hours

CSC 299 INDEPENDENT STUDY (A,R,AEC)

3 Credit Hours

Prerequisite: Consent of instructor

Please refer to the general description of Independent Study in this catalog.

15-135 Contact Hours

Dental Assisting

DEA 100 ORIENTATION TO DENTAL ASSISTING (N)

3 Credit Hours

Prerequisites: None

An overview of dentistry and the role of the Certified Dental Assistant in relationship to other members of the dental health team. A brief history of the progression, code of ethics, jurisprudence and legal implications also included.

15 Theory Hours — 30 Contact Hours

DEA 105 INTRODUCTION TO DENTAL OPERATORY PROCEDURES (N)

3 Credit Hours

Prerequisites: None

An introduction to the basic responsibilities of the chairside dental assistant. Basic terminology, identification, care and maintenance of equipment, the prevention control program and off campus supervised observation of dental facilities.

30 Theory Hours — 45 Lab Hours — 75 Contact Hours

DEA 106 SCIENCE OF DENTAL MATERIALS (N)

3 Credit Hours

Prerequisites: None

Chemical properties and uses of dental materials and solutions. Manipulation of impression materials and gypsum products are included.

15 Theory Hours — 45 Lab Hours — 60 Contact Hours

DEA 107 DENTAL SCIENCE (N)

3 Credit Hours

Prerequisite: BIO 111

This course covers oral anatomy and physiology, microscopic anatomy, pathology and bacteriology, physiology of eating and breathing, oral structure and terminology.

45 Theory Hours — 45 Contact Hours

DEA 108 DENTAL CHAIRSIDE PROCEDURES I (N)

2 Credit Hours

Prerequisite: DEA 105

An introduction to the identification and use of dental instruments in general dentistry, operation of equipment in the dental operator, assisting in four handed dentistry and sterilization techniques.

15 Theory Hours — 22.5 Lab Hours

37.5 Contact Hours

DEA 109 APPLIED SCIENCE OF DENTAL MATERIALS (N)

3 Credit Hours

Prerequisites: DEA 106

Chemical properties and manipulation of restorative materials.

15 Theory Hours — 45 Lab Hours — 60 Contact Hours

DEA 110 DENTAL OFFICE BOOKKEEPING (N)

3 Credit Hours

Prerequisites: DEA 100

Basic bookkeeping for accounts receivable, accounts payable, payroll, taxes, filing systems. Basic math background essential.

15 Theory Hours — 45 Lab Hours — 60 Contact Hours

DEA 115 ODONTOLOGY (N)

3 Credit Hours

Prerequisites: DEA 100, DEA 105

A course in descriptive anatomy of teeth, i.e. the external form and relationship of teeth. Laboratory experience in the preparation of a three dimensional record of each tooth is included. This course prepares the student for the expanded duty course area of packing and carving of amalgam and composite restorations.

15 Theory Hours — 45 Lab Hours — 60 Contact Hours

DEA 200 DENTAL ROENTGENOLOGY (N)

4 Credit Hours

Prerequisites: DEA 107

Principles, practices, and safety precautions in the operation of all types of dental x-ray units are studied. Various exposure techniques of intra oral and extra oral radiographs, will be practiced.

30 Theory Hours — 45 Lab Hours — 75 Contact Hours

DEA 205 DENTAL CHAIRSIDE PROCEDURES II (N)

5 Credit Hours

Prerequisites: DEA 105, DEA 108

A continuation of DEA 108. A further study of instruments, their identification, with concentration on use in specialty practices chairside treatment sequences. The student will prepare and present a table clinic, and counsel first year students in preventive dental care.

30 Theory Hours — 45 Practicum Hours

45 Lab Hours — 120 Contact Hours

DEA 206 EMERGENCY MEASURES FOR DENTAL ASSISTANTS (N)

1 Credit Hour

Prerequisites: BIO 112, DEA 107

A discussion of physiologic processes relevant to common dental emergency situations and the planning and immediate response measures required by those emergencies.

15 Theory Hours — 15 Contact Hours

DEA 207 PHARMACOLOGY FOR DENTAL ASSISTANTS (N)

1 Credit Hour

Prerequisites: BIO 112, DEA 107

An overview of pharmacologic agents used in dental practice. Drug therapy measures for emergency situations included.

15 Theory Hours — 15 Contact Hours

DEA 208 ADVANCED LABORATORY PROCEDURES (N)

2 Credit Hours

Prerequisites: DEA 205

Students are given opportunity to put together previous course information and manipulation of materials to construct orthodontic space maintainers, temporary crowns and bridges, personalized trays and take impressions out of various materials.

45 Lab Hours — 45 Contact Hours

DEA 209 ADVANCED OPERATORY PROCEDURES (N)

3 Credit Hours

Prerequisites: DEA 205 or equivalent

Pumice prophylaxis, topical fluoride application and polishing amalgam restorations are covered in this class, placing and finishing of amalgam and composite restorations in typodonts and prepared models.

15 Theory Hours — 45 Lab Hours — 60 Contact Hours

DEA 210 CLINICAL PRACTICUM (N)

10 Credit Hours

Prerequisite: DEA 205

This course provides an opportunity for the students to apply their knowledge and further their skills, essential for employment as dental assistants. Students are assigned to dental offices and clinics for this experience.

450 Contact Hours

DEA 215 CLINICAL REVIEW (N)

Prerequisites: Concurrent enrollment in DEA 210

Feedback and class discussion of clinical experience encountered the previous week. Evaluation of dental assisting techniques and improvements of skills.

23 Lab Hours — 23 Contact Hours

DEA 216 DENTAL OFFICE MANAGEMENT (N)

2 Contact Hours

Prerequisite: DEA 110

Appointment control, treatment and case history planning, insurance records, recall and inventory.

45 Lab Hours — 45 Contact Hours

DEA 225 RUBBER CUP PUMICE PROPHYLAXIS (N)

3 Credit Hours

Prerequisites: None

Principles of technique for rubber cup polishing with use of disclosing agents, fluoride treatments, auxiliary plaque control measures and care of dental appliances.

15 Theory Hours — 45 Lab Hours — 60 Contact Hours

DEA 226 PLACING AND FINISHING AMALGAM AND COMPOSITE RESTORATIONS (N)

4 Credit Hours

Prerequisites: None

Acorde Program presented for Class I through Class II placements, finishing and polishing of restorations material using Rubber Dam techniques.

30 Theory Hours — 45 Lab Hours — 75 Contact Hours

DEA 227 ORAL SURGERY ASSISTING (N)

2 Credit Hours

Prerequisites: None

Oral Surgery Assisting in private practice. Subject material includes pre-medications, drugs common levels of anesthesia, instrumentation, transfer methods and zones, sterilization procedures, suture removal, post op care and emergency measures as they relate to oral surgery patients.

30 Theory Hours — 30 Contact Hours

DEA 228 HOSPITAL SURGICAL PROCEDURES FOR DENTAL ASSISTING (N)

3 Credit Hours

Prerequisites: None

A course to familiarize the private practice auxiliary with general hospital procedures including general record keeping, scrub technique, gowning and gloving, O.R. equipment and set-ups. Technical information on various dental procedures presented to differentiate instrument set-up and sequencing of surgical assisting procedures.

15 Theory Hours — 30 Lab Hours — 45 Contact Hours

DEA 229 MINOR DENTAL LABORATORY REPAIR IN ACRYLICS (N)

2 Credit Hours

Prerequisites: None

Broken retainers, cracked dentures, replacement of broken tooth in denture will be repaired; mouth guard temporary crowns and bridges will be constructed.

30 Theory Hours — 30 Contact Hours

EA 230 OFFICE MANAGEMENT AND SUPERVISION (N)

Credit Hours
Prerequisites: None
This course includes personnel management, interview and hiring techniques, financial record responsibilities, inventory controls, time and motion studies, effective delegation of duties and utilization of equipment and personnel.
30 Theory Hours — 30 Contact Hours

EA 235 PREVENTIVE THERAPY I (N)

Credit Hour
Prerequisites: None
Designed to provide the dental assistant with the skills and motivation necessary to apply the principles of preventive dentistry to his own oral cavity.
15 Theory Hours — 15 Contact Hours

EA 236 PREVENTIVE THERAPY COUNSELING II (N)

Credit Hour
Prerequisites: None
Designed to provide the dental assistant with the skills necessary to become a preventive therapist in a dental facility. The course will include patient motivation techniques, plaque removal aids and nutrition counseling.
15 Theory Hours — 15 Contact Hours

Dietetic Technology

DIT 100 DIETETICS ORIENTATION (N,AEC)

Credit Hour
Prerequisites: None
An introduction and orientation to the field of dietetic supportive personnel. Course activities include speaker presentations and self-concept development activities.
15 Theory Hours — 15 Contact Hours

DIT 102 WEIGHT REDUCTION (N)

Credit Hours
Prerequisites: None
For those individuals who desire guidance on weight loss following good nutrition principles, exercise and establishing life-long eating patterns.
30 Theory Hours — 30 Contact Hours

DIT 104 FOOD CONSUMERISM (N)

Credit Hours
Prerequisites: None
Exploring and practicing various activities in food consumerism such as nutrition, planning, purchasing, storing, energy use, and recycling.
30 Theory Hours — 30 Contact Hours

DIT 105 SANITATION, SAFETY, TOOLS AND EQUIPMENT (N)

Credit Hours
Prerequisites: None
This course dealing with the fundamentals of commercial food service laws, rules, and regulations on sanitation and safety and how these apply to the tools and equipment facilities and personnel of the industry.
15 Theory Hours — 45 Lab Hours — 60 Contact Hours

DIT 106 NUTRITIONAL ECOLOGY OF MAN (N)

3 Credit Hours
Prerequisites: None
If you are interested in how the environment affects your nutritional requirements, this course is for you.
45 Theory Hours — 45 Contact Hours

DIT 107 APPLIED DIETETIC TERMINOLOGY (N,AEC)

2 Credit Hours
Prerequisites: None
Terminology of dietetics as used in understanding the role of dietetics in the hospital, in the human body, and in understanding the patient chart.
30 Theory Hours — 30 Contact Hours

DIT 108 NUTRITION FOR HEALTH (A,N,AEC)

3 Credit Hours
Prerequisites: None
This course presents basic information and nutrition and diet therapy to students in dietetic technology and other health related fields. This course is open to any student interested in the field.
45 Theory Hours — 45 Contact Hours

DIT 109 VOLUME FOOD PREPARATION AND SERVICE (N)

3 Credit Hours
Prerequisites: Proficiency in DIT 105
This includes planning meals, table count and cafeteria service. Basic stocks, sauces, secondary sauces, gravies, independent production and casserole cookery are stressed.
15 Theory Hours — 45 Lab Hours — 60 Contact Hours

DIT 110 THE MODIFIED DIET AND ITS SERVICE (N)

4 Credit Hours
Prerequisites: DIT 108
Understanding of diet as a therapeutic tool in general illnesses. Preparation and service of modified foods.
45 Theory Hours — 23 Lab Hours — 68 Contact Hours

DIT 115 NUTRITION (N)

1 Credit Hour
Prerequisites: None
Basic elements of nutrition as required for nursing.
15 Theory Hours — 15 Contact Hours

DIT 120 PRE CLINICAL (N)

4 Credit Hours
Prerequisites: None
Exploration of dietetic field for student with limited background. Observations at clinical facilities.
30 Theory Hours — 90 Contact Hours

DIT 121 CLINICAL EXPERIENCE (N)

4-12 Credit Hours
Prerequisites: DIT 100, DIT 108, concurrent CIT 110 or permission of instructor.
Special needs groups in the community are considered from the viewpoint of the nutritionist working with them.
15-45 Theory Hours — 150-450 Contact Hours

DIT 135 PURCHASING AND STOCK RECORD CONTROL MANAGEMENT (N)

3 Credit Hours

Concurrent: DIT 105, DIT 109

The student will become familiar with means of determining quality and other standard levels of purchased items. The emphasis will be on feasibility of need, methods of, and control in purchasing and accounting for purchased items.

45 Theory Hours — 45 Contact Hours

DIT 155 BASIC NUTRITION (N)

2 Credit Hours

Prerequisites: None

Required for Early Childhood Education and Management, and Dental Assisting. A survey of basic nutrition of general interest. Open to all students.

30 Theory Hours — 30 Contact Hours

DIT 212 NUTRITIONAL CARE SEMINAR (N)

3 Credit Hours

Prerequisites: DIT 107, DIT 110, BIO 106 or 111.

A case study application of normal diet modifications to therapeutic nutrition.

45 Theory Hours — 45 Contact Hours

DIT 215 PERSONNEL, LABOR RELATIONS AND SUPERVISION (N)

3 Credit Hours

Prerequisites: None

The student will understand methods and reasons for suitable recruiting, selecting, training and motivating the proper staffing of employees in the hospitality industry. Also, the effect of labor relation negotiations and contracts on the operations and supervision of the work force.

45 Theory Hours — 45 Contact Hours

DIT 220 MENUS AND THEIR OPERATIONAL IMPLICATIONS (N)

3 Credit Hours

Prerequisites: None

The student will gain proficiency in developing through analytic planning and determination of customer desires, menus within constraints of allowed costs, required nutrition, desirable color and texture, and available staff and equipment limitations, as well as mechanical confines, through programmed lab experience.

45 Theory Hours — 45 Contact Hours

DIT 240 FOOD MANAGEMENT SEMINAR (N)

3 Credit Hours

Prerequisites: None

Layout, purchasing of food supplies and equipment specifically for health care food service.

45 Theory Hours — 45 Contact Hours

DIT 250 DIETETIC SEMINAR (N)

3 Credit Hours

Prerequisites: DIT 212, DIT 222, DIT 240

Application of principles of personnel and food management to specific health care food service situation.

45 Theory Hours — 45 Contact Hours

DIT 256 SPECIFICS OF FOOD OPERATIONS MANAGEMENT (N)

3 Credit Hours

Prerequisites: None

This course is designed for students having previous work experience in a particular major field of Food Operations Management in a specific area of the hospitality industry and will serve to reinforce their practical experience and gain proficiency or enhance job knowledge the better methods of accomplishing their task.

45 Theory Hours — 45 Contact Hours

DIT 260 DIETETIC REVIEW AND UPDATE (N)

3 Credit Hours

Prerequisites: None

This course is designed for the dietetic technician graduate or advanced student who wishes to keep abreast of continuous changes in the field.

45 Theory Hours — 45 Contact Hours

DIT 297 CLINICAL WORK EXPERIENCE (N)

2 Credit Hours

Prerequisites: None

In some cases, students may wish to divide clinical involvement into two segments to provide a wider scope of experience. This may be provided by scheduling DIT 297 at two different times.

15 Theory Hours — 60 Lab Hours — 75 Contact Hours

DIT 299 INDEPENDENT STUDY IN DIETETICS (N)

1 to 5 Credit Hours

Prerequisites: Second year standing and permission of program director.

In depth study in area of student's special interest.

22-210 Contact Hours

Diesel Power — Heavy Equipment and Truck Mechanics

DPE 100 SAFETY, TOOLS, BOLTS, BEARINGS, GASKETS AND SEALS (R)

3 Credit Hours

Prerequisites: None

The student is taught shop and trade safety, the proper use of hand tools, tensile strength and grades of nuts and bolts, features and design of various types of bearings and load ratings, and types of seals and gaskets. The student studies special tools used. The student will have prescribed times of days to spend in the toolroom during the entire two-year period for advanced studies special tools.

15 Theory Hours — 45 Lab Hours — 60 Contact Hours

DPE 105 FOUR-CYCLE ENGINE OVERHAUL (R)

6 Credit Hours

Prerequisites: DPE 100

An introduction of the fundamentals of four-cycle engine and procedures for disassembling and reassembling tune-up, test run and troubleshooting are taught. A study of subassemblies, their function and rebuilding procedures, including turbo chargers, oil pumps, fan hubs and water pumps are also taught.

30 Theory Hours — 90 Lab Hours

120 Contact Hours

DPE 106 TWO-CYCLE ENGINE OVERHAUL (R)

6 Credit Hours

Prerequisites: DPE 100

An introduction to the fundamentals of two-cycle engines and procedures for disassembling and reassembling, tune-up, test run and troubleshooting are taught. Students will learn subassemblies, their function and rebuilding procedures, including blowers and blower rebuild, oil pumps, fan hubs and water pumps.

30 Theory Hours — 90 Lab Hours

120 Contact Hours

DPE 107 CLUTCHES AND MANUAL TRANSMISSIONS (R)

9 Credit Hours

Prerequisites: DPE 100

Students are taught types and sizes of clutches and bell housings, drive-types and universal joints. They are also taught theory of designs, gears and gear ratios; disassembly, inspection, and replacement of parts and reassembly of same.

45 Theory Hours — 135 Lab Hours

180 Contact Hours

DPE 108 POWER-SHIFT TRANSMISSIONS (R)

6 Credit Hours

Prerequisites: DPE 100

The student is taught theory, operation and rebuilding, principles and operations of torque converters and fluid couplings.

30 Theory Hours — 90 Lab Hours

120 Contact Hours

DPE 200 DIFFERENTIALS (R)

3 Credit Hours

Prerequisites: DPE 100 or permission of the instructor.

The student is taught the purpose, theory and operation of differentials as used in trucks and heavy equipment, and the class includes overhaul and adjusting of the differentials.

15 Theory Hours — 45 Lab Hours — 60 Contact Hours

DPE 201 CHASSIS COMPONENTS AND SUSPENSION SYSTEMS (R)

6 Credit Hours

Prerequisites: DPE 100 or permission of the instructor.

The student is taught the purpose, types, principle parts, care and maintenance, removal and installation of the same.

30 Theory Hours — 90 Lab Hours

120 Contact Hours

DPE 202 STEERING SYSTEMS (R)

6 Credit Hours

Prerequisites: DPE 100 or permission of the instructor.

The student is taught theory of operation, types and methods used, troubleshooting, repair and adjustment procedures.

30 Theory Hours — 90 Lab Hours

120 Contact Hours

DPE 205 BRAKE SYSTEMS (AIR HYDRAULIC) (R)

3 Credit Hours

Prerequisites: DPE 100 or permission of the instructor.

Terminology, components, types of systems, principles of operation, disassembly, rebuilding and assembly of various systems are taught.

15 Theory Hours — 45 Lab Hours — 60 Contact Hours

DPE 208 ELECTRICAL TROUBLESHOOTING (R)

6 Credit Hours

Prerequisites: DPE 100 or permission of the instructor.

The student in this class is taught theory, starting with the lead acid battery. The class also includes the study and maintenance of starters, alternators, generators and lights, and reviews electrical systems and accessories.

30 Theory Hours — 90 Lab Hours — 120 Contact Hours

DPE 210 PRACTICAL SHOP EXPERIENCE (R)

6 Credit Hours

Prerequisites: DPE 100 or permission of the instructor.

This class will utilize all previous classes taught, using hands-on experience to increase the student's ability to apply his/her knowledge to improve his/her mechanical aptitude.

120 Lab Hours — 120 Contact Hours

DPE 211 INTRODUCTION TO ENGINE AND FUEL SYSTEM DESIGN RELATIONSHIPS (R)

1 Credit Hour

Prerequisites: None

This class studies engine design, timing, and principles of injection and factors directly relating to fuel injection.

5 Theory Hours — 15 Lab Hours — 20 Contact Hours

DPE 215 ADVANCED ENGINE STUDY — CATERPILLAR (R)

3 Credit Hours

Prerequisites: DPE 211 or permission of the instructor.

This class is the study and tune-up of Caterpillar engines, dealing with the systems and subassemblies unique to the manufacturer's design.

15 Theory Hours — 45 Lab Hours — 60 Contact Hours

DPE 216 ADVANCED ENGINE STUDY — CUMMINS (R)

3 Credit Hours

Prerequisites: DPE 211 or permission of the instructor.

This class is the study and tune-up of Cummins engines, dealing with the systems and subassemblies unique to the manufacturer's design.

15 Theory Hours — 45 Lab Hours — 60 Contact Hours

DPE 217 ADVANCED ENGINE STUDY — DETROIT DIESEL (R)

4 Credit Hours

Prerequisites: DPE 211 or permission of the instructor.

This class is the study of, and the tune-up of Detroit Diesel engines, dealing with the systems and subassemblies unique to the manufacturer's design.

20 Theory Hours — 60 Lab Hours — 80 Contact Hours

DPE 218 ADVANCED ENGINE STUDY — ALLIS CHALMERS (R)

3 Credit Hours

Prerequisites: DPE 211 or permission of the instructor. This class is the study of, and the tune-up of Allis Chalmers engines, dealing with the systems and subassemblies unique to the manufacturer's design.

15 Theory Hours — 45 Lab Hours — 60 Contact Hours

DPE 219 ADVANCED FUEL SYSTEMS — CUMMINS (R)

3 Credit Hours

Prerequisites: DPE 211 or permission of the instructor. Cummins fuel pumps and injectors, theory, disassembly, reassembly and calibration are taught.

15 Theory Hours — 45 Lab Hours — 60 Contact Hours

DPE 220 ADVANCED FUEL SYSTEMS — ROOSAMASTER (R)

3 Credit Hours

Prerequisites: DPE 211 or permission of the instructor. Roosamaster pump and pencil nozzles theory, disassembly, reassembly and calibration are taught.

15 Theory Hours — 45 Lab Hours — 60 Contact Hours

DPE 225 ADVANCED FUEL SYSTEMS — CATERPILLAR (R)

3 Credit Hours

Prerequisites: DPE 211 or permission of the instructor. Caterpillar pumps, nozzles and precombustion chambers, theory, disassembly, reassembly and calibration are taught.

15 Theory Hours — 45 Lab Hours — 60 Contact Hours

DPE 226 ADVANCED FUEL SYSTEMS — AMERICAN BOSCH (R)

3 Credit Hours

Prerequisites: DPE 211 or permission of the instructor. American Bosch pumps and nozzles, theory, disassembly, reassembly and calibration are taught.

15 Theory Hours — 45 Lab Hours — 60 Contact Hours

DPE 227 ADVANCED FUEL SYSTEMS — ROBERT BOSCH (R)

2 Credit Hours

Prerequisites: DPE 211 or permission of the instructor. Robert Bosch pumps, theory, disassembly, reassembly and calibration are taught.

10 Theory Hours — 30 Lab Hours — 40 Contact Hours

DPE 228 ADVANCED FUEL SYSTEMS — DETROIT (R)

3 Credit Hours

Prerequisites: DPE 211 or permission of the instructor. Detroit Diesel pump and injectors, theory, disassembly and reassembly, testing and calibrating injectors on stand are taught.

15 Theory Hours — 45 Lab Hours — 60 Contact Hours

DPE 229 ADVANCED TROUBLESHOOTING AND TUNE-UP (R)

7 Credit Hours

Prerequisites: DPE 211 or permission of the instructor. Advanced troubleshooting techniques used in industry on diesel-powered equipment are taught.

35 Theory Hours — 105 Lab Hours

140 Contact Hours

DPE 235 AIR-CONDITIONING SYSTEMS (R)

3 Credit Hours

Prerequisites: DPE 211 or permission of the instructor. Automotive air-conditioning used in the diesel industry, and truck refrigeration systems are taught.

15 Theory Hours — 45 Lab Hours — 60 Contact Hours

Drama

DRA 111 INTRODUCTION TO THEATRE ARTS (A,N,R,AEC)

3 Credit Hours

Prerequisites: None

Introduces basic principles of acting and a variety of production skills as appropriate to course of study and school activities. Offered normally Fall term.

45 Contact Hours

DRA 112 INTRODUCTION TO THEATRE ARTS (A,N,R,AEC)

3 Credit Hours

Prerequisites: DRA 111 or permission of the instructor. Continues development of acting principles through various school activities. Offered normally Spring term.

45 Contact Hours

DRA 121 READER'S THEATRE (A,AEC)

3 Credit Hours

Prerequisites: None

Trains students to select, cut, cast, produce and direct small scale production. Offered normally Fall term.

45 Contact Hours

DRA 131 PRACTICUM IN TEATRO (A,AEC)

3 Credit Hours

Prerequisites: None

Focusing upon current Chicano "Teatro," aids student in establishing techniques of acting, directing and play-writing. Offered as need or interest arises Fall term.

45 Contact Hours

DRA 211 SURVEY OF THEATRE I (A,N,R,AEC)

3 Credit Hours

Prerequisites: None

Surveys great plays, writers, performers, and critiques through play reading, acting and production with emphasis on Shakespeare. Offered normally Fall term.

45 Contact Hours

DRA 212 SURVEY OF THEATRE II (A,N,R,AEC)

3 Credit Hours

Prerequisites: None

Continues survey of drama from Restoration to Modern Theatre. Offered normally Spring term.

45 Contact Hours

DRA 221 THEATRE IMPROVISATION (A,AEC)

3 Credit Hours

Prerequisites: DRA 111 or DRA 112 or permission of instructor.

Develops skills in improvisation through the techniques and approaches of actual production. Offered as need or interest arises.

45 Contact Hours

DRA 299 INDEPENDENT STUDY (A,N,R,AEC)

1-3 Credit Hours

Prerequisite: Consent of instructor.

Please refer to the general description of Independent Study in this catalog.

15-45 Contact Hours

Drafting / Blueprint Reading**DPR 125 BLUEPRINT READING FOR CONSTRUCTION TRADES (R)**

4 Credit Hours

Prerequisites: None

Principles of interpreting blueprints and trade specifications common to the residential building trades.

68 Contact Hours

DPR 126 BLUEPRINT READING FOR MECHANICAL TRADES (R)

4 Credit Hours

Prerequisites: None

Principles of interpreting blueprints and trade specifications common to the mechanical trades.

68 Contact Hours

DPR 127 BUILDING INSPECTION FOR CONSTRUCTION TRADES (R)

4 Credit Hours

Prerequisites: None

Examination and evaluation of construction work in progress. Comparing and contrasting with recognized norms or standards to meet state and local building requirements.

68 Contact Hours

DPR 128 ESTIMATING RESIDENTIAL CONSTRUCTION COSTS (R)

4 Credit Hours

Prerequisites: None

Construction mathematical review, plan reading, specifications, excavation, take off estimates, concrete foundations, footings, caissons, and slab. Rough structure, and full enclosure.

68 Contact Hours

DPR 129 CONSTRUCTION MATERIALS I (R)

4 Credit Hours

Prerequisites: None

Terminology, nomenclature, board footage, lumber, plywood, millwork, brick cement will be covered by lecture and field trips.

68 Contact Hours

DPR 130 CONSTRUCTION MATERIALS II (R)

4 Credit Hours

Prerequisites: None

Roofing, drywall, steel products, beams, stress graded lumber, and building codes will be covered by lecture and field trips.

68 Contact Hours

DPR 135 BLUEPRINT READING (A)

3 Credit Hours

Prerequisites: None

Introductory course in reading, and interpretation of blueprints used by technicians. Emphasis is placed on visualization, sketching, and various systems of projection.

60 Contact Hours

Drafting for Construction**DRC 116 INTRODUCTION TO ARCHITECTURAL DRAFTING — FRAME CONSTRUCTION (R)**

6 Credit Hours

Prerequisites: DRI 105

Utilizing a specified floor plan with an emphasis on wood construction, various details will be drawn such as wall section, cross section, stair section, elevations, fireplaces, foundation plans and sections, various schedules, dimensioning methods, window and door details.

120 Contact Hours

DRC 200 INTRODUCTION TO COMMERCIAL ARCHITECTURE — MASONRY CONSTRUCTION (R)

6 Credit Hours

Prerequisites: DRC 116

Utilizing a given floor plan with an emphasis on masonry and concrete construction, various details will be drawn such as wall sections, cross sections, stair sections, elevations, foundation plans and section, masonry coursing and precast units.

120 Contact Hours

DRC 207 ARCHITECTURAL DEVELOPMENT OF AN INDUSTRIAL / COMMERCIAL FACILITY (R)

6 Credit Hours

Prerequisites: DRC 200

Work will be with building relationships, floor plans, elevations, and architectural details for a facility and its equipment requirements.

120 Contact Hours

DRC 208 STRUCTURAL DEVELOPMENT OF AN INDUSTRIAL / COMMERCIAL FACILITY (R)

6 Credit Hours

Prerequisites: DRC 200

Plans and pertinent details will be drawn as they relate to the building complex such as steel columns and beams and their respective details, various trusses and roof framing systems, shop drawings and concrete details as well as structural considerations for installations of equipment.

120 Contact Hours

**DRC 209 FINALIZING THE INDUSTRIAL /
COMMERCIAL FACILITY PROJECT (R)**

3 Credit Hours

Prerequisites: DRC 208

Work will relate to the finalizing of plans and details, checking against codes and specifications, construction methods and procedures and last minute modifications and/or as built drawings.

60 Contact Hours

**DRC 210 ARCHITECTURAL TECHNICAL PROJECT
(R)**

3-6 Credit Hours

Prerequisite: Permission of instructor.

This is a technical project consisting of: 1. a student written and faculty approved proposal; 2. scheduled progress reports; 3. a finalized set of drawings (plans, elevations and details) sufficient to determine the various aspects of the proposal. Proposals must be approved prior to course registration. The purpose is to allow students to expand knowledge in DRC 207, 208, or 209. This course is in addition to the required program credit hours.

60-120 Contact Hours

Drafting for Industry

DRI 105 INTRODUCTION TO DRAFTING (A,R)

6 Credit Hours

Prerequisites: None

Serves as an introductory course to drafting for all students, drafting majors and non-majors. It is the introductory course for all certificate and associate degree programs in drafting and also satisfies introductory or basic drafting requirements for all programs such as civil technology, petroleum, carpentry, surveying, etc. and serves as an exploratory course for non-occupational students. The following areas will be introduced: 1) lettering, linework, reproduction methods and geometric constructions; 2) orthographic projection and sketching; 3) isometric sketching; 4) orthographic and isometric drafting practices; 5) sections and conventions; and 6) basic dimensions (mechanical, architectural, civil/topographic mapping).

120 Contact Hours

**DRI 106 BASIC DESCRIPTIVE GEOMETRY AND
AUXILIARY VIEW PROJECTION (A,R)**

3 Credit Hours

Prerequisites: None

The following problem areas will be covered: 1) Line problems; true length, point view, bearing, slope and azimuth. 2) Plane problems: edge view, dihedral angle, true size and shape of any plane, true angle between two lines, true length of a line by the principle line method. 3) Shortest distances between: parallel and non-parallel lines, lines and planes. 4) Interesting lines: lines, lines and planes, and planes.

60 Contact Hours

**DRI 107 DRAFTING AND DIMENSIONING
PRACTICES (A,R)**

5 Credit Hours

Prerequisites: DRI 105

Expands the principles of orthographic projection, isometric drawing, sections and conventions and basic dimensioning practices for cast and machined parts and the drawing, specifying and applications of threaded fasteners. Cumulative, aligned, fractional, unidirectional, coordinate, and decimal dimensioning systems will be used. Shop practices and practical applications will be discussed. (Note: DRI 108, Inking Methods, must be taken at the same time as DRI 107.)

100 Contact Hours

DRI 108 INKING METHODS (A,R)

1 Credit Hour

Prerequisites: Must be taken at the same time as DRI 107.

Introduces inking methods and applications. Work will be on both tracing paper and mylar and will include orthographic and section drawings with dimensioning applications and the use of the LeRoy lettering system.

20 Contact Hours

**DRI 109 INTERSECTIONS AND DEVELOPMENTS
(A,R)**

3 Credit Hours

Prerequisites: DRI 105

Introduces the principles of flat and curved surface intersections and their resulting developments in terms of their materials and heavy plate applications. Right and oblique prisms, cylindrical and conical surfaces transitions and their resulting intersections and developments will be completed.

60 Contact Hours

**DRI 110 INTRODUCTION TO ASSEMBLY AND
WELDMENT DRAWINGS (A,R)**

3 Credit Hours

Prerequisites: DRI 107

Introduces assembly and detail drawings by the use of welded assembly. Introduces drawing layout and dimensioning methods, subassembly, part callouts and material lists. Applies welding symbols, their functions and methods of representation. Uses fractional, aligned, cumulative and metric dimensions.

60 Contact Hours

DRI 115 PERSPECTIVE DRAWING (A,R)

3 Credit Hours

Prerequisites: DRI 105

Introduces two point perspectives and presentation charts, including diagrams and drawings.

60 Contact Hours

DRI 116 MECHANICAL ASSEMBLY AND DETAIL PROJECTS (A,R)

6 Credit Hours

Prerequisites: DRI 115

Introduces the drawing of mechanical and operating mechanical assemblies and subassemblies and may include cast, welded or machined materials and purchased parts. Includes preparation of appropriate assembly drawings and necessary detail drawings utilizing required parts callouts and material lists and appropriate dimensions for the subject matter. Introduces precision dimensioning techniques.

120 Contact Hours

DRI 200 INDUSTRIAL PLANT DEVELOPMENT (A,R)

3 Credit Hours

Prerequisites: DRI 116

Requires the drawing of preliminary plans for an industrial plant development utilizing process flow diagrams, mechanical equipment and building relationships, preliminary drawings, plot plan and civil requirements relating to industrial production processes and requirements.

20 Contact Hours

DRI 205 INTRODUCTION TO ARCHITECTURAL-STRUCTURAL PLANS AND DETAILS (A,R)

3 Credit Hours

Prerequisites: DRI 200

Requires the drawing of a small industrial building utilizing masonry, concrete and steel plans and details showing architectural and structural elements of floor plans, foundation plans, elevations and pertinent sections, beam, column and foundation details, use of AISC Manual of Steel Construction, Smoley's Tables and Architectural Graphic Standards.

20 Contact Hours

DRI 206 INDUSTRIAL PIPING AND UTILITY CONSIDERATIONS (A,R)

3 Credit Hours

Prerequisites: DRI 105

Requires industry-related drawings based on details for industrial piping and/or electrical, hydraulic or pneumatic systems; plumbing, heating and air conditioning considerations.

20 Contact Hours

DRI 207 LARGE MECHANICAL EQUIPMENT (A,R)

3 Credit Hours

Prerequisites: DRI 205

Involves the development of large mechanical assemblies, their subassemblies and details pertinent to their manufacture and installation. Types of assemblies may include rotary dryers, dust collectors, vessels, hoppers, bins, separators and similar equipment. The AISC Manual of Steel Construction and Smoley's Tables will be used.

20 Contact Hours

DRI 208 MATERIAL HANDLING AND CONVEYING METHODS (A,R)

6 Credit Hours

Prerequisites: DRI 205

Introduces material handling methods, systems, equipment and building factors used in conveying bulk material or packaged goods. Includes developing plans, details and drive components for a material handling system as determined by preliminary drawings from DRI 200 such as: crane, hoist, monorail, bucket elevator, chain, belt or roll conveyor, etc.

120 Contact Hours

DRI 209 INSTALLATION PLANS AND DETAILS (A,R)

3 Credit Hours

Prerequisites: DRI 208

Requires drawings of plans and details for the installation of various types of industrial equipment in a new or existing plant situation.

60 Contact Hours

DRI 210 MECHANICAL TECHNICAL PROJECT (A,R)

3-6 Credit Hours

Prerequisite: Permission of instructor.

This is a technical project consisting of: 1) A student written and faculty approved proposal; 2) Scheduled progress reports; 3) A finalized set of drawings (assemblies, subassemblies, pertinent details, material lists, etc.) sufficient to determine the various aspects of the proposal. Proposals must be approved prior to course registration. The purpose is to allow the student to expand knowledge in DRI 207, 208 or 209. This course is in addition to the required program credit hours.

60-120 Contact Hours

DRI 297 COOPERATIVE WORK EXPERIENCE (A,R)

2-9 Credit Hours

Prerequisite: Permission of instructor.

Coordinates course work and industry work experience.

60-375 Contact Hours

DRI 299 INDEPENDENT STUDY (A,R)

3 Credit Hours

Prerequisites: Permission of instructor.

Provides for individual study on a special project which is related to the drafting program, and outside the program offerings.

90 Contact Hours

Drafting for Civil / Topographic Mapping

DRM 116 INTRODUCTION TO CIVIL / TOPOGRAPHIC MAPPING (A,R)

6 Credit Hours

Prerequisite: DRI 105

Introduces various techniques of civil/topographic mapping utilizing a specified plat. Content will include working from field notes, bearing and distance, traverses, coordinates, plat maps, plat or site plans, contours and various civil, topographic and geological surface and subsurface conventions.

120 Contact Hours

DRM 200 MAP CONSTRUCTION TECHNIQUES (A,R)

9 Credit Hours

Prerequisite: DRI 105

Studies the following areas and materials as used in base map construction: land and geological symbols, adhesive-backed transfer type and pattern screens, independent and dependent survey, planimetric measurements, route curves, easements and spirals, survey plats, topographic sheets, aerial photos and survey notes.

180 Contact Hours

DRM 205 ADVANCED MAP CONSTRUCTION TECHNIQUES (A,R)

9 Credit Hours

Prerequisite: DRM 200

Involves base and overlay map construction, the use of metes and bounds, written legal descriptions, coordinates, latitude and longitude, azimuth and tangent methods.

120 Contact Hours

DRM 210 CIVIL TOPOGRAPHIC MAPPING TECHNICAL PROJECT (R)

3-6 Credit Hours

Prerequisite: Permission of instructor

This is a technical project consisting of:

- 1) A student written and faculty approved proposal.
- 2) Scheduled progress reports.
- 3) A finalized set of drawings and related details sufficient to determine the various aspects of the proposal.

Proposals must be approved prior to course registration. The purpose is to allow students to expand knowledge in specific areas. This course is in addition to the required program credit hours.

60-120 Contact Hours

Drafting — Solar**DRS 210 SOLAR DRAFTING TECHNICAL PROJECT (R)**

6 Credit Hours

Prerequisite: Permission of instructor

This is a technical project consisting of: 1. a written and approved proposal 2. scheduled progress reports 3. a finalized set of drawings (plans, elevations and details) sufficient to determine the various aspects of the proposal. Proposal must be approved prior to registration. This unit involves solar applications to architectural drafting.

120 Contact Hours

Earth Science**EAS 105 THE GEOLOGY OF THE REGIONAL NATIONAL PARKS AND MONUMENTS (R)**

3 Credit Hours

Prerequisites: None

This course will examine the geologic history of the national parks and monuments within a day's ride of Denver. Field trips will be taken.

45 Theory Hours — 45 Contact Hours

EAS 106 ENVIRONMENTAL GEOLOGY OF COLORADO (R)

4 Credit Hours

Prerequisites: None

A study of the environment from a geologic perspective. Many examples taken from Colorado and elsewhere illustrate problems of land use, geologic hazards, mineral resources, and energy needs for the future. Laboratory work involves field trips to local areas to examine landslides, swelling soils, dams, and river floodplains as well as indoor work with rocks, minerals, topographic, and geologic maps.

45 Theory Hours — 45 Lab Hours — 90 Contact Hours

EAS 107 AIRPHOTO INTERPRETATION (R)

3 Credit Hours

Prerequisites: None

An introduction to our environment using airphoto maps, and remote sensing data. Emphasis is on the development of skills and reasoning ability required for interpretation of geologic features and aspects of forestry, agriculture, land use, engineering, urban planning, and industrial problems. Laboratory work includes practical use of the stereoscope, simple photogrammetric instruments, maps, photomaps, and air photographs.

15 Theory Hours — 90 Lab Hours

105 Contact Hours

EAS 108 WEATHER AND CLIMATE (R)

4 Credit Hours

Prerequisites: None

The behavior of the atmosphere and its influence on man's activities. Topics include weather observation, solar radiation, pressure and wind, precipitation, climates of the earth, and theories of climate change.

45 Theory Hours — 45 Lab Hours — 90 Contact Hours

EAS 111 PHYSICAL GEOLOGY (R)

4 Credit Hours

Prerequisites: None

An introductory study of the earth. Emphasis is on recognizing earth materials, discovering the relationship between crustal movements and the earth's interior mountain building, metamorphism, volcanism, and earthquakes; and investigating the role of weathering, landslides, streams, waves, wind, and groundwater in shaping the land surface. Laboratories include studies of Rocky Mountain geology through field investigations, field trips, and museum tours. EAS 111 and EAS 112 constitute a one-year course in geology.

45 Theory Hours — 45 Lab Hours — 90 Contact Hours

EAS 112 HISTORICAL GEOLOGY (R)

4 Credit Hours

Prerequisites: EAS 111 or consent of instructor.

An introductory study of the physical and biological origin and development of the earth through the vast span of geologic time. Emphasis is on investigating and interpreting sedimentary rocks, the record of ancient environments, fossil life forms, and physical events, all within the framework of shifting crustal plates. Laboratories include studies of Rocky Mountain geology through field investigations, field trips, and museum tours. EAS 111 and EAS 112 constitute a one-year course in geology.

45 Theory Hours — 45 Lab Hours — 90 Contact Hours

EAS 115 MINERAL RESOURCES AND THE FUTURE (R)

Credit Hour
Prerequisites: None
An impending crisis! The decline of our mineral and energy resources. A study of mineral origins, distribution, use and politics and the impact of declining resources on the U.S. lifestyle.
5 Theory Hours — 15 Contact Hours

EAS 117 GEOLOGY OF THE WESTERN NATIONAL PARKS (R)

Credit Hour
Prerequisites: None
A study of the national parks grouped according to their geologic origin. Illustrated lectures.
5 Theory Hours — 15 Contact Hours

EAS 118 ROCKS AND MINERAL IDENTIFICATION (R)

Credit Hour
Prerequisites: None
Training and practice in identifying and classifying minerals and rocks using physical properties. For beginners and those who have completed physical geology.
5 Theory Hours — 15 Contact Hours

EAS 119 THE GREAT ICE AGE (R)

Credit Hour
Prerequisites: None
This course will analyze the effects of the Great Ice Age on the development of North America and will also explore theories of climatic change.
5 Theory Hours — 15 Contact Hours

EAS 120 WEATHER AT ITS WORST (R)

Credit Hour
Prerequisites: None
This course will analyze the causes of tornadoes, hurricanes, thunderstorms, and drought.
5 Theory Hours — 15 Contact Hours

EAS 125 CONTINENTAL DRIFT (R)

Credit Hour
Prerequisites: None
The history of continental movement and its relationship to earthquakes and volcanoes and the history of life.
5 Theory Hours — 15 Contact Hours

EAS 126 VOLCANOES AND EARTHQUAKES (R)

Credit Hour
Prerequisites: None
Great natural disasters: their causes, results, prediction, and impact on society.
5 Theory Hours — 15 Contact Hours

EAS 130 AVALANCHE STUDY (R)

2 Credit Hours
Prerequisites: None
A comprehensive and in-depth study of snow and avalanches. Emphasis will be placed on the science of recognizing and evaluating the existing hazard. Topics to be covered in the classroom are: meteorological fundamentals, the mountain snowpack, avalanche characteristics and snow mechanics, terrain analysis, and avalanche rescue. Field work will include identification of weak layers within the snowpack, route selection, avalanche rescue, and avalanche hazard forecasting and stability evaluation.
15 Theory Hours — 45 Lab Hours — 60 Contact Hours

EAS 201 INTRODUCTION TO MINERALOGY (R)

4 Credit Hours
Prerequisites: EAS 111 or consent of instructor and high school chemistry or equivalent.
A study of minerals, their occurrences, origins, description, and identification. Topics will include history of mineralogy and lore of gems, physical properties of minerals, crystallography, origin and occurrence of mineral deposits. Includes mineral identification with spectrographic analyzer and simple chemical techniques as well as hand specimen identification. Field trips will be taken to local mineral collecting areas.
45 Theory Hours — 45 Lab Hours — 90 Contact Hours

EAS 202 INTRODUCTION TO PETROLOGY (R)

4 Credit Hours
Prerequisites: EAS 111 or consent of instructor and high school chemistry or equivalent.
Using examples from Colorado, the occurrence, description, and origin of igneous, metamorphic, and sedimentary rocks will be studied. The relation of ore deposits to the rock framework of Colorado will also be discussed. Includes preparation and description of rock thin sections using the polarizing microscope as well as field trips to outstanding geologic localities.
45 Theory Hours — 45 Lab Hours — 90 Contact Hours

EAS 205 GEOLOGY OF COLORADO (R)

2 Credit Hours
Prerequisites: None
A summer course consisting of field trips to classic geologic localities in Colorado. One-day trips in the front range and trips to the western slope will be taken.
15 Theory Hours — 45 Lab Hours — 60 Contact Hours

EAS 206 GEOLOGY FIELD EXPERIENCES (R)

2 Credit Hours
Prerequisite: Consent of instructor.
In-depth field studies into the geology of specific regions both within and outside of Colorado. A field trip of several days' length to the study area will constitute the major activity of the course. The specific area of investigation will be indicated in the schedule of classes each time the course is offered.
15 Theory Hours — 45 Lab Hours — 60 Contact Hours

EAS 207 GEOLOGIC FIELD METHODS (R)

3 Credit Hours

Prerequisites: EAS 111 and EAS 112

An introduction to geologic mapping and methods of field investigation. Emphasis is on field identification of rocks, use of geologic instruments such as the Brunton compass, hand level, Jacob's staff, chain, etc., preparing geologic maps, sampling techniques, note-taking, measuring and compiling columnar sections, and writing reports. Laboratory work is held outdoors.

45 Theory Hours — 45 Lab Hours — 90 Contact Hours

EAS 208 ECONOMIC GEOLOGY (R)

3 Credit Hours

Prerequisites: None

This course treats the nature, occurrence, production, use and future of economic mineral deposits. These include not only the metals, but fuels such as coal, uranium and oil, and supplies for the building, chemical and agricultural industries. Several weekend field trips will be held to local mines and mills to examine Colorado's mineral industry first-hand.

45 Theory Hours — 45 Contact Hours

EAS 299 INDEPENDENT STUDY (R)

1-3 Credit Hours

Prerequisite: Consent of instructor.

Please refer to the general description of Independent Study in this catalog.

45-135 Contact Hours

Early Childhood Education and Management**ECE 100 INTRODUCTION TO EARLY CHILDHOOD EDUCATION (A,N,R,AEC)**

3 Credit Hours

Prerequisites: None

Through the observation and recording of children and educators in various settings, students will develop an understanding of the field of early childhood.

45 Theory Hours — 45 Contact Hours

ECE 101 CHILD STUDY AND DEVELOPMENT (A,N,R,AEC)

6 Credit Hours

Prerequisites: None

Co-requisite: Recommend ECE 100

This course presents the study of the child from prenatal through six. The integration of physical, emotional and cognitive development will be observed and interpreted by the student for a better understanding of the whole child.

90 Theory Hours — 90 Contact Hours

ECE 102 APPLIED CHILD GROWTH AND DEVELOPMENT (N,AEC)

3 Credit Hours

Prerequisites: None

Provides fundamental knowledge of the child's physical, intellectual, social, emotional growth and development individually and in groups.

45 Theory Hours — 45 Contact Hours

ECE 105 SUPERVISED LAB EXPERIENCE AND SEMINAR (A,N,R)

8 Credit Hours

Prerequisites: ECE 100 and 101 or instructor's permission.

This course provides the first supervised experience working with children in group settings. It provides an introduction to all areas of curriculum and many areas of operating a center. A weekly staff meeting for planning evaluation and staff development in child development will be held.

30 Theory Hours — 135 Lab Hours

165 Contact Hours

ECE 109 HOME CENTER COORDINATION (A,N,R)

2 Credit Hours

Prerequisite: Concurrent enrollment in supervised lab experience.

Practical experience in bringing about optimal coordination of home and center, home visits, and parent meetings is included.

30 Theory Hours — 30 Contact Hours

ECE 110 SUPERVISED EDUCATIONAL INTERNSHIP AND SEMINAR (A,N,R)

6 Credit Hours

Prerequisites: None

This is the first field experience working with young children. It develops the understanding of their growth and behavior and the ability to meet their individual and group needs. There is a focus on the teaching styles and ways of relating to children and adults. Weekly seminar is required.

30 Theory Hours — 90 Lab Hours

120 Contact Hours

ECE 115 CLASSROOM CURRICULUM DEVELOPMENT (A,N,R,AEC)

5 Credit Hours

Prerequisites: None

Develops competencies in planning and designing learning experiences and settings for children to meet their individual and group needs.

75 Theory Hours — 75 Contact Hours

ECE 116 CREATIVE ACTIVITIES (A,AEC)

3 Credit Hours

Prerequisites: None

Explores the design of appropriate experiences and creative activities for developing the young child's mastery of his or her world.

45 Theory Hours — 45 Contact Hours

ECE 117 SPECIAL STUDIES — MOTOR DEVELOPMENT AND EXPLORATION (R,AEC)

3 Credit Hours

Prerequisites: None

Provides a participatory approach to motor development for the young child. Content will include sensory-motor experiences, movement education, use of diagnostic tools, movement teaching strategies and classroom utilization.

45 Theory Hours — 45 Contact Hours

ECE 118 COMMUNITY RESOURCES FOR PARENTS I (A,N,R)

2 Credit Hours

Prerequisites: None

This is a seminar for parents and others interested in young children. Child growth and development, parenting skills and personal concerns will be explored.

30 Theory Hours — 30 Contact Hours

ECE 119 COMMUNITY RESOURCES FOR PARENTS II (A,N,R)

2 Credit Hours

Prerequisites: None

This course considers and explores issues relevant to parents and others interested in parenting and young children, with a focus on identifying resources in the community.

30 Theory Hours — 30 Contact Hours

ECE 125 CLASSROOM APPLICATION TO LANGUAGE AND COGNITION (A,AEC)

3 Credit Hours

Prerequisites: None

Explores the development of appropriate experiences and activities related to language and cognitive development, which will develop the young child's mastery of his or her own world.

45 Theory Hours — 45 Contact Hours

ECE 126 CLASSROOM APPLICATION TO MUSIC AND MOVEMENT (A,AEC)

3 Credit Hours

Prerequisites: None

Explores the design of appropriate experiences and activities related to music and movement, which will develop the young child's mastery of his or her world.

45 Theory Hours — 45 Contact Hours

ECE 127 CLASSROOM APPLICATION TO SCIENCE AND MATH (A,AEC)

3 Credit Hours

Prerequisites: None

Explores the design of appropriate experiences and activities related to science and math, which will develop the young child's mastery of his or her world.

45 Theory Hours — 45 Contact Hours

ECE 130 DEVELOPMENTAL ISSUES AND ACTIVITIES (N,AEC)

3 Credit Hours

Prerequisites: None

This course is designed to integrate the developmental theory with an application in infant/toddler settings. Students will observe as well as explore and utilize and develop age-appropriate activities for very young children.

15 Theory Hours — 45 Contact Hours

ECE 132 SUPERVISED LAB EXPERIENCE: INFANT / TODDLER (N)

8 Credit Hours

Prerequisites: None

This course provides a supervised experience working with infants and toddlers in a group setting. It involves giving care and stimulation appropriate to individual children's growth and developmental needs. Students also participate in weekly seminars designed to facilitate planning and evaluation for specific needs of children.

30 Theory Hours — 135 Lab Hours

165 Contact Hours

ECE 133 SUPERVISED EDUCATION INTERNSHIP AND SEMINAR I (N)

8 Credit Hours

Prerequisites: None

A supervised field experience in an infant/toddler setting working with the very young child. Students will participate in daily activities designed to increase their abilities to give appropriate care and stimulation relevant to developmental age of infants and toddlers.

30 Theory Hours — 135 Lab Hours

165 Contact Hours

ECE 134 HOME-CENTER COORDINATION II (N)

3 Credit Hours

This course is designed to develop optimal coordination and understanding between caregivers and parents. Students will make home visits and plan meetings and develop techniques for understanding and working with parents of very young children.

15 Theory Hours — 15 Lab Hours — 45 Contact Hours

ECE 136 INFANT / TODDLER SEMINAR FOR PARENTS I (N)

3 Credit Hours

This seminar will address those specific issues that present themselves in the care and development of the individual children enrolled in the infant/toddler setting. It will also incorporate some general child development theories and practices. At times parents will observe and participate with their child, utilize equipment or design activities to meet the needs of their child (required of parents and infants/toddlers enrolled).

15 Theory Hours — 30 Lab Hours — 45 Contact Hours

ECE 138 INFANT / TODDLER SEMINAR FOR PARENTS II (N)

2 Credit Hours

This seminar will continue to address specific issues presented in the previous seminars. Students will go into depth on specific developmental areas related to the young child. It will also incorporate some general child development theories and practices. At times parents will observe activities to meet the needs of their child. (Required for parents of infants/toddlers enrolled.)

15 Theory Hours — 30 Lab Hours — 45 Contact Hours

ECE 146 SAFETY AND THE PRESCHOOL CHILD (A,N,R,AEC)

2 Credit Hours

This is a fundamental course in first aid and setting up and maintaining a healthy and safe environment for children.

30 Theory Hours — 30 Contact Hours

**ECE 150 NUTRITION FOR YOUNG CHILDREN
(A,N,R)**

2 Credit Hours

This is a seminar in basic nutrition, menu planning, food shopping, preparation, and cooking with children. There is an emphasis on developing an understanding of the relationship of good nutrition to optimum health and development.

30 Theory Hours — 30 Contact Hours

**ECE 165 INITIAL ASSESSMENT FOR CHILD
DEVELOPMENT ASSOCIATE (N)**

2 Credit Hours

Prerequisite: Permission of the instructor.

Initial assessment is designed to establish a base line of performance and knowledge in six competency areas to enable prescriptive training.

15 Theory Hours — 23 Lab Hours — 38 Contact Hours

**ECE 175 LEARNING ENVIRONMENTS FOR THE
CHILD DEVELOPMENT ASSOCIATE (N)**

5 Credit Hours

A course in which the student learns to set up and maintain an environment which is safe, healthy and conducive to creative learning.

30 Theory Hours — 68 Lab Hours — 98 Contact Hours

**ECE 176 PHYSICAL AND INTELLECTUAL
DEVELOPMENT FOR THE CHILD
DEVELOPMENT ASSOCIATE (N)**

5 Credit Hours

Introduction to methods and theories of teaching the young child while developing skills in the physical, cognitive, creative and language areas.

30 Theory Hours — 60 Lab Hours — 98 Contact Hours

**ECE 177 SELF-CONCEPT AND INDIVIDUAL
STRENGTH FOR THE CHILD
DEVELOPMENT ASSOCIATE (N)**

5 Credit Hours

Designed to aid the student in developing the child's positive self-image and awareness of feelings. Intensified lab school experience includes major trends in child growth and development.

30 Theory Hours — 68 Lab Hours — 98 Contact Hours

**ECE 178 CHILDREN AND ADULTS IN GROUPS
FOR THE CHILD DEVELOPMENT
ASSOCIATE (N)**

5 Credit Hours

A study of the factors involved in the teaching/learning process, the relationship of children and adults functioning together in planned group environments and in group management.

30 Theory Hours — 68 Lab Hours — 98 Contact Hours

**ECE 179 ADMINISTRATION I — HOME / CENTER
PARENT INVOLVEMENT COORDINATION
FOR THE CHILD DEVELOPMENT
ASSOCIATE (N)**

5 Credit Hours

Techniques for bringing about optimal coordination of home and center. Child rearing practices and expectations are included in program planning.

30 Theory Hours — 68 Lab Hours — 98 Contact Hours

**ECE 180 STAFF DEVELOPMENT FOR THE CHILD
DEVELOPMENT ASSOCIATE (N)**

5 Credit Hours

Administrative and supplementary responsibilities related to children's programs are given with an emphasis on staff development and training. Staff will plan and implement children's program.

30 Theory Hours — 68 Lab Hours — 98 Contact Hours

**ECE 185 CHILD ABUSE AND NEGLECT FOR THE
CHILD DEVELOPMENT ASSOCIATE (N)**

5 Credit Hours

Prerequisites: None

This course will assist nonprofessional child care workers to understand and to take action in a constructive way against child neglect and abuse.

30 Theory Hours — 68 Lab Hours — 98 Contact Hours

**ECE 190 FINAL ASSESSMENT FOR THE CHILD
DEVELOPMENT ASSOCIATE (N)**

2 Credit Hours

Prerequisites: None

Final assessment is designed to establish exiting competence in six CDA competency areas for recommendation for national CDA assessment and credentialing.

15 Theory Hours — 23 Lab Hours — 38 Contact Hours

**ECE 194 INTRODUCTION TO EARLY CHILDHOOD
EDUCATION FOR THE DAY CARE HOME
PROVIDER (A,N,R,AEC)**

2 Credit Hours

Prerequisites: None

Explores various aspects of meeting the needs of young children and parents in the home setting.

30 Theory Hours — 30 Contact Hours

ECE 195 INFANT STIMULATION (A,N,R)

3 Credit Hours

Prerequisites: None

A course designed to enable students to appropriately encourage development of very young children.

30 Theory Hours — 23 Lab Hours — 53 Contact Hours

**ECE 196 CLASSROOM MANAGEMENT
TECHNIQUES (A,AEC)**

3 Credit Hours

Prerequisites: None

Explores various techniques and theories for understanding and coping with children individually and in group settings.

45 Theory Hours — 45 Contact Hours

**ECE 197 COOPERATIVE WORK EXPERIENCE
(A,N,R)**

2-4 Credit Hours

Prerequisite: ECE 110 or permission of instructor.

Through this course, the student will have an opportunity to become more proficient in classroom skills. The number of semester hours of credit (2-4) will be determined by the instructor based upon student needs.

45-90 Lab Hours — 45-90 Contact Hours

ECE 198 SPECIALIZED LEARNING ENVIRONMENTS — OUTDOORS (A,AEC)

3 Credit Hours

Prerequisites: None

Explores the design of appropriate environments to maximize development of the young child in the outdoors.

45 Theory Hours — 45 Contact Hours

ECE 199 INDEPENDENT STUDY (A,N,R)

2-6 Credit Hours

Prerequisite: Permission of instructor or division director.

Provides opportunity for the early childhood student to engage in intensive study and/or research on a specific topic under the direction of a qualified faculty member.

30-90 Theory Hours — 30-90 Contact Hours

ECE 201 WORKSHOP OF IDEAS (A,N,R,AEC)

3 Credit Hours

Prerequisites: None

This course is designed to meet needs of teachers currently in the field. It includes a brief review of basic early childhood practices and an introduction to recent developments in the field.

45 Theory Hours — 45 Contact Hours

ECE 202 WORKSHOP OF THINGS (A,N,R,AEC)

3 Credit Hours

Prerequisites: None

Examination of commercial and teacher-made materials related to current learning models. Teachers design and create teaching materials for their own classroom.

45 Theory Hours — 45 Contact Hours

ECE 206 CHILD STUDY AND OBSERVATION II (R,AEC)

3 Credit Hours

Prerequisites: None

Through analysis of theories and recent trends relevant to the learning process, the student shall develop a philosophy of education. Observations will be included.

45 Theory Hours — 45 Contact Hours

ECE 210 SUPERVISED EDUCATION INTERNSHIP AND SEMINAR II (A,N,R,AEC)

8 Credit Hours

Prerequisites: None

There is an assumption of increasing responsibility for program planning, implementation and evaluation for individual children as well as for the total group, parent relationships and staff development. In this course, a weekly seminar is required.

30 Theory Hours — 135 Lab Hours

165 Contact Hours

ECE 215 ADMINISTRATION I PARENT INVOLVEMENT AND STAFF DEVELOPMENT (A,N,R)

3 Credit Hours

Prerequisites: None

Presents an analysis and interpretation of supervision and administration procedures relevant to early childhood education and management programs specifically related to the involvement of parents and staff. Community resources are studied as they apply to home and school needs.

45 Theory Hours — 45 Contact Hours

ECE 216 CHILD CARE BUSINESS OPERATIONS (A,N,R,AEC)

3 Credit Hours

Prerequisites: None

The methodology involved in starting and operating a small business including the zoning restrictions, licensing requirements, insurance, tax information, funding procedures and basic bookkeeping is covered.

45 Theory Hours — 45 Contact Hours

ECE 228 CLASSROOM APPLICATIONS OF LANGUAGE AND COGNITION II (A,N,R)

3 Credit Hours

Prerequisites: None

This is an advanced study of the development of appropriate experiences and activities for the young child's mastery of his or her world.

45 Theory Hours — 45 Contact Hours

ECE 230 CLASSROOM APPLICATIONS OF SCIENCE AND MATH II (A,N,R)

3 Credit Hours

Prerequisites: None

This is an advanced study of the development of appropriate experiences and activities for the young child's mastery of his or her world.

45 Theory Hours — 45 Contact Hours

ECE 235 SPECIALIZED LEARNING ENVIRONMENTS — SPECIAL NEEDS (A,N,R)

3 Credit Hours

Prerequisites: None

This course covers the design of appropriate materials and learning environment for children with special needs.

45 Theory Hours — 45 Contact Hours

ECE 297 COOPERATIVE WORK EXPERIENCE II (A,N,R)

2-4 Credit Hours

Prerequisite: ECE 220 or permission of instructor.

Through this course the student will have the opportunity to become more proficient in administrative skills. The number of semester hours of credit (2-4) will be determined by the instructor based upon student needs.

45-90 Lab Hours — 45-90 Contact Hours

ECE 299 INDEPENDENT STUDY (A,N,R,AEC)

2-6 Credit Hours

Prerequisite: Permission of instructor.

This course is for the student preparing for graduation or for individual development in a special area of Early Childhood Education. This course provides opportunity for the early childhood student to engage in intensive study and/or research on a specific topic under the direction of a qualified faculty member. The number of semester hours (2-6) will be determined by the instructor based upon student needs.

30-60 Contact Hours

Economics**ECO 117 INTRODUCTION TO ECONOMICS (A,N,R,AEC)**

3 Credit Hours

Prerequisites: None

Emphasizes development of economic systems and philosophies; applications of fundamental economic concepts.

45 Contact Hours

ECO 118 LABOR RELATIONS (A,N,R)

3 Credit Hours

Prerequisites: None

An in-depth analysis of labor economics, collective bargaining, labor laws, and the role of government in labor relations.

45 Contact Hours

ECO 119 APPLIED ECONOMICS (A,N,R,AEC)

3 Credit Hours

Prerequisites: None

Emphasizes basic economics that relate to the role of the small businessman and the wage earner.

45 Contact Hours

ECO 120 ECONOMICS FOR THE CONSUMER (A,N,R,AEC)

3 Credit Hours

Prerequisites: None

Deals with consumer effectiveness, in areas such as money management, credit, taxes, and consumer law.

45 Contact Hours

ECO 121 LABOR-MANAGEMENT RELATIONS I (N,AEC)

3 Credit Hours

Prerequisites: None

The role of the union steward and first-line supervisor in the labor-management relationship.

45 Contact Hours

ECO 122 LABOR-MANAGEMENT RELATIONS II (N,AEC)

3 Credit Hours

Prerequisites: None

The role of the union steward and first-line supervisor in preparation for negotiations; a simulated exercise in bargaining a labor contract with union and management teams.

45 Contact Hours

ECO 165 ECONOMICS AND THE CHICANO (A)

3 Credit Hours

Prerequisites: None

Deals with the contributions of the Chicano to the American economic system. The economic activities in which the Chicano is presently engaged will be examined.

45 Contact Hours

ECO 175 GOVERNMENT AND THE U.S. ECONOMY (A,R,AEC)

3 Credit Hours

Prerequisites: None

Deals with development of government's role in the national economy.

45 Contact Hours

ECO 201 PRINCIPLES OF ECONOMICS — MACRO (A,N,R,AEC)

3 Credit Hours

Prerequisites: None

Present an overview of gross national product, government involvement, money and banking, national income determination, inflation and unemployment, business cycle fluctuations, and international trade.

45 Contact Hours

ECO 202 PRINCIPLES OF ECONOMICS — MICRO (A,N,R,AEC)

3 Credit Hours

Prerequisites: None

Presents an analysis of the market system: Consumers, businesses, markets, price theory, income distribution, economic issues and economics of ecology.

45 Contact Hours

ECO 265 BLACK ECONOMIC DEVELOPMENT (A)

3 Credit Hours

Prerequisites: 3 hours 100 level ECO or permission of instructor

Analyzes the nature of urban growth, economic instability, income inequality, urban public services, public revenues, and the different problems of unemployment, poverty and manpower development.

45 Contact Hours

ECO 285 DYNAMICS OF ECONOMICS (A,R,AEC)

3 Credit Hours

Prerequisites: None

Focuses upon a topical approach to contemporary economic issues.

45 Contact Hours



Electronic Digital Technology

EDT 110 FUNDAMENTALS OF AC/DC CIRCUIT FOR ELECTRONICS (R)

Credit Hours

Prerequisites: None

Current, voltage, resistance and power in AC and DC circuits. Series, parallel and series-parallel circuit computations and measurements, troubleshooting procedures, properties of conductors and insulators, soldering, basic test equipment and circuit analysis. Emphasis will be on electronic applications.

5 Theory Hours — 135 Lab Hours — 180 Contact Hours

EDT 118 BASIC OF AC AND DC ELECTRONICS (R)

Credit Hours

Prerequisites: None

Resistance, current, voltage, and power in AC and DC circuits. Measurements, and computations of series and parallel circuits. Circuit analysis and troubleshooting with basic test equipment.

5 Theory Hours — 45 Lab Hours — 60 Contact Hours

EDT 120 SOLID STATE DEVICES & CIRCUITS FOR ELECTRONICS (R)

Credit Hours

Prerequisites: EDT 110 or consent of instructor

Analysis and interpretation of various circuits, using solid state devices with emphasis on SCR's, Triacs, and thyristor circuits and common base configurations. Introduction to digital logic soldering, and layout techniques. Emphasis will be on electronic applications.

10 Theory Hours — 90 Lab Hours — 120 Contact Hours

EDT 130 DIGITAL LOGIC DEVICES FOR ELECTRONICS (R)

Credit Hours

Prerequisites: EDT 120 or consent of instructor

An introduction to digital circuits applicable to computers, instrumentation and industrial electronic students. Codes, logic gates, memory devices, counters, shift registers, and Boolean algebra. Basic troubleshooting techniques. Emphasis will be on electronic applications.

15 Theory Hours — 135 Lab Hours — 180 Contact Hours

EDT 140 OPERATIONAL AMPLIFIERS AND A TO D CONVERTERS FOR ELECTRONICS (R)

Credit Hours

Prerequisites: EDT 130 or consent of instructor

Advanced continuation of EDT 130 which deals with operational amplifiers and their use as voltage followers, inverting and non-inverting amplifiers, summing amplifiers, integrators and differentiators and applications of each; bridge circuits used in sensing and measuring equipment and electronic instruments; Analog to Digital conversion techniques and equipment as related to digital control of an analog system. Basic troubleshooting techniques. Emphasis will be on electronic applications.

30 Theory Hours — 90 Lab Hours — 120 Contact Hours

EDT 210 INTRODUCTION TO COMPUTERS (R)

9 Credit Hours

Prerequisites: EDT 140 or consent of instructor

Machine language programming for maintenance; schematics, test specifications, operational procedures and circuits of a minicomputer.

45 Theory Hours — 135 Lab Hours — 180 Contact Hours

EDT 214 INTRODUCTION TO MICRO-PROCESSORS (R)

3 Credit Hours

Prerequisite: EDT 140

Introduction course on the development and use of microprocessors, programming and hardware. Industrial orientated.

15 Theory Hours — 45 Lab Hours — 60 Contact Hours

EDT 215 MICRO-PROCESSORS PROGRAMMING (R)

3 Credit Hours

Prerequisite: EDT 214

Advance programming on Motorola 6800, Intel 8080, and Zilog Z280 computer techniques. Industrial orientated.

15 Theory Hours — 45 Lab Hours — 60 Contact Hours

EDT 216 PRACTICUMS OF MICRO-PROCESSOR HARDWARE (R)

3 Credit Hours

Prerequisite: EDT 215

A continuation of EDT 215, with emphasis on hardware and practical applications. Industrial orientated.

15 Theory Hours — 45 Lab Hours — 60 Contact Hours

EDT 217 PDP-11 COMPUTER PROGRAMMING/ BASIC HARDWARE (R)

6 Credit Hours

Prerequisite: EDT 140

Introductory course on theory and principles of operation, function, machine language, programming, use in large systems, and hardware of the Digital Equipment Corp. PDP-11 Computer.

30 Theory Hours — 90 Lab Hours — 120 Contact Hours

EDT 218 PDP-11 INTERFACING (R)

3 Credit Hours

Prerequisite: EDT 217

Interfacing techniques of Digital Equipment Corp. PDP-11, with peripherals and lab experience, capabilities in building and testing and interface printed circuit board.

15 Theory Hours — 45 Lab Hours — 60 Contact Hours

EDT 219 FOCAL PROGRAMMING (SELF PACED) (R)

3 Credit Hours

Prerequisites: None

Flow charting and programming using "FOCAL" to solve electronic problems.

60 Lab Hours — 60 Contact Hours

EDT 220 COMPUTER TROUBLESHOOTING (R)

6 Credit Hours

Prerequisite: EDT 210

Practical experience in troubleshooting a small commercial computer using associated test equipment utilized in isolating malfunctions to a card and chip level.

30 Theory Hours — 90 Lab Hours — 120 Contact Hours

EDT 225 MINI COMPUTERS (SELF PACED) (R)

3 Credit Hours

Prerequisites: Instructor's permission.

Introductory course to the principles of operation, functions and hardware of a mini computer.

60 Lab Hours — 60 Contact Hours

EDT 226 DISK CONCEPTS (SELF PACED) (R)

2 Credit Hours

Prerequisites: Instructor's permission.

Operating principles, programming techniques, hardware, and the use of the disk as the main and external storage device in a computer system.

45 Lab Hours — 45 Contact Hours

EDT 227 TAPE CONCEPTS (SELF PACED) (R)

2 Credit Hours

Prerequisites: Instructor's permission.

Operating principles, functions, and hardware of magnetic tape units.

45 Lab Hours — 45 Contact Hours

EDT 228 MAGNETIC RECORDING (SELF PACED) (R)

2 Credit Hours

Prerequisites: Instructor's permission.

Magnetic recording techniques and hardware used in commercial tape units, disks, and other magnetic devices.

40 Lab Hours — 40 Contact Hours

EDT 229 DATA COMMUNICATIONS (SELF PACED) (R)

2 Credit Hours

Prerequisites: Instructor's permission.

Operating principles and characteristics of equipment with an emphasis on terminal and computer-to-computer communication techniques.

40 Lab Hours — 40 Contact Hours

EDT 230 INTERFACING/COMPUTER PERIPHERAL (R)

9 Credit Hours

Prerequisite: EDT 220.

Detailed descriptions and lab work involving interface construction and programming. Principles of operation, components, circuitry, and programming of various computer peripheral devices.

45 Theory Hours — 135 Lab Hours — 180 Contact Hours

EDT 235 PDP-11 COMPUTER (SELF PACED) (R)

3 Credit Hours

Prerequisites: Instructor's permission.

Self paced adaptation of EDT 207.

60 Lab Hours — 60 Contact Hours

EDT 240 MICROPROCESSORS (R)

6 Credit Hours

Prerequisites: None

Hardware and programming of microprocessors with application related to industrial systems. Practical experience in troubleshooting microprocessors.

40 Theory Hours — 80 Lab Hours — 120 Contact Hours

EDT 299 INDEPENDENT STUDY (R)

2 Credit Hours

Prerequisites: None

Individual study on a special project which is related to the Electronic Program, and outside the program offerings.

40 Lab Hours — 40 Contact Hours

Electricity Industrial/Commercial**EIC 105 ELECTRICAL BLUEPRINT READING (R)**

3 Credit Hours

Prerequisites: None

This class introduces the student to blueprint reading for commercial and industrial electrical applications.

45 Theory Hours — 45 Contact Hours

EIC 111 SOLID STATE DEVICES FOR ELECTRICIANS I (R)

3 Credit Hours

Prerequisites: ELF 100 or consent of the instructor

The student will learn the basic properties of diodes, transistor, triacs, SCRs and other solid state devices in this class. He/she will also become involved in the application of solid state devices in control and power conversion and the circuits in equipment likely to be encountered in 60-cycle power installation.

15 Theory Hours — 45 Lab Hours — 60 Contact Hours

EIC 112 SOLID STATE DEVICES FOR ELECTRICIANS II (R)

3 Credit Hours

Prerequisites: None

In this unit, the student will be involved in the applications of solid state devices applicable to industrial controls with special emphasis on solid state contractors and starters, proximity sensors, temperature probes, liquid level sensors and opto-electric devices.

15 Theory Hours — 45 Lab Hours — 60 Contact Hours

EIC 115 ELECTRICAL PLANNING (R)

3 Credit Hours

Prerequisites: None

This class teaches the planning of electrical system installations, starting from the blueprints through to the completed job; preparation of material lists, job sheets and time schedules for various phases of construction.

45 Theory Hours — 45 Contact Hours

EIC 118 BASICS OF AC AND DC ELECTRICITY (R)

3 Credit Hours

Prerequisites: None

This class teaches resistance, current, voltage and power in AC and DC circuits, measurements, computations of series and parallel circuits, circuit analysis and troubleshooting with basic test equipment.

15 Theory Hours — 45 Lab Hours — 60 Contact Hours

IC 120 ELECTRICITY FOR CONSTRUCTION TRADES (R)

Credit Hours

Prerequisites: None

This class is an orientation to the field of electricity. General principles, initial techniques and skill development and how electricity relates to the various construction trades are presented.

5 Theory Hours — 45 Lab Hours — 60 Contact Hours

IC 121 ELECTRICAL INSTALLATIONS I (R)

Credit Hours

Prerequisites: None

This class teaches residential and commercial building wiring and conformance with the current National Electric Code and local codes; basics of blueprint reading, planning and discussing representative systems, using non-metallic cable and electric metallic tubing. Proper use of tools and safety is emphasized.

5 Theory Hours — 45 Lab Hours — 60 Contact Hours

IC 122 ELECTRICAL INSTALLATIONS II (R)

Credit Hours

Prerequisite: EIC 121

This class teaches commercial and industrial building wiring in conformance with the current National Electric Code and local codes, using electric metallic tubing and rigid conduit and other raceways. Techniques of blueprint reading and symbols and proper use of tools and safety are emphasized.

5 Theory Hours — 45 Lab Hours — 60 Contact Hours

IC 131 NATIONAL ELECTRIC CODE I (R)

Credit Hours

Prerequisites: None

The National Electric Code and local code requirements for electrical installation are taught in this class.

5 Theory Hours — 45 Contact Hours

IC 132 NATIONAL ELECTRIC CODE II (R)

Credit Hours

Prerequisites: EIC 131 or consent of instructor

This class is a continuation of EIC 131.

5 Theory Hours — 45 Contact Hours

IC 141 ELECTRICITY FOR AUTOMOTIVE STUDENTS I (R)

Credit Hours

Prerequisites: None

This class teaches the principles of electricity and magnetism; use of basic electrical laws to analyze circuits with regard to voltage, current and power with emphasis on automotive applications. Also, the student will learn the use of common electrical instruments and oscilloscopes for measurements and electrical symbols and circuit diagrams.

5 Theory Hours — 45 Lab Hours — 60 Contact Hours

EIC 142 ELECTRICITY FOR AUTOMOTIVE STUDENTS II (R)

3 Credit Hours

Prerequisites: EIC 141

In this class, the student is taught the principles of AC electricity and rectification, especially as related to automotive alternators and battery-charging systems; capacitance and inductance and their use in ignition systems and automotive instruments; and the use of electrical instruments and oscilloscopes to measure and analyze electrical systems.

15 Theory Hours — 45 Lab Hours — 60 Contact Hours

EIC 143 SOLID STATE DEVICES FOR AUTOMOTIVE STUDENTS (R)

3 Credit Hours

Prerequisite: EIC 142

This class teaches the principles of diodes, transistors and controlled rectifiers; solid state voltage regulators; electronic ignition systems; electronic automotive instruments; and survey of computerized monitors.

15 Theory Hours — 45 Lab Hours — 60 Contact Hours

EIC 200 ELECTRICAL CALCULATIONS (R)

4 Credit Hours

Prerequisites: None

In this class, calculations used in the application of the National Electric Code, sizing of branch circuit and feeder conductors and calculation of ratings of protective devices emphasized.

60 Theory Hours — 60 Contact Hours

EIC 201 TRANSFORMER INSTALLATION AND THEORY (R)

3 Credit Hours

Prerequisites: EIC 102 or consent of the instructor

In this class, the student is taught the installation and maintenance of transformers; considerations of dry and liquid filled transformers; installations above and below grade including vaults; and theory and operating characteristics of the various classes of transformers.

15 Theory Hours — 45 Lab Hours — 60 Contact Hours

EIC 202 AC AND DC MACHINES, INSTALLATION AND THEORY (R)

3 Credit Hours

Prerequisites: None

The student will learn installation and maintenance of AC and DC machines, connections, multiple voltage, speed change, starting methods, and machine maintenance in this class.

15 Theory Hours — 45 Lab Hours — 60 Contact Hours

EIC 203 POLYPHASE ROTATING MACHINES AND TRANSFORMERS (R)

3 Credit Hours

Prerequisites: None

In this class, the student will learn about installing and maintenance of polyphase induction, synchronous machines and transformers; Wye/Delta and Scott connections; power factor control and analysis; reduced voltage starting methods; and multispeed and voltage connections.

15 Theory Hours — 45 Lab Hours — 60 Contact Hours

EIC 205 BASIC ELECTRICAL HOUSE WIRING (R)

3 Credit Hours

Prerequisites: None

This class is an introduction course of wiring methods, using non-metallic cable (romex) with emphasis on installation techniques.

15 Theory Hours — 45 Lab Hours — 60 Contact Hours

EIC 207 ELECTRICAL CONTROL WIRING FOR PLUMBING, HEATING, AIR-CONDITIONING TRADES (R)

3 Credit Hours

Prerequisites: None

This class is an introduction to electrical controls for valves, limits, relays, pressure, temperature, wiring and installation techniques.

15 Theory Hours — 45 Lab Hours — 60 Contact Hours

EIC 208 ADVANCED NATIONAL ELECTRICAL CODES (R)

3 Credit Hours

Prerequisites: None

This is an advanced National Electrical Code class for the licensed journey-man electrician and in-plant electrician, and it prepares for the Master Electrician Examination.

45 Theory Hours — 45 Contact Hours

EIC 209 ADVANCED CODE CALCULATIONS (R)

4 Credit Hours

Prerequisites: None

In this class, calculations based on code requirements for sizing conductors, conduit, fittings, protective devices, motor loads, and cost estimating based on material take-offs are taught.

60 Theory Hours — 60 Contact Hours

EIC 211 INSTALLATION AND OPERATION OF DISTRIBUTION SYSTEMS I (R)

3 Credit Hours

Prerequisites: None

In this class, the student will learn installation and operation of electrical distribution systems, 600 volts and below. Emphasis is given to secondary distribution and standby power and switch gear.

15 Theory Hours — 45 Lab Hours — 60 Contact Hours

EIC 212 INSTALLATION AND OPERATION OF DISTRIBUTION SYSTEMS II (R)

3 Credit Hours

Prerequisites: None

This class teaches the installation and operation of electrical primary distribution systems, switch gear, system protection, and related metering of demand and power factor.

15 Theory Hours — 45 Lab Hours — 60 Contact Hours

EIC 215 ADVANCED ELECTRICAL INSTALLATION (R)

3 Credit Hours

Prerequisite: EIC 121

Techniques of large commercial and industrial installation, relating to Code, safety and OSHA are taught.

15 Theory Hours — 45 Lab Hours — 60 Contact Hours

EIC 216 ADVANCED ELECTRICAL PLANNING (R)

3 Credit Hours

Prerequisite: EIC 215

In this class, the student will learn the planning and layout of large commercial and industrial installations.

45 Theory Hours — 45 Contact Hours

EIC 297 COOPERATIVE WORK EXPERIENCE (R)

2-9 Credit Hours

Prerequisites: None

This class is a program of study developed with coordinated college course work and industry work experience.

15 Theory Hours — 45-360 Lab Hours — 60-375 Contact Hours

EIC 299 INDEPENDENT STUDY (R)

3 Credit Hours

Prerequisites: None

This is the individual study on a special project which is related to the Electricity Program and is outside the program offering.

90 Lab Hours — 90 Contact Hours

Electricity Fundamentals**ELF 100 FUNDAMENTALS OF AC / DC ELECTRICITY (R)**

9 Credit Hours

Prerequisites: None

In this class, the student is taught about current, voltage resistance and power in AC, three phase, and DC circuits, series, parallel and series-parallel circuit computations and measurements; troubleshooting procedures properties of conductors and insulators; soldering; basic test equipment; and circuit analysis.

45 Theory Hours — 135 Lab Hours

180 Contact Hours

ELF 105 SOLID STATE DEVICES AND CIRCUITS (R)

6 Credit Hours

Prerequisite: ELF 100 or consent of the instructor.

In this class, the student is taught the analysis and interpretation of various circuits using solid state devices with emphasis on SCRs, Triacs, and the firing circuits used to operate these devices; common emitter, common collector and common base configuration. This class is an introduction to digital logic circuits, using transistors and diodes. Basic troubleshooting, soldering and layout techniques are also presented.

30 Theory Hours — 90 Lab Hours

120 Contact Hours

ELF 106 DIGITAL LOGIC DEVICES AND CIRCUITS (R)

9 Credit Hours

Prerequisite: ELF 105 or consent of instructor.

This class is an introduction to digital circuits applicable to computers, instrumentation and industrial electronic students in codes, logic gates, memory devices counters, shift registers, Boolean algebra and basic troubleshooting techniques.

45 Theory Hours — 135 Lab Hours

180 Contact Hours

ELF 107 OPERATIONAL AMPLIFIERS AND A TO D CONVERTERS (R)

6 Credit Hours

Prerequisite: ELF 106 or consent of instructor.

This class is a continuation of EDT 105 which deals with operational amplifiers and their use as voltage followers, inverting and non-inverting amplifiers, summing amplifiers, integrators and differentiators and applications of each; bridge circuits used in sensing and measuring equipment and electronic instruments; analog to digital conversion techniques and equipment as related to digital control of an analog system, and basic troubleshooting techniques.

30 Theory Hours — 90 Lab Hours

120 Contact Hours

Electronics Technology

ELT 100 DC FUNDAMENTALS (A,N)

3 Credit Hours

Prerequisites: None

Construct and evaluate series and parallel circuits; to show the relationships of voltage, current, resistance, and power emphasizing standard safety practices.

30 Theory Hours — 30 Lab Hours — 60 Contact Hours

ELT 105 DC CIRCUITS AND MAGNETISM (A,N)

3 Credit Hours

Prerequisite: ELT 100

Construct and analyze series-parallel resistive, RC, and RL circuits and describe the properties of magnetism, inductance, and capacitance.

30 Theory Hours — 30 Lab Hours — 60 Contact Hours

ELT 106 AC FUNDAMENTALS (A,N)

3 Credit Hours

Prerequisite: ELT 105

Construct and analyze basic transformer voltage, current and impedance ratios, and voltage current, phase, and power relationships of series AC circuits composed of inductive, capacitive, and resistive combinations using oscilloscopes, AC meters, and vector analysis.

30 Theory Hours — 30 Lab Hours — 60 Contact Hours

ELT 107 AC CIRCUITS (A,N)

3 Credit Hours

Prerequisite: ELT 106

Analyze, construct, and troubleshoot basic power supply and frequency discriminating circuits consisting of resistors, inductors, and capacitors in series, parallel, and combinations as applied to filters.

30 Theory Hours — 30 Lab Hours — 60 Contact Hours

ELT 108 VACUUM TUBE FUNDAMENTALS AND CIRCUITS (A,N)

3 Credit Hours

Prerequisite: ELT 107

Analyze, construct, troubleshoot, plot frequency response curves and compute DB gain for various classes of tube type audio amplifiers including phase splitters and inverters, single-ended, and push-pull circuits.

30 Theory Hours — 30 Lab Hours — 60 Contact Hours

ELT 109 SOLID STATE FUNDAMENTALS (A,N)

3 Credit Hours

Prerequisite: ELT 107

Measure the AC and DC voltages of half-wave, full-wave, bridge, and voltage doubler power supply circuits, and test series and shunt regulator circuits for correct linear operation.

30 Theory Hours — 30 Lab Hours — 60 Contact Hours

ELT 110 TRANSISTOR AMPLIFIERS (A,N)

3 Credit Hours

Prerequisite: ELT 109

Examine the characteristics of the common emitter, common base, and common collector configurations, and describe the operation of the single-ended, phase splitter, phase inverter, push-pull, and differential amplifiers.

30 Theory Hours — 30 Lab Hours — 60 Contact Hours

ELT 115 TRANSISTOR OSCILLATORS AND FET'S (A,N)

3 Credit Hours

Prerequisite: ELT 110

Analyze Armstrong, Colpitts, Hartley, crystal, RC phase shift, and multi-vibrator oscillator circuits, and diagnose the operational characteristics of JFET and MOSFET configurations.

30 Theory Hours — 30 Lab Hours — 60 Contact Hours

ELT 116 SCR'S, UJT'S AND SPECIAL DEVICES (A,N)

3 Credit Hours

Prerequisite: ELT 115

Identify the symbols of and describe the characteristics and circuit operation for SCR's, UJT's, TRIAC, DIACS, varactors and thermistors.

30 Theory Hours — 30 Lab Hours — 60 Contact Hours

ELT 117 IC OPERATIONAL AMPLIFIERS (A,N)

3 Credit Hours

Prerequisite: ELT 116

Identify and demonstrate the principles and applications of inverting and non-inverting amplifier, voltage follower, summing, integrator, differentiator, sinewave, and squarewave generator circuits.

30 Theory Hours — 30 Lab Hours — 60 Contact Hours

ELT 200 INSTRUMENTS AND MEASUREMENTS (A,N)

6 Credit Hours

Prerequisite: ELT 117

Demonstrate the principles of measurements, the selection, application and limitations of electronic test equipment, the operation of instruments including meters, oscilloscopes, signal generators, transistor curve tracers and frequency counters.

45 Theory Hours — 75 Lab Hours

120 Contact Hours

ELT 205 COMMUNICATIONS SYSTEMS (A,N)

3 Credit Hours

Prerequisite: ELT 117

Demonstrate the fundamental principles of RF wave propagation, antenna theory, receivers and transmitters, including representative amplitude, frequency and pulse modulation circuits and stereo encoding and decoding techniques.

30 Theory Hours — 30 Lab Hours — 60 Contact Hours

ELT 206 DIGITAL FUNDAMENTALS (A,N)

3 Credit Hours

Prerequisite: ELT 117

Demonstrate the principles of digital integrated circuits, binary, octal, hexadecimal, and various binary codes, digital logic, truth tables, basic Boolean Algebra, and combinational logic.

30 Theory Hours — 30 Lab Hours — 60 Contact Hours

ELT 207 DIGITAL CIRCUITS (A,N)

3 Credit Hours

Prerequisite: ELT 206

Demonstrate the principles and operation of functions of combinational logic, flip-flops, counters, and registers, logic circuit maximization by algebraic techniques and Karnaugh mapping.

30 Theory Hours — 30 Lab Hours — 60 Contact Hours

ELT 208 MICROPROCESSOR FUNDAMENTALS (A,N)

3 Credit Hours

Prerequisite: ELT 207

Examine the fundamentals of microprocessors, micro and mini-computers and assembly language programs. May also include writing assembly language programs in Motorola M6800 mnemonics to meet predesignated arithmetic and logic input and output parameters; convert these programs to machine coding; and demonstrate the successful operation of these programs in meeting all prescribed parameters when encoded in a Motorola D2-M6800 Microprocessor Trainer.

30 Theory Hours — 30 Lab Hours — 60 Contact Hours

ELT 209 TROUBLESHOOTING TECHNIQUES (A,N)

3 Credit Hours

Prerequisite: ELT 117

Analyze and isolate representative analog circuit problems, following logical troubleshooting procedures and using signal tracing and/or signal substitution and in-circuit voltage and signal measurements to locate the circuit faults.

30 Theory Hours — 30 Lab Hours — 60 Contact Hours

**ELT 210 ELECTRONIC FABRICATION TECHNIQUES (A,N)**

6 Credit Hours

Prerequisite: ELT 117

Develop component layouts and printed circuit board artwork, both single- and double-sided, from schematics and parts lists; use photographic and chemical etching techniques in preparing finished printed circuit boards from artwork; assemble, solder, test and when necessary, troubleshoot finished circuits; package finished circuits, fabricating special parts and hardware when necessary; and prepare well-documented reports, logs, and drawing covering the above activities.

40 Theory Hours — 80 Lab Hours
120 Contact Hours**ELT 216 INTRODUCTION TO ELECTROMECHANICAL DEVICES (A)**

3 Credit Hours

Prerequisite: ELT 117

Examines alternating and direct current motors, single and three-phase power concepts, and associated control and measurement methods.

15 Theory Hours — 45 Lab Hours — 60 Contact Hours

ELT 218 MICROPROCESSOR APPLICATIONS (N)

3 Credit Hours

Prerequisite: ELT 208

When given the required input and output parameters of a micro-computer control problem, formulate and fabricate peripheral interface connections between a Motorola D2-M6800 Microprocessor Trainer and a simulation of the controlled device; write an assembly language program to provide the required control functions; machine code this program; and demonstrate the successful operation of the microprocessor controlled system.

30 Theory Hours — 30 Lab Hours — 60 Contact Hours

ELT 219 FCC SECOND CLASS RADIO TELEPHONE LICENSE PREPARATION (N)

8 Credit Hours

Prerequisites: ELT 117 and ELT 108.

Obtain FCC Second Class Radio Telephone License by learning basic law and operating procedures (FCC Elements I-II) and radio telephone theory.

120 Theory Hours — 120 Contact Hours

ELT 297 COOPERATIVE WORK EXPERIENCE (A,N)

3 Credit Hours

Prerequisites: None

Coordinates college course work and industry work experience.

15 Theory Hours — 90 Lab Hours
105 Contact Hours**ELT 299 INDEPENDENT STUDY (A,N)**

3 Credit Hours

Prerequisites: None

Individual study on a special project which is related to the Electronics Technology Program, and is outside the program offering.

90 Lab Hours — 90 Contact Hours

English

ENG 090 ENGLISH AS A SECOND LANGUAGE I (A,N,R,AEC)

5 Credit Hours

Prerequisite: None

Designed for the student with minimal experience in spoken English. Introduces non-English speakers to vocabulary, syntax, and the sound system of the English language.

2 Lab Hours (required per week)

40-75 Contact Hours

ENG 091 ENGLISH AS A SECOND LANGUAGE II (A,N,R,AEC)

5 Credit Hours

Prerequisite: None

Designed for students who have had 1 to 2 years experience in using the English language. Strengthens the student's concept of the patterns relating to syntax, paragraphs, intonation, rhythm, pronunciation, spelling, idiomatic expressions, and culture. Gives considerable attention to vocabulary development. (Entry level skills: assessment required.)

2 Lab Hours (required per week)

40-75 Contact Hours

ENG 092 ENGLISH AS A SECOND LANGUAGE III (A,N,R,AEC)

5 Credit Hours

Prerequisite: Successful completion of ENG 091 or equivalent

Extends the international student's concept of the English pattern system to literature, speech, and composition. Relates current events to patterns of American cultural behavior. Emphasizes literal reading and stresses vocabulary as a key to literal comprehension. Utilizes a reading, writing, speaking approach.

2 Lab Hours (required per week)

40-75 Contact Hours

ENG 099 SOUND AND SPELLING (A,N,R,AEC)

3 Credit Hours

Prerequisite: None

Designed for the student who needs a refresher course in spelling and pronunciation. Emphasizes understanding dictionary pronunciation keys, spelling rules, and vocabulary. Uses an oral and written approach.

2 Lab Hours (required per week)

45-55 Contact Hours

ENG 101 WORKSHOP IN LANGUAGE FUNDAMENTALS I (A,N,R,AEC)

3 Credit Hours

Prerequisite: None

Designed for the student who needs a review of basic grammar and formal/informal use of the English language. Introduces sentence structure. Utilizes an individualized approach. (Entry level: A score of 1 on the English assessment.)

1-2 Lab Hours (required per week)

45 Contact Hours

ENG 102 WORKSHOP IN LANGUAGE FUNDAMENTALS II (A,N,R,AEC)

3 Credit Hours

Prerequisite: None

Designed for the student who needs a quick review of grammar, in addition to a general review of basic writing skills. Teaches sentence structure and basic paragraph style and organization. (Entry level: A score of 2 on the English assessment or a grade of C or better in ENG 101.)

1-2 Lab Hours (required per week)

45 Contact Hours

ENG 103 WORKSHOP IN READING, WRITING AND SPEAKING (A,N,R,AEC)

1-3 Credit Hours

Prerequisite: None

NOTE: This course may be taken for either English or Reading credit depending on student needs (see REA 103).

Designed for students whose reading skills are adequate for freshmen courses but who wish to integrate the three basic communication areas — reading, writing, and speaking. Emphasizes the skills common to all three areas in order to facilitate the transfer from one area to another. The student also learns to apply these skills to other college classes of knowledge. (Entry level skills: A score of 3 on the English assessment and a score of 3 on the reading assessment.)

1-2 Lab Hours (required per week)

15-45 Contact Hours

ENG 105 STUDY SKILLS (A,N,R,AEC)

1-3 Credit Hours

Prerequisite: None

NOTE: This course may be taken for either English or Reading credit, depending on the student needs (see REA 105).

Designed for the student whose reading skills are adequate but who needs a review in methods necessary to improve study skills. This course is particularly helpful to students who have been away from school for several years. Methods include the following: making better use of time, improving reading rate, note-taking, outlining, skimming and scanning, test taking techniques, library use, critical reading, and vocabulary building. Uses lecture and class discussion techniques. (Entry level skills: Score of 4 on the Reading assessment or grade of C or better in REA 101.)

1-2 Lab Hours (required per week)

15-45 Contact Hours



ENG 106 TECHNICAL WRITING FOR THE HEALTH OCCUPATIONS (A,N,R,AEC)

3 Credit Hours

Prerequisite: None

Gives students in health occupations writing skills appropriate to medical fields. Students write papers of instruction, definition, classification, and description or causation on topics related to their particular health areas. Includes readings in various professional journals and periodicals, and preparation of written and oral summaries of materials read. Definitions and spellings of medical terminology are emphasized. Practice is given in finding and documenting information about current trends in medicine through writing a final research paper. (Entry level skills: Reading assessment score of 4 or a grade of C or better in REA 101; writing assessment score of 4 or grade of C or better in ENG 110.)

45 Contact Hours

ENG 107 ENGLISH FUNDAMENTALS (1ST SEMESTER) (A,N,R,AEC)

3 Credit Hours

Prerequisite: Score of 1 on English Assessment

Emphasis on basic elements of correct oral and written expression: word usage, punctuation, capitalization, spelling, building complete sentences, reading paragraph models and short essays. Practice in library skills and analyzing information.

45 Contact Hours

ENG 108 ENGLISH FUNDAMENTALS (2ND SEMESTER) (A,N,R,AEC)

3 Credit Hours

Prerequisite: Score of 2 on English Assessment or C or above in English 107.

Elements of correct written and oral expression. Emphasis on sentence structure, paragraph units, essay organization. Includes library skills or finding and interpreting data, reading and analyzing short essays, writing and following directions. Designed to prepare student for entry into ENG 109 or ENG 111.

45 Contact Hours

ENG 109 BUSINESS COMMUNICATION (A,N,R,AEC)

3 Credit Hours

Prerequisite: None

Presents a review of basic grammar, business vocabulary, punctuation, and business style (capitalization, abbreviations, and numbers). Also teaches principles and an understanding of the theory, style, and patterns of basic business letters. (Entry level: Reading assessment score of 4 or grade of C or better in REA 101; writing assessment score of 3 or grade of C or better in ENG 110.)

45 Contact Hours

ENG 110 ELEMENTS OF COMPOSITION, STYLE AND TECHNIQUE (A,R,AEC)

3 Credit Hours

Prerequisite: None

Prepares the student to enter freshman composition and technical English courses. Reviews sentence structure punctuation and effective diction; teaches organization of the basic paragraph and essay. Includes sentence exercises and tests, as well as analysis and writing of basic explanation compositions. Provides transfer credit in several program and major areas. (Recommended entry levels: Reading assessment score of 3 or grade of C or better in REA 101; writing assessment score of 3 or grade of C or better in ENG 108.)

45 Contact Hours

ENG 111 ENGLISH COMPOSITION: ESSAY WRITING (A,N,R,AEC)

3 Credit Hours

Prerequisite: None

Freshman composition. Prepares the student for writing in college and on the job. Begins with a review of sentence structure, punctuation, and basic paragraphing skills; then proceeds to strategies of style and to organization and evaluation of essay forms and purposes. Includes creation of a variety of essays. Required or recommended for graduation in most transfer or associate degree programs. (Recommended entry levels: Reading assessment score of 4 or grade C or better in REA 101; writing assessment score of 4 or grade of C or better in ENG 110.)

45 Contact Hours

ENG 112 ENGLISH COMPOSITION: RESEARCH PAPER (A,N,R,AEC)

3 Credit Hours

Prerequisite: ENG 111 or permission of instructor

Freshman composition. Prepares the student for researching and writing papers required in many other college courses. Teaches skills needed in the research process, including using the library, organizing longer papers, and documenting sources. The student writes research papers. Required or recommended for graduation in most transfer or associate degree programs.

45 Contact Hours

ENG 115 CREATIVE WRITING (A,N,R,AEC)

3 Credit Hours

Prerequisite: None

Provides self-enrichment as well as transfer credit in several program or major areas. Teaches imaginative uses of language, appreciation and creation of various short forms — stories, short plays, poetry. Discusses creative processes as well as craftsmanship. The student writes both practice exercises and finished pieces. (Recommended entry levels: Reading assessment score of 4 or grade of C in REA 101; writing assessment score of 3 or grade of C in ENG 110.)

45 Contact Hours

ENG 125 POETRY WRITING (A,R,AEC)

3 Credit Hours

Prerequisite: None

Provides self-enrichment as well as transfer credit in several program or major areas. Teaches techniques for creating poems, including study of the language, forms, and sound patterns of poetry. Both practice exercises and finished pieces are written. (Recommended entry levels: Reading assessment score of 4 or grade of C in REA 101; writing assessment score of 3 or grade of C in ENG 110.)

45 Contact Hours

ENG 211 COMPOSITION II: ARTICLE WRITING (A,R,AEC)

3 Credit Hours

Prerequisite: ENG 112 or permission of instructor

Provides opportunities for writing improvement as well as basic information on how to market writing efforts. Further develops the student's essay-writing ability through emphasis on expression of ideas and on style. Magazine nonfiction writing will be covered. Gives transfer credit for several program or major areas.

45 Contact Hours

ENG 215 CREATIVE WRITING II (A,R,AEC)

3 Credit Hours

Prerequisite: ENG 115 or permission of instructor

Provides self-enrichment as well as basic information on how to market writing efforts. Advances the student's fiction-writing abilities, emphasizing techniques for developing and controlling narrative and dramatic ideas. Teaches critical skills which are applied as the student writes several finished short stories and/or short plays. Gives transfer credit in several program or major areas.

45 Contact Hours

ENG 225 POETRY WRITING II (A,R,AEC)

3 Credit Hours

Prerequisite: ENG 125 or permission of instructor

Provides self-enrichment, encouragement to publish, and transfer credit in several program or major areas. Assists the student in advancing control of technique and in developing a group of finished poems. Develops critical skills that are applied to the student's own writing and that of others in the class.

45 Contact Hours

ENG 231 TECHNICAL WRITING (A,R,AEC)

3 Credit Hours

Prerequisites: ENG 111 or ENG 106 or ENG 109 or instructor permission

Provides skills one can immediately apply to technical reports and job needs. Teaches principles for organizing, writing and revising a variety of clear, readable reports for industry, business, and government. Gives transfer credit in several program or major areas.

45 Contact Hours

ENG 299 INDEPENDENT STUDY (A,N,R,AEC)

1-3 Credit Hours

Prerequisite: Consent of instructor

Please refer to the general description of Independent Study in this catalog.

15-45 Contact Hours

Environmental Technology**EVT 100 INTRODUCTION TO ENVIRONMENT (R,AEC)**

3 Credit Hours

Prerequisite: None

An introduction to the environmental processes as they are currently impacted by mankind. Basic environmental philosophy, techniques, and the function of the environmental technician in development of solutions will be covered.

45 Theory Hours — 45 Contact Hours

EVT 105 ENVIRONMENTAL PROBLEMS (R)

3 Credit Hours

Prerequisite: None

A review of the major environmental problems confronting mankind and their physical and psychological effects upon people. Problems involving air, water, noise and scenic pollution, solid waste disposal, land use and population growth will be identified and discussed.

45 Theory Hours — 45 Contact Hours

EVT 106 NOISE POLLUTION (R)

3 Credit Hours

Prerequisite: None

An introduction to noise pollution, including the psychological and physical effects of noise upon people. A familiarization with the operation of instruments used to measure noise intensity through demonstrations, field experiences and operation of the equipment by students themselves. Noise control methods used in industry and in the local community will be discussed, along with current and proposed noise control legislation.

45 Theory Hours — 45 Contact Hours

EVT 107 INTRODUCTION TO OSHA-COSH (R)

3 Credit Hours

Prerequisite: None

Overview of the Occupational Safety and Health Act of 1970 with emphasis on rights and responsibilities of employer/employee standards, along with information on hazards, citation, penalties, abatement and federal register and record keeping.

45 Theory Hours — 45 Contact Hours

EVT 108 SOLID WASTE POLLUTION (R)

3 Credit Hours

Prerequisite: None

An in-depth study of sources of solid waste and the problems such pollution causes relative to land use, water and people. Traditional, new and experimental methods of control and abatement will be identified. Methods of sewage treatment will also be studied. Field trips will be taken to sanitary landfill and garbage dump facilities and wastewater treatment plants to observe both poor and good practices relative to solid waste disposal.

45 Theory Hours — 45 Contact Hours

EVT 109 WATER POLLUTION (R)

3 Credit Hours

Prerequisite: None

Identification of the chemical, physical, biological and social causes of water pollution. The course will describe how people pollute their streams, lakes and other bodies of water, the effects of this pollution on humans, wildlife and vegetation. Legislation and technology aimed at minimizing or stopping such pollution will also be discussed. Field trips will be included.

45 Theory Hours — 45 Contact Hours

EVT 200 ENVIRONMENTAL DECISION MAKING (R)

4 Credit Hours

Prerequisite: None

A course designed to help the student become acquainted with techniques involved in environmental decision making, including ecological, social, economic and cultural consideration. The concept of the Environmental Impact Statement required by federal law will be explored, along with case studies of actual environmental impact statements developed by various entities. Integration of project management techniques and the evaluation of actual development proposals from neighboring communities will be included in the course.

60 Theory Hours — 60 Contact Hours

EVT 205 LAND USE AND THE QUALITY OF LIFE (R)

5 Credit Hours

Prerequisite: None

This course brings together the various facets of the Environmental Technology Program and relates them to the broader concept of land use. The student will gain an awareness of municipal government and citizen processes involved in the local land use decision-making system that occurs in every municipality throughout the land. Integration of project management techniques and the evaluation of actual environmental impact development proposals from local communities will be included in the course.

60 Theory Hours — 23 Lab Hours — 83 Contact Hours

EVT 206 INDUSTRIAL HYGIENE (R)

3 Credit Hours

Prerequisite: None

The science of recognizing, evaluating and controlling health hazards, including safety, in industry will be studied. Included in the course will be a description of techniques involved in collecting and analyzing airborne contaminants, radiation, and physical hazards, such as noise and heat stress. Students will also become familiar with the various types of industrial hygiene sampling equipment. Field trips will be taken to observe and become familiar with industrial processes which present potential health hazards.

45 Theory Hours — 45 Contact Hours

EVT 207 ATMOSPHERIC POLLUTION (R)

5 Credit Hours

Prerequisite: None

Sources and classification of air pollutants, effects upon public health as well as upon plant life and man-made materials, present technological methods of control and future alternative solutions. Pollution and weather and descriptions of sampling and measurement techniques will also be covered. Field trips will be taken to observe technological controls now employed and equipment used to detect and analyze air pollutants.

60 Theory Hours — 23 Lab Hours — 83 Contact Hours

EVT 208 POLLUTION CONTROL SYSTEMS (R)

4 Credit Hours

Prerequisite: None

Hydraulic, pneumatic, mechanical, electrical and electronic control systems and components. Basic description, analysis and explanation of operation. Typical performance characteristics, limitations on performance, accuracy, application and their utilization in industrial processes.

60 Theory Hours — 60 Contact Hours

EVT 209 DATA COLLECTION TECHNIQUES AND EVALUATION (R)

3 Credit Hours

Prerequisite: None

Basic principles of sampling, survey designs, systems of sampling, methods of estimation: problem definition, evaluation of information collected, organization and preparation of reports including techniques of collecting, interpreting and presenting information useful in environmental technology.

45 Theory Hours — 45 Contact Hours

EVT 210 DATA PROCESSING FOR ENVIRONMENTAL TECH (R)

3 Credit Hours

Prerequisite: None

Effective use of automatic equipment necessary to meet the information needs of environmental technology. Study of the basic data processing concepts and procedures including management information systems, the hardware and software necessary for system implementation and intra-firm and agency coordination.

45 Theory Hours — 45 Contact Hours

EVT 215 PICTORIAL DRAFTING (R)

3 Credit Hours

Prerequisite: None

Problems involving the construction, layout, and rendering of pictorial illustrations of a technical nature, including exploded assemblies and assembled sections, using axonometric, and perspective projections.

45 Theory Hours — 45 Contact Hours

EVT 216 ENVIRONMENTAL LAW (R)

3 Credit Hours

Prerequisite: None

An introduction to the legal basis for environmental technology including such topics as the basic court cases and federal laws which delineate the environmental control, the state legislation and a review of local jurisdiction ordinance forms. This is followed by a review of the process which is required for the passage of new state and local laws.

45 Theory Hours — 45 Contact Hours

EVT 217 MAP READING AND PHOTO INTERPRETATION (R)

3 Credit Hours

Prerequisite: None

Interpretation and information gathering from maps and aerial photos. Use and application of black and white and color photos. Final project will be an evaluation of an area for specific proposal.

45 Theory Hours — 45 Contact Hours

EVT 218 PESTS AND PESTICIDES (R)

3 Credit Hours

Prerequisite: None

This course includes the study of those parasites which produce disease with particular reference to the human host and those animals and arthropods that are important in the transmission of disease.

45 Theory Hours — 45 Contact Hours

EVT 297 COOPERATIVE WORK EXPERIENCE / PRACTICAL TRAINING (R)

1-4 Credit Hours

Prerequisite: None

The student is assigned to a local environment department and is given duties related to the environmental tech degree program. This practical training program is supervised and coordinated by a College instructor. The student works with an experienced pre-selected supervisor on the job who will grade his/her performance according to College standards. Regular school class attendance is required by all students participating in the course.

45-180 Cooperative Hours

45-180 Contact Hours

EVT 299 INDEPENDENT STUDY (R)

1-4 Credit Hours

Prerequisite: None

The student will study intensively a topic of interest under the direction of a qualified faculty member. The number of credit hours to be allowed for successful completion of the course will be determined cooperatively by the instructor and the division director.

22-90 Independent Study Hours

22-90 Contact Hours

Foreign Automotive Mechanics**FAM 100 ORIENTATION, SAFETY, BASIC ELECTRICAL AND IGNITION SYSTEMS (A)**

3 Credit Hours

Prerequisites: None

Introduces the automotive program, general shop safety, basic engine operations, electrical theory, conventional and solid state ignition systems and metric systems.

15 Theory Hours — 45 Lab Hours — 60 Contact Hours

FAM 105 STARTING AND CHARGING SYSTEMS (A)

3 Credit Hours

Prerequisites: None

Examines operation of charging and starting systems and how to diagnose and repair the systems.

15 Theory Hours — 45 Lab Hours — 60 Contact Hours

FAM 106 CARBURETOR SERVICE (A)

3 Credit Hours

Prerequisites: None

Presents the theory of operation and how to rebuild and adjust, one, two and four-barrel carburetors.

15 Theory Hours — 45 Lab Hours — 60 Contact Hours

FAM 107 OSCILLOSCOPES AND ELECTRONIC TESTING (A)

3 Credit Hours

Prerequisites: None

Introduces the reading of oscilloscope patterns and use of electronic testing instruments.

15 Theory Hours — 45 Lab Hours — 60 Contact Hours

FAM 108 EMISSION CONTROL (A)

3 Credit Hours

Prerequisites: None

Presents the theory of operation and the repair of emission control components.

15 Theory Hours — 45 Lab Hours — 60 Contact Hours

FAM 109 DRUM BRAKE SYSTEMS (A)

3 Credit Hours

Prerequisites: None

Examines hydraulic principles, theory, and service as applied to the automotive brake systems.

15 Theory Hours — 45 Lab Hours — 60 Contact Hours

FAM 110 DISC BRAKE SYSTEMS (A)

3 Credit Hours

Prerequisites: None

Introduces theory, operation, and service on automotive disc brakes.

15 Theory Hours — 45 Lab Hours — 60 Contact Hours

FAM 115 WHEEL ALIGNMENT (A)

3 Credit Hours

Prerequisites: None

Presents theory, operation, and service of wheel alignment.

15 Theory Hours — 45 Lab Hours — 60 Contact Hours

FAM 116 WHEEL BALANCE AND SUSPENSION (A)

3 Credit Hours

Prerequisites: None

Presents theory and service of wheel balance and suspension.

15 Theory Hours — 45 Lab Hours — 60 Contact Hours

FAM 117 STEERING GEARS AND SYSTEMS (A)

3 Credit Hours

Prerequisites: None

Examines theory and service of steering gears and systems.

15 Theory Hours — 45 Lab Hours — 60 Contact Hours

FAM 200 CLUTCHES AND MANUAL TRANSMISSIONS (A)

3 Credit Hours

Prerequisites: None

Includes construction, operation, and service techniques for standard transmission clutches.

15 Theory Hours — 45 Lab Hours — 60 Contact Hours

FAM 205 DRIVE LINES AND DIFFERENTIALS (A)

3 Credit Hours

Prerequisites: None

Presents service procedures and construction of universal joints, drive lines, and differential assemblies.

15 Theory Hours — 45 Lab Hours — 60 Contact Hours

FAM 206 AUTOMATIC TRANSMISSIONS THEORY AND MAINTENANCE (A)

3 Credit Hours

Prerequisites: None

Examines the theory and service of automatic transmissions.

15 Theory Hours — 45 Lab Hours — 60 Contact Hours

FAM 207 AUTOMATIC TRANSMISSION REBUILDING (A)

6 Credit Hours

Prerequisites: None

Requires diagnosing malfunctions and rebuilding automatic transmissions.

30 Theory Hours — 90 Lab Hours

120 Contact Hours

FAM 208 ENGINE OPERATION, DIAGNOSIS, DISASSEMBLY AND MEASUREMENT (A)

6 Credit Hours

Prerequisites: None

Presents engine overhaul procedures, disassembly and measurement with micrometers and special tools.

30 Theory Hours — 90 Lab Hours

120 Contact Hours

FAM 209 ENGINE RECONDITIONING AND ASSEMBLY (A)

3 Credit Hours

Prerequisites: None

Presents assembly procedures and reconditioning of the complete engine.

15 Theory Hours — 45 Lab Hours — 60 Contact Hours

FAM 210 AIR CONDITIONING THEORY SERVICE AND SAFETY (A)

3 Credit Hours

Prerequisites: None

Examines the service, theory and safety procedures of automotive air conditioning.

15 Theory Hours — 45 Lab Hours — 60 Contact Hours

FAM 215 GENERAL SERVICE REPAIR (A)

3 Credit Hours

Prerequisites: None

Includes work on customer cars and any work the student needs to complete the program, with the advisor's permission.

15 Theory Hours — 45 Lab Hours — 60 Contact Hours

FAM 216 CUSTOMER PARTS SERVICE (A)

3 Credit Hours

Prerequisites: None

Analyzes how to read the parts catalog, compare parts stock an inventory of parts.

15 Theory Hours — 45 Lab Hours — 60 Contact Hours

Fluid Power**FLP 100 SAFETY — INTRODUCTION AND ORIENTATION (R)**

3 Credit Hours

Prerequisites: None

The student is taught the identification and the use of basic hand tools and is given an orientation to the fluid power field.

15 Theory Hours — 45 Lab Hours — 60 Contact Hours

FLP 105 BASIC PRINCIPLES OF HYDRAULICS (R)

3 Credit Hours

Prerequisites: None

Fundamentals of hydraulic systems and the principles of hydraulics are taught. The students will perform shop laboratory experiments, using shop trainers.

15 Theory Hours — 45 Lab Hours — 60 Contact Hours

FLP 106 FLUIDS FOR HYDRAULICS, SEALING DEVICES (R)

3 Credit Hours

Prerequisites: None

The student studies petroleum-base fluids, viscosity, fire resistant fluids, water glycol, water-in-oil emulsions, and neutralization number of oils.

15 Theory Hours — 45 Lab Hours — 60 Contact Hours

FLP 107 SOURCE OF HYDRAULIC POWER (R)

3 Credit Hours

Prerequisites: None

The student will disassemble, inspect, repair or replace worn parts and assemble and test gear, vane and piston pumps in accordance with the manufacturer's specifications.

15 Theory Hours — 45 Lab Hours — 60 Contact Hours

P 108 CONTROL OF HYDRAULIC POWER (R)

Credit Hours

Prerequisites: None

The student will repair, adjust, test and install hydraulic controls as listed by the instructor. He/she will study the flow control valves to meet the manufacturer's specifications; the set time and adjusting of all balanced and unbalanced direct and pilot operated relief valves to meet manufacturer's specifications; and will disassemble, repair and test all solenoid control valves according to the manufacturer's specifications.

Theory Hours — 45 Lab Hours — 60 Contact Hours

P 109 HYDRAULIC ACTUATORS — MOTORS — CYLINDERS (R)

Credit Hours

Prerequisites: None

The student will repair, test and select the proper actuator cylinder or motor for the job, using shop manuals according to the manufacturer's specification, select the proper hydraulic motor for different torque, pressures, and G.P.M. to the customer's specifications using charts and graphs.

Theory Hours — 45 Lab Hours — 60 Contact Hours

P 110 DISTRIBUTION OF HYDRAULIC POWER (R)

Credit Hours

Prerequisites: None

The student is taught the proper hoses, tubing or pipe for a given volume or pressure setting, using charts and graphs, and manufactured and test flex hose and rigid piping in sizes and lengths.

Theory Hours — 45 Lab Hours — 60 Contact Hours

P 115 CONDITIONING POWER FLUIDS (R)

Credit Hours

Prerequisites: None

The student will learn to select the proper filter, reservoir, heat exchanger and strainers for any given hydraulic system, identifying correctly, various types of filter elements, full flow and by-pass indicators, and taking Millie "A" pressure readings across filter elements.

Theory Hours — 45 Lab Hours — 60 Contact Hours

P 116 PUMP, OVERHAUL AND TESTING (R)

Credit Hours

Prerequisites: None

The student will disassemble, inspect, repair, assemble and test gear, vane and piston-type pumps, using pump overhaul kits, test the pump on shop test equipment for proper G.P.M., P.S.I., and for volumetric efficiency at a given R.P.M. using the manufacturer's test charts.

Theory Hours — 45 Lab Hours — 60 Contact Hours

FLP 117 COMPONENTS, OVERHAUL AND TESTING (R)

3 Credit Hours

Prerequisites: None

The student will disassemble, inspect and repair relief valves, directional control valves, pressure-reducing valves, actuating cylinders, and other hydraulic components used in a hydraulic system in accordance with the manufacturer's recommended procedures and test charts, and hook up components to the shop test equipment for proper testing and adjustments.

15 Theory Hours — 45 Lab Hours — 60 Contact Hours

FLP 120 FLUID POWER FOR MECHANICAL TRADES I (R)

3 Credit Hours

Prerequisites: None

Orientation to the field of fluid power, general principles, initial techniques and skill development, and how fluid power relates to the various mechanical trades is presented.

15 Theory Hours — 45 Lab Hours — 60 Contact Hours

FLP 121 FLUID POWER FOR MECHANICAL TRADES II (R)

3 Credit Hours

Prerequisites: None

This class covers power steering for automobiles and construction equipment, trucks, etc., including pumps, cylinders, and valves, and hydrostatic transmissions.

15 Theory Hours — 45 Lab Hours — 60 Contact Hours

FLP 125 ANALYZING HYDRAULIC CIRCUITS (R)

3 Credit Hours

Prerequisites: None

The students will learn how to analyze hydraulic systems, drawings and determine the how and why of the system and the hydraulic components required.

15 Theory Hours — 45 Lab Hours — 60 Contact Hours

FLP 126 HYDRAULIC SCHEMATICS (R)

3 Credit Hours

Prerequisites: None

Students will plan and draw hydraulic circuits using ASIA symbols and diagrams for various hydraulic systems as designated by the instructor.

15 Theory Hours — 45 Lab Hours — 60 Contact Hours

FLP 127 HYDROSTATIC DRIVES (R)

3 Credit Hours

Prerequisites: None

The student will learn troubleshooting, adjusting and testing of hydrostatic drives.

15 Theory Hours — 45 Lab Hours — 60 Contact Hours

FLP 200 BASIC PNEUMATICS — SAFETY (R)

3 Credit Hours

Prerequisites: None

Application of basic physical laws of fluids and mechanics pertaining to fluid power are presented.

15 Theory Hours — 45 Lab Hours — 60 Contact Hours

FLP 205 COMPRESSORS (R)

3 Credit Hours

Prerequisites: None

Operation and physical characteristics of most positive and nonpositive displacement compressors, and procedures for dismantling, inspecting and adjusting compressors are taught.

15 Theory Hours — 45 Lab Hours — 60 Contact Hours

FLP 206 PRIMARY, SECONDARY AIR TREATMENT (R)

3 Credit Hours

Prerequisites: None

Operation and application of primary and secondary air treatment units are taught.

15 Theory Hours — 45 Lab Hours — 60 Contact Hours

FLP 207 DIRECTIONAL CONTROL VALVES (R)

3 Credit Hours

Prerequisites: None

Operation, adjustments and repair of directional control valves are taught.

15 Theory Hours — 45 Lab Hours — 60 Contact Hours

FLP 208 CYLINDERS, MOTORS, PNEUMATICS (R)

3 Credit Hours

Prerequisites: None

Maintaining pneumatic cylinder motors and principles of operation and construction are taught.

15 Theory Hours — 45 Lab Hours — 60 Contact Hours

FLP 209 PIPING, HOSE, FITTING, PNEUMATIC SYSTEMS (R)

3 Credit Hours

Prerequisites: None

The student will fabricate, inspect, install and test air system piping hoses.

15 Theory Hours — 45 Lab Hours — 60 Contact Hours

FLP 210 PRESSURE CONTROL VALVES, PNEUMATIC SYSTEMS (R)

3 Credit Hours

Prerequisites: None

The student will disassemble, inspect, repair, assemble and test pressure control valves.

15 Theory Hours — 45 Lab Hours — 60 Contact Hours

FLP 215 PNEUMATIC LOGIC CONTROLS (R)

3 Credit Hours

Prerequisites: None

Methods whereby control answers can be attained are taught.

15 Theory Hours — 45 Lab Hours — 60 Contact Hours

FLP 216 TROUBLESHOOTING, PRINT READING (R)

3 Credit Hours

Prerequisites: None

Troubleshooting basic pneumatic circuits, using manuals and prints, is taught.

15 Theory Hours — 45 Lab Hours — 60 Contact Hours

FLP 217 BASIC FLUIDICS (R)

3 Credit Hours

Prerequisites: None

Operation of fluidic (nonmoving part), logic devices and their application in problem solving are taught.

15 Theory Hours — 45 Lab Hours — 60 Contact Hours

FLP 218 ADVANCED SYSTEM COMPONENTS AND CIRCUITS (R)

3 Credit Hours

Prerequisites: None

JIC standards, graphic symbol, schematic diagram hydrostatic drives, and servo controls for the advanced hydraulic mechanic are taught.

15 Theory Hours — 45 Lab Hours — 60 Contact Hours

FLP 219 ADVANCED TROUBLESHOOTING — SAFETY (R)

3 Credit Hours

Prerequisites: None

Various methods of troubleshooting complete hydraulic and pneumatic systems, both in the field and laboratory setting, using portable test equipment and shop test stands are taught.

15 Theory Hours — 45 Lab Hours — 60 Contact Hours

FLP 220 ADVANCED FLUID POWER, HYDRAULIC AND PNEUMATIC MAINTENANCE (R)

3 Credit Hours

Prerequisites: None

In this class, the student will learn hydraulic and pneumatic shop procedures, manufacturer's specifications, hydraulic and pneumatic components and will participate in local shop visits for the advanced mechanic.

15 Theory Hours — 45 Lab Hours — 60 Contact Hours

FLP 221 FLUID POWER INSTRUMENTATION (R)

3 Credit Hours

Prerequisites: None

Students are taught the individual instruments or hardware that measure the variables in a fluid power system.

15 Theory Hours — 45 Lab Hours — 60 Contact Hours

FLP 225 AIR BRAKE AND ANTI-SKID SYSTEMS (R)

3 Credit Hours

Prerequisites: None

Students will learn fundamentals of the air brake and anti-skid systems and principles of operation.

15 Theory Hours — 45 Lab Hours — 60 Contact Hours

FLP 230 COMPRESSOR OVERHAUL (R)

3 Credit Hours

Prerequisites: None

Students will learn overhaul procedures using manufacturer's manuals and specifications.

15 Theory Hours — 45 Lab Hours — 60 Contact Hours

FSM 297 COOPERATIVE WORK EXPERIENCE (R)

3 Credit Hours

Prerequisites: None

This is a program of study developed with coordinated college course work and industry work experience.

15 Theory Hours — 45 Lab Hours

60-375 Contact Hours

FSM 299 INDEPENDENT STUDY (R)

3 Credit Hours

Prerequisites: None

This is a class of individual study on a special project that related to the fluid power program and is outside the program offerings.

0 Lab Hours — 90 Contact Hours

French**FSM 101 BASIC APPLIED FRENCH I (A,N,R)**

3 Credit Hours

Prerequisites: None

Introduces conversational French for career, travel, and general appreciation of French culture. AV materials, songs, games and skits will be used to teach basic language patterns and pronunciations.

60 Contact Hours

FSM 102 BASIC APPLIED FRENCH II (A,N,R)

3 Credit Hours

Prerequisites: None

Continues emphasis on conversational French with more practice in basic conversational patterns, grammar and syntax.

60 Contact Hours

Food Service and Management**FSM 105 SANITATION, SAFETY, TOOLS AND EQUIPMENT (N)**

3 Credit Hours

Prerequisites: None

This course dealing with the fundamentals of commercial food service laws, rules and regulations on sanitation and safety and how these apply to the tools and equipment facilities and personnel of the industry.

15 Theory Hours — 45 Lab Hours — 60 Contact Hours

FSM 110 PANTRY STATION WORK DUTIES (N)

3 Credit Hours

Prerequisite: or concurrent Math 100. Proficiency in FSM 105 or equivalent.

This course covers the preparation of various types of salads, techniques of sandwich production, beverages and other duties found in different pantry stations throughout the food service industry.

15 Theory Hours — 45 Lab Hours — 60 Contact Hours

FSM 115 BASIC BAKING AND FRY COOK DUTIES (N)

3 Credit Hours

Prerequisite: Proficiency in FSM 105 and FSM 110 or equivalent.

Study and use of the various types of flours, leavening agents, fillings, icings, and production of breads and pastries. Fresh, frozen and convenience products are studied. The fry cook duties of deep fat frying, eggs cookery, and vegetable cookery are introduced.

15 Theory Hours — 45 Lab Hours — 60 Contact Hours

FSM 120 VOLUME FOOD PREPARATION AND SERVICE (N)

3 Credit Hours

Prerequisite: Proficiency in FSM 105, FSM 110, FSM 115, or equivalents.

This includes planning meals, table count and cafeteria service. Basic stocks, sauces, secondary sauces, gravies, independent production and casserole cookery is stressed.

15 Theory Hours — 45 Lab Hours — 60 Contact Hours

FSM 125 VOLUME FOOD PRODUCTION (N)

3 Credit Hours

Prerequisite: or concurrent Basic Oral Communication. Proficiency in FSM 105, FSM 110, FSM 115, FSM 120, or equivalents.

Meat cookery is started and volume food production is introduced through the application of previous class studies. Laboratory experience is stressed.

15 Theory Hours — 45 Lab Hours — 60 Contact Hours

FSM 130 MEAT IDENTITY AND COOKERY (N)

3 Credit Hours

Prerequisite: Proficiency in FSM 105, FSM 110, FSM 115, FSM 120, FSM 125, FSM 130 or equivalents.

This course gives an in-depth study of meat products from purchasing through preparation to include various methods of meat cookery and soy protein additives.

15 Theory Hours — 45 Lab Hours — 60 Contact Hours

FSM 135 SHORT ORDER COOK STATION DUTIES (N)

3 Credit Hours

Prerequisite: Basic Written Communication, proficiency in FSM 105, FSM 110, FSM 115, FSM 120, FSM 125, FSM 130, or equivalents.

Breakfast preparation items and duties often delegated under the heading of short order cook are studied and practiced including broiler and grill cooking.

15 Theory Hours — 45 Lab Hours — 60 Contact Hours

FSM 140 VOLUME FOOD DISPLAY AND PRODUCTION (N)

3 Credit Hours

Prerequisite: Proficiency in FSM 105, FSM 110, FSM 115, FSM 120, FSM 125, FSM 130, FSM 135, or equivalents.

Poultry, game and fish preparation and service along with cookery are studied and applied here. Proficiency and advancement of quantity food production is practiced.

15 Theory Hours — 45 Lab Hours — 60 Contact Hours

FSM 145 FIRST COOK STATION DUTIES (N)

3 Credit Hours

Prerequisite: Proficiency in FSM 105, FSM 110, FSM 115, FSM 120, FSM 125, FSM 130, FSM 135, FSM 140, or equivalents.

This course expands terminology, planning, costing, and production with emphasis on employee relationship of one department to another for effective and profitable kitchen production. The student will become familiar with catering and other special food service needs.

15 Theory Hours — 45 Lab Hours — 60 Contact Hours

FSM 150 FOOD PRODUCTION II (N)

3 Credit Hours

Prerequisite: DIT 105 Basic Nutrition. Proficiency in FSM 105, FSM 110, FSM 115, FSM 120, FSM 125, FSM 130, FSM 135, FSM 140, FSM 145, or equivalents.

The student performs through lab work assignments, utilizing both theory and techniques started in previous food courses. Students complete areas where proficiency was lacking. Demonstrates his or her best food production skills and ability to work independently.

15 Theory Hours — 45 Lab Hours — 60 Contact Hours

FSM 155 ADVANCED PRODUCTION (N)

3 Credit Hours

Prerequisites: None

Advanced techniques in production will be studied in this course.

15 Theory Hours — 45 Lab Hours — 60 Contact Hours

FSM 156 SPECIALIZED FOOD AND CONVENIENCE FOODS (N)

3 Credit Hours

Prerequisites: None

Refresher and promotional production for advanced kitchen workers.

15 Theory Hours — 45 Lab Hours — 60 Contact Hours

FSM 157 BEVERAGE SERVICE (N)

3 Credit Hours

Prerequisites: None

The student will gain ability to function as operator of the alcoholic beverage area of a hospitality industry business from procurement of product through preparation and service to the final accountability of sales and commodity.

15 Theory Hours — 45 Lab Hours — 60 Contact Hours

FSM 158 HOSPITALITY AND SERVICE (N)

3 Credit Hours

Prerequisites: None

The student will demonstrate awareness of all facets of the service aspects of food and beverage sales in the hospitality industry as to needs and responsibilities within all organizations from fountain-luncheonette through those offering tableside cart cooking or French-type service.

15 Theory Hours — 45 Lab Hours — 60 Contact Hours

FSM 197 COOPERATIVE WORK EXPERIENCE (N)

4 Credit Hours

Prerequisites for enrollment in FSM 197 are permission of the instructor and approval of the Division Director.

A basic course provided through a cooperative arrangement between the College and an employing agency. Through this course, the student will have an opportunity to become more proficient in basic skills or special skills directly related to a specific job-entry goal. One hour per week in class.

15 Theory Hours — 135 Lab Hours

150 Contact Hours

Fire Science Technology**FST 100 FIRE PROTECTION (R,AEC)**

3 Credit Hours

Prerequisites: None

History and philosophy of fire protection. Introduction to the fire service and its many facets. Review of the general areas of duties and responsibilities at the fire company level.

45 Theory Hours — 45 Contact Hours

FST 105 FIRE APPARATUS AND EQUIPMENT (R,AEC)

3 Credit Hours

Prerequisites: None

Types of fire apparatus used in the fire service. Familiarization, operation and uses of the various types of pumps, ladders, aerial platforms, squads and all specialized fire equipment.

45 Theory Hours — 45 Contact Hours

FST 106 FIRE PREVENTION (R,AEC)

2 Credit Hours

Prerequisites: None

A course that analyzes the organization and functions of fire prevention, including inspection and survey procedures and recognition of fire hazards. Methods of fire hazard removal and the use of fire safety education to prevent or limit fires and their effects are taught.

30 Theory Hours — 30 Contact Hours

FST 107 RELATED CODES AND ORDINANCES (R,AEC)

3 Credit Hours

Prerequisites: None

This course is designed to acquaint the student with the requirements of the Uniform Fire Code. The fire code will cover the requirements for operations and functions that go on within the building.

45 Theory Hours — 45 Contact Hours

FST 108 FIRE HYDRAULICS (R,AEC)

4 Credit Hours

Prerequisite: Applied Math

Review of basic mathematics; hydraulic laws and formulas as applied to the fire service, application of formulas and mental calculation to hydraulic problems; water supply problems, underwriters' requirements for pumps.

45 Theory Hours — 23 Lab Hours — 68 Contact Hours

ST 109 BUILDING PLANS AND CONSTRUCTION (R,AEC)

Credit Hours

Prerequisites: None

How to read and understand a working drawing of a structure or a schematic of electric/ or fire protection systems. Building construction for the fire fighter means the types of buildings and building materials, the structural stability of them in the fire situation.

5 Theory Hours — 45 Contact Hours

ST 111 FIRE SERVICE FORENSIC PHOTOGRAPHY I (R)

Credit Hours

Prerequisites: None

An introductory, basic photography course for fire investigative photographers. Some of the areas covered are types of cameras, lenses, shutters, lighting, developing and printing, types of film and other pertinent information for the beginning fire service photographer.

5 Theory Hours — 23 Lab Hours — 68 Contact Hours

ST 112 FIRE SERVICE FORENSIC PHOTOGRAPHY II (R)

Credit Hours

Prerequisites: FST 111, or equivalent photo experience, to be determined by the instructor.

An advanced course in fire service forensic photography. Some of the areas covered are arson detection and investigation, using photographic skills to take and prepare photographic evidence for judicial proceedings.

5 Theory Hours — 23 Lab Hours — 68 Contact Hours

ST 115 PHOTOGRAPHY FOR FIRE EVIDENCE (R)

Credit Hour

Prerequisites: None

A photography course to acquaint the student with practices and techniques to use photography as evidence for arson investigation and judicial procedures.

5 Theory Hours — 15 Contact Hours

ST 116 WALKTHRU REVIEW OF UNIFORM BUILDING CODE (R)

Credit Hours

Prerequisites: None

Chapter-by-chapter review of changes between 1976 and 1979 Uniform Building Code. Emphasis will be placed on utilization of Uniform Building Code as a fire prevention tool.

10 Theory Hours — 30 Contact Hours

ST 117 FIREFIGHTER AND FIRE DEPARTMENT LIABILITY (R)

Credit Hour

Prerequisites: None

A course to inform fire departments, fire boards, and firefighters of civil and criminal liabilities under the law. Colorado laws and statutes will be reviewed by the instructor.

5 Theory Hours — 15 Contact Hours

ST 118 FIREGROUND TACTICS (R)

Credit Hour

Prerequisites: None

Basic methods of fire attack, solving problems with use of fire simulator and communications simulator.

5 Theory Hours — 15 Contact Hours

FST 121 HAZARDOUS MATERIALS (R)

4 Credit Hours

Prerequisites: None

A study into the physical and chemical properties of different compounds which render fire fighting abnormally dangerous and hazardous. Emphasis is placed on molecular structures of compounds in identifying their hazardous properties. The different classes of compounds studied are: flammable liquids; compressed gases; cryogenics; flammable solids; water reactive compounds; oxidizers explosives; Class A and B poisons; corrosives; plastics and radioactive materials.

45 Theory Hours — 23 Lab Hours — 68 Contact Hours

FST 141 AUTOMATIC EXTINGUISHING SYSTEMS (R,AEC)

1 Credit Hour

Prerequisites: None

Sprinkler systems, types, installation and maintenance for various hazards.

15 Theory Hours — 15 Contact Hours

FST 142 SPECIAL AUTOMATIC PROTECTION SYSTEMS (R)

1 Credit Hour

Prerequisites: None

A study of special systems including standpipes, CO² foam, halogenated and dry chemical systems.

15 Theory Hours — 15 Contact Hours

FST 143 PORTABLE FIRE EXTINGUISHERS (R)

1 Credit Hour

Prerequisites: None

This course identifies the various types of fire extinguishers and their extinguishing agents. Proper installation, inspection, operation and proper application will be demonstrated and practiced.

15 Theory Hours — 15 Contact Hours

FST 144 AUTOMATIC FIRE DETECTION SYSTEMS (R)

1 Credit Hour

Prerequisites: None

A study of various devices and methods of automatically detecting fire or other emergency situations.

15 Theory Hours — 15 Contact Hours

FST 145 FIREFIGHTERS RESPIRATORY PROTECTION (R)

1 Credit Hour

Prerequisites: None

A study of respiratory hazards encountered by firefighters and the equipment necessary for protection from those hazardous atmospheres.

15 Theory Hours — 15 Contact Hours

FST 146 PESTICIDE FIRE AND SPILL CONTROL (R)

1 Credit Hour

Prerequisites: None

Proper control of situations involving toxic substances in fire and/or spill incidents.

15 Theory Hours — 15 Contact Hours

FST 205 FIRE SAFETY EDUCATION (R,AEC)

3 Credit Hours

Prerequisites: None

This course is structured to enable the student to design and implement a fire safety education program: Media relations, fire safety education through audio-visual aids, promotion of community business support, improvement of citizen-firefighter communication:

45 Theory Hours — 45 Contact Hours

FST 206 FIRE INVESTIGATION (R,AEC)

3 Credit Hours

Prerequisites: None

Introduction to arson and incendiarism, arson laws, and types of incendiary fires. Methods of determining fire cause, recognizing and preserving evidence, interviewing and detaining witnesses. Procedures in handling juveniles, court procedures and giving court testimony.

45 Theory Hours — 45 Contact Hours

FST 207 COMPREHENSIVE PLANNING FOR FIRE PROTECTION (R,AEC)

3 Credit Hours

Prerequisites: None

How to plan and coordinate between separate government agencies on the use of streets, water, and construction in relation to fire prevention and suppression.

45 Theory Hours — 45 Contact Hours

FST 208 BUILDING INSPECTIONS FOR FIRE PROTECTION (R,AEC)

3 Credit Hours

Prerequisites: None

Emphasis is on inspection techniques, plumbing inspections, electrical inspections, and mechanical inspections relative to the fire protection field.

45 Theory Hours — 45 Contact Hours

FST 215 STRATEGY AND TACTICS (R,AEC)

3 Credit Hours

Prerequisites: None

Basic fire fighting tactics and strategy, methods of attack, preplanning fire problems.

45 Theory Hours — 45 Contact Hours

FST 216 RESCUE PROCEDURES (R,AEC)

3 Credit Hours

Prerequisites: None

Rescue practices, rescue skills and techniques, rescue tools and equipment with emphasis on auto accident extraction, building collapse, cave-in and landslide and other rescue problem procedures.

45 Theory Hours — 45 Contact Hours

FST 217 OPERATING AND DRIVING PROCEDURES (R)

4 Credit Hours

Prerequisites: None

A course designed to enable the student to safely maintain, drive, and operate pump and aerial ladder fire apparatus, including maintenance checks, defensive driving, and operating apparatus in the field.

45 Theory Hours — 23 Lab Hours — 68 Contact Hours

FST 218 FIRE SERVICE MANAGEMENT (R,AEC)

3 Credit Hours

Prerequisites: None

A course that analyzes the organization and functions of public fire departments, including study of master planning, public budget systems, cost-benefit analysis management information systems, systems approach and other current administration and management theories.

45 Theory Hours — 45 Contact Hours

FST 220 STRUCTURAL PREPLANNING FOR THE FIRE SERVICE (R)

3 Credit Hours

Prerequisites: None

A course teaching accurate pre-plan drawings, using universal symbols, for uniform fire service pre-plans.

45 Theory Hours — 45 Contact Hours

FST 226 FIRE COMMAND OFFICER SCHOOL (R)

1 Credit Hour

Prerequisites: None

A comprehensive three-day command office training seminar and workshop, conducted during the summer semester utilizing nationally-known speakers in fire service management, command strategy and company operations.

15 Theory Hours — 15 Contact Hours

FST 227 EMERGENCY MEDICAL TECHNICIAN (R)

4 Credit Hours

Prerequisites: None

College credits will be given to a student for EMT upon presentation of a current certificate of completion from the American College of Surgeons and the Colorado Department of Health.

120 Theory Hours — 120 Contact Hours

FST 228 UNDERWATER RECOVERY (R)

3 Credit Hours

Prerequisites: None

Study of methods used in underwater search and recovery; psychological and physiological aspects of diving are studied.

45 Theory Hours — 45 Contact Hours

FST 229 HAZARDOUS MATERIALS SEMINAR (R)

3 Credit Hours

Prerequisites: None

Seminar on transportation accidents and methods of fire suppression/ safety precautions used at the scene.

45 Theory Hours — 45 Contact Hours

FST 230 AIRCRAFT FIRE / RESCUE (R)

3 Credit Hours

Prerequisites: None

Emergency procedures used at the scene of commercial/ military aircraft accidents. Use of special firefighting suppression agents.

45 Theory Hours — 45 Contact Hours

FST 242 SUPERVISION FOR FIRE SERVICES (R)

1 Credit Hour

Prerequisites: None

This course will acquaint the student with the role of a supervisor, styles of supervision, communication needs, understanding conflicts, motivation and evaluation of employees.

15 Theory Hours — 15 Contact Hours

FST 243 STRESS MANAGEMENT (R)

1 Credit Hour

Prerequisites: None

This course covers methods to reduce stress generators as well as techniques to cope with them. It shows participants how to beat stress in order to work more productively and to live more fully.

15 Theory Hours — 15 Contact Hours

FST 244 PERSONNEL MANAGEMENT (R)

1 Credit Hour

Prerequisites: None

This course will develop knowledge of students in aspects of public personnel administration, including classification, compensation, recruitment, and selection, EEO/ affirmative action, employee appraisal and employee development.

15 Theory Hours — 15 Contact Hours

FST 285 WILDLAND FIRES (R)

3 Credit Hours

Prerequisites: None

The study of uncontrolled fire burning in vegetation, structures and other improvements. Strategy and tactics in controlling wildland fires and prevention methods used by agencies will be included in this course.

45 Theory Hours — 45 Contact Hours

FST 286 FIREFIGHTER SAFETY (R)

3 Credit Hours

Prerequisites: None

Personal safety for the firefighter under emergency and nonemergency conditions will be studied.

45 Theory Hours — 45 Contact Hours

FST 287 AUTOMATIC EXTINGUISHING SYSTEMS DESIGN (R)

3 Credit Hours

Prerequisites: None

Background on transposing information from working drawings through field measurements into standard plot plan, interpretation of NFPA standards, fire inspections of commercial/ industrial buildings, and hydraulics calculations for water needs of fixed fire protection.

45 Theory Hours — 45 Contact Hours

**FST 297 COOPERATIVE WORK EXPERIENCE / PRACTICAL TRAINING (R)**

4 Credit Hours

Prerequisites: None

The student is assigned to a local area fire department and is assigned fire department duties related to his Fire Science Technology Degree Program. This practical training program is supervised and coordinated by his College instructor. He will work with an experienced pre-selected fire department officer who will grade his performance according to College standards. Regular school attendance is required by all students participating in this course. OPTIONS: Electives in Fire Science or General Education courses may be substituted by permission of FST advisor.

120 Theory Hours — 120 Contact Hours

FST 299 INDEPENDENT STUDY (R,AEC)

1-6 Credit Hours

Prerequisites: None

This course provides opportunity for a student to study intensively a specific topic of interest under the direction of a qualified faculty member. Permission to enroll for independent study must be obtained from the assigned instructor. OPTION: Electives in Fire Science or General Education courses may be substituted by permission of FST advisor.

23-164 Theory Hours — 23-164 Contact Hours

General Education Development**GED 010 GED PREPARATION: READING AND WRITING SKILLS (A,N,R)**

5 Credit Hours

Prerequisites: None

Includes instruction in general reading skills, reading in the content areas, writing skills, and test-taking techniques designed to prepare students to pass GED tests in the following areas: Writing Skills, Social Studies, Science and Reading Skills. The program involves diagnostic testing to determine skill levels, prescriptive instruction, practice testing in GED materials, stimulated GED testing and scheduling for the actual GED test. Special assistance in Reading and English skills is available through the Learning Development Center.

75 Contact Hours

GED 011 GED PREPARATION: MATHEMATICS (A,N,R)

5 Credit Hours

Prerequisites: None

Includes instruction in basic mathematical operations, mathematical reasoning, algebra, geometry, test-taking techniques designed to prepare students to pass the GED Mathematics Test. The program involves diagnostic testing to determine skill levels, prescriptive instruction, practice test-taking, simulated GED testing, and scheduling for the actual GED. Special tutoring assistance in mathematics is available in the Learning Development Center.

75 Contact Hours

Geography

GEO 105 FUNDAMENTAL PLACE-NAME GEOGRAPHY (A,R,AEC)

1 Credit Hour

Prerequisites: None

Designed for persons wanting to know where places are located.

15 Theory Hours — 15 Contact Hours

GEO 106 VISUAL LITERACY (R,AEC)

1 Credit Hour

Prerequisites: None

Designed to acquaint students with techniques for increasing their visual awareness and understanding.

15 Theory Hours — 15 Contact Hours

GEO 107 APPLIED GEOGRAPHY (R,AEC)

1 Credit Hour

Prerequisites: None

Designed for the student who wants to know how informed locational decisions related to residential location, marketing geography and manpower geography are made.

15 Theory Hours — 15 Contact Hours

GEO 108 MAPS AND COMPASS USE (A,R,AEC)

1 Credit Hour

Prerequisites: None

Designed to improve the student's ability to make and use maps.

15 Theory Hours — 15 Contact Hours

GEO 111 PHYSICAL GEOGRAPHY (LANDFORMS) (A,N,R,AEC)

4 Credit Hours

Prerequisites: None

Introduces the principles of landforms and soil as major aspects of man's natural environment. The course is conducted through an integrated process of lecture, discussion and laboratory assignments.

45 Theory Hours — 45 Lab Hours — 90 Contact Hours

GEO 112 PHYSICAL GEOGRAPHY (WEATHER AND CLIMATE) (A,N,R,AEC)

4 Credit Hours

Prerequisites: None

Introduces the principles of meteorology, climatology, world vegetation patterns, and world regional climatic classification. The course is conducted through an integrated process of lecture, discussion and laboratory assignments.

45 Theory Hours — 45 Lab Hours — 90 Contact Hours

GEO 121 GEOGRAPHY OF MAN (A,R,AEC)

3 Credit Hours

Prerequisites: None

Details the patterns and forms of mankind's changing use of and adjustments to the earth's environment. Included is a preliminary examination of major global social, economic and political problems from a spatial and geographic perspective.

45 Theory Hours — 45 Contact Hours

GEO 150 WORLD REGIONAL GEOGRAPHY (A,R,AEC)

4 Credit Hours

Prerequisites: None

Details the major regions of the world and introduces the concepts of cultural geography and how they apply to these regions.

60 Theory Hours — 60 Contact Hours

GEO 165 GEOGRAPHY OF LATIN AMERICA (A,R)

3 Credit Hours

Prerequisites: None

An in-depth analysis of geographical patterns of Latin America.

45 Theory Hours — 45 Contact Hours

GEO 200 HUMAN ECOLOGY (A,N,R,AEC)

3 Credit Hours

Prerequisites: None

A survey of world resources, the nature of resources, attitudes toward resources, environmental principles and the impact of populations on resource bases.

45 Theory Hours — 45 Contact Hours

GEO 210 THE GEOGRAPHY OF ECONOMIC ACTIVITY (A,R,AEC)

3 Credit Hours

Prerequisites: None

An examination of man's economic activities and their location.

45 Theory Hours — 45 Contact Hours

GEO 220 THE MANY COLORADOS (A,R,AEC)

3 Credit Hours

Prerequisites: None

Examines such things as the landforms, vegetation, climate, peoples, economy, and culture which give various areas of Colorado their character.

45 Theory Hours — 45 Contact Hours

GEO 230 URBAN GEOGRAPHY (A,N,R,AEC)

3 Credit Hours

Prerequisites: None

The study of sociological, psychological and economic forces at work in urban places from a spatial, geographic perspective.

45 Theory Hours — 45 Contact Hours

GEO 235 RURAL GEOGRAPHY (R,AEC)

3 Credit Hours

Prerequisites: None

An examination of the changing patterns of land use and population in rural America resulting from both agricultural and nonagricultural forces since World War II and the effects of these changes on rural America.

45 Theory Hours — 45 Contact Hours

GEO 289 GEOGRAPHY PRACTICUM (A,R,AEC)

1-9 Credit Hours

Prerequisites: None

Field experience related to the student's interests. Arrangement with instructor required.

EO 299 INDEPENDENT STUDY (A,N,R)

4 Credit Hours

Prerequisite: Consent of instructor.

Please refer to the general description of Independent Study in this catalog.

5-180 Contact Hours



German

GER 101 BASIC APPLIED GERMAN (R)

5 Credit Hours

Prerequisites: None

Provides basic conversational patterns for enjoyment and/or for practical use.

5 Contact Hours

GER 102 BASIC APPLIED GERMAN (R)

5 Credit Hours

Prerequisites: None

Continuation of GER 101.

5 Contact Hours

GER 111 FIRST YEAR GERMAN (R)

5 Credit Hours

Prerequisites: None

Covers basic principles of grammar, reading and writing skills, correct pronunciation, and basic conversation.

5 Contact Hours

GER 112 FIRST YEAR GERMAN (R)

5 Credit Hours

Prerequisite: GER 111 or permission of instructor.

Continuation and expansion of GER 111.

5 Contact Hours

GER 211 INTERMEDIATE GERMAN (R)

3 Credit Hours

Prerequisite: GER 112 or equivalent.

Further skills in communications, linguistic structure and vocabulary through readings in literature.

5 Contact Hours

GER 212 INTERMEDIATE GERMAN (R)

3 Credit Hours

Prerequisite: GER 211.

Continuation and expansion of GER 211.

45 Contact Hours

GER 299 INDEPENDENT STUDY (R)

1-3 Credit Hours

Prerequisite: Consent of instructor.

Please refer to the general description of Independent Study in this catalog.

15-45 Contact Hours

Gerontology / Geriatrics and Activities Directing

GGA 100 INTRODUCTION TO GERONTOLOGY (A)

3 Credit Hours

Prerequisites: None

Provides the student with basic understanding of facts and fallacies of aging. Included are various theories of aging, health and sexuality in later years, death and dying, service programs for the aged, how to understand and deal with delicate subjects and many problems faced by the aged.

45 Theory Hours — 45 Contact Hours

GGA 101 PHYSICAL, PSYCHOLOGICAL AND SOCIAL IMPLICATIONS OF AGING I (A)

5 Credit Hours

Prerequisite: GGA 100

Provides the student with an understanding of the physical, psychological, and social implications in later years of human life, history of gerontology, demography of the aged, cellular biology of aging, aging brain function and behavior, and successful alleviation or retardation of behavioral deficits of the aged by environmental intervention and improved health through proper nutrition and exercise. Also included are methods to improve the declining memory of the aged and their learning performances.

75 Theory Hours — 75 Contact Hours

GGA 102 ACTIVITIES DIRECTING FOR SENIOR CITIZENS I (A)

3 Credit Hours

Prerequisites: None

Teaches the roles and functions of the activity director for the aged and infirm, how to plan and conduct rehabilitational, recreational and therapeutic activities to meet the physical and psychological needs and interests of the aged, and contribute to healthy adjustment to the institutions and homes. Included are strategies and techniques for activity directing, planning and scheduling of activities, resident interest sheets and progress recording, budgeting, volunteer training and supervision, activities appropriate for bed care, the visually handicapped, wheelchair and ambulatory residents. Content related to reality orientation, sensory training, remotivation techniques, the stepladder approach, approaches for working with persons with confusion, chronic brain syndrome and senile dementia are also emphasized.

45 Theory Hours — 45 Contact Hours

GGA 105 NUTRITION FOR THE ELDERLY (A)

4 Credit Hours

Prerequisites: None

Provides the student with basic concepts and knowledge of essential nutrients and their functions, body metabolism and dietary requirement changes in later years. Deficiency syndromes, malnutrition, obesity and its role in precipitating or aggravating cardiovascular and cerebrovascular accidents, disabilities in later years, preventive measures through proper nutrition are considered. Other topics discussed are prepared foods, cultural influences on food choices, task simplification in food preparation and safety precautions. Cooking demonstrations that emphasize the preparation of low cholesterol diets comprise the major lab activities.

45 Theory Hours — 20 Lab Hours — 65 Contact Hours

GGA 107 EMERGENCY PROCEDURES AND PROFESSIONAL RELATIONSHIPS (A)

3 Credit Hours

Prerequisites: None

Covers suggested precautions for prevention of accidents common to the aged in and around the residence, safety measures, and first aid. Emphases are placed on body mechanics, body alignment to prevent occupational injuries common to geriatric care personnel and activity directors, the Heimlich maneuver, and cardio-pulmonary resuscitation. Legal and ethical implications for the geronomist and proper professional communication techniques are included.

30 Theory Hours — 30 Lab Hours — 60 Contact Hours

GGA 109 ACTIVITIES OF DAILY LIVING (A)

3 Credit Hours

Prerequisites: None

Introduces the student to overwhelming problems that the aged and handicapped encounter in everyday living and provides the student with various information concerning adaptation that will make life easier such as work simplification principles, selection and adaptation of clothing to suit particular physical limitations, devices/tools and techniques which save time and energy, thus enabling the aged and infirm to live as independently as possible. Also included are nature of common geriatric disabilities, range of motion mechanics, and source of services and devices available for the handicapped.

30 Theory Hours — 30 Lab Hours — 60 Contact Hours

GGA 111 PHYSICAL, PSYCHOLOGICAL, AND SOCIAL IMPLICATIONS OF AGING II (A)

5 Credit Hours

Prerequisites: None

Meets the needs and demands of activity directors and health care personnel in the fields of gerontology, geriatrics and nursing homes. It provides the student with further understanding of physical, psychological and social implications in later years. Various geriatric illnesses common to aged, causes, symptoms and signs, management, rehabilitational activities and how to prevent these undesirable illnesses are discussed.

75 Theory Hours — 75 Contact Hours

GGA 112 ACTIVITY DIRECTING FOR SENIOR CITIZENS II (A)

7 Credit Hours

Prerequisite: GGA 102

Provides the student with essential knowledge in activities-directing; how to make rehabilitational, recreational and therapeutic arts and crafts; proper usage of various materials, tools, and equipment in arts and crafts; information about purchasing or obtaining needed materials, how to utilize materials which would normally be discarded, and "know-how" survival techniques for activity directors. In addition to the college lab experience, each student will have an opportunity for observation and entry level practice in assisting activity director in various nursing homes and community centers.

135 Community Practicum — 90 Lab Hours

225 Contact Hours

Graphic Arts**GRA 100 INTRODUCTION TO GRAPHIC ARTS (A)**

3 Credit Hours

Prerequisites: None

Introduces the student to the history of printing, illegible printing, pica pole, grid sheets, border tape, thumbnail comprehensive, waxer and beginning paste-up. Emphasizes headliner, types, VariTyper, paste-up, harmony balance and design, letterheads and ads, proofreading, newspaper paste-up and corrections, and brochures.

24 Theory Hours — 36 Lab Hours — 60 Contact Hours

GRA 105 BEGINNING PROCESS CAMERA (A)

3 Credit Hours

Prerequisite: GRA 100

Teaches theory, use, parts plus types of process camera, films, papers, chemicals, proportions, tins, screens, filters, gray scales for process camera and two color card paste-up which includes a window and picture for halftones.

24 Theory Hours — 36 Lab Hours — 60 Contact Hours

GRA 106 HALFTONES ON PROCESS CAMERA (A)

3 Credit Hours

Prerequisite: GRA 105

Introduces theory of halftones, calibrate screens, compute flash chart, shoot halftones, halftone bumps, drop outs design, paste-up two color personal business card and begin shooting. Assignments include paste-up on camera with weak copy, percentage plus f-stop change and filter factors.

24 Theory Hours — 36 Lab Hours — 60 Contact Hours

GRA 107 COMPOSITION (A)

3 Credit Hours

Prerequisite: GRA 106

Emphasizes business cards, transfer type, ad helpers design, paste-up with picture, three panel brochure shooting of brochure, forms, index cards with two side ruling-pen, border tape and scribe.

24 Theory Hours — 36 Lab Hours — 60 Contact Hours

IA 108 PROCESS CAMERA II AND COMPOSITION II (A)

Credit Hours

Prerequisite: GRA 107

Views line shots, halftones, design, paste-up two color cards and shooting of cards. (A continuation of GRA 105, 106 and 107.)

Theory Hours — 36 Lab Hours — 60 Contact Hours

IA 109 BEGINNING OFFSET PRESSES (A)

Credit Hours

Prerequisite: GRA 108

Produces offset press set-up for: paper feeder, register card, delivery and printing head.

Theory Hours — 36 Lab Hours — 60 Contact Hours

IA 110 STRIPPING AND SMALL BINDERY (A)

Credit Hours

Prerequisite: GRA 109

Teaches simple, advanced, book and process color stripping, register pins, small bindery, paper drill, power paper cutter, book bindings, Velo bind, saddle stitch, perfect bind, table model friction folder, perforating, printing and slitting.

Theory Hours — 36 Lab Hours — 60 Contact Hours

IA 115 INTERMEDIATE OFFSET PRESSES (A)

Credit Hours

Prerequisite: GRA 110

Continues the work on beginning offset presses, including quick copy, pressure settings and adjustments, register techniques, 25" press, multi-color registering and printing.

Theory Hours — 36 Lab Hours — 60 Contact Hours

IA 116 PAPER MANAGEMENT AND PRODUCTION (A)

Credit Hours

Prerequisite: GRA 115

Teaches buying, estimating, pricing, job pricing, job planning and scheduling, work flow and plant layout.

Theory Hours — 36 Lab Hours — 60 Contact Hours

IA 117 INKS, PLATES AND INTRODUCTION TO LARGE BINDERY (A)

Credit Hours

Prerequisite: GRA 116

Works with kinds of ink, manufacture and characteristics, color mixing and additives, types, brands, characteristics, and processing of offset plates and basics of air folder techniques.

Theory Hours — 36 Lab Hours — 60 Contact Hours

IA 120 PROCESS CAMERA AND HALFTONES (A)

Credit Hours

Prerequisites: None

Teaches theory, use, parts of and types of process camera; films, papers, chemical proportions, tint screens, gray scales, theory of halftones, calibrate screens, compute flash chart and shooting halftones.

Theory Hours — 72 Lab Hours

60 Contact Hours

GRA 130 INTERMEDIATE LITHOGRAPHIC EQUIPMENT MAINTENANCE AND REPAIR (A)

3 Credit Hours

Prerequisites: None

Teaches machine settings, adjustments and repair of offset equipment; including Multiliths, A.B. Dicks, Chief 15, 25" press, process camera, and other related equipment.

24 Theory Hours — 36 Lab Hours — 60 Contact Hours

GRA 200 PROCESS COLOR SEPARATION (A)

3 Credit Hours

Prerequisite: GRA 117

Teaches process color separation with use of filters, separations using both reflection and transmission copy, transmission densitometer, theory and use of direct and indirect separations.

24 Theory Hours — 36 Lab Hours — 60 Contact Hours

GRA 205 PROCESS COLOR PRINTING (A)

3 Credit Hours

Prerequisite: GRA 200

Works with set-up, register and printing of process color separation, techniques and features of 25" presses, changing and setting of molleton covers.

24 Theory Hours — 36 Lab Hours — 60 Contact Hours

GRA 206 COMPUTERIZED TYPESETTING (A)

3 Credit Hours

Prerequisite: GRA 205

Teaches the theory, function and use of a computerized typesetter employing level six coded perforated tape.

24 Theory Hours — 36 Lab Hours — 60 Contact Hours

GRA 207 RAISED PRINTING (A)

3 Credit Hours

Prerequisite: GRA 206

Teaches the theory and use of raised printing use and functions and set up of three section air fed folder and set-up of four pocket Rosback signature collator.

24 Theory Hours — 36 Lab Hours — 60 Contact Hours

GRA 208 BASIC MACHINE MAINTENANCE (A)

3 Credit Hours

Prerequisite: GRA 207

Teaches basic settings lubrication, adjustments and minor repair of offset equipment, including presses, cameras, vacuum pumps, etc.

24 Theory Hours — 36 Lab Hours — 60 Contact Hours

GRA 209 SILK SCREENING FOR GRAPHIC ARTS (A)

1 Credit Hour

Prerequisite: GRA 208

Introduces the various methods of commercial silk-screening, including direct photo, transfer photo and hand cut stencils. Introduces the student to the types of equipment and inks used.

8 Theory Hours — 12 Lab Hours — 20 Contact Hours

GRA 299 INDEPENDENT STUDY

1-3 Credit Hours

Prerequisites: Consent of instructor and must have completed all 100 level GRA courses.

Please refer to the general description of Independent Study in this catalog.

Heavy Equipment Operation and Preventive Maintenance

HEO 100 SAFETY ORIENTATION AND STARTING PROCEDURES (R)

3 Credit Hours

Prerequisites: None

Safety, orientation to the earth-moving field, inspection, reading gauges, and starting and shutting off engines are taught in this class.

15 Theory Hours — 45 Lab Hours — 60 Contact Hours

HEO 105 MAINTENANCE AND ADJUSTMENT (R)

3 Credit Hours

Prerequisite: HEO 100

In this class, the student will learn maintenance procedures and will have training in adjusting steering systems, brakes, power units, dozer blades, scraper blades and ripper equipment.

15 Theory Hours — 45 Lab Hours — 60 Contact Hours

HEO 106 OPERATING EQUIPMENT (R)

3 Credit Hours

Prerequisites: None

The student will be introduced to manipulating and coordinating controls used to operate heavy equipment.

15 Theory Hours — 45 Lab Hours — 60 Contact Hours

HEO 107 FIELD TASKS — INITIAL GRADING (R)

3 Credit Hours

Prerequisites: None

The student will be involved in field work designed to give experience in making cuts and fills, moving dirt, rock and vegetation and establishing subgrades.

15 Theory Hours — 45 Lab Hours — 60 Contact Hours

HEO 108 FIELD TASKS — SUBGRADING (R)

3 Credit Hours

Prerequisites: None

The field work in this class is designed to give experience in stake reading, rolling, packing, burying and piling earth to establish final grades.

15 Theory Hours — 45 Lab Hours — 60 Contact Hours

HEO 109 FIELD TASKS — INITIAL FINISH WORK (R)

3 Credit Hours

Prerequisites: None

Additional field work is given and it is designed to develop skill in initial finish work.

15 Theory Hours — 45 Lab Hours — 60 Contact Hours

HEO 110 FIELD TASKS — DOZER EQUIPMENT (R)

3 Credit Hours

Prerequisites: None

In this class, the student will have field work experience in operating a cable or hydraulic dozer.

15 Theory Hours — 45 Lab Hours — 60 Contact Hours

HEO 115 FIELD TASKS — SCRAPER EQUIPMENT (R)

3 Credit Hours

Prerequisites: None

In this class, the student will have field work experience in operating a self-loading or push scraper.

15 Theory Hours — 45 Lab Hours — 60 Contact Hours

HEO 116 FIELD TASKS — GRADER EQUIPMENT (R)

3 Credit Hours

Prerequisites: None

Students in this class will have field work experience operating a grader.

15 Theory Hours — 45 Lab Hours — 60 Contact Hours

HEO 117 FIELD TASKS — LOADER AND BACKHOE EQUIPMENT (R)

3 Credit Hours

Prerequisites: None

Students in this class will have field work experience operating a loader and backhoe.

15 Theory Hours — 45 Lab Hours — 60 Contact Hours

HEO 118 ADVANCED MAINTENANCE (R)

3 Credit Hours

Prerequisites: None

Advanced continuation of HEO 105 dealing with the finer points of heavy equipment maintenance which is performed by the operator is offered in this class.

15 Theory Hours — 45 Lab Hours — 60 Contact Hours

HEO 119 ADVANCED FIELD TASKS — FINISH GRADE (R)

3 Credit Hours

Prerequisites: None

In this class, the student will have field work experience in building finish grade.

15 Theory Hours — 45 Lab Hours — 60 Contact Hours

HEO 120 ADVANCED FIELD TASKS — SPECIAL PROJECTS (R)

3 Credit Hours

Prerequisites: None

Additional field work experience on building finish grade and on equipment where more experience is needed offered in this class.

15 Theory Hours — 45 Lab Hours — 60 Contact Hours

HEO 297 COOPERATIVE WORK EXPERIENCE (R)

2-9 Credit Hours

Prerequisites: None

This is a program of study developed with coordinate college course work and industry work experience.

15 Theory Hours — 45-360 Lab Hours

60-375 Contact Hours

HEO 299 INDEPENDENT STUDY (R)

3 Credit Hours

Prerequisites: None

The student participates in individual study on a special project which is related to the Heavy Equipment Operation and Preventive Maintenance Program and is outside the program offering.

90 Lab Hours — 90 Contact Hours

History**HIS 111 WORLD CIVILIZATION (A,R,AEC)**

4 Credit Hours

Prerequisites: None

Explores the historical development and cultural contributions of peoples in various areas of the world.

60 Contact Hours

HIS 112 WORLD CIVILIZATION (A,R,AEC)

4 Credit Hours

Prerequisites: None

Explores the historical development and cultural contributions of peoples in various areas of the world with greater emphasis on the modern period.

60 Contact Hours

HIS 115 PERSONALITIES AND ISSUES (A,R)

3 Credit Hours

Prerequisites: None

Examines the key personalities and issues that have shaped critical periods in history.

45 Contact Hours

HIS 116 THE NATIVE AMERICAN EXPERIENCE AND INDIAN HISTORY (A,R)

3 Credit Hours

Prerequisites: None

An introduction to American Indians' historical and socio-cultural development with emphasis upon those processes and relations with non-Indians, which have contributed to the current conditions.

45 Contact Hours

HIS 125 AMERICAN CIVILIZATION: ITS HISTORY, ART AND CULTURE (A,R)

3 Credit Hours

Prerequisites: None

This course will investigate early American art, history, antiques, behavior and most aspects of our culture. It will concentrate on the American lifestyle and study its development.

45 Contact Hours

HIS 126 AMERICAN CIVILIZATION: ITS HISTORY, ART AND CULTURE (A,R)

3 Credit Hours

Prerequisites: None

This course will investigate American art, history, antiques, behavior, and most aspects of our culture with a great emphasis on the period since the Civil War. It will focus on such periods as the Victorians, life in the Great Depression and the '50s to show the development of our modern lifestyle.

45 Contact Hours

HIS 130 THE SOUTHWEST UNITED STATES (A,R)

3 Credit Hours

Prerequisites: None

The culture and historical development of what is now the Southwestern United States, including the cultural contributions of the American Indian and Chicano people.

45 Contact Hours

HIS 135 INTRODUCTION TO LATIN AMERICAN HISTORY (A)

3 Credit Hours

Prerequisites: None

Provides an introduction to the land, people and politics from a historical perspective and Third World approach.

45 Contact Hours

HIS 140 CARIBBEAN CULTURE AND THE CUBAN REVOLUTION (A)

3 Credit Hours

Prerequisites: None

Will investigate the cultural aspects of life in the West Indies with emphasis on the Cuban Revolution from 1960 to the present.

45 Contact Hours

HIS 150 CONTEMPORARY WORLD HISTORY (A,N,R,AEC)

3 Credit Hours

Prerequisites: None

Analyzes the historical and cultural development of modern man since 1900.

45 Contact Hours

HIS 175 CONTEMPORARY CHALLENGES (A,R)

1-3 Credit Hours

Prerequisites: None

Examines in-depth the major critical issues confronting contemporary America and the world. Students will have the option to choose topics related to their needs and interests.

15-45 Contact Hours

HIS 205 WOMEN IN HISTORY (A,R,AEC)

3 Credit Hours

Prerequisites: None

Surveys the roles, experiences and contributions of women in the history of the Americas; explores ways in which women's history modifies traditional interpretations of historical events.

45 Contact Hours

HIS 211 THE UNITED STATES TO 1865 (A,N,R,AEC)

3 Credit Hours

Prerequisites: None

Story of the American people from the first inhabitants through the European colonies, the American Revolution and the early experiences of the new nation through the crisis of Civil War.

45 Contact Hours

**HIS 212 THE UNITED STATES 1865 TO PRESENT
(A,N,R,AEC)**

3 Credit Hours

Prerequisites: None

Story of the people of the U.S. from reconstruction through the resettlement of the West, the emergence of the modern industrial state, world war, the roaring twenties, and the Great Depression, to the upheavals since World War II.

45 Contact Hours

**HIS 218 THE CIVIL WAR AND RECONSTRUCTION
(R,AEC)**

3 Credit Hours

Prerequisites: None

Designed to expose the student to the causes of the Civil War, the way it was fought, and the attempts to reconstruct the South in the aftermath of war. Special focus upon Lincoln, black men in America, and the idea of the confederacy.

45 Contact Hours

**HIS 220 COLORADO HISTORY, PART I
(A,N,R,AEC)**

3 Credit Hours

Prerequisites: None

A presentation of Colorado's past from the prehistoric Indians, the state's first residents, to the great days of gold and silver.

45 Contact Hours

**HIS 221 COLORADO HISTORY, PART II
(A,N,R,AEC)**

3 Credit Hours

Prerequisites: None

The story of the people, society and culture of Colorado from its earliest settlers, the Indians, through the Spanish influx, the fur traders, the explorers, the gold rush, the cattlemen and farmers, the tourists and the modern 20th century state.

45 Contact Hours

HIS 225 COLORADO SEMINAR (R,AEC)

3 Credit Hours

Prerequisites: None

On-site seminar with visits to local places of historical significance, such as Fort Vasquez, Cripple Creek, and Georgetown. Examines the dynamics of mining, labor, farming and ranching, and Colorado's people.

45 Contact Hours

HIS 226 HISTORY OF DENVER (A,R,AEC)

3 Credit Hours

Prerequisites: None

On-site history of the development of the greater Denver area. Designed to give the student an overall and in-depth view of the local culture, heritage and character.

45 Contact Hours

**HIS 228 THE BLACK PEOPLE AND THE
AMERICAN FRONTIER (A)**

3 Credit Hours

Prerequisite: 3 hour, 100 level history or permission of instructor.

Examines the roles of black people in the development of the West.

45 Contact Hours

HIS 235 THE AMERICAN WEST (A,R)

3 Credit Hours

Prerequisites: None

Focuses upon Indians, fur traders, explorations, gold rushes, cattlemen, sodbusters, closing of the frontier, and developments in the 20th century.

45 Contact Hours

HIS 239 AMERICAN PRESIDENTS (A,R)

3 Credit Hours

Prerequisites: None

Gives the student an opportunity to analyze some of the critical problems facing our American presidents from George Washington to the present.

45 Contact Hours

HIS 240 HISTORY OF ROME (R)

3 Credit Hours

Prerequisites: None

Survey of ancient Rome, including its parallels with America's imperial growth. May be self-paced.

45 Contact Hours

HIS 241 BLACK CIVILIZATION — AFRICA (A,R)

3 Credit Hours

Prerequisite: 3 hour, 100 level history or permission of instructor.

Traces the culture and development of early African civilization to the American Civil War.

45 Contact Hours

HIS 242 BLACK CIVILIZATION — AMERICA (A,R)

3 Credit Hours

Prerequisite: HIS 241 or permission of instructor.

The culture and the development of blacks in America from the Civil War to the present time. Treats reconstruction and the basic problems which have emerged both in the south and north with emphasis on the protest movement emerging in the 20th century.

45 Contact Hours

**HIS 243 LAND GRANTS AND THEIR
RELATIONSHIP TO THE
CONTEMPORARY CHICANO I (A)**

3 Credit Hours

Prerequisite: HUM 115 or permission of instructor.

Provides the student with information concerning the Spanish and Indian Pueblo Land Grants of the Southwest from 1689-1848.

45 Contact Hours

HIS 246 MEXICO (R)

3 Credit Hours

Prerequisite: HUM 115 or permission of instructor.
The historical and cultural development of Mexico from earliest times to the present; includes an examination of present day politics and society of Mexico.
45 Contact Hours

HIS 250 DEMOCRATIC IDEAS (A,R,AEC)

3 Credit Hours

Prerequisites: None

Study of individual and social freedom as a value and concern, with emphasis on Jeffersonian thought. May be self-paced.
45 Contact Hours

HIS 255 SOVIET RUSSIA (A,R)

3 Credit Hours

Prerequisites: None

An analysis of the men and ideas that shaped the development of the Soviet Union.
45 Contact Hours

HIS 261 ENGLAND I (R)

3 Credit Hours

Prerequisites: None

The formative development of Britain from Stonehenge to the Restoration of 1660. Available with Survey of Theatre and English Literature as British Studies (9 credits).
45 Contact Hours

HIS 262 ENGLAND II (R)

3 Credit Hours

Prerequisites: None

Continuation of 261 and Restoration to modern Britain.
45 Contact Hours

HIS 271 MIDDLE AMERICA (MESO) I (A)

3 Credit Hours

Prerequisite: HUM 115 or permission of instructor.

Traces the history of the indigenous population of Middle America (Mexico, Guatemala) from earliest times until the conquest of Mexico by the Spanish, emphasis is on the civilizations of the Olmeca, Zapoteca, Maya, Tolteca, Mixteca and Azteca.
45 Contact Hours

HIS 280 NO MORE LIES: THE OTHER SIDE OF AMERICAN HISTORY (A)

3 Credit Hours

Prerequisite: HIS 211 or 212 or permission of instructor.

Features a "revisionist" approach to American history; the purpose is to develop an objective understanding of America's history — of its dark side as well as its greatness.
45 Contact Hours

Hotel / Motel Management**HMM 110 INTRODUCTION TO THE HOSPITALITY INDUSTRY (A)**

3 Credit Hours

Prerequisites: None

Industry origins; motels; modern management; front of the house; accounting; food and beverage; sales and promotion; engineering and maintenance; personnel management; industry future; discussion questions.
45 Theory Hours — 45 Contact Hours

HMM 115 FOOD AND BEVERAGE MANAGEMENT AND SERVICE (A)

3 Credit Hours

Prerequisites: None

Provides a basic understanding of the principles of food production and service management. Reviews sanitation, menu planning, controls of costs and labor, purchasing, storage and merchandising of food and beverages.
45 Theory Hours — 45 Contact Hours

HMM 120 WAITRESS AND BARTENDING (A)

3 Credit Hours

Prerequisites: None

Teaches students how to make and serve mixed drinks and hors d'oeuvres, covers controls of food and beverages.
15 Theory Hours — 45 Lab Hours — 60 Contact Hours

HMM 125 MAINTENANCE AND ENGINEERING FUNCTIONS FOR HOSPITALITY (A)

3 Credit Hours

Prerequisites: None

Examines the maintenance and engineering functions and provides the technical information necessary to establish effective prevention programs, and maintenance procedures.
45 Theory Hours — 45 Contact Hours

HMM 130 FRONT OFFICE OPERATIONS (A)

3 Credit Hours

Prerequisites: None

Covers organization, guest relations, salesmanship, rooming procedure, equipment, cash and credit, accounting, transcripts, office machines, data register, and the changing face of hotelkeeping.
15 Theory Hours — 45 Lab Hours — 60 Contact Hours

HMM 200 BASIC SANITATION FOR FOOD SERVICE EMPLOYEES (A)

3 Credit Hours

Prerequisites: HMM 110, HMM 115

Details the fundamentals of sanitation for foodservice employees; covers practical guidance in safe food handling and stresses the scientific principles underlying food sanitation practices.
45 Theory Hours — 45 Contact Hours

HMM 201 ADVANCED SANITATION FOR FOOD SERVICE EMPLOYEES (A)

3 Credit Hours

Prerequisites: HMM 200

Provides an advanced study in the field of sanitation. Describes the significance of sanitation in foodservice and provides the practical knowledge needed to implement a sanitation program in any food service facility.

45 Theory Hours — 45 Contact Hours

HMM 203 FOOD AND BEVERAGE BUYING (A)

3 Credit Hours

Prerequisites: HMM 110, HMM 115

Covers food and beverage purchasing, fresh fruits and vegetables, processed fruits and vegetables, dairy products, baked goods and cereal products, fish and shellfish, poultry and eggs, beef and veal, pork products, lamb, mutton, variety meats, coffee and tea, general groceries, specialty items, convenience foods, wines, beers, spirits, storage facilities, receiving procedures and controls, storage and refrigerated storage, and records.

45 Theory Hours — 45 Contact Hours

HMM 204 PROFITABLE CATERING (A)

3 Credit Hours

Prerequisites: HMM 110, HMM 115.

Presents catering concessions, wedding, office parties, menu planning, preparing promotional materials, pricing banquets, equipment for off-premises catering, equipment for on-premises catering, the restaurant as a commissary; profits for everyone in office coffee, staffing for occasional catering, catering markets and decoration.

45 Theory Hours — 45 Contact Hours

HMM 205 DINING ROOM SERVICE (A)

3 Credit Hours

Prerequisites: HMM 110, HMM 115

Presents food and beverage service, planning for good beverage service, dining room management, equipment and supplies, human relations, employee's merchandising role, course service, room service preparation, seating guests and taking orders, good service essentials, wine and beverage service, bar service, showmanship in service, special service situations, counter service, wines of the world, fifty common cocktails, menus and a glossary of international menu terms.

45 Theory Hours — 45 Contact Hours

HMM 206 PRACTICAL WINE KNOWLEDGE (A)

3 Credit Hours

Prerequisites: HMM 110, HMM 115

Covers wine and the menu: French wines, German wines, Italian wines, American wines, wine bargains nobody knows, bottle or carafe? Selling wine, wine for dessert sales, wine as a cocktail, getting the best out of a bottle, buying right, creating a wine menu, service techniques, storing wine, sparkling wines, wine promotions and festivals.

45 Theory Hours — 45 Contact Hours

HMM 207 FOOD AND BEVERAGE CONTROLS (A)

3 Credit Hours

Prerequisites: HMM 110, HMM 115

Outlines the essential principles and procedures of effective food and beverage control and emphasizes calculation of food costs, standards and planning.

45 Theory Hours — 45 Contact Hours

HMM 220 FRONT DESK AUDITING (A)

3 Credit Hours

Prerequisites: HMM 110, HMM 130

The process of verifying the accuracy of guest account balances, posting of transactions and completion of financial statements.

15 Theory Hours — 45 Lab Hours — 60 Contact Hours

HMM 221 ACCOUNTING PRACTICE FOR THE HOSPITALITY INDUSTRY (A)

5 Credit Hours

Prerequisites: HMM 110, HMM 115

Applies general accounting principles to the hospitality industry: practice in bookkeeping methods; the "Uniform System of Accounts for Hotels"; basic cost control tenets; food, beverage and labor cost; specialized journals and ledgers; financial statements; voucher systems; budgeting and credit systems.

75 Theory Hours — 75 Contact Hours

HMM 240 HOTEL MOTEL SALES (A)

3 Credit Hours

Prerequisites: HMM 110, MAN 115

Shows how to develop a marketing plan for any size operation and shows how to tie all of the departments of a hotel operation into a coordinated team. The organization and functioning of a sales department, sales tools, techniques, advertising and types of markets are emphasized.

45 Theory Hours — 45 Contact Hours

HMM 241 HOTEL MOTEL LAW (A)

3 Credit Hours

Prerequisites: HMM 110, MAN 115

Creates an awareness of the responsibilities and rights which the law imposes upon and grants to the innkeeper, and illustrates the consequences caused by failure in those responsibilities. The attitude of the courts toward an innkeeper involved in litigation is also discussed.

45 Theory Hours — 45 Contact Hours

HMM 242 HOTEL MOTEL PROPERTY MANAGEMENT (A)

3 Credit Hours

Prerequisites: HMM 110, MAN 115

Covers all phases of property management, emphasizing the first impression, staffing, training, capital investments, cost analysis, rentals and renovation.

45 Theory Hours — 45 Contact Hours

HMM 243 HOTEL MOTEL SECURITY (A)

3 Credit Hours

Prerequisites: HMM 110, HMM 115

Presents basic principles of Hotel/Motel security in the area of guests, property and employees. Relates security functions to legal obligations.

45 Theory Hours — 45 Contact Hours

HMM 297 COOPERATIVE WORK EXPERIENCE (A)

3-6 Credit Hours

Prerequisites: All 100 level courses in HMM

The student is placed at an approved work station related to his educational and occupational goals.

135-270 Lab Hours

HMM 298 HOTEL MOTEL MANAGEMENT SEMINAR (A)

1-5 Credit Hours

Prerequisites: None

Designed to accommodate industry, by offering weekly seminars in any of the Hotel/ Motel courses.

15-75 Theory Hours — 15-75 Contact Hours

HMM 299 INDEPENDENT STUDY (A)

1-3 Credit Hours

Prerequisites: Instructor's permission

Provides opportunity for a student to study intensively a specific topic of interest under the direction of a qualified faculty.

15-45 Theory Hours — 15-45 Contact Hours

Health Occupations**HOC 100 MEDICAL TERMINOLOGY I (A,R,AEC)**

1 Credit Hour

Prerequisites: None

Teaches the origin and structure of medical terms; helps the student interpret and pronounce medical terms used in various medically related areas.

15 Theory Hours — 15 Contact Hours

HOC 105 INTRODUCTION TO PATHOLOGY (R)

1 Credit Hour

Prerequisite: HOC 100

An introduction to the primary pathophysiological processes of diseases.

15 Theory Hours — 15 Contact Hours

HOC 106 BASIC PATIENT CARE (A)

2 Credit Hours

Prerequisites: None

Stresses basic concepts and technical skills common to all health care deliverers. Ethical and legal responsibilities, basic techniques necessary to meet health care needs and emergency measures are included.

30 Theory Hours — 10 Lab Hours — 40 Contact Hours

HOC 107 ORIENTATION TO CLINICAL PRACTICUM (A)

1 Credit Hour

Prerequisite: Acceptance into Nuclear Medicine, Radiation Therapy or Ultrasound Program.

Orients the student to the Nuclear Medicine, Radiation Therapy or Ultrasound clinical education area and acquaints him with the selected radiologic specialty area.

40 Contact Hours

HOC 108 POSITIONING AND TECHNIQUES (A)

3 Credit Hours

Prerequisites: None

Provides a history of radiology and an introduction to terminology and general principles of positioning. Presents anatomy of the chest and skull as related to Nuclear Medicine, Radiation Therapy or Ultrasound procedures. Focuses on latent image formation, fundamentals or manual and automatic processing and routine positioning practices.

45 Theory Hours — 45 Contact Hours

HOC 110 MEDICAL TERMINOLOGY II (R)

1 Credit Hour

Prerequisites: None

Continuation of Medical Terminology I.

15 Theory Hours — 15 Contact Hours

HOC 115 OBSTETRICS FOR CHILDBIRTH EDUCATORS (A)

2 Credit Hours

Prerequisite: Permission of instructor.

Reviews normal anatomy and physiology of reproduction as it relates to conception, fetal growth and development, the period of pregnancy, labor and delivery, the newborn and postpartum periods. Identifies high-risk problems of the maternity cycle and includes assessment and management aspects of these problems. Usual hospital routines related to the maternity experience are discussed.

30 Theory Hours — 30 Contact Hours

HOC 116 INTRODUCTION TO PHARMACOLOGY (A)

2 Credit Hours

Prerequisite: 9th grade math skills.

Provides the student with a beginning knowledge of pharmacology and the use of specific drugs in the management of clinical conditions. Alerts students to side effects and precautions in drug administration.

30 Theory Hours — 30 Contact Hours

HOC 117 HOLISTIC HEALTH PERSPECTIVES (A)

3 Credit Hours

Prerequisites: None

Orients the student to the concept of holistic health from a variety of perspectives. Examines current practices as to their origins, forms and expected results.

45 Theory Hours — 45 Contact Hours

HOC 199 INDEPENDENT STUDY (A,R)

2-4 Credit Hours

Prerequisite: Permission of instructor and division director.

Provides an opportunity for the health occupations student to engage in intensive study of a specific topic under the direction of a qualified faculty member.

30-60 Theory Hours — 30-60 Contact Hours

Human Services

HSE 105 INTRODUCTION TO SOCIAL WELFARE (A)

3 Credit Hours

Prerequisites: None

Provides the student with an overview of social welfare. The historical development of social welfare/human services will be traced in terms of social change and changing attitudes toward social problems.

45 Theory Hours — 45 Contact Hours

HSE 106 SURVEY OF HUMAN SERVICES (A)

3 Credit Hours

Prerequisites: None

An orientation to human services in general and specifically to the agencies and institutions identified with such services. Presents procedures, philosophies and problems in human services delivery. Selected service areas will be described.

45 Theory Hours — 45 Contact Hours

HSE 107 INTERVIEWING PRINCIPLES AND PRACTICES (A)

3 Credit Hours

Prerequisites: None

Examines the purpose and basic concepts of the interview relationship with emphasis on the helping interview. Provides instruction in the principles, processes and techniques of interviewing with an opportunity to engage in practice interviews and includes role playing and feedback. Recording the interview is also covered.

30 Theory Hours — 15 Lab Hours — 45 Contact Hours

HSE 108 INTRODUCTION TO THERAPEUTIC SYSTEMS (A)

3 Credit Hours

Prerequisites: None

Introduces basic concepts of major therapeutic systems. Students will be exposed to the backgrounds, developmental theories and practices of specific systems.

45 Theory Hours — 45 Contact Hours

HSE 109 HUMAN SERVICES FOR INDIVIDUALS (A)

3 Credit Hours

Prerequisite: HSE 106

Gives students the basic concepts, skills, tasks and activities essential to the delivery of human services to individuals. Beginning familiarity with individual counseling methods is emphasized.

30 Theory Hours — 15 Lab Hours — 45 Contact Hours

HSE 115 HUMAN SERVICES PRACTICUM I (A)

4 Credit Hours

Prerequisites: HSE 106, HSE 107

Students are placed in various service agencies for the purpose of familiarizing them with the work of these agencies. Emphasis is upon developing observational skills, individual growth in self-awareness, interviewing skills, introduction to agencies and client systems. A weekly classroom seminar complements the agency experience.

15 Theory Hours — 135 Practicum Hours

150 Contact Hours

HSE 205 HUMAN SERVICES FOR GROUPS (A)

3 Credit Hours

Prerequisite: HSE 108

Provides an introduction to the concepts, principle goals and skills of group work as a method of providing human services. Emphasis is on the basic practice skill and intervention techniques.

30 Theory Hours — 15 Lab Hours — 45 Contact Hours

HSE 206 HUMAN SERVICES FOR FAMILIES (A)

3 Credit Hours

Prerequisite: HSE 108

Provides an overview of family functions and roles. Cultural differences in families are considered. Presents philosophies and techniques for interviewing in family conflicts and dysfunctions.

30 Theory Hours — 15 Lab Hours — 45 Contact Hours

HSE 207 COMMUNITY ORGANIZATION (A)

3 Credit Hours

Prerequisite: HSE 106

Introduces principles, concepts and methods of community development and organization.

45 Theory Hours — 45 Contact Hours

HSE 208 SOCIAL WELFARE POLICY (A)

3 Credit Hours

Prerequisite: HSE 207

Presents models for social policy analysis, program planning and evaluation. Application of models to relevant social welfare issues is a major focus.

45 Theory Hours — 45 Contact Hours

HSE 209 CRISIS THEORY AND INTERVENTION (A)

3 Credit Hours

Prerequisite: HSE 108

Introduces the student to basic theories and principles of crisis intervention from a historical as well as a practical orientation. Activities for gaining skills in interviewing in various types of crisis situations are included.

45 Theory Hours — 45 Contact Hours

HSE 211 HUMAN SERVICES PRACTICUM II (A)

4 Credit Hours

Prerequisite: HSE 115

Through placement in a service agency, the student applies the values, concepts and skills gained in theoretical courses to the actual process of helping people. Emphasis is upon sharpening skills and knowledge, use of self in the helping process, understanding systems and use of community resources. Weekly classroom seminars are held to correlate theory with practice.

15 Theory Hours — 135 Practicum Hours

150 Contact Hours



ISE 212 HUMAN SERVICES PRACTICUM III (A)

3 Credit Hours

Prerequisites: None

The student participates in various service agency functions as a group member and leader. Further develops skills and knowledge in the use of self and systems in the helping process. Develops an in-depth understanding of the relationships between human services and society. Weekly classroom seminars are held to correlate theory with practice. Upon completion of this course, the student will have demonstrated mastery of paraprofessional human services skills.

5 Theory Hours — 270 Practicum Hours

85 Contact Hours

Humanities**HUM 111 STUDIES IN THE HUMANITIES (A,N,R,AEC)**

3 Credit Hours

Prerequisites: None

A survey of ideas which have shaped humankind and which have influenced the development of art, music, literature, the societies and behavior of individuals throughout history.

5 Contact Hours

HUM 112 STUDIES IN THE HUMANITIES (A,N,R,AEC)

3 Credit Hours

Prerequisites: None

Continuation of HUM 111 with the emphasis on human activity.

5 Contact Hours

HUM 115 INTRODUCTION TO CHICANO STUDIES (A)

3 Credit Hours

Prerequisites: None

An overview of the origin, culture, philosophy and present status of the Chicano.

5 Contact Hours

HUM 120 THE NATIVE AMERICAN PERSPECTIVE: ARTS AND IDEAS (A)

3 Credit Hours

Prerequisites: None

A study of the art and music of various native American peoples and of the religion and philosophy from which native American art forms evolved.

5 Contact Hours

HUM 126 FOLKLORE OF MEXICO AND THE SOUTHWEST (A)

3 Credit Hours

Prerequisites: None

A study of the folklore of indigenous people and the mestizo in Mexico and the Southwest.

5 Contact Hours

HUM 127 INDIGENISMO AND THE CHICANO (A)

3 Credit Hours

Prerequisites: None

Will study non-European approach to philosophies and ideas of native peoples in the Americas as those philosophies and ideas affect the Chicano.

45 Contact Hours

HUM 200 POPULAR CULTURE (A,AEC)

3 Credit Hours

Prerequisite: ENG 111 or permission of instructor.

A survey of the meanings, implicit values and impact of the artifacts of cultures as observed in popular music, art, film, television and print.

45 Contact Hours

HUM 211 TRADITIONS AND INNOVATIONS IN THE ARTS I (A,N,R,AEC)

3 Credit Hours

Prerequisite: ENG 111 or permission of the instructor.

An interdisciplinary study of the musical, visual and literary arts arranged according to themes and movements, such as classicism and romanticism; will meet the GEM interdisciplinary requirement.

45 Contact Hours

HUM 212 TRADITIONS AND INNOVATIONS IN THE ARTS II (A,N,R,AEC)

3 Credit Hours

Prerequisite: ENG 111 and HUM 211 or permission of instructor.

An interdisciplinary study of the musical, visual and literary arts arranged according to themes and movements such as realism and modernism; will meet the GEM interdisciplinary requirement.

45 Contact Hours

HUM 215 IDEAS IN A CHANGING SOCIETY (A,R,AEC)

3 Credit Hours

Prerequisite: ENG 111 or permission of instructor.

An interdisciplinary study of the modes of change as manifested in artistic and social movements, in mass culture, and in changing life-styles.

45 Contact Hours

HUM 216 JESUS AND THE CHALLENGE OF BEING HUMAN (R)

3 Credit Hours

Prerequisites: None

The historical Jesus, his environment and teachings.

HUM 225 CONTEMPORARY CHICANO (A)

3 Credit Hours

Prerequisite: HUM 115 or permission of instructor.

An interdisciplinary course dealing with current issues of the Chicano. General themes to be discussed and analyzed will include: alienation, community identity, political organization, conflict and change, ideology, religion and power.

45 Contact Hours

HUM 226 COMIDAS CHICANAS (A)

3 Credit Hours

Prerequisite: HUM 115 or permission of instructor.

A study of the history and folklore of comidas chicanas (cuisine), along with its position, traditional and contemporary, in the cultural matrix of the Chicano community.

45 Contact Hours

HUM 251 CURANDERISMO (A)

3 Credit Hours

Prerequisite: HUM 115 or permission of instructor.

A study of the history, philosophy and practicality of medicinal herbs of the Southwest.

45 Contact Hours

Industrial Maintenance Technology**IMA 200 ELECTRONIC / PNEUMATIC INSTRUMENTATION (R)**

9 Credit Hours

Prerequisite: ELF 106

The principles of pneumatics and electronics as applied to industrial controls in the sensing, controlling, indicating and recording of the process variables of flow, temperature, pressure and level are taught in this class.

45 Theory Hours — 135 Lab Hours

180 Contact Hours

IMA 205 INDUSTRIAL CONTROL SYSTEMS (R)

9 Credit Hours

Prerequisite: EIC 203

This class teaches the manual and automatic speed control of DC and induction motors, solid state variable speeds and variable frequency drives, solid state sequential controllers, automatic feedback control loops, microprocessor controlled systems, numeric process controls and computer controlled plants.

45 Theory Hours — 135 Lab Hours

180 Contact Hours

IMA 206 AUTOMATIC CONTROL LOOPS (R)

6 Credit Hours

Prerequisite: IMA 200 or consent of advisor.

The principles of operation and application of valves and actuators in an industrial control loop; the concepts of automatic process control; the modes of control and timing; and proportional derivative ratio and cascade process loops are all taught in this class.

30 Theory Hours — 90 Lab Hours

120 Contact Hours

IMA 207 INDUSTRIAL PROCESS CONTROL LOOPS (R)

6 Credit Hours

Prerequisite: IMA 206 or consent of advisor

In this class, the student will learn applications of automatic process control loops previously covered in IMA 200 and 205 for both pneumatic and electronic systems. Specific control applications are for furnace, pipeline, pollution (pH), boiler and mixing.

30 Theory Hours — 90 Lab Hours

120 Contact Hours

IMA 297 COOPERATIVE WORK EXPERIENCE (R)

2-9 Credit Hours

Prerequisites: None

This class is a program of study developed with coordinated college course work and industry work experience.

15 Theory Hours — 45-360 Lab Hours

60-375 Contact Hours

IMA 299 INDEPENDENT STUDY (R)

3 Credit Hours

Prerequisites: None

This class is an individual study on a special project which is related to the Electricity Program and is outside the program offering.

90 Lab Hours — 90 Contact Hours

Industrial Mechanical Drafting Technology**IMD 101 MECHANICAL DRAFTING, THEORY, AND TECHNIQUES I (N)**

3 Credit Hours

Prerequisites: None

The Industrial Mechanical Drafting (IMD) student should be able to demonstrate the use of orthographic projection, geometric construction, sketching and reproduction equipment. Minimum performance of accuracy is eighty percent.

20 Theory Hours — 40 Lab Hours — 60 Contact Hours

IMD 102 MECHANICAL DRAFTING, THEORY, AND TECHNIQUES II (N)

3 Credit Hours

Prerequisites: None

The IMD student should be able to construct the following types of drawings: sectional views; pictorial drawings (3-dimensional); auxiliary views; intersections and developments; and threads and fastening devices.

20 Theory Hours — 40 Lab Hours — 60 Contact Hours

IMD 103 MECHANICAL DRAFTING, THEORY, AND TECHNIQUES III (N)

3 Credit Hours

Prerequisite: IMD 102 or consent of instructor.

The IMD student should be able to demonstrate the ability to draw and apply dimensioning techniques; use of decimal dimensions and apply dimensional standards.

20 Theory Hours — 40 Lab Hours — 60 Contact Hours

IMD 111 MACHINE DETAIL AND ASSEMBLY DRAWING I (N)

3 Credit Hours

Prerequisite: IMD 103 or consent of instructor.

The IMD student should be able to demonstrate the ability to produce working drawings, dimension mating parts and develop more complex drawings with less information.

20 Theory Hours — 40 Lab Hours — 60 Contact Hours

D 112 MACHINE DETAIL AND ASSEMBLY DRAWING II (N)

Credit Hours

Prerequisite: IMD 111 or consent of instructor.

The IMD student should be able to demonstrate the ability to produce working drawings, apply use of precision dimensioning, apply tolerances to drawings and select applicable materials. Minimum performance of accuracy is eighty percent.

20 Theory Hours — 40 Lab Hours — 60 Contact Hours

D 113 MACHINE DETAIL AND ASSEMBLY DRAWING III (N)

Credit Hours

Prerequisite: IMD 112 or consent of instructor.

The IMD student should be able to produce more complex detail and assembly projects, continue to demonstrate the use of precision dimensioning and tolerancing; select applicable materials and demonstrate the principles and techniques of geometric tolerancing. Minimum performance of accuracy is eighty percent.

20 Theory Hours — 40 Lab Hours — 60 Contact Hours

D 114 MACHINE DETAIL AND ASSEMBLY DRAWING IV (N)

Credit Hours

Prerequisite: IMD 113 or consent of instructor.

The IMD student should be able to continue to demonstrate all of the principles and techniques learned in IMD 113, and apply the principles and techniques of dual dimensioning. Minimum performance of accuracy is eighty percent.

20 Theory Hours — 40 Lab Hours — 60 Contact Hours

D 121 INTRODUCTION TO INKING (N)

Credit Hours

Prerequisite: IMD 112 or consent of instructor.

The IMD student should be able to demonstrate the ability to identify inking equipment, show the use and operation of inking equipment and produce drawings in ink (including working drawings). Minimum performance of accuracy is eighty percent.

20 Theory Hours — 40 Lab Hours — 60 Contact Hours

D 122 INTRODUCTION TO SHEET METAL DRAWINGS

Credit Hours

Prerequisite: IMD 112 or consent of instructor.

The IMD student should be able to demonstrate the ability to draw sheet metal parts, develop sheet metal patterns and compute bend allowances. Minimum performance of accuracy is eighty percent.

20 Theory Hours — 40 Lab Hours — 60 Contact Hours

D 123 INTRODUCTION TO ELECTRO-MECHANICAL DRAWING (N)

Credit Hours

Prerequisite: IMD 112 or consent of instructor.

The IMD student should be able to demonstrate the ability to identify components by symbol, draw block diagrams, draw schematics and generate printed circuit boards. Minimum performance of accuracy is eighty percent.

20 Theory Hours — 40 Lab Hours — 60 Contact Hours

IMD 200 INTRODUCTION TO CASTING DRAWINGS (N)

3 Credit Hours

Prerequisite: IMD 112 or consent of instructor.

The IMD student should be able to apply drafting techniques to the drawing and detailing of castings. Minimum performance of accuracy is eighty percent.

20 Theory Hours — 40 Lab Hours — 60 Contact Hours

IMD 205 INTRODUCTION TO TECHNICAL ILLUSTRATION (N)

3 Credit Hours

Prerequisite: IMD 103 or consent of instructor.

The IMD student should be able to demonstrate the ability to construct exploded view pictorial drawings, apply principles and techniques of shading, distinguish the types of technical illustration and apply the use of available templates and drawing aids. Minimum performance of accuracy is eighty percent.

20 Theory Hours — 40 Lab Hours — 60 Contact Hours

IMD 206 INTRODUCTION TO CAMS AND GEARS (N)

3 Credit Hours

Prerequisite: IMD 112 or consent of instructor.

The IMD student should be able to draw cams and determine how they impart motion. Draw gears and determine how they transmit power and apply formulae for their construction. Minimum performance of accuracy is eighty percent.

20 Theory Hours — 40 Lab Hours — 60 Contact Hours

IMD 207 INTRODUCTION TO PIPE DRAWING (N)

3 Credit Hours

Prerequisite: IMD 103 or consent of instructor.

The IMD student should be able to identify the types of pipe drawings, the type of pipe fittings, construct pipe drawings and apply fittings to drawings. Minimum performance of accuracy is eighty percent.

20 Theory Hours — 40 Lab Hours — 60 Contact Hours

IMD 208 INTRODUCTION TO WELDING DRAWING (N)

3 Credit Hours

Prerequisite: IMD 114 or consent of instructor.

The IMD student should be able to identify the weld arrow and weld symbols, apply weld arrow and symbols to drawings and construct welding drawings. Minimum performance of accuracy is eighty percent.

20 Theory Hours — 40 Lab Hours — 60 Contact Hours

IMD 211-215 INDUSTRIAL DRAFTING TECHNOLOGY I, II, III, IV, AND V (N)

3 Credit Hours (per course)

Prerequisite: IMD 114 or consent of instructor.

The IMD student should be able to research information, construct projects in detail and assembly form and to draw to industrial standards. Minimum performance of accuracy is eighty percent.

20 Theory Hours — 40 Lab Hours — 60 Contact Hours

Information Media Technology

IMT 101 INTRODUCTION TO LIBRARY RESOURCES (A)

1 Credit Hour

Prerequisites: None

Introduces students to libraries and their resources; how to use indexes, card catalogs and basic reference tools. With optional study.

5 Theory Hours — 15 Lab Hours — 20 Contact Hours

IMT 103 BUSINESS MATERIALS USE (A)

1 Credit Hour

Prerequisites: None

Introduction to business libraries and their resources; location and use of business data for class and work experience.

5 Theory Hours — 15 Lab Hours — 20 Contact Hours

IMT 105 HEALTH MATERIALS USE (A)

1 Credit Hour

Prerequisites: None

Location, identification and use of health and medical resource material for nursing, and paramedical students.

5 Theory Hours — 15 Lab Hours — 20 Contact Hours

IMT 107 INDUSTRIAL MATERIALS USE (A)

1 Credit Hour

Prerequisites: None

Introduction to handbooks, catalogs, microforms and audio visual formats for industrial occupations students.

5 Theory Hours — 15 Lab Hours — 20 Contact Hours

IMT 109 SCIENCE MATERIALS USE (A)

1 Credit Hour

Prerequisites: None

Review to science information, sources to guide students in finding required class information.

5 Theory Hours — 15 Lab Hours — 20 Contact Hours

IMT 111 LIBRARY PUBLIC SERVICES (A)

3 Credit Hours

Prerequisites: None

Introduction to library organization and services. Overview of library public relations. Explains circulation procedures and inter-library loan processing.

30 Theory Hours — 20 Lab Hours — 50 Contact Hours

IMT 113 LIBRARY TECHNICAL SERVICES (A)

3 Credit Hours

Prerequisites: None

Practical exercise in search and verification, ordering and serials ordering and control. Practical experience in book repair and binding, material preparation and processing.

30 Theory Hours — 20 Lab Hours — 50 Contact Hours

IMT 115 LIBRARY CATALOG SERVICES (A)

3 Credit Hours

Prerequisites: None

Introduction to book and nonbook descriptive cataloging and preparation of catalog card sets. Study of subject heading, classification schemes and A.L.A. filing rules, maintenance of shelf lists.

30 Theory Hours — 20 Lab Hours — 50 Contact Hours

IMT 117 AUDIO VISUAL SKILLS (A)

3 Credit Hours

Prerequisites: None

Operation of projection equipment. Production of transparencies, laminating and dry mounting skills. Operation of recording equipment. Lettering skills, posters and graphic productions, audio visual presentation.

30 Theory Hours — 20 Lab Hours — 50 Contact Hours

IMT 119 LIBRARY REFERENCE SKILLS (A)

3 Credit Hours

Prerequisites: None

Study and practical experience with business and science resource materials. Preparing annotations and answering questions. Also, includes study and practical experience with science materials.

30 Theory Hours — 20 Lab Hours — 50 Contact Hours

IMT 121 LIBRARY SELECTIONS SKILLS (A)

3 Credit Hours

Prerequisites: None

A study of the selection processes for obtaining library media.

30 Theory Hours — 20 Lab Hours — 50 Contact Hours

IMT 131 MICRO FILM AND RECORDS INDEXING (A)

2 Credit Hours

Prerequisites: None

In depth technical level study of indexing methods of document input to micromedia. Field observation and application.

15 Theory Hours — 25 Lab Hours — 40 Contact Hours

IMT 133 MICRO FILM SKILLS AND PRODUCTION (A)

4 Credit Hours

Prerequisites: None

Introduction to basic and important characteristics of microforms and equipment with fundamentals of terminology, storage and metrication. Also teaches basic production methods, equipment specification, materials supplies, and minor repairs, adjustments and replacements. Includes familiarization with image capture, developing, processing and duplicating equipment.

45 Theory Hours — 30 Lab Hours — 75 Contact Hours

IMT 135 FORMS DESIGN AND MANAGEMENT (A)

4 Credit Hours

Prerequisites: None

Advanced course for development and management of forms, programs, productions, procurement, selection and training personnel. Studies basic principles of form design and control to obtain maximum advantage of data at minimum cost. Fundamentals of task analysis organization, writing, productions and distribution of procedure manual.

45 Theory Hours — 30 Lab Hours — 75 Contact Hours

**MT 141 INFORMATION CENTER
MANAGEMENT (A)**

3 Credit Hours

Prerequisites: None

A study of staffing requirements, records analysis and controls, and management functions. Planning for equipment purchases and the introduction of basic archival methods and policies and the importance of records retention. Also a study of the particular requirements related to microforms management.

45 Theory Hours — 45 Contact Hours

MT 143 WORD PROCESSING MANAGEMENT (A)

3 Credit Hours

Prerequisites: None

A study of the necessary equipment and skill requirements needed to implement a successful word processing center. The integration of functions, personnel and equipment as well as space requirements.

45 Theory Hours — 45 Contact Hours

**MT 145 MICROMEDIA INFORMATION
SYSTEMS (A)**

3 Credit Hours

Prerequisites: None

A study of the necessary equipment and skill requirements needed to implement a successful word processing center. The integration of functions, personnel and equipment as well as space requirements.

45 Theory Hours — 45 Contact Hours

**MT 145 MICROMEDIA INFORMATION
SYSTEMS (A)**

3 Credit Hours

Prerequisites: None

A study of current micromedia systems and their implementation requirements. An examination of proposed future technology. A systems approach to the integration of functions for the successful operations of an information center.

45 Theory Hours — 45 Contact Hours

MT 201 LIBRARY SPECIAL OPERATIONS (A)

3 Credit Hours

Prerequisites: None

Familiarizes the student with microfilm equipment and systems in large and small libraries. Emphasis is in effective use of microforms. Network operations studies cooperative use of services among libraries, its advantages and problems. Also collection maintenance and acquisitions.

60 Theory Hours — 20 Lab Hours — 50 Contact Hours

**MT 203 LIBRARY COMMUNITY SERVICE
SEMINAR (A)**

3 Credit Hours

Prerequisites: None

Students complete projects with disadvantaged, handicapped, geriatric, and bi-lingual groups under faculty supervision to meet community needs under supervised study.

60 Theory Hours — 20 Lab Hours — 50 Contact Hours

IMT 205 DATA ENTRY SYSTEMS (A)

3 Credit Hours

Prerequisites: None

Introduces the student to basic concepts of multi-media data-entry systems. Programmed study, audio-visual computer instruction and hands-on experience in a computer lab, familiarize students with data handling input/output and network operations.

30 Theory Hours — 20 Lab Hours — 50 Contact Hours

IMT 207 CONFERENCE MEDIA MANAGEMENT (A)

3 Credit Hours

Prerequisites: None

The course introduces students in the hotel-motel and public service fields to the basic skills of operating, managing, procuring and security of audiovisual equipment and media for meetings, conferences, exhibits and symposiums.

30 Theory Hours — 20 Lab Hours — 50 Contact Hours

**IMT 209 MICROGRAPHIC TECHNICIAN
CERTIFICATION (A)**

3 Credit Hours

Prerequisites: None

Initial instruction in basic employment and job skills. Also study in black and white film principles, advanced photochemistry and quality control. Additional subject coverage in computer micrographics and equipment maintenance and use.

30 Theory Hours — 20 Lab Hours — 50 Contact Hours

**IMT 211 ADVANCED MICRO-TECHNICIAN
CERTIFICATION (A)**

3 Credit Hours

Prerequisites: None

Investigates color film chemistry, advanced optics, systems design, records management administration, storage and retrieval method plus personnel requirements. Certification as micrographic technicians is by the local Micrographic Association Chapter.

30 Theory Hours — 20 Lab Hours — 50 Contact Hours

IMT 213 MICROMEDIA SEMINAR (A)

4 Credit Hours

Prerequisites: None

Students assess the micromedia needs of a community and develop projects for review in relation to these needs. Proposed projects must be approved by the instructor.

15 Theory Hours — 60 Lab Hours — 75 Contact Hours

IMT 215 RECORDS MANAGEMENT SEMINAR (A)

3 Credit Hours

Prerequisites: None

Students prepare proposals and complete projects under faculty supervision. Special arranged class prepares for Certified Records Manager (CRM). Examination given semiannually by the Association of Records Managers and Administrators (ARMA).

30 Theory Hours — 30 Lab Hours — 50 Contact Hours

IMT 297 COOPERATIVE WORK EXPERIENCE (A)

1-6 Credit Hours

Prerequisites: None

Actual work experience under professional supervision; students apply learned work skills on the job.

15 Theory Hours — 45-225 Lab Hours

15-240 Contact Hours

IMT 299 INDEPENDENT STUDY (A)

3 Credit Hours

Prerequisites: None

Special studies arranged between student and faculty advisor to give the student advanced or remedial learning opportunities.

45 Independent Study Hours

15-45 Contact Hours

Industrial Management**INM 103 OCCUPATIONAL SAFETY (R)**

2 Credit Hours

Prerequisites: None

Course is designed to acquaint students with the responsibilities of the worker and/or first line supervisor with regard to OSHA, workman's compensation and on-the-job safety training.

30 Theory Hours — 30 Contact Hours

INM 211 PRODUCTION MANAGEMENT I (R,AEC)

3 Credit Hours

Prerequisites: None

Preparation in principles and practices of industrial management. Emphasis given to the organization structure of a production enterprise; production facilities; methods and procedures for effective plant layout; plan and equipment maintenance; and purchasing.

45 Theory Hours — 45 Contact Hours

INM 212 PRODUCTION MANAGEMENT II (R,AEC)

3 Credit Hours

Prerequisites: None

INM 211

A continuation of Production Management I, this course emphasizes development of skill and knowledge in control systems, employee development systems and procedures for managing human resources.

45 Theory Hours — 45 Contact Hours

INM 215 PRODUCTION MANAGEMENT CASE STUDY (R,AEC)

2 Credit Hours

Prerequisite: Consent of instructor.

A practical approach to problem solving and decision making in a production oriented company using case examples which require an integrative approach using the various factors of the organization and its processes in a mode of management by objectives.

30 Theory Hours — 30 Contact Hours

Industrial Pipe Drafting**IPD 201 INDUSTRIAL PIPE DRAFTING I (N)**

3 Credit Hours

Prerequisite: IMD 123 or consent of instructor

Upon satisfactory completion of this module, the student should be able to identify piping symbols, instrument symbols, and flow diagrams used in the industry. Minimum performance of accuracy is 80 percent.

20 Theory Hours — 40 Lab Hours — 60 Contact Hours

IPD 202 INDUSTRIAL PIPE DRAFTING II (N)

3 Credit Hours

Prerequisite: IPD 201 or consent of instructor

Upon satisfactory completion of this module, the student should be able to demonstrate the use of pipe drafting symbols, instrument specifications, piping specifications, piping plans, plot plans, and piping terminology. Minimum performance of accuracy is 80 percent.

20 Theory Hours — 40 Lab Hours — 60 Contact Hours

IPD 203 INDUSTRIAL PIPE DRAFTING III (N)

3 Credit Hours

Prerequisite: IPD 202 or consent of instructor

Upon satisfactory completion of this module, the student should be able to demonstrate ability to draw standard piping details, piping plans process equipment, concrete and structural steel drawings, and isometric pipe drawings with dimensions. Minimum performance of accuracy is 80 percent.

20 Theory Hours — 40 Lab Hours — 60 Contact Hours

IPD 204 INDUSTRIAL PIPE DRAFTING IV (N)

3 Credit Hours

Prerequisite: IPD 203 or consent of instructor.

Upon satisfactory completion of this module, the student should be able to use Smoley's Tables, solve trigonometric problems, review and/or rework problems on piping specifications, piping details and general pipe specifications. Minimum performance of accuracy is 80 percent.

20 Theory Hours — 40 Lab Hours — 60 Contact Hours

IPD 205 INDUSTRIAL PIPE DRAFTING V (N)

3 Credit Hours

Prerequisite: IPD 204 or consent of instructor.

Upon satisfactory completion of this module, the student should be able to demonstrate the usage of all skills acquired in IPD 201 through IPD 204. Minimum performance of accuracy is 80 percent.

20 Theory Hours — 40 Lab Hours — 60 Contact Hours

Interpreter Training Program**ITP 100 HEARING PROCESS AND PATHOLOGY (N)**

2 Credit Hours

Overview of the hearing mechanism, causes of hearing impairment, degrees of hearing loss, audiological testing and the use of hearing aids.

30 Theory Hours — 30 Contact Hours

ITP 105 COMMUNITY RESOURCES (N)

2 Credit Hours

Co-requisite: ASL 111

Study of organizations and agencies serving deaf populations in the U.S. with focus on the metro Denver area. Students will visit various community and service agencies to become acquainted with services provided and settings in which interpreters function.

15 Theory Hours — 23 Lab Hours — 30 Contact Hours

ITP 106 FINGERSPELLING (N)

3 Credit Hours

Prerequisite: ASL 111

Co-requisite: ASL 112

Principles of finger-spelling as used by deaf people in the United States. Lab work will focus on developing speed and clarity with receptive and expressive fingerspelling.

30 Theory Hours — 23 Lab Hours — 53 Contact Hours

ITP 107 SPEECHREADING AND ORAL COMMUNICATION FACILITATION (N)

2 Credit Hours

Prerequisite: ANT 105, ITP 100

Co-requisite: ITP 110, PSY 220

Principles and techniques of speech-reading and facilitating oral communication with deaf individuals.

15 Theory Hours — 23 Lab Hours — 38 Contact Hours

ITP 110 INTERPRETER SEMINAR AND OBSERVATIONS (N)

4 Credit Hours

Prerequisite: ASL 111, ANT 105

Co-requisite: ASL 112, PSY 220

Introduction to interpreting; the role of the interpreter, interpreter ethics; the physical setting; organizations for, and the certification of interpreters; and observations of interpreters.

15 Theory Hours — 23 Lab Hours — 68 Contact Hours

ITP 200 SIGN TO VOICE INTERPRETING (N)

3 Credit Hours

Prerequisite: Completion of ASL 112 and ITP 110 with grade B or higher.

Co-requisite: ASL 201

Basic skills in interpreting from sign language to spoken English.

15 Theory Hours — 45 Lab Hours — 60 Contact Hours

ITP 205 VOICE TO SIGN INTERPRETING (N)

3 Credit Hours

Prerequisite: Completion of ASL 112 and ITP 110 with grade B or higher.

Co-requisite: ASL 201

Basic skills in interpreting from English to Sign Language.

15 Theory Hours — 45 Lab Hours — 60 Contact Hours

ITP 206 SYSTEMS OF MANUALLY CODED ENGLISH (N)

3 Credit Hours

Prerequisite: Completion of ASL 112 and ITP 110 with grade B or higher.

Co-requisite: ASL 201

Overview of various sign systems for visually coding English. Focus and in-depth work with those systems most prevalent in Colorado (i.e., signed English and signing exact English).

45 Theory Hours — 45 Contact Hours

ITP 207 TRANSLITERATING (N)

2 Credit Hours

Co-requisite: ITP 206

Developing skills in changing from spoken English into a visual system of English and vice versa.

45 Theory Hours — 45 Contact Hours

ITP 208 PRINCIPLES OF NOTETAKING AND TUTORING (N)

3 Credit Hours

Prerequisite: ASL 112, PSY 220

Techniques for providing instructional support services (notetaking and tutoring) for hearing impaired students in mainstreamed educational settings.

45 Lecture Hours — 45 Contact Hours

ITP 210 PRACTICUM SEMINAR (N)

2 Credit Hours

Prerequisite: ASL 211, ITP 200, ITP 205

Co-requisite: ITP 215

Discussion and role play related to ethical issues in interpreting and practicum experiences.

30 Theory Hours — 30 Contact Hours

ITP 215 INTERPRETING PRACTICUM (N)

7 Credit Hours

Prerequisites: ASL 211, ITP 200, ITP 205 with grade B or better.

Co-requisite: ITP 210 Practicum Seminar

Field experience interpreting in a supervised educational, community, service agency or other setting.

315 Practicum Hours — 315 Contact Hours

ITP 285 WORKSHOP IN INTERPRETING (N)

1-9 Credit Hours

Prerequisite: Employment as an interpreter.

Conducted on a periodic basis, workshops will be designed to meet the needs of interpreters in the field. Workshops will include such things as issues in interpreting, new developments in the field of interpreting, interpreter ethics, interpreter skills, specialized areas of interpreting, the structure of ASL and Sign Language issues.

15-135 Theory Hours — 15-135 Contact Hours

ITP 299 INDEPENDENT STUDY (N)

2-4 Credit Hours

Intensive study or research on a specific area of interpreting under the direction of a qualified faculty member.

30-60 Contact Hours

Journalism

JOU 111 INTRODUCTION TO JOURNALISM I (A,N,R,AEC)

3 Credit Hours

Prerequisites: None

Introduces basics of the print media including news writing, features, interviews as well as giving exposure to layout, make-up and typesetting. Offered normally fall term.

45 Contact Hours

JOU 112 INTRODUCTION TO JOURNALISM II (A,N,R,AEC)

3 Credit Hours

Prerequisite: JOU 111 or permission of instructor.

Continues JOU 111. Offered normally spring term.

45 Contact Hours

JOU 221 REPORTING AND EDITING (A,AEC)

3 Credit Hours

Prerequisite: JOU 111 or 112 or permission of instructor.

Provides instruction and practice in reporting news stories which involve current events, political issues, crime, education and others. Normally offered in fall term.

45 Contact Hours

JOU 222 REPORTING (A)

3 Credit Hours

Prerequisite: JOU 111 or 112 or permission of instructor.

Reporting investigative and advocacy stories. Normally offered in spring term.

45 Contact Hours

JOU 231 FEATURE WRITING (A,AEC)

3 Credit Hours

Prerequisite: JOU 111 and 112 or permission of instructor.

Emphasizes the theory and practice of writing feature articles for newspapers and magazines. Includes developing query letters, use of photos, selecting publishers, and composing manuscripts. Offered as needed or as interest arises.

45 Contact Hours

JOU 241 JOURNALISTIC ADVERTISING (A,AEC)

3 Credit Hours

Prerequisite: JOU 111 or 112 or permission of instructor.

Explores advertising principles as applied to the print media and radio or television. Offered as needed or as interest arises.

45 Contact Hours

JOU 299 INDEPENDENT STUDY (A,AEC)

1-3 Credit Hours

Prerequisite: Consent of instructor.

Please refer to the general description of Independent Study in this catalog.

15-45 Contact Hours

Literature

LIT 105 INTRODUCTION TO LITERATURE: THE SHORT STORY (A,N,R,AEC)

3 Credit Hours

Prerequisites: None

Reading, discussion and writing assignments concerning selected works of recent and contemporary short fiction. (Entry level skills: tenth grade reading level.)

45 Contact Hours

LIT 106 INTRODUCTION TO LITERATURE: THE SHORT NOVEL (A,N,R,AEC)

3 Credit Hours

Prerequisites: None

Reading discussion and writing assignments concerning recent and contemporary short novels selected from the Western as well as the Oriental tradition. (Entry level skills: tenth grade reading level.)

45 Contact Hours

LIT 107 INTRODUCTION TO LITERATURE: POETRY (A,R,AEC)

3 Credit Hours

Prerequisites: None

Reading discussion and writing assignments concerning poems from the British and American traditions. (Entry level skills: tenth grade reading level.)

45 Contact Hours

LIT 110 THEMES IN LITERATURE (A,AEC)

3 Credit Hours

Prerequisites: None

Reading discussion and writing assignments concerning works selected according to their thematic content (as for example, humor, or the ages of man, or the religious experience); a given semester's theme is announced in the schedule when the course is offered. (Entry level skills: eleventh grade reading level.)

45 Contact Hours

LIT 125 INTRODUCTION TO CHICANO LITERATURE (A)

3 Credit Hours

Prerequisites: None

An overview of Chicano literature from its indigenous (native) roots to the present.

45 Contact Hours

LIT 126 NATIVE AMERICAN LITERATURE (A)

3 Credit Hours

Prerequisites: None

A survey of the literature of the Native American.

45 Contact Hours

LIT 128 BLACK LITERATURE IN AMERICA (A)

3 Credit Hours

Prerequisites: None

A study of black literature which includes methods of evaluation and analysis essential for understanding and appreciating the literary contributions of the black writer.

45 Contact Hours

LIT 201 LITERATURE BY AND ABOUT WOMEN (A,AEC)

3 Credit Hours
Prerequisite: ENG 111 or permission of instructor.
The role of women as characters and authors in selected works of world literature. (Entry level skills: twelfth grade reading level.)
45 Contact Hours

LIT 210 SCIENCE FICTION (A,AEC)

3 Credit Hours
Prerequisite: ENG 111 or permission of instructor.
Current trends in science fiction: selected readings in short stories and novels, from Jules Verne to Isaac Asimov. (Entry level skills: twelfth grade reading level.)
45 Contact Hours

LIT 215 CULT AND THE OCCULT (A,R)

3 Credit Hours
Prerequisite: ENG 111 or permission of instructor.
A study of cults and the occult — from the visionary to the diabolical. (Entry level skills: Twelfth grade reading level.)
45 Contact Hours

LIT 216 FANTASY (A,R,AEC)

3 Credit Hours
Prerequisite: ENG 111 or permission of instructor.
Plays, poems, stories and fables from all over the world. (Entry level skills: Twelfth grade reading level.)
45 Contact Hours

LIT 217 HUMOR AND SATIRE (A,AEC)

3 Credit Hours
Prerequisite: ENG 111 or permission of instructor.
The literature of laughter and its underlying seriousness; works are chosen both from the classics of world literature as well as from contemporary sources. (Entry level skills: twelfth grade reading level.)
45 Contact Hours

LIT 218 DETECTIVE FICTION: CRIME (A,R,AEC)

3 Credit Hours
Prerequisite: ENG 111 or permission of instructor.
A study of detective, spy and mystery fiction as genre. (Entry level skills: twelfth grade reading level.)
45 Contact Hours

LIT 228 CONTEMPORARY CHICANO LITERATURE (A)

3 Credit Hours
Prerequisite: ENG 111, LIT 125 or permission of instructor.
Analyzes the various literary styles of contemporary Chicano literature and students will express themselves through their own literary works and research.
45 Contact Hours

LIT 229 CONTEMPORARY BLACK LITERATURE (A,R)

3 Credit Hours
Prerequisite: ENG 111, LIT 128 or permission of instructor.
An analytical and critical study of contemporary black literature emphasizing the plight and protest of black Americans in American society.
45 Contact Hours

LIT 230 LITERATURE OF THE AMERICAN WEST (N,AEC)

3 Credit Hours
Prerequisites: None
Readings in novels, short stories and essays about the American West. Includes films adapted from western short stories, images of the West in art. Authors read include: A.B. Guthrie, Vardis Fisher, Jack London, Emerson Hough, Owen Wister, Earnest Haycox, Max Brand, Luke Short, Robert Warshaw.
45 Contact Hours

LIT 241 SURVEY OF AMERICAN LITERATURE (A,N,R,AEC)

3 Credit Hours
Prerequisites: None
A comparative study of major American authors through the Civil War.

LIT 242 SURVEY OF AMERICAN LITERATURE (A,N,R,AEC)

3 Credit Hours
Prerequisite: LIT 241 or permission of instructor.
A continuation of LIT 241, covering the period from the Civil War to the present.

LIT 261 GREAT BOOKS I (A,AEC)

3 Credit Hours
Prerequisite: ENG 111 or permission of instructor.
Reading, discussion and writing assignments concerning the acknowledged classics of the western tradition including, but not restricted to, Homer, the Greek tragedians and the Bible.
45 Contact Hours

LIT 262 GREAT BOOKS II (A,AEC)

3 Credit Hours
Prerequisite: ENG 111 or permission of instructor.
Reading, writing assignments and discussion of acknowledged classics of the world, including, but not restricted to, Renaissance literature, the modern period, and selected oriental works.
45 Contact Hours



Management

MAN 105 INTRODUCTION TO BUSINESS (A,N,R,AEC)

3 Credit Hours

Prerequisites: None

A survey course enabling the student to gain an understanding of the overall business system and of the individual business institution. Surveys the functions and interrelationships within the individual business enterprise, and with its commercial and economic environment. Emphasizes the primary functional areas common to all types of business enterprise.

45 Theory Hours — 45 Contact Hours

MAN 115 PRINCIPLES OF MANAGEMENT (A,N,R,AEC)

3 Credit Hours

Prerequisites: None

This course is designed to focus on the fundamentals of business organization as it applies to planning, organizing and controlling. Emphasis will be placed on methods of recognizing and solving organizational problems and measuring corporate results against objectives.

45 Theory Hours — 45 Contact Hours

MAN 116 PRINCIPLES OF SUPERVISION (A,N,R,AEC)

3 Credit Hours

Prerequisites: None

A study of the principles and techniques of managing and motivating personnel. This course is designed for the student who is interested in supervising others or for those presently in supervision. Course content will focus on the human interaction in supervision.

45 Theory Hours — 45 Contact Hours

MAN 117 TIME MANAGEMENT (A,N,R,AEC)

2 Credit Hours

Prerequisites: None

This course is intended to provide the student with the conceptual knowledge and tools to make better use of his time in the management function.

30 Theory Hours — 30 Contact Hours

MAN 120 OFFICE MANAGEMENT (A,N,R,AEC)

2 Credit Hours

Prerequisites: None

Emphasis is placed on the functions of the office. Includes office organization, work in the office, office layout, equipment and supplies procurement and control, work flow, forms design, record storage and retrieval systems, personnel administration and problems and government control.

30 Theory Hours — 30 Contact Hours

MAN 200 HUMAN RESOURCES MANAGEMENT (A,N,R,AEC)

3 Credit Hours

Prerequisites: None

Includes the methods and techniques of personnel administration. Emphasis is on the study of recruiting, interviewing, selecting, placement, training and evaluating. Discussion will include the topics of job descriptions, orientation, remuneration, promotion and transfers, benefits, grievances and union-management relations.

45 Theory Hours — 45 Contact Hours

MAN 202 WOMEN IN MANAGEMENT (A,N,R)

2 Credit Hours

Prerequisites: None

Goals, styles and competencies of contemporary women in the managerial role will be addressed. Topics will include: problems of women in management, legal rights of women, self-awareness of behavior and motivation patterns, successful assertiveness styles, successful office dress and manners, and developing a career plan for upward mobility.

30 Theory Hours — 30 Contact Hours

MAN 205 SMALL BUSINESS MANAGEMENT (A,N,R,AEC)

3 Credit Hours

Prerequisites: None

A study of the importance of the small business, its problem status, and requirements for success. Focus is on the fundamentals basic to small business operations while recognizing variations in application suited to particular needs. Specific management problems are considered on an individual basis.

45 Theory Hours — 45 Contact Hours

MAN 206 BUSINESS LAW (A,N,R,AEC)

4 Credit Hours

Prerequisites: None

This course is designed to develop the recognition of legal problems so that solutions might be obtained. This purpose is accomplished by an introduction to the court system and the legal process. It covers the study of laws relating to business, contracts, sales, commercial paper and consumer legislation. Case studies and analysis of problems are emphasized.

60 Theory Hours — 60 Contact Hours

MAN 209 MANAGEMENT SEMINAR (A,N,R,AEC)

1-4 Credit Hours

Prerequisite: Consent of instructor.

A variable content and credit course to provide for the offering of: (1) special coverage of areas of current topical interest, (2) experimental coverage of potential new units or courses, and (3) program integrating effort via seminar and simulation techniques.

15-60 Theory Hours — 15-60 Contact Hours

IAN 225 MANAGERIAL FINANCE (A,N,R,AEC)

Credit Hours

Prerequisite: Consent of instructor.

Involves concepts and techniques for utilization of financial accounting information for managerial planning, decision making, and control. Also involves concepts and techniques for funds flow management, and for short, intermediate, and long-term financing considerations.

45 Theory Hours — 45 Contact Hours

IAN 239 MANAGEMENT POLICIES AND SYSTEMS (A,N,R,AEC)

Credit Hours

Prerequisite: Consent of instructor.

Study of policy formulation and its usage for effective management systems development. Focuses on integrated managerial coordination and control of marketing, production, finance, accounting, administration, etc.

5 Theory Hours — 45 Contact Hours

IAN 240 APPLIED MANAGEMENT CONCEPTS (A,N,R,AEC)

Credit Hours

Prerequisite: Consent of instructor.

Capstone course utilizing seminar and simulation techniques to apply management concepts and principles to both situational and comprehensive case problems.

5 Theory Hours — 45 Contact Hours

Marketing**MAR 107 PRINCIPLES OF MARKETING (A,N,R,AEC)**

Credit Hours

Prerequisites: None

Comprehensive introductory course enabling the student to obtain a broad understanding of marketing as a functional process and managerial variable. Presents marketing strategies as an integrated system of the marketing mix designed to plan, promote, price and distribute goods and services to businesses and consumers.

5 Theory Hours — 45 Contact Hours

MAR 108 PRINCIPLES OF SALESMANSHIP (A,N,R,AEC)

Credit Hours

Prerequisites: None

Course to enable the student to understand and develop proper sales techniques. The course covers the role of selling in the marketing process, consumer behavioral consideration in the buying-selling process, sales techniques and sales management.

5 Theory Hours — 45 Contact Hours

MAR 109 ADVERTISING AND PROMOTION (A,N,R,AEC)

Credit Hours

Prerequisites: None

Course enabling the student to understand and apply techniques in advertising and promotion. Considers the role of advertising and sales promotion in our economy, and includes the kinds and purposes of different media, consumer behavioral implications and student practice application in campaign programming.

5 Theory Hours — 45 Contact Hours

MAR 115 VISUAL MERCHANDISING (A,N,R)

2 Credit Hours

Prerequisites: None

A course enabling the student to understand and apply techniques in the various areas of visual merchandising. The course covers principles and arrangement of merchandise displays, store design and layout, promotional signs, store fixtures and customer-service.

30 Theory Hours — 30 Contact Hours

MAR 207 MARKETING SEMINAR (A,N,R)

3 Credit Hours

Prerequisite: MAR 107, Principles of Marketing or equivalent.

This is an advanced course in marketing, enabling the student to apply marketing strategies to the development of both individual and group projects.

45 Theory Hours — 45 Contact Hours

MAR 208 SALES SEMINAR (A,N,R)

2 Credit Hours

Prerequisite: MAR 108, Salesmanship or equivalent.

This is an advanced course designed for those students planning a career in sales. The course will enable the student to design a personal profile for sales success, develop advanced sales techniques, and develop an acquaintance and association with professional salespeople.

30 Theory Hours — 30 Contact Hours

MAR 211 WHOLESALING AND DISTRIBUTION (A,N,R)

3 Credit Hours

Prerequisites: None

A course enabling the student to understand and develop strategies in wholesaling and physical distribution. The course will deal with the function, purposes and operation of the various wholesale middlemen, warehouse and transportation policies and procedures and documentation of goods and services.

45 Theory Hours — 45 Contact Hours

MAR 215 RETAIL MANAGEMENT (A,N,R,AEC)

3 Credit Hours

Prerequisites: None

A course designed to acquaint the student with the fundamentals of and develop strategies for retail store management. The course will cover retail organization and management, store location, buying and handling merchandise, pricing merchandise and promotional efforts.

45 Theory Hours — 45 Contact Hours

MAR 216 PRINCIPLES OF PURCHASING (A,N,R,AEC)

3 Credit Hours

Prerequisites: None

Objectives and methodology of industrial, institutional and governmental purchasing agents and buyers. Emphasizes value analysis, product quality control, maintenance of operating efficiency, analysis of competitive price quotations and materials management.

45 Theory Hours — 45 Contact Hours

Machine Shop

MAS 100 INTRODUCTION TO MACHINE SHOP (N)

3 Credit Hours

Prerequisites: None

The student should have demonstrated the ability to follow safety procedures, and be able to read simple shop drawings, use bench tools, layout tools, power saws, taps, grind a general purpose lathe bit, sharpen a general purpose drill, and identify the major parts of the engine lathe.

30 Theory Hours — 30 Lab Hours — 60 Contact Hours

MAS 101 ENGINE LATHE SETUPS AND OPERATIONS I (N)

3 Credit Hours

Prerequisite: MAS 100

The student should be able to mount chucks and accessories on the lathe spindle, set a lathe bit, face, turn, bore, knurl, chamfer, center drill, groove, taper with taper attachment, setup with a mandrel, use taper formulas, adjust speeds and feeds, and work within tolerances specified on drawings from 1/64 to .001.

20 Theory Hours — 40 Lab Hours — 60 Contact Hours

MAS 102 ENGINE LATHE SETUP AND OPERATION II (N)

3 Credit Hours

Prerequisite: MAS 101

The student should be able to single point external and internal unified screw threads to a Class 3 fit, generate angles with the compound rest within one degree, ream holes concentric within .001, determine cutting speeds and perform facing and turning operations with inserted carbide tools.

20 Theory Hours — 40 Lab Hours — 60 Contact Hours

MAS 103 ENGINE LATHE SETUPS AND OPERATIONS III (N)

3 Credit Hours

Prerequisite: MAS 102

The student should be able to form radius, single-point isometric threads, turn spherical radius, use a radius gauge, and work within .0005 tolerance externally.

20 Theory Hours — 40 Lab Hours — 60 Contact Hours

MAS 104 ENGINE LATHE SETUPS AND OPERATIONS IV (N)

3 Credit Hours

Prerequisite: MAS 103

The student should be able to hold .0005 tolerance internally, use an arbor, a sine bar, and taper within one minute angular tolerance.

20 Theory Hours — 40 Lab Hours — 60 Contact Hours

MAS 105 BLUEPRINT READING (N)

3 Credit Hours

Prerequisites: None

The student should be able to read blueprints and interpret symbols, notes, dimensions, and tolerances. The knowledge will be evidenced by scoring 85% accuracy on an exam.

45 Theory Hours — 45 Contact Hours

MAS 111 VERTICAL MILL OPERATIONS AND SETUPS I (N)

3 Credit Hours

Prerequisite: MAS 100

The student should be able to identify the major parts of the vertical mill, align a vise, use an indicator, edge finder, boring head, determine speeds and feeds, perform simple indexing, mill flat, square surfaces and slots, drill, bore, and tap holes, and work within plus or minus .002 tolerance.

20 Theory Hours — 40 Lab Hours — 60 Contact Hours

MAS 112 VERTICAL MILL SETUPS AND OPERATIONS II (N)

3 Credit Hours

Prerequisite: MAS 111

The student should be able to determine hole locations by coordinates and degrees, use a rotary table, use a job bore to drill holes by the coordinate method and work within plus or minus .001 tolerance.

20 Theory Hours — 40 Lab Hours — 60 Contact Hours

MAS 115 HORIZONTAL MILL SETUPS AND OPERATIONS (N)

3 Credit Hours

Prerequisite: MAS 100

The student should be able to identify the major parts and accessories for the horizontal mill, select cutters, mill slots, slab mill, and square a workpiece and work within a tolerance of plus or minus .002.

20 Theory Hours — 40 Lab Hours — 60 Contact Hours

MAS 116 MILLING MACHINE SETUP AND OPERATIONS (N)

3 Credit Hours

Prerequisite: MAS 105, 112 and 115.

The student should be able to indicate the head of a vertical mill, bore holes, drill holes at an angle, and work with tolerances of .0008 location and diameter.

20 Theory Hours — 40 Lab Hours — 60 Contact Hours

MAS 201 SURFACE GRINDER SETUPS AND OPERATIONS (N)

3 Credit Hours

Prerequisite: MAS 116

The student should be able to identify major parts and accessories of the surface grinder, grind flat, vertical and angular surfaces to a tolerance of .0002 position and size.

20 Theory Hours — 40 Lab Hours — 60 Contact Hours

MAS 202 CYLINDRICAL AND TOOL AND CUTTER GRINDER (N)

3 Credit Hours

Prerequisite: MAS 104

The student should be able to identify the major parts and accessories of the cylindrical and tool and cutter grinder, sharpen two and four flute end mills, and work within tolerance of plus or minus .0005 on the cylindrical grinder.

20 Theory Hours — 40 Lab Hours — 60 Contact Hours

MAS 205 TRACING LATHE SETUP AND OPERATION (N)

3 Credit Hours

Prerequisite: MAS 105

The student should be able to set up a template, operate a tracing attachment on an engine lathe, and work within a plus or minus .002 tolerance.

20 Theory Hours — 40 Lab Hours — 60 Contact Hours

MAS 206 TURRET LATHE AND AUTOMATIC SCREW MACHINE (N)

3 Credit Hours

Prerequisite: MAS 104

The student should be able to identify the major parts of the screw machine and turret lathe, produce simple parts within plus or minus .002 tolerance.

20 Theory Hours — 40 Lab Hours — 60 Contact Hours

MAS 207 POINT-TO-POINT NUMERICAL CONTROL (N)

3 Credit Hours

Prerequisite: MAS 112

The student should be able to write a program for the Moog NC, make a tape, and perform milling and drilling operations within plus or minus .001 tolerance.

20 Theory Hours — 40 Lab Hours — 60 Contact Hours

MAS 211-215 JOB SHOP MACHINING I, II, III, IV, V (N)

3 Credit Hours

Prerequisites: MAS 104, 105 and 116

The student should be able to write process sheets, estimate machining time, perform final inspection on the finished parts, and use any machine in the shop to produce the part. (NOTE: Additional major courses may be substituted for Job Shop Machining with permission of instructor.)

10 Theory Hours (each unit)

10 Lab Hours (each unit)

10 Contact Hours (each unit)

MAS 216 GRINDING MACHINE SETUPS AND OPERATIONS (N)

3 Credit Hours

Prerequisite: MAS 201 and 202

The student should be able to use the principles of grinding wheel selection, do form, cutter surface, and cylindrical grinding within a tolerance of .0001.

10 Theory Hours — 40 Lab Hours — 60 Contact Hours

MAS 217 INTRODUCTION TO STRUCTURE OF METALS (N)

3 Credit Hours

Prerequisites: None

The student should be able to identify metallurgical terms and definitions and interpret data from handbooks on selection, heat treatments, machining, and welding of metals. The knowledge will be evidenced by scoring 85% accuracy on exams.

15 Theory Hours — 45 Contact Hours

MAS 218 INTRODUCTION TO DIE-MAKING (N)

6 Credit Hours

Prerequisites: None

The student should be able to sketch, build, set, and operate a simple punch die in order to satisfactorily complete this module.

40 Theory Hours — 80 Lab Hours

120 Contact Hours

MAS 219 MACHINE MAINTENANCE AND REPAIR (N)

6 Credit Hours

Prerequisites: None

The student should be able to identify different types of lubricants, oil machines, disassemble, repair, and reassemble machine slides and gear boxes to manufacturer's specifications.

40 Theory Hours — 80 Lab Hours

120 Contact Hours

MAS 228 GRINDING MACHINE THEORY (N)

3 Credit Hours

Prerequisites: None

The student should be able to relate the theory and principles of grinding machines, grinding wheels, and grinding machine accessories. The knowledge will be evidenced by scoring 85% accuracy on examinations.

45 Theory Hours — 45 Contact Hours

MAS 229 USING MACHINE SHOP FORMULAS (N)

3 Credit Hours

Prerequisites: None

The student should be able to use machine shop formulas to solve problems in tapering, angle cutting, speeds and feeds, and hole locations.

45 Theory Hours — 45 Contact Hours

MAS 230 MACHINE SHOP MEASURING INSTRUMENTS THEORY (N)

3 Credit Hours

Prerequisites: None

The student should be able to relate the theory and principles of measurement and machine shop measuring instruments. The knowledge will be evidenced by scoring 85% accuracy on examinations.

45 Theory Hours — 45 Contact Hours

MAS 226 TURNING MACHINE THEORY (N)

3 Credit Hours

Prerequisites: None

The student should be able to relate the theory and principles of turning machines, their cutting tools and accessories. The knowledge will be evidenced by scoring 85% accuracy on examinations.

45 Theory Hours — 45 Contact Hours

MAS 227 MILLING MACHINE THEORY (N)

3 Credit Hours

Prerequisites: None

The student should be able to relate the theory and principles of milling machines, their cutting tools and accessories. The knowledge will be evidenced by scoring 85 percent accuracy on examinations.

45 Theory Hours — 45 Contact Hours

Mathematics

MAT 090 INTRODUCTION TO MATHEMATICAL OPERATIONS (A)

3 Credit Hours

Prerequisite: None

Teaches multiplication tables and strengthens skills in adding, subtracting, multiplying, and dividing whole numbers. Exposes students to the terminology used in mathematics and includes diagnostic testing and individualized instruction. Provides the opportunity for self-paced progress. (Entry level skills: Score of 0 to 1 on the Math assessment.)

1-3 Lab Hours (required per week)

45 Contact Hours

MAT 100 BASIC MATHEMATICAL SKILLS (A)

3 Credit Hours

Prerequisite: None

Designed for students who need a comprehensive review of arithmetic. Topics include the fundamental operations with whole numbers, fractions, decimals, percentages, and ratios. (Entry level skills: Score of 2 on the Math assessment.)

1-3 Lab Hours (required per week)

45 Contact Hours

MAT 101 APPLIED MATHEMATICS I (A,N,R)

1-3 Credit Hours

Prerequisite: None

Applies elementary mathematics to industrial occupations. Includes fractions, decimals, percents, ratio and proportion, powers and roots, weights and measures, working with formulas and simple equations, and introduces geometry. New students registering for fewer than three hours must have the approval of their advisor and Developmental Studies. (Entry level skills: Score of 2 on the Math assessment.)

1 Lab Hour (required per week)

15-45 Contact Hours

MAT 102 APPLIED MATHEMATICS II (A,N,R)

1-3 Credit Hours

Prerequisite: Successful completion of MAT 101

Continues basic geometry (MAT 101) including polygons, circles, solid figures, followed by basic trigonometry. Students registering for fewer than three hours must have the permission of their advisor and Developmental Studies. (At North Campus all of the geometry topics are included in MAT 101; at North and Red Rocks campuses all topics pertaining to math for electronics are contained in MAT 102.) (Entry level skills: Score of 2 on the Math assessment.)

1 Lab Hour (required per week)

15-45 Contact Hours

MAT 105 MATHEMATICS FOR THE PHYSICAL SCIENCES (A)

1-2 Credit Hours

Prerequisite: None

Includes fractions, decimals, percentages, ratio and proportion, work problems, exponents, and dimensional analysis as these topics apply to certain areas of the physical sciences. (Entry level skills: Score of 1 on the Math assessment or successful completion of MAT 090.)

1 Lab Hour (required per week)

15-30 Contact Hours

MAT 107 MATHEMATICS FOR ELECTRONICS (A)

5 Credit Hours

Prerequisite: None

Includes powers of ten, scientific notation, electronic currents, use of electronic calculators, basic algebra Ohm's law, power formulas, direct and alternating current circuits, equation systems, and elementary trigonometry (Entry level skills: Score of 3 or 4 on Math assessment or successful completion of MAT 100.)

75 Contact Hours

MAT 108 HAND-HELD CALCULATOR (A,N,R)

1 Credit Hour

Prerequisite: MAT 106 or equivalent

Introduces the concepts of scientific notation, estimation, significant digits, and algebraic hierarchy as applied to the use of the calculator for computation.

15 Theory Hours — 15 Contact Hours

MAT 110 THE METRIC SYSTEM (A,R)

1 Credit Hour

Prerequisite: None

Comprehensively covers metric area, cubic volume, and capacity volume. Also included are conversions of English area, land area, cubic volume, capacity volume to metric units. Fahrenheit and Celsius temperatures and density and specific gravity are also included. (Same as SCI 105 on North campus.)

15 Theory Hours — 15 Contact Hours

MAT 111 INTRODUCTORY ALGEBRA (A,N,R,AEC)

3 Credit Hours

Prerequisite: MAT 106 or equivalent

A first course in algebra designed for the student who has had less than one year of high school algebra or for those who need a review, this course includes manipulation of algebraic expressions, solving first degree equations in one and two variables, factoring, solving fractional equations, graphing and verbal problem solving.

45 Theory Hours — 45 Contact Hours

MAT 112 INTERMEDIATE ALGEBRA (A,N,R,AEC)

4 Credit Hours

Prerequisite: MAT 111 or equivalent

Introduces sets, axiomatic approach to the set of real numbers, extension of exponents, radicals, first and second degree equations in one variable, functions and graphs.

60 Theory Hours — 60 Contact Hours

MAT 113 INTRODUCTION TO GEOMETRY (N,R,AEC)

3 Credit Hours

Prerequisite: MAT 112 or equivalent

Designed to extend the mathematical skills developed in MAT 111 and MAT 112. The topics to be included are logic, geometry, and basic trigonometry.

45 Theory Hours — 45 Contact Hours

MAT 115 CONSUMER MATHEMATICS (N)

2 Credit Hours

Prerequisite: MAT 106 or equivalent skills

A course designed to help the student in his everyday dealing with the business world. Topics include loans, interest, checkbook reconciliation, and installment buying.

30 Theory Hours — 30 Contact Hours

MAT 116 EXPLORING MATHEMATICS (N,AEC)

3 Credit Hours

Prerequisite: MAT 106 or equivalent skills

A survey course designed to give the student an appreciation of a great variety of interesting topics in mathematics without emphasizing its computational aspects.

45 Theory Hours — 45 Contact Hours

MAT 121 COLLEGE ALGEBRA (A,N,R,AEC)

4 Credit Hours

Prerequisite: MAT 112 or equivalent

Review of algebraic manipulations and sets, real and complex numbers, relations and functions, linear systems and inequalities, second degree equations and inequalities.

60 Theory Hours — 60 Contact Hours

MAT 122 TRIGONOMETRY AND FUNCTIONS (A,N,R,AEC)

3 Credit Hours

Prerequisite: MAT 121 or equivalent

Details trigonometric functions, identities, graphs, logarithms, solutions of triangles, complex numbers, and polynomials. Functions as mappings, associations and ordered pairs are also covered and included are theories of equations and further solutions to systems of equations.

45 Theory Hours — 45 Contact Hours

MAT 127 SURVEY OF CALCULUS (N,R)

4 Credit Hours

Prerequisite: MAT 121 or consent of instructor

For Business, Life Science, and Social Science majors. Derivatives, integrals, and their applications are included with attention restricted to algebraic, exponential and logarithmic functions.

60 Theory Hours — 60 Contact Hours

MAT 201 CALCULUS I (A,N,R,AEC)

5 Credit Hours

Prerequisite: MAT 122 or equivalent

Introduces single variable calculus and analytic geometry. Concepts introduced will be motivated by geometric and physical interpretations.

75 Theory Hours — 75 Contact Hours

MAT 202 CALCULUS II (A,N,R,AEC)

5 Credit Hours

Prerequisite: MAT 201

Extends and further develops concepts of single variable calculus and analytic geometry studies as found in MAT 201. Applications of differentiation and integration and techniques of integration are emphasized.

75 Theory Hours — 75 Contact Hours

MAT 203 CALCULUS III (A,N,R,AEC)

4 Credit Hours

Prerequisite: MAT 202

Completes the traditional subject matter of single variable calculus not covered in MAT 201 and MAT 202 and introduces vector analysis, multi-variable calculus and solid analytic geometry. Also covered are three-dimensional vector space and infinite series.

60 Theory Hours — 60 Contact Hours

MAT 205 ORDINARY DIFFERENTIAL EQUATIONS (A,N,R,AEC)

3 Credit Hours

Prerequisite: MAT 202 or MAT 203 concurrently

Introduces ordinary differential equations. Topics will include equations of first and second order with applications, linear equations, series methods and transform methods.

45 Theory Hours — 45 Contact Hours

MAT 206 LINEAR ALGEBRA (A,N,R,AEC)

3 Credit Hours

Prerequisite: MAT 202

Introduces theories of vector space, linear transformations, matrix representations, eigenvalues and eigenvectors. Theories will be appropriately applied.

45 Theory Hours — 45 Contact Hours

MAT 207 PROBABILITY AND STATISTICS (A)

4 Credit Hours

Prerequisite: MAT 121

Applies the principles of elementary probability theory and descriptive and inferential statistics. Topics include random variables, probability distributions, sampling, estimation and tests of hypotheses.

60 Theory Hours — 60 Contact Hours

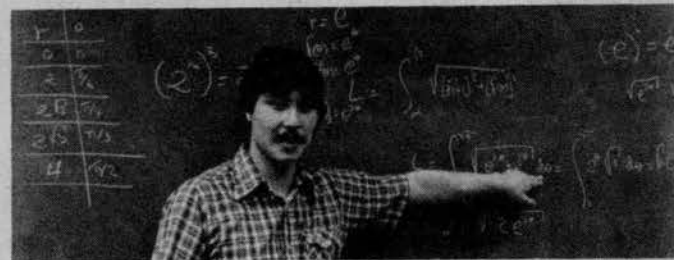
MAT 225 INTRODUCTION TO STATISTICS (N,R,AEC)

3 Credit Hours

Prerequisite: Algebra

Study of the elementary statistical functions, introduction to statistical distributions, statistical inference, and hypothesis testing.

45 Theory Hours — 45 Contact Hours



MAT 226 COMPUTER APPLICATIONS FOR STATISTICS (R)

1 Credit Hour

Prerequisite: MAT 225 or concurrent enrollment in MAT 225

Laboratory course to include computer applications of statistical procedures such as correlation, chi square analysis, and analysis of variance. Data analysis will be done by using commercially prepared computer packages.

45 Lab Hours — 45 Contact Hours

MAT 299 INDEPENDENT STUDY (A,N,R,AEC)

1-3 Credit Hours

Prerequisite: Consent of instructor

Please refer to the general description of Independent Study in this catalog.

45-135 Contact Hours

Machine Drafting Technology

MDT MACHINE DRAFTING TECHNOLOGY I, II, 201-204 III, AND IV (N)

3 Credit Hours

Prerequisites: None

In these units, the student will be assigned machine drafting projects which he will research and complete with assembly and detail drawings. These drawings will be expected to meet industrial standards.

20 Theory Hours — 40 Lab Hours — 60 Contact Hours

MDT 205 MACHINE DRAFTING TECHNOLOGY V (N)

3 Credit Hours

Prerequisites: None

In this unit, the student may continue machine drafting technology, or with the permission of the advisor, take cooperative work experience, electives, or independent study.

10 Theory Hours — 50 Lab Hours — 60 Contact Hours

Medical Office Management

MOM 201 MEDICAL OFFICE PROCEDURES AND ETHICS (A)

3 Credit Hours

This course is designed to meet the needs of many who may be employed as office personnel in a medical setting. It will teach the most efficient ways to complete routine tasks with a perspective of their responsibilities. Honesty and loyalty to the medical professional will be stressed.

45 Theory Hours — 45 Contact Hours

MOM 203 HEALTH INSURANCE METHODS AND CLAIMS (A)

3 Credit Hours

This course is designed to instruct the student in the understanding of general types of health insurance plans on the market, methods of payment, common insurance terms, benefits and limitations of government sponsored and mandated insurance plans, practice in expediting the logging and processing of insurance forms and the proficiency necessary to minimize the rejection of insurance claims in the doctor's office.

45 Theory Hours — 45 Contact Hours

Music

MUS 100 ENSEMBLE: CHORUS (A,N,R)

1 Credit Hour

Prerequisites: None

Study of choral styles and literature. (May be repeated for up to six hours credit.)

30 Contact Hours

MUS 101 HISTORY OF AFRO-AMERICAN MUSIC (A)

3 Credit Hours

Prerequisites: None

A study of African music as one of the main sources of Black music in America. Emphasis will move from the music and musical instruments of Africa to the Jazz Age.

45 Contact Hours

MUS 102 HISTORY OF AFRO-AMERICAN MUSIC II (A)

3 Credit Hours

Prerequisites: None

The contemporary era beginning with the Jazz Age and moving to the present.

45 Contact Hours

MUS 105 ENSEMBLE: BAND (N)

1 Credit Hour

Prerequisites: None

Study of instrumental styles and literature. (May be repeated for up to six hours credit.)

30 Contact Hours

MUS 111 THEORY AND HARMONY I (A,N,R)

3-5 Credit Hours

Prerequisites: None

Corequisite: MUS 151 or 152 or permission of instructor.

The study of melody, harmony, rhythm, analysis composition, sight singing and ear training.

75 Contact Hours

MUS 112 THEORY AND HARMONY II (A,N,R)

5 Credit Hours

Prerequisite: MUS 111

Corequisite: MUS 151 or 152 or permission of instructor

Continues the study of harmony from MUS 111. Emphasizes techniques in harmonizing with inverted triads and seventh chords and modulation formulae.

75 Contact Hours

MUS 115 MUSIC FOR CHILDREN (N,R)

3 Credit Hours

Prerequisites: None

Fundamentals for music for teachers in early childhood education.

45 Contact Hours

MUS 116 SONGWRITING (A)

3 Credit Hours

Prerequisites: None

Presents the basics of pitch and rhythm notation, includes the elements of melody construction and analyzes the basic characteristics of popular melodies. Students will be encouraged to write at least one melody a week. (Entry level skills: Basic skills in music.)

45 Contact Hours

MUS 120 THE MUSIC OF MEXICO AND THE SOUTHWEST (A)

3 Credit Hours

Prerequisites: None

An examination of selected works in Mexican music from pre-Columbian time to present concentrating on regional works and on 20th Century composers.

45 Contact Hours

MUS 131 VOICE CLASS I (A,N,R)

1 Credit Hour

Prerequisites: None

Corequisite: MUS 151

Study of vocal techniques of various major teachers, including emphasis on breathing techniques, tonal control, stage presence and interpretation of vocal materials from all periods.

30 Contact Hours

MUS 132 VOICE CLASS II (A,N,R)

1 Credit Hour

Prerequisite: MUS 131 or permission of instructor

Corequisite: MUS 151 or 152

A continuation of MUS 131 with special emphasis on diction, enunciation and performance preparation.

30 Contact Hours

MUS 140 WOODWIND METHODS (N)

1 Credit Hour

Prerequisites: None

Develop basic knowledge of the woodwind family, the problems, functions, possibilities and literature.

15 Contact Hours

MUS 145 BRASS METHODS (N)

1 Credit Hour

Prerequisites: None

Develop basic knowledge of the brass family, the problems, functions, possibilities and literature.

15 Contact Hours

MUS 146 PERCUSSION METHODS (N)

1 Credit Hour

Prerequisites: None

Develop basic knowledge of the percussion family, the problems, functions, possibilities and literature.

15 Contact Hours

MUS 151 PIANO CLASS I (A,N,R)

1 Credit Hour

Prerequisites: None

Introduces the basic piano techniques. Includes major and minor chords, accompaniment patterns, rhythm drills, and traditional notation.

30 Contact Hours

MUS 152 PIANO CLASS II (A,N,R)

1 Credit Hour

Prerequisite: MUS 151 or permission of instructor

CONTINUATION OF MUS 151. Includes a complete study of chords, jazz rhythms and accompaniment techniques.

30 Contact Hours

MUS 161 FOLK GUITAR I (R)

1 Credit Hour

Prerequisites: None

Principles and techniques of folk guitar.

30 Contact Hours

MUS 162 FOLK GUITAR II (R)

1 Credit Hour

Prerequisites: None

Continuation of MUS 162.

30 Contact Hours

MUS 165 GUITAR CLASS I (A,N,R)

1 Credit Hour

Prerequisites: None

Corequisite: MUS 151 or permission of instructor

Studies the elements of music as they apply to guitar playing and basic strumming techniques for accompaniment patterns and elementary melody playing.

30 Contact Hours

MUS 166 GUITAR CLASS II (A,N,R)

1 Credit Hour

Prerequisites: None

Continuation of MUS 165.

30 Contact Hours

MUS 171 INTRODUCTION TO ELECTRONIC MUSIC (N)

2 Credit Hours

Prerequisites: None

Exploration of techniques used in electronic music.

30 Contact Hours

MUS 190 MUSIC APPRECIATION (A,N,R,AEC)

3 Credit Hours

Prerequisites: None

Survey of music literature, style and form from inception to present day.

45 Contact Hours

MUS 200 CHORAL CONDUCTING (N)

2 Credit Hours

Prerequisites: None

Introduction to conducting patterns and techniques with emphasis on choral compositions and problems.

30 Contact Hours

MUS 201 INTRODUCTION TO MUSIC I (R)

3 Credit Hours

Prerequisites: None

Study of musical styles, forms development, literature and composers from antiquity through Baroque.

45 Contact Hours

MUS 202 INTRODUCTION TO MUSIC II (R)

3 Credit Hours

Prerequisites: None

Continuation of MUS 201, emphasizing impressionistic and contemporary.

45 Contact Hours

MUS 205 INSTRUMENTAL CONDUCTING (N)

2 Credit Hours

Prerequisites: None

Introduction to conducting patterns and techniques with emphasis on instrumental compositions and problems.

30 Contact Hours

MUS 211 ADVANCED THEORY AND HARMONY I (A,N,R)

5 Credit Hours

Prerequisite: MUS 112

Continuation of MUS 112 with emphasis on chromatic and contemporary harmony, counterpoint and instrumentation.

75 Contact Hours

MUS 212 ADVANCED THEORY AND HARMONY II (A,N,R)

5 Credit Hours

Prerequisites: None

Continuation of MUS 211, with emphasis on chromatic and contemporary harmony, counterpoint and instrumentation.

75 Contact Hours

MUS 231 CHORUS: THEORY AND PRACTICE (R)

3 Credit Hours

Prerequisites: None

Choral literature from the classics to the contemporary including vocal techniques and diction.

90 Contact Hours

MUS 232 CHORUS: THEORY AND PRACTICE II (R)

3 Credit Hours

Prerequisites: None

Continuation of MUS 231.

90 Contact Hours

MUS 251 ADVANCED PIANO CLASS I (A,R)

1 Credit Hour

Prerequisites: MUS 151 or permission of instructor

Continuation of MUS 152 with emphasis on ensemble playing, transposition and improvisation.

30 Contact Hours

MUS 252 ADVANCED PIANO CLASS II (A,R)

1 Credit Hour

Prerequisite: MUS 251 or permission of instructor

Continuation of MUS 251 with emphasis on advanced improvisation and accompaniment.

30 Contact Hours

MUS 299 INDEPENDENT STUDY (A,N,R,AEC)

1-3 Credit Hours

Prerequisite: Consent of instructor

Please refer to the general description of Independent Study in this catalog.

30-90 Contact Hours

Continuing Education for Nursing**NCE 200 REGISTERED NURSE REFRESHER COURSE (A,N,R)**

13 Credit Hours

Prerequisites: None

Classroom instruction includes nursing knowledge and skills basic to all areas of nursing practice: current trends in health care, pharmacology, fluid and electrolytes, intravenous therapy, cardiopulmonary resuscitation and legal aspects. Emphasis on patient assessment and nursing intervention. Hospital experience will consist of patient care and observation in the areas of student's choice when possible.

105 Theory Hours — 135 Lab Hours

240 Contact Hours

NCE 201 PRE AND POST OPERATIVE PATIENT TEACHING (A,N,R)

1 Credit Hour

Prerequisites: None

Presents the principles and techniques of the teaching-learning process; adult learner characteristics; assessment of the pre and post operative patients' learning needs; and how to write and evaluate a patient teaching plan.

15 Theory Hours — 15 Contact Hours

NCE 202 PSYCHIATRIC NURSING REVIEW (A,N,R)

1 credit hour

Prerequisites: None

Review of basic psychiatric concepts, principles, and practices essential for therapeutic nursing care of patients with emotional problems, includes psycho-social aspects, interpersonal skills and community mental health concepts. Purpose: State Board exam review or Psychiatric Nursing refresher.

15 Theory Hours — 15 Contact Hours

NCE 203 MEDICAL SURGICAL NURSING REVIEW (A,N,R)

2 credit hours

Prerequisites: None

Integrated review of basic medical-surgical nursing concepts and the application of principles in the practice of nursing. Includes nursing care planning, pathophysiology, acid-base and fluid and electrolyte balance, legal aspects and current nursing issues.

30 Theory Hours — 30 Contact Hours

**NCE 204 MATERNAL CHILD NURSING REVIEW
(A,N,R)**

1 Credit Hour

Prerequisites: None

Integrated review of philosophy and practice of maternity and pediatric nursing care including family-centered care, normal labor and delivery, care of the newborn, normal growth and development, prevention of and pathophysiology of abnormalities in obstetrics and pediatrics. Purpose: State Board exam or Maternal Child Nursing.

15 Theory Hours — 15 Contact Hours

**NCE 205 THE UPS AND DOWNS OF DEPRESSION
(A,N,R)**

1 Credit Hour

Prerequisites: None

This mini course is a comprehensive overview of depression and its multiphasic aspects. Included will be the clinical observations of depression and practical maneuvers for effective management in oneself and others.

15 Theory Hours — 15 Contact Hours

**NCE 206 APPLIED PHYSIOLOGY FOR NURSES
(A,N,R)**

4 Credit Hours

Prerequisites: None

Study of physiology and pathophysiology — an integrated approach to human disease with emphasis on nursing implications.

60 Theory Hours — 60 Contact Hours

**NCE 207 ACUTE CARE OF THE MEDICAL
SURGICAL PATIENT (A,N,R)**

3 Credit Hours

Prerequisites: None

Identifies new concepts in the assessment and responsibilities of the nurse in the care of the acute medical surgical patient. To include commonly occurring disease processes.

45 Theory Hours — 45 Contact Hours

NCE 208 BASIC EKG INTERPRETATION (A,N,R)

2 Credit Hours

Prerequisites: None

Anatomy and physiology of the heart, conduction system, normal and abnormal stimuli of cardiac muscle, cardiac drugs and recognition of arrhythmias for interpretation of telemetry.

30 Theory Hours — 30 Contact Hours

**NCE 209 CLINICAL INTERPRETATION OF
LABORATORY TESTS (A,N,R)**

2 Credit Hours

Prerequisites: None

New developments in laboratory test and analysis. Emphasis on nurses' responsibilities in interpreting and evaluating laboratory tests to improve patient care.

30 Theory Hours — 30 Contact Hours

**NCE 210 PHYSICAL ASSESSMENT OF THE ADULT
(A,N,R)**

3 Credit Hours

Prerequisites: None

Study and practice of techniques that are necessary in history taking and physically examining an adult patient for nursing care assessments.

45 Theory Hours — 45 Contact Hours

**NCE 211 AUSCULTATION OF BREATH AND
HEART SOUNDS (A,N,R)**

1 Credit Hour

Prerequisites: None

Theory and practice of normal breath and heart sounds and recognition of abnormalities through audio-visual materials.

15 Theory Hours — 15 Contact Hours

**NCE 212 MANAGING THE HYPERTENSION
PATIENT (A,N,R)**

1 Credit Hour

Prerequisites: None

This course includes assessment of the hypertensive patient; pharmacological management of hypertension and techniques to provide and maintain an effective teaching-learning atmosphere.

15 Theory Hours — 15 Contact Hours

NCE 213 PRIMARY CRISIS INTERVENTION (A,N,R)

2 Credit Hours

Prerequisites: None

Identification of the crisis event; assessment of the individual's level of anxiety, perception of the event, copying mechanisms and situational support. Emphasis is placed on planning, nursing intervention and evaluation.

30 Theory Hours — 30 Contact Hours

**NCE 214 SPIRITUAL CARE OF THE PATIENT
(A,N,R)**

1 Credit Hour

Prerequisites: None

Exploration of the spiritual dimension of patient care, making it a natural part of nursing practice that easily fits into the nursing process.

15 Theory Hours — 15 Contact Hours

**NCE 215 CARDIOPULMONARY RESUSCITATION
(A,N,R)**

1 Credit Hour

Prerequisites: None

Normal heart physiology and basic EKG followed by practice of cardiopulmonary resuscitation. Based on AMA and AHA standards.

15 Theory Hours — 15 Contact Hours

**NCE 216 ORTHOPEDIC AND NEUROLOGICAL
NURSING (A,N,R)**

2 Credit Hours

Prerequisites: None

New developments and expanded skills in the assessment of orthopedic and neurological problems. Emphasis will be on patient needs — alleviation of pain, correct positioning of injured or surgically repaired extremities, prevention of complications and rehabilitation.

30 Theory Hours — 30 Contact Hours

NCE 217 PHARMACODYNAMICS AND DRUG INTERACTION (A,N,R)

3 Credit Hours

Prerequisites: None

Study of the biochemical and physiologic effects of drugs and mechanism of action and interaction. Enables the nurse to understand drug interaction, and to increase observation skills and interpretation of drug response in patient care.

45 Theory Hours — 45 Contact Hours

NCE 218 LEGAL ASPECTS OF CHARTING (A,N,R)

1 Credit Hour

Prerequisites: None

Basic concepts of charting. Emphasis placed on observations, patient response to care and legal aspects of the nurse's record. A practice charting session and evaluation of charting in relation to various patient situations will be included.

15 Theory Hours — 15 Contact Hours

NCE 219 NURSING LEADERSHIP AND MANAGEMENT (A,N,R)

2 Credit Hours

Prerequisites: None

Directed toward helping the professional nurse to understand the responsibilities in becoming a leader and to provide a simple guide to the various ways in which he/she can exercise leadership in the management of patient care.

30 Theory Hours — 30 Contact Hours

NCE 220 LEGAL ASPECTS OF NURSING (A,N,R)

2 Credit Hours

Prerequisites: None

Introduction to the law and application to nursing practice.

30 Theory Hours — 30 Contact Hours

NCE 221 WELLNESS (A,N,R)

2 Credit Hours

Prerequisites: None

Wellness is more than the absence of illness. Learn how to meet basic needs to prevent illness. Participants will be involved in wellness self evaluations, eating habit surveys, body stress assessment guides for self exploration and self responsibility, and tools for changing lifestyles.

30 Theory Hours — 30 Contact Hours

NCE 222 AUSCULTATION OF HEART SOUNDS (A,N,R)

1 Credit Hour

Prerequisites: None

In-depth theory and practice of normal heart sounds and recognition of abnormalities through audio-visual materials.

15 Theory Hours — 15 Contact Hours

NCE 223 AUSCULTATION OF BREATH SOUNDS (A,N,R)

1 Credit Hour

Prerequisites: None

In-depth theory and practice of normal breath sounds and recognition of abnormalities through audio-visual materials.

15 Theory Hours — 15 Contact Hours

NCE 232 PREVENTING THE BURNOUT SYNDROME (A,N,R)

1 Credit Hour

Prerequisites: None

Learn the causes of burnout in nursing practice; how to recognize burnout symptoms in yourself and others if they occur. Emphasis will be placed on methods to prevent burnout.

15 Theory Hours — 15 Contact Hours

NCE 235 EMERGENCY TRAUMA NURSING (A,N,R)

2 Credit Hours

Prerequisites: None

Acute care of the patient from treatment at the scene of an accident to management of emergencies that occur within the hospital setting. Patient assessment, therapeutic needs, diagnostic procedures and treatment techniques.

30 Theory Hours — 30 Contact Hours

NCE 236 PHYSICAL ASSESSMENT OF THE CHILD (A,N,R)

2 Credit Hours

Prerequisites: None

Study and practice of skills required by the nurse in collecting data for nursing assessment. To include interviewing, observation and physical appraisal skills of the infant through adolescence.

30 Theory Hours — 30 Contact Hours

NCE 237 BASIC SPANISH FOR NURSES (A,N,R)

3 Credit Hours

Prerequisites: None

To meet the immediate needs of the health worker in communicating with the Spanish speaking patient. Includes vocabulary, grammar and idioms. Previous knowledge of Spanish is *not* necessary.

45 Theory Hours — 45 Contact Hours

NCE 238 INTERVIEWING TECHNIQUES FOR NURSES (A,N,R)

1 Credit Hour

Prerequisites: None

Designed for nurses in hospitals and all health care agencies. Includes the role of the nurse interviewer, principles of patient interviewing and evaluation by the nurse interviewer. This is the basis for problem oriented patient care.

15 Theory Hours — 15 Contact Hours

NCE 239 BLOOD GASES (A,N,R)

1 Credit Hour

Prerequisites: None

Four primary acid-base balance problems, interpretation of blood gas test, signs, symptoms and measures to help the nurse plan effective patient care.

15 Theory Hours — 15 Contact Hours

NCE 240 ASSERTIVENESS FOR NURSES (A,N,R)

2 Credit Hours

Prerequisites: None

Seminar for nurses to expand positive attitudes and actions, applicable for personal and professional growth. Includes communication skills, time utilization, creativity, leadership and goal setting. Be assertive!

30 Theory Hours — 30 Contact Hours

NCE 245 INTERMEDIATE EKG INTERPRETATION (A,N,R)

1 Credit Hours

Prerequisites: None

Continuation of basic EKG interpretation. To include twelve (12) lead interpretations with focus on treatment modalities.

30 Theory Hours — 30 Contact Hours

NCE 247 INTRODUCTION TO CRITICAL CARE (A,N,R)

1 Credit Hours

Prerequisites: None

An introduction to the care of the critically ill patient to include the technical, psychological and physical aspects of critical care nursing.

30 Theory Hours — 30 Contact Hours

NCE 248 PSYCHIATRIC NURSING UPDATE (A,N,R)

1 Credit Hours

Prerequisites: None

Designed to provide the nurse with a broad overview of the new dimensions in psychiatry and an update in psychiatric mental health nursing. Attention will be paid to the community mental health centers and their functions.

30 Theory Hours — 30 Contact Hours

NCE 249 SEXUAL ASPECTS OF PATIENT CARE (A,N,R)

1 Credit Hours

Prerequisites: None

Theories and attitudes of human sexuality. Sexual development, sexual maturity and acceptance of ourselves as sexual beings. Emphasis on nursing implications regarding physiological, behavioral and cultural aspects.

30 Theory Hours — 30 Contact Hours

NCE 250 TUBES AND INTUBATION (A,N,R)

1 Credit Hour

Prerequisites: None

Identification, insertion and maintenance of tubes used in every aspect of patient care. This course will *not* teach the how to do tracheal intubation.

15 Theory Hours — 15 Contact Hours

NCE 255 PROBLEM ORIENTED MEDICAL RECORDS (A,N,R)

1 Credit Hour

Prerequisites: None

Philosophy and mechanics of POMR. Participants will learn to identify and describe patient problems, organize and record both nursing care plans and interventions using the problem-oriented record.

15 Theory Hours — 15 Contact Hours

NCE 256 INTERPRETATION OF VITAL SIGNS (A,N,R)

1 Credit Hour

Prerequisites: None

An in-depth look at vital signs; what each means in relation to the other; and what the abnormalities indicate in relation to different disease processes. This is more than basic TPR.

15 Theory Hours — 15 Contact Hours

NCE 257 SELECTED EMERGENCY CARE (A,N,R)

1 Credit Hour

Prerequisites: None

First aid plus emergency care of patient with diabetes, epilepsy, fainting, burns, etc.

15 Theory Hours — 15 Contact Hours

NCE 259 AGING PROCESS (A,N,R)

1 Credit Hour

Prerequisites: None

Normal changes in the aging process as well as disease processes. The difficulties in recognizing disease due to multiple pathological factors. Sensory deprivation, social and legislative issues, resources presently available to the elderly, and what's happening in Colorado today with the elderly.

15 Theory Hours — 15 Contact Hours

NCE 260 PEDIATRIC EMERGENCY CARE (A,N,R)

2 Credit Hours

Prerequisites: None

Encompasses common emergencies of childhood (burns, head trauma, poisonings, dehydration, seizures, etc.); current topics of interest (child abuse, Reyes Syndrome, SID); improvement of clinical skills (resuscitation, IV's and psychosocial aspects of pediatric care).

30 Theory Hours — 30 Contact Hours

NCE 265 EMERGENCY CARE (A,N,R)

4 Credit Hours

Prerequisites: None

Accurate patient observation, triage, physical assessment, psychological and scene management and emergency care protocols. Special emphasis is placed upon practical, demonstrated ability to function as an individual and as a member of a team in an emergency situation.

60 Theory Hours — 60 Contact Hours

NCE 266 MANAGEMENT IN LONG TERM CARE (A,N,R)

1 Credit Hour

Prerequisites: None

How to manage and motivate using communication skills, objectively and counseling skills; the purpose of organization structures and job descriptions in relation to sound management; management of patient and personnel problems.

15 Theory Hours — 15 Contact Hours

NCE 267 PATIENT CARE — OPEN HEART SURGERY (A,N,R)

1 Credit Hour

Prerequisites: None

Pre- and post-operative nursing care with emphasis on teaching and psychological support. Review of cardiac diseases requiring surgery and complications encountered. The patient's OR and ICU experience, intra-aortic balloon pump and pacemakers included.

15 Theory Hours — 15 Contact Hours

NCE 268 QUALITY ASSURANCE IN LONG TERM CARE (A,N,R)

1 Credit Hour

Prerequisites: None

Designed to assist nurses to establish nursing audit procedures consistent with current legislation and accreditation. Participants will write audit criteria. Basic components of quality assurance to be identified.

15 Theory Hours — 15 Contact Hours

NCE 269 THE NURSE AND NUTRITION (A,N,R)

1 Credit Hour

Prerequisites: None

Current concepts of normal and therapeutic nutrition applicable to patient care and personal health.

15 Theory Hours — 15 Contact Hours

NCE 270 EMERGENCY DRUGS (A,N,R)

1 Credit Hour

Prerequisites: None

Drugs frequently used in emergency situations — actions, indications and contraindications. Emphasis on application in patient care situations.

15 Theory Hours — 15 Contact Hours

NCE 276 DRUGS AND THE ELDERLY (A,N,R)

1 Credit Hour

Prerequisites: None

Knowledge of drugs, meaning of symptoms, and the alarming spread of toxicities and imbalances produced by improper drug therapy in relation to the physiological and sociological changes that occur with normal aging.

15 Theory Hours — 15 Contact Hours

NCE 277 CARDIOVASCULAR NURSING (A,N,R)

2 Credit Hours

Prerequisites: None

Study of the anatomy, physiology and pathophysiology of the cardiovascular system directed toward increase nursing skills in diagnosis and evaluation of cardiovascular disorders. Nursing assessment and management of patients with cardiovascular disease which may result in acute myocardial infarction, cardiogenic shock, congestive heart failure, stroke and other embolic and hemorrhagic disorders.

30 Theory Hours — 30 Contact Hours

NCE 278 REHABILITATION NURSING (A,N,R)

2 Credit Hours

Prerequisites: None

The role of the rehabilitation nurse; pathophysiology and dysfunction resulting from CVA, brain injury, spinal cord injury and arthritis; hazards of immobility; bladder, bowel and sexual dysfunction; teaching patients; communication; and psycho-social issues.

30 Theory Hours — 30 Contact Hours

NCE 279 IMMUNIZATION LAWS AND CHILD HEALTH (A,N,R)

1 Credit Hour

Prerequisites: None

A look at the new school immunization laws, the epidemiological reasons for the current changes, long range effects on child health, and how immunization programs relate to broader issues of community health.

15 Theory Hours — 15 Contact Hours

NCE 280 NURSING SKILLS (A,N,R)

1 Credit Hour

Prerequisites: None

Lecture and student practice of nursing skills; catheterizations, intravenous therapy, nasogastric intubation, injections and dressings.

15 Theory Hours — 15 Contact Hours

NCE 295 PSYCHOLOGICAL ASPECTS OF PATIENT CARE (A,N,R)

2 Credit Hours

Prerequisites: None

Psychological assessment and intervention of patient care. Includes how to cope with normal and abnormal stress and tension.

30 Theory Hours — 30 Contact Hours

NCE 296 COMMON CHILDHOOD ILLNESSES (A,N,R)

2 Credit Hours

Prerequisites: None

Lecture/Discussion of current Pediatric problems from the body systems approach: gastrointestinal, cardiovascular, etc. The course will focus on the more common pediatric problems seen in practice utilizing input from students.

30 Theory Hours — 30 Contact Hours

NCE 297 STRESS MANAGEMENT FOR NURSES (A,N,R)

1 Credit Hour

Prerequisites: None

Undue stress is unavoidable in our fast-paced life, but it can be a positive force in personal growth. Learn about the nature of stress, how it affects our body and personal goals, and principles of managing stress.

15 Theory Hours — 15 Contact Hours

NCE 298 VITAL ISSUES IN NURSING (A,N,R)

1 Credit Hour

Prerequisites: None

What's happening in nursing today? Nurse Practice Act, 1985 proposal, legal aspects, expanded roles, collective bargaining, nurse's organizations, unionization. Be well informed!

15 Theory Hours — 15 Contact Hours

Nuclear Medicine Technology

NMT 200 CLINICAL APPLICATIONS I (A)

1 Credit Hour

Prerequisites: BIO 111, BIO 112 or equivalent

Designed to introduce the basic methodology of various *in vivo* procedures routinely performed in nuclear medicine departments. Includes specialized anatomy and physiology, criteria for performing the study, and basic protocol for imaging performance.

20 Theory Hours — 20 Contact Hours

NMT 205 STATISTICS OF RADIOACTIVE COUNTING (A)

1 Credit Hour

Prerequisites: MAT 121 or equivalent and NMT 206

Presents the statistical procedures associated with nuclear medicine counting and imaging. Includes indeterminate and determinant errors precision, bias, accuracy, Gaussian and Poisson distributions, standard deviations, error analysis, and optimum distribution of counting times.

15 Theory Hours — 15 Contact Hours

NMT 206 RADIATION PHYSICS FOR NUCLEAR MEDICINE (A)

3 Credit Hours

Prerequisites: MAT 121, PHY 115 or equivalent

Describes the basic principles of atomic and nuclear structure, radioactivity and decay, and interaction of radiation with matter as they relate to nuclear medicine procedures and instrumentation. These principles are prerequisite to continued study in the nuclear medicine technology program.

15 Theory hours — 45 Contact Hours

NMT 207 NUCLEAR MEDICINE INSTRUMENTATION (A)

4 Credit Hours

Prerequisites: NMT 206

Stresses basic scintillation detectors, gas detectors, scintillation spectrometry, well counters, stationary and moving imaging devices, photographic media, calibrators and computers, and quality assurance procedures for all major instrumentation used in nuclear medicine departments.

45 Theory Hours — 23 Lab Hours — 68 Contact Hours

NMT 208 CLINICAL PRACTICUM I (A)

9 Credit Hours

Prerequisites: NMT 206, plus placement in clinical affiliate

Designed to be an introduction to the clinical applications of nuclear medicine theory for the students at the hospital affiliates. Provides the student with the opportunity to develop the skills associated with basic patient care, radiation safety, quality control of nuclear medicine instrumentation and routine imaging procedures performed in nuclear medicine departments. Students are evaluated monthly on the basis of their development of technical proficiency and professionalism. This course requires the attainment of a minimum performance level for satisfactory completion.

15 Theory Hours — 360 Lab Hours

375 Contact Hours

NMT 209 CLINICAL APPLICATIONS II (A)

5 Credit Hours

Prerequisite: NMT 200

An advanced clinical course integrating the anatomy, physiology, pathology, and methodology of routinely performed nuclear medicine studies with the technical performance responsibilities of the nuclear medicine technologist and its relationship to diagnostic quality examinations. Studies of the skeletal, endocrine, respiratory, gastrointestinal, reticuloendothelial, cardiovascular, renal, central nervous, and hematologic systems are covered.

60 Theory Hours — 60 Contact Hours

NMT 210 CLINICAL PRACTICUM II (A)

8 Credit Hours

Prerequisite: NMT 208

Provides the student with the opportunity to develop the skills associated with radiopharmaceutical preparation and quality control, dose distribution, radionuclide accountability, radioassay procedures and quality control, computers in nuclear medicine and cardiovascular nuclear medicine. Requires the attainment of a minimum performance level for satisfactory completion. This clinical experience is scheduled in various clinical affiliations.

360 Lab Hours — 360 Contact Hours

NMT 215 COMPUTERS IN NUCLEAR MEDICINE (A)

3 Credit Hours

Prerequisites: NMT 207 and NMT 210

Provides the basic theory of computer operations, various medical applications of data, and clinical application in the nuclear medicine department. Workshops provide hands-on experience with computerized systems through actual hospital visitations.

45 Theory Hours — 45 Contact Hours

NMT 216 CLINICAL PRACTICUM III (A)

15 Credit Hours

Prerequisite: NMT 210

Provides the student with the opportunity to practice and refine those skills associated with nuclear medicine technology. Where appropriate, students are given an opportunity to specialize in specific areas for a portion of this clinical experience.

680 Lab Hours — 680 Contact Hours

NMT 217 RADIOPHARMACEUTICAL PREPARATIONS (A)

4 Credit Hours

Prerequisites: CHE 101 or equivalent, and NMT 206

Examines the basic theory and practice of radiopharmaceutical preparation and quality control in nuclear medicine. Emphasis is placed on the design and function of radionuclide generators, labeling procedures, sterility and pyrogenicity considerations, and radionuclide and radiochemical quality control procedures.

45 Theory Hours — 23 Lab Hours — 68 Contact Hours

NMT 218 RADIOASSAY PROCEDURES (A)

4 Credit Hours

Prerequisites: CHE 101 or equivalent, NMT 207, NMT 205

Examines the theory of radioassay procedures performed in nuclear medicine departments via radioimmunoassay and competitive protein binding techniques. Emphasizes separation methods, data presentation, troubleshooting and quality control procedures currently utilized in this rapidly developing specialty of nuclear medicine technology. Laboratory experiences reinforce the application of theory to commonly performed tests.

45 Theory Hours — 23 Lab Hours — 68 Contact Hours

Nursing — Auraria Campus**NUR 100 INTRODUCTION TO NURSING (A)**

3 Credit Hours

Prerequisite: Admission to Nursing Program

Explores the philosophy of the nursing program and institutional resources available to assist the student. An occupational overview is provided to identify career options. Attention is given to nutritional needs of healthy adults and application of math skills to computation of hypothetical drug dosages.

45 Theory Hours — 45 Contact Hours

NUR 109 CONCENTRATED NURSING SKILLS (A)

3-9 Credit Hours

Prerequisite: HOC 110, NUR 111

This is a laboratory course designed to reinforce basic nursing care skills in the clinical area. Emphasis is placed on organization, priority setting, assessment and confidence building.

15-45 Theory Hours — 90-270 Lab Hours

105-315 Contact Hours

NUR 110 REVIEW OF NURSING CONCEPTS (A)

2 Credit Hours

Prerequisite: Second semester nursing program or instructor permission

Provides a review of basic nursing care concepts to reinforce job entry or prepare for state practical nurse licensure examination. A seminar approach is used to adjust the course to specific student needs.

30 Theory Hours — 30 Contact Hours

NUR 111 NURSING CONCEPTS I (A)

10 Credit Hours

Prerequisite: NUR 100, BIO 111

Provides an introduction to the fundamentals of patient care and incorporates Maslow's hierarchy of needs, mental health, cultural concepts, nursing process and nursing knowledge basic to care of the patient. Practical nursing care skills are stressed for the patient throughout the life cycle and concepts related to the child rearing families are included. Learning experiences are provided in the college classroom and laboratory and in clinical facilities within the community.

60 Theory Hours — 135 Lab Hours

195 Contact Hours

NUR 112 NURSING CONCEPTS II (A)

14 Credit Hours

Prerequisite: NUR 111, BIO 112

Emphasis in this course continues with Maslow's hierarchy of needs related to health maintenance and common illnesses occurring at various developmental cycles. Focus is also directed toward care by the practical nurse for the child and adult and includes common medical and/or surgical problems. The nursing process and mental health concepts are an integral part of this course. Learning experiences are provided in the college classroom and laboratory and in clinical facilities within the community.

90 Theory Hours — 180 Lab Hours

270 Contact Hours

NUR 115 SOCIALIZATION INTO NURSING I (A)

1 Credit Hour

Prerequisite: NUR 111

Explores the changing trends in nursing with emphasis on the specific legal and ethical implications for the practical nurse. Focus is on the role of the practical nurse as a health team member in the community. Attention is given to skills necessary to seek employment in this new role.

15 Theory Hours — 15 Contact Hours

NUR 120 PSYCHOSOCIAL CONCEPTS IN NURSING (A)

2 Credit Hours

Prerequisite: Graduation from an approved school of practical nursing.

Teaches theory and skills of therapeutic communication and interviewing, therapeutic role of the nurse, ethnicity, spiritual needs, stress and adaptation, mental defense mechanisms, the nursing process, basic concepts of body image and loss, death and dying and common patterns of response to stress.

30 Theory Hours — 30 Contact Hours

NUR 126 NURSING PROCESS: CONCEPTS AND SKILLS (A)

4 Credit Hours

Prerequisite: Graduation from an approved school of practical nursing.

A course designed to review and update basic concepts related to nursing care throughout the developmental cycle. The child-rearing family, medical and surgical problems and common tasks and problems of childhood are emphasized. Nursing process is utilized to identify components of a nursing care study. Specific nursing procedures are assessed.

45 Theory Hours — 23 Lab Hours — 68 Contact Hours



NUR 199 INDEPENDENT STUDY (A)

Variable Credit Hours

Prerequisite: Instructor permission

Provides the opportunity for the student to explore specialty areas of nursing, specific skills, or specialized nursing functions. The learning may be clinical through the utilization of a preceptor, laboratory, or theory research in nature. The student is responsible for writing and implementing objectives specific to learning goals with faculty direction and guidance.

30-90 Theory Hours — 30-180 Lab Hours

30-240 Contact Hours

NUR 201 ADVANCED PHARMACOLOGY (A)

2 Credit Hours

Prerequisite: Level II student or instructor permission

Focuses on the clinical use of drugs and implications for nursing practice. Emphasis is placed on altered absorption, distribution, biotransformation and excretion of drugs. Information is provided to aid in recognition of drug interactions.

30 Theory Hours — 30 Contact Hours

NUR 209 REVIEW OF NURSING PRINCIPLES (A)

2 Credit Hours

Prerequisite: None

Provides a review and synthesis of nursing theory to prepare the student for job readiness.

30 Theory Hours — 30 Contact Hours

NUR 210 ADVANCED NURSING SKILLS (A)

5-15 Credit Hours

Prerequisite: Instructor permission

This is a laboratory course to develop advanced nursing skills designed to follow the basic courses within the nursing program. Students may request this course to gain additional skills in team leading or to be introduced to more complex or specialty areas of nursing practice.

15-45 Theory Hours — 90-270 Lab Hours

105-315 Contact Hours

NUR 211 COMPREHENSIVE NURSING I (A)

12 Credit Hours

Prerequisite: NUR 112 or Advanced Placement Requirements

The two parts of this course are designed to be taken the same semester and built on basic concepts from Level I. Part A utilizes Maslow's hierarchy of needs as an assessment guide to apply the nursing process to plan comprehensive nursing care which meets the needs of adults and children with common emotional and/or behavioral disorders. Emphasis is placed on developmental, cultural and psychosocial needs of the individual. Part B is an advanced course concerned with nursing intervention related to problems occurring throughout the childbearing cycle. Learning experiences occur in the college classroom and laboratory and in clinical facilities within the community.

80 Theory Hours — 150 Clinical Lab Hours

230 Contact Hours

NUR 212 COMPREHENSIVE NURSING II (A)

14 Credit Hours

Prerequisite: NUR 112 or Advanced Placement Requirements

Presents a comprehensive integrated approach to nursing care of adults and children, and is organized around Maslow's hierarchy of needs. The conceptual framework of basic human needs is then applied to Man's life cycle within the context of safety and security, activity and rest, sexual role satisfaction, nutrition, elimination and oxygenation. Learning experiences occur in the college classroom and laboratory and in clinical facilities within the community.

90 Theory Hours — 180 Lab Hours

270 Contact Hours

NUR 214 SOCIALIZATION INTO NURSING II (A)

1 Credit Hour

Prerequisite: NUR 112 or Advanced Placement Requirements

Introduces the student to role responsibilities and dependent and independent functions of the associate degree nurse in the health care delivery system. Focus is given to principles of effective leadership and group member skills for basic nursing care.

15 Theory Hours — 15 Contact Hours

NUR 215 SOCIALIZATION INTO NURSING III (A)

1 Credit Hours

Prerequisite: NUR 214

Focuses on current issues related to legislation, licensure, professional organizations and the relationship of nursing history to current trends in the delivery of health care. Attention is given to the realities and expectations of the new graduate in nursing.

15 Theory Hours — 15 Contact Hours

NUR 259 MEDICAL SURGICAL NURSING SEMINAR (A)

2-4 Credit Hours

Prerequisite: None

Reviews and reinforces nursing theory related to care of the patient with medical or surgical problems.

30-60 Theory Hours — 30-60 Contact Hours

NUR 269 PEDIATRIC NURSING SEMINAR (A)

2-4 Credit Hours

Prerequisite: None

Reviews and reinforces nursing theory related to the care of the pediatric patient. Growth and development are stressed.

30-60 Theory Hours — 30-60 Contact Hours

NUR 279 PSYCHIATRIC NURSING SEMINAR (A)

2-4 Credit Hours

Prerequisite: None

Reviews and reinforces nursing theory related to the care of the patient with emotional and behavioral problems.

30-60 Theory Hours — 30-60 Contact Hours

NUR 289 OBSTETRICAL NURSING SEMINAR (A)

2-4 Credit Hours

Prerequisite: None

Reviews and reinforces nursing theory related to the care of the child bearing family and newborn. Obstetrical problems and related nursing care is emphasized.

30-60 Theory Hours — 30-60 Contact Hours

NUR 299 INDEPENDENT STUDY (A)

Variable Credit Hours

Prerequisite: Instructor permission

Provides the opportunity for the student to explore specialty areas of nursing, specific skills, or specialized nursing functions. The learning may be clinical, through the utilization of a preceptor, laboratory or theory research in nature. The student is responsible for writing and implementing objectives specific to learning goals with faculty direction and guidance.

30-180 Theory and/or Lab Hours

30-180 Contact Hours

**Nursing — North Campus****NUR 101 PHARMACOLOGY I (N)**

2 Credit Hours

Prerequisites: MAT 106 or equivalent

Co-requisite: NUR 105

This course is designed to familiarize the student with the classification of drugs and their anticipated therapeutic effects and adverse reactions. Emphasis is placed upon the action of drugs as they relate to the various body systems. In this course the student will achieve the basic skills necessary to calculate drug dosage.

30 Theory Hours — 30 Contact Hours

NUR 105 BASIC CONCEPTS OF NURSING (N)

6 Credit Hours

Co-requisites: NUR 101, NUR 100, BIO 111

This is an introductory course in the fundamentals of nursing care focusing on assessment of basic needs of the patient and how to meet those needs. Nursing knowledge and skills necessary for safe and accurate delivery of nursing care are stressed. Basic mental health and cultural concepts are introduced. Learning experiences are provided in the college classroom and laboratory and in clinical facilities in the community.

30 Lecture Hours — 45 Lab Hours

45 Clinical Hours — 120 Contact Hours

NUR 106 BASIC CONCEPTS IN FAMILY CENTERED MATERNAL-NEWBORN NURSING (N)

4 Credit Hours

Prerequisite: NUR 105

This is an introductory course in the fundamental nursing care of the pregnant family. Emphasis is placed on the basic needs and nursing care by the practical nurse of the family during pregnancy, integrating basic mental health and cultural concepts. The focus is normal pregnancy, physiological changes occurring during this time and care of the normal newborn. Nursing assessment skills are introduced to facilitate the student's knowledge in comprehending patients' needs, nursing actions and evaluation of outcome. Learning experiences are provided in the college classroom and in clinical facilities in the community.

30 Lecture Hours — 45 Clinical Hours

75 Contact Hours

NUR 107 BASIC CONCEPTS OF NURSING OF CHILDREN (N)

4 Credit Hours

Prerequisite: NUR 105

This is an introductory course which focuses on the role of the practical nurse in meeting the individual needs of the child from infancy through adolescence in health and illness. Beginning assessment in basic growth and development, pathophysiology, nutrition and relevant emotional, cultural and family concepts are integrated throughout. Learning experiences are provided in the college classroom and clinical facilities in the community.

30 Lecture Hours — 45 Clinical Hours

75 Contact Hours

NUR 108 BASIC CONCEPTS OF NURSING OF ADULTS (N)

10 Credit Hours

Prerequisites: NUR 106 or NUR 107, BIO 111

Co-requisites: BIO 112, CIT 115

This is an introductory course designed to prepare the individual for the beginning role of the practical nurse in assessing and meeting the nursing needs of patients with medical/surgical conditions. Emphasis is on the application of knowledge from the sciences, pharmacology, and nutrition as well as continued integration of mental health and cultural concepts. Learning experiences are provided in the college classroom and laboratory and in clinical facilities in the community.

60 Lecture Hours — 14 Lab Hours

124 Clinical Hours — 198 Contact Hours

NUR 109 CONCENTRATED NURSING SKILLS (N)

3-9 Credit Hours

Prerequisite: Instructor permission

This is a laboratory course designed to reinforce basic nursing care skills in the clinical area. Emphasis is placed on organization, priority setting, assessment and confidence building.

15 or 45 Theory Hours — 90 or 202 Lab Hours

105 or 247 Contact Hours

NUR 110 REVIEW OF NURSING CONCEPTS (N)

2 Credit Hours

Prerequisite: Second semester nursing program or instructor permission.

This course provides a review of basic nursing care concepts to reinforce job entry preparation. A seminar approach is used to adjust the course to specific student needs.

30 Theory Hours — 30 Contact Hours

NUR 116 MEDICAL TERMINOLOGY (N)

1 Credit Hour

Prerequisites: None

A study designed to acquaint the student with the origin and structure of medical terms. The intent of this course is to help the student interpret and understand medical terms, reports and therapy requests to his field.

15 Theory Hours — 15 Contact Hours

NUR 130 SOCIALIZATION INTO NURSING I (N)

1 Credit Hour

Prerequisites: NUR 105 and NUR 106 or NUR 107

Co-requisite: NUR 108

This course explores the changing trends in nursing with emphasis on the specific legal and ethical implications for the practical nurse. The focus is on the role of the practical nurse as a health team member in the community.

15 Theory Hours — 15 Contact Hours

NUR 199 INDEPENDENT STUDY (N)

Variable Credit Hours

Prerequisite: Instructor permission

This course provides the opportunity for the student to explore areas of practical nursing, specific skills, or specialized nursing functions. The learning may be clinical through the utilization of a preceptor, laboratory, or independent theory study in nature. The student is responsible for writing his/her own objectives specific to his/her learning goals. Faculty direction and guidance will be provided.

30-90 Theory Hours — 0-180 Lab Hours

30-270 Contact Hours

NUR 201 PHARMACOLOGY II (N)

2 Credit Hours

Prerequisites: NUR 101, NUR 106, NUR 107, NUR 108

Co-requisite: BIO 211

This course focuses on the clinical use of drugs and related implications for nursing practice. Emphasis is placed on altered absorption, distribution, bio-transformation and excretion of drugs. Information is provided to aid in the recognition of drug interactions.

30 Theory Hours — 30 Contact Hours

NUR 206 COMPREHENSIVE CONCEPTS IN FAMILY CENTERED MATERNAL-NEWBORN NURSING (N)

4 Credit Hours

Prerequisites: NUR 106, NUR 107, NUR 108

Co-requisites: NUR 201, NUR 231, BIO 211

This course is a comprehensive study of parent-newborn nursing. The focus is on complications of pregnancy and nursing measures utilized to reduce maternal-infant morbidity and mortality with continued emphasis on normal pregnancy. Knowledge of nursing care, pathophysiology and related symptomatology, emotional, family and cultural needs, and dietary and pharmacologic therapies are integrated. The nursing process utilizing Maslow's hierarchy is applied in the clinical area. The laboratory focus is IV therapy and nasogastric intubation.

20 Lecture Hours — 5 Lecture-Laboratory Hours

45 Clinical Hours — 70 Contact Hours

NUR 207 COMPREHENSIVE NURSING OF CHILDREN (N)

3 Credit Hours

Prerequisites: NUR 106, NUR 107, NUR 108

Co-requisites: NUR 201, NUR 231, PSY 235, BIO 211

This course is a comprehensive study of the needs in health and illness of the total child from birth through adolescence. Nursing care is integrated with principles of growth and development, pathophysiology and related symptoms, emotional, family and cultural needs, and dietary and pharmacology therapies. The nursing process utilizing Maslow's hierarchy is applied in the clinical area.

20 Lecture Hours — 45 Clinical Hours

65 Contact Hours

NUR 208 COMPREHENSIVE NURSING OF ADULTS (N)

6 Credit Hours

Prerequisites: NUR 206, NUR 207

Co-requisites: NUR 201, NUR 231, BIO 211

This course is a comprehensive study of the nursing needs of the adult with medical or surgical conditions integrating principles of nursing care with pathophysiology and related symptoms, emotional, family and cultural needs, and dietary and pharmacologic therapies. The nursing process utilizing Maslow's hierarchy is applied in the clinical area.

30 Lecture Hours — 90 Lab Hours

120 Contact Hours

NUR 209 REVIEW OF NURSING PRINCIPLES (N)

2 Credit Hours

Prerequisites: None

This course is a review and synthesis of nursing theory preparing the student for job readiness.

30 Theory Hours — 30 Contact Hours

NUR 210 ADVANCED NURSING SKILLS (N)

5-15 Credit Hours

Prerequisite: Instructor's permission

This is a laboratory course of advanced nursing skill development designed to follow the basic courses of the nursing program. Students may request this course to gain additional skills in team leading or an introduction to more complex or specialty areas of nursing practice.

90 or 270 Lab Hours

15 or 45 Theory Hours

105 or 315 Contact Hours

NUR 216 COMPREHENSIVE NURSING OF THE EMOTIONALLY ILL (N)

6 Credit Hours

Prerequisites: NUR 208, NUR 231, PSY 235

This course is designed to develop an understanding of the role of the nurse as a member of the mental health team in prevention, crisis situations and care of emotionally ill adults. Basic principles of psychiatric nursing will be studied, building on knowledge previously gained in meeting the bio-psychosocial-cultural needs of ill patients. Dynamics of psychopathology will be emphasized when applying the nursing process in assessing needs and planning patient care. Maslow's hierarchy and Brooks-Nisberg hierarchy will be integrated with nursing process.

45 Lecture Hours — 68 Clinical Hours

113 Contact Hours



NUR 217 COMPREHENSIVE NURSING OF OLDER ADULTS (N)

8 Credit Hours

Prerequisites: NUR 216, BIO 211

Co-requisites: NUR 232, BIO 115

This course is a comprehensive study of the nursing needs of the older adult with medical, surgical and/or psychological disturbances. Principles of nursing care are integrated with pathophysiology and related symptoms, emotional, family and cultural needs, dietary and pharmacologic therapies. Social and health maintenance needs of the older adult, therapeutic relationships and activity, reality and re-motivation therapy are implemented in the nursing home setting. Primary care nursing or team leading are implemented in the hospital experience. The nursing process utilizing Maslow's hierarchy is applied in both clinical areas.

30 Lecture Hours

31 Nursing Home Experience Hours

104 Hospital Experience Hours

NUR 231 SOCIALIZATION INTO NURSING II (N)

1 Credit Hour

Prerequisites: NUR 130, NUR 106, NUR 107, NUR 108

Co-requisites: NUR 206, NUR 207, NUR 208

This course introduces the student to the role responsibilities and dependent and independent functions of the associate degree nurse in the health care delivery system. Focus is given to principles of effective leadership and group member skills for basic nursing.

30 Theory Hours — 30 Contact Hours

NUR 232 SOCIALIZATION INTO NURSING III (N)

1 Credit Hour

Prerequisites: NUR 231, NUR 208

Co-requisites: NUR 216, NUR 217

This course focuses on current issues related to legislation, licensure, professional organizations, and the relationship of nursing history to current trends in delivery of health care. Attention is given to realities and expectations of the new graduate in nursing.

30 Theory Hours — 30 Contact Hours

NUR 259 MEDICAL SURGICAL NURSING SEMINAR (N)

2-4 Credit Hours

Prerequisites: None

This course is designed to review and reinforce nursing theory related to care of the patient with medical or surgical problems.

30-60 Theory Hours — 30-60 Contact Hours

NUR 269 PEDIATRIC NURSING SEMINAR (N)

2-4 Credit Hours

Prerequisites: None

This course is designed to review and reinforce nursing theory related to the care of the pediatric patient. Growth and development are stressed.

30-60 Theory Hours — 30-60 Contact Hours

UR 279 PSYCHIATRIC NURSING SEMINAR (N)

4 Credit Hours

Prerequisites: None

This course is designed to review and reinforce nursing theory related to the care of the patient with emotional and behavioral problems.

0-60 Theory Hours — 30-60 Contact Hours

UR 289 OBSTETRICAL NURSING SEMINAR (N)

4 Credit Hours

Prerequisites: None

This course is designed to review and reinforce nursing theory related to the care of the child bearing family and newborn. Obstetrical problems and related nursing care are emphasized.

0-60 Theory Hours — 30-60 Contact Hours

UR 299 INDEPENDENT STUDY (N)

Variable Credit Hours

Prerequisite: Instructor's permission

This course provides the opportunity for the student to explore specialty areas of nursing, specific skills, or specialized nursing functions. The learning may be clinical through the utilization of a preceptor, laboratory or independent theory study in nature. The student is responsible for writing his/her own objectives specific to his/her learning goals. Faculty direction and guidance will be provided.

Optometric Assisting**OPA 100 OCULAR ANATOMY, PHYSIOLOGY AND PATHOLOGY (N)**

1 Credit Hours

Prerequisite: Admission to Optometric Assisting Program.

A study of surface and intraocular anatomy, relation to and function of each part to the other, common disorders, diseases and abnormal conditions of the eye. An overview of basic anatomical structures of man and functioning of the various components, particularly the pathological conditions directly affecting the eye, will be included.

.5 Theory Hours — 45 Contact Hours

OPA 105 VISUAL SCIENCE, OPTICS AND FUNDAMENTALS OF FRAME MECHANICS (N)

1 Credit Hours

Prerequisite: Concurrent enrollment in OPA 100

Properties of light, glass, plastic, single vision, multi-focal, photochromic, tinted, absorptive, impact resistant and low vision lenses. Use of the lensometer, Geneva lens measure, calipers, interpupillary measurements, review of metric system and introduction to frame mechanics will be included.

.5 Theory Hours — 45 Lab Hours — 90 Contact Hours

OPA 106 PRELIMINARY EXAMINATION TECHNIQUES (N)

4 Credit Hours

Prerequisite: Concurrent enrollment in OPA 105

Lecture and lab in basic terminology, visual acuities, cover test, color vision, keystone skills, depth perception (stereopsis), case histories, fields, chairside assisting and related equipment.

45 Theory Hours — 23 Lab Hours — 68 Contact Hours

OPA 107 OPTOMETRIC OFFICE MANAGEMENT (N)

4 Credit Hours

Prerequisites: SEC 101 or BSI 126 or equivalent.

Review of writing skills related to the optometric office. Use of office equipment, record-keeping procedures, patient control, proper telephone techniques, appointment scheduling, mail and recall systems, fees, finance, credit procedures, filing methods, insurance forms, resume and job-seeking skills will be covered. A brief history of the profession, code of ethics, and legal implications to be included.

60 Theory Hours — 60 Contact Hours

OPA 108 FACIAL ANALYSIS — FRAME SELECTION AND ADJUSTMENT (N)

2 Credit Hours

Prerequisite: Concurrent enrollment in OPA 109.

Study of facial structures with subsequent frame selection and adjustment. Minor frame repair and use of related equipment included.

30 Theory Hours — 30 Contact Hours

OPA 109 CONTACT LENSES (N)

5 Credit Hours

Prerequisites: OPA 105 and OPA 106

Continuation of OPA 105 with emphasis on contact lenses, modification, care and handling procedures, auxiliary solutions, insertion, removal and centering techniques. Use of the related equipment included.

45 Theory Hours — 45 Lab Hours — 90 Contact Hours

OPA 110 PHARMACOLOGY — EMERGENCY MEASURES FOR OPTOMETRIC ASSISTANTS (N)

2 Credit Hours

Prerequisites: OPA 100 and OPA 106

Designed to familiarize the student with pharmacologic agents common to the eye care field, and their application and common emergency situations, the planning and immediate responses required.

30 Theory Hours — 30 Contact Hours

OPA 115 OPTOMETRIC CLINICAL PRACTICUM (N)

8 Credit Hours

Prerequisites: ENG 106, SEC 101 or BSI 126, OPA 106, OPA 107

Through placement in a professional office or clinic, the student is provided the opportunity to perform the duties of an assistant under the direct supervision of a qualified assistant or optometrist.

60 Skill Lab Hours

240 Clinical Hours — 300 Contact Hours

OPA 116 CLINICAL SEMINAR (N)

1 Credit Hour

Prerequisite: Concurrent enrollment in OPA 115

Clarification of clinical learning experiences through discussion and lab.

15 Theory and Lab Hours — 15 Contact Hours

OPA 117 INTRODUCTION TO OPTOMETRICS (N)

1 Credit Hour

Prerequisites: None

A course designed to introduce the student to optometric terminology and the characteristics of the visual care field today.

15 Theory Hours — 15 Contact Hours

Paralegal**PAR 100 INTRODUCTION TO PARALEGAL (A)**

3 Credit Hours

Prerequisites: None

Designed primarily for those students interested in becoming a paralegal with emphasis on career options, legal concepts and terminology and basic techniques and functions of the paralegal.

45 Theory Hours — 45 Contact Hours

PAR 105 TORTS (A)

3 Credit Hours

Prerequisites: None

Introduces basic area of law dealing with civil (as opposed to criminal) wrongs, with emphasis on the area of negligence law.

30 Theory Hours — 23 Lab Hours — 53 Contact Hours

PAR 106 CONTRACTS (A)

3 Credit Hours

Prerequisites: None

Introduces the basic area of contracts, with special emphasis on the preparation of contracts.

30 Theory Hours — 23 Lab Hours — 53 Contact Hours

PAR 107 LEGAL RESEARCH (A)

3 Credit Hours

Prerequisites: None

Examines the location and interpretation of federal, state and local statutes and ordinances with emphasis on locating relevant case law interpretations of this legislation. Use of law libraries is emphasized.

30 Theory Hours — 23 Lab Hours — 53 Contact Hours

PAR 108 CIVIL PROCEDURES (A)

3 Credit Hours

Prerequisites: None

An intensive study of the Colorado Rules of Civil Procedure and their importance in the processing of cases through the court system. Emphasis is on drafting relevant forms arising from these rules.

30 Theory Hours — 23 Lab Hours — 53 Contact Hours

PAR 109 PROPERTY (A)

3 Credit Hours

Prerequisites: None

Emphasizes drafting of forms for partnership agreements, real estate transactions, procedures relevant subdivision requirements and other requirements of real estate law practice.

30 Theory Hours — 23 Lab Hours — 53 Contact Hours

PAR 110 BUSINESS ORGANIZATIONS (A)

3 Credit Hours

Prerequisites: None

Introduces the law of sole proprietorships, partnership and corporations, with emphasis on drafting the numerous documents inherent in corporate law practice.

30 Theory Hours — 23 Lab Hours — 53 Contact Hours

PAR 115 DOMESTIC RELATIONS (A)

3 Credit Hours

Prerequisites: None

Deals with standard legal problems of marriage including dissolution of marriage, dependent and neglected children, children in need of supervision, adoptions, etc.

30 Theory Hours — 23 Lab Hours — 53 Contact Hours

PAR 116 COMMERCIAL LAW (A)

3 Credit Hours

Prerequisites: None

Deals with Colorado law of sales and secured transactions with emphasis on Uniform Commercial Code. Forms and documents dealing with these areas will also be covered in detail.

30 Theory Hours — 23 Lab Hours — 53 Contact Hours

PAR 117 CONSTITUTIONAL LAW (A)

3 Credit Hours

Prerequisites: None

Introduces state and federal constitutional law and principles and individual guarantees against governmental or private action. Individual rights are emphasized.

30 Theory Hours — 23 Lab Hours — 53 Contact Hours

PAR 118 CRIMINAL LAW AND PROCEDURE (A)

3 Credit Hours

Prerequisites: None

Covers criminal law theory, construction and interpretation of criminal law statutes, various categories of criminal offenses and process of criminal justice, investigation, arrest, trial and judgment.

30 Theory Hours — 23 Lab Hours — 53 Contact Hours

PAR 119 PROBATE (A)

3 Credit Hours

Prerequisites: None

Emphasizes drafting wills, settling estates, trusts, and tax considerations involved in each of these areas.

30 Theory Hours — 23 Lab Hours — 53 Contact Hours

PAR 120 OFFICE PROCEDURES (A)

3 Credit Hours

Prerequisites: None

Teaches the paralegal such skills as timekeeping, management controls, client files, checklists, and other skills necessary to keep any law firm operating efficiently.

30 Theory Hours — 23 Lab Hours — 53 Contact Hours

AR 125 TAX LAW

Credit Hours

Prerequisites: None

Introduces Internal Revenue Code rules and regulations, forms, and special tax problems relating to property and inheritance. Deals with mechanics, not theory, of tax law.

0 Theory Hours — 23 Lab Hours — 53 Contact Hours

AR 126 CREDITOR / DEBTOR / BANKRUPTCY (A)

Credit Hours

Prerequisites: None

Examines creditor's rights with emphasis on prejudgment and judgment remedies. Emphasis also on bankruptcy procedures.

0 Theory Hours — 23 Lab Hours — 53 Contact Hours

AR 127 EVIDENCE (A)

Credit Hours

Prerequisites: None

Introduces the Rules of Evidence and covers the methodology of interviewing witnesses, investigating and marshalling of evidence for trial of cases.

0 Theory Hours — 23 Lab Hours — 53 Contact Hours

AR 128 ENVIRONMENTAL AND NATURAL RESOURCE LAW (A)

Credit Hours

Prerequisites: None

Introduces new field of environmental law, with attention to mineral rights law, water law, land-use litigation, public and private interest questions, tax questions and other related areas.

0 Theory Hours — 23 Lab Hours — 53 Contact Hours

AR 129 ADMINISTRATIVE LAW (A)

Credit Hours

Prerequisites: None

Introduces the Rule of Administrative Agencies and daily operating procedures of agencies, plus how the paralegal can work within these various agency structures.

0 Theory Hours — 23 Lab Hours — 53 Contact Hours

AR 130 REAL ESTATE AND LAND USE LAW (A)

Credit Hours

Prerequisites: None

Emphasizes the methods of utilization of land with regard to land planning, development financing. Methods of appraisal will be studied, together with tax problems relating to real estate.

0 Theory Hours — 23 Lab Hours — 53 Contact Hours

AR 207 LEGAL RESEARCH SEMINAR I (A)

Credit Hours

Prerequisite: PAR 107

Continued utilization of research techniques learned in AR 109. Emphasis placed upon student's ability to brief cases and write legal memoranda.

5 Theory Hours — 45 Contact Hours

PAR 208 LEGAL RESEARCH SEMINAR II (A)

3 Credit Hours

Prerequisite: PAR 107

Continues the use of techniques learned in PAR 109, and Legal Research Seminar I.

45 Theory Hours — 45 Contact Hours

PAR 210 PARALEGAL WORKSHOP (A)

6 Credit Hours

Prerequisite: Completion of 15 credit hours of PAR courses.

Places students in working situations involving areas of specialty.

90 Lab Hours — 90 Contact Hours

PAR 219 PARALEGAL SEMINAR (A)

3 Credit Hours

Prerequisite: Any 100 level PAR course.

Brings together a focus in general paralegal skills, and reviews crucial functions in the general paralegal field.

30 Theory Hours — 23 Lab Hours — 53 Contact Hours

**Petroleum Technology —
Exploration / Production****PET 105 PETROLEUM INDUSTRY (R)**

3 Credit Hours

Prerequisite: None

History, role and importance of technicians, energy spectrum and relationship to environment, world energy policies, petroleum economics, petroleum accumulation, drilling, completion, production, secondary recovery, transportation, refining, oil shale, coal gasification, and liquification.

45 Theory Hours — 45 Contact Hours

PET 106 GEOLOGICAL (MAP) DRAFTING I (R)

6 Credit Hours

Prerequisite: None

Introduction; role of illustrations, lettering, geometric constructions, orthographic projections, isometric projections, descriptive geometry (introduction), topographic maps: scales, projections, symbols, contouring, drafting practices, scribing, and posting.

30 Theory Hours — 90 Lab Hours

120 Contact Hours

PET 107 PETROLEUM EXPLORATION LAB I (R)

6 Credit Hours

Prerequisite: PET 107

Reading geological maps, presentation of prospects, leasing (sources, bids, formouts), well log (basic graphical presentation).

30 Theory Hours — 90 Lab Hours

120 Contact Hours

PET 108 GEOPHYSICAL CONCEPTS (R)

3 Credit Hours

Prerequisite: EAS 101

Magnetometer, gravity, seismic, resistivity, magnetotellurics, remote sensing, well logging analysis (basic), geophysical field methods.

45 Theory Hours — 45 Contact Hours

PET 205 GEOLOGICAL DRAFTING II (R)

6 Credit Hours

Prerequisite: PET 106

History, kinds of maps, sources, geological principles and terminology, descriptive geometry, geological maps: reproduction techniques, coloring, posting, symbols, x-sections, subsurface mapping, reproduction and office practices.

30 Theory Hours — 90 Lab Hours

120 Contact Hours

PET 206 LAND AND LEGAL ASPECTS (R)

3 Credit Hours

Prerequisite: Consent of instructor

Leasing, spacing, depletion allowance unitization and forced pooling, taxation (capital, tangibles, intangibles), IRS, records, risks. Titles, agreements, state, federal and Indian regulations, environmental problems.

45 Theory Hours — 45 Contact Hours

PET 207 PETROLEUM EXPLORATION LAB II (R)

6 Credit Hours

Prerequisite: PET 107

Data gathering, basic data evaluation, complete presentation of prospect.

30 Theory Hours — 90 Lab Hours

120 Contact Hours

PET 208 HYDROCARBON ACCUMULATION (R)

3 Credit Hours

Prerequisite: None

Source rock, subsurface geology, structural geology, petroleum traps.

45 Theory Hours — 45 Contact Hours

PET 209 EXPLORATION CASE STUDIES (R)

3 Credit Hours

Prerequisite: Fourth semester student

Case studies in exploration from initial concept to final results.

45 Theory Hours — 45 Contact Hours

PET 215 PETROLEUM PRODUCTION I (R)

6 Credit Hours

Prerequisite: Consent of instructor

Desk procedures for the technician in: petroleum reservoir characteristics, porosity, permeability, gas behavior, phase relationships, reservoir management, properties of porous media.

60 Theory Hours — 45 Lab Hours

105 Contact Hours

PET 216 PETROLEUM PRODUCTION II (R)

6 Credit Hours

Prerequisite: Consent of instructor

Desk procedures for the technician in: drilling, safety, mud logging, casing and tubing, cementing, perforating, drilling fluid behavior, well log analysis (basic).

60 Theory Hours — 45 Lab Hours

105 Contact Hours

PET 217 PETROLEUM PRODUCTION III (R)

6 Credit Hours

Prerequisite: Consent of instructor

Desk procedures for the technician in: production flowing well, pumping well, treatment on lease location, environmental considerations, gas list, decline curves, secondary and tertiary recovery.

60 Theory Hours — 45 Lab Hours

105 Contact Hours

PET 218 PETROLEUM ECONOMICS (R)

3 Credit Hours

Prerequisite: Fourth Semester Student

Elementary definition and discussion of: interest, present worth, pay out, rate of return, depreciation, royalties, budgets, farmouts, effects of regulatory agencies, cost of environmental considerations, discounted cash flow, petroleum in world economy.

45 Theory Hours — 45 Contact Hours

PET 219 PETROLEUM COMPANY PROCEDURES (R)

3 Credit Hours

Prerequisite: Consent of instructor

Terminology and abbreviations, taking and sending drilling reports, lease and rental procedures, plotting well and lease locations.

45 Theory Hours — 45 Contact Hours

PET 299 INDEPENDENT STUDY (R)

3 Credit Hours

Prerequisite: Consent of instructor

Petroleum related topics selected by student-instructor.

90 Contact Hours

Physical Education**PHE 100 GROUP ACTIVITIES (N,R)**

1 Credit Hour

Prerequisites: None

Coed participation in soccer, volleyball, softball, basketball, water activities and outdoor activities.

PHE 101 FIRST AID (N,R)

2 Credit Hours

Prerequisites: None

The standard American Red Cross first aid course. The standard American Red Cross certificate (card) will be given on satisfactory completion of the course.

PHE 102 ADVANCED FIRST AID (N,R)

2 Credit Hours

Cardio-Pulmonary Resuscitation (or valid American Red Cross card).

PHE 105 GROUP ACTIVITIES, WOMEN (N,R)

1 Credit Hour

Prerequisites: None

Participation in activities designed to improve physical fitness and to improve skills in various team sports.

HE 106 HORSEMANSHIP (N,R)

Credit Hour
 rerequisites: None
 beginning instruction in western style riding and horsemanship.

HE 107 CANOEING (N,R)

Credit Hour
 rerequisites: None
 basic strokes of canoeing, principles of water safety and self-rescue.

HE 111 BEGINNING ARCHERY (N,R)

Credit Hour
 rerequisites: None
 basic skills and techniques including target competition and field shooting, equipment and terminology.

HE 112 INTERMEDIATE ARCHERY (N,R)

Credit Hour
 rerequisites: None
 continuation of PHE 111 with emphasis on advanced skills in shooting.

HE 121 BEGINNING BOWLING (N,R)

Credit Hour
 rerequisites: None
 basic skills and techniques of bowling.

HE 122 INTERMEDIATE BOWLING (N,R)

Credit Hour
 rerequisites: None

HE 131 BEGINNING GOLF (N,R)

Credit Hour
 rerequisites: None
 introduction to golf, its origin and development, with emphasis on basic skills and techniques.

HE 132 INTERMEDIATE GOLF (N,R)

Credit Hour
 rerequisites: PHE 131
 advanced skills in golf.

HE 141 BEGINNING SWIMMING (N,R)

Credit Hour
 rerequisites: None
 basic fundamentals of swimming, includes basic crawl, elementary backstroke and life support.

HE 142 INTERMEDIATE SWIMMING (N,R)

Credit Hour
 rerequisites: None
 side stroke, elementary backstroke, surface dives, underwater swimming and endurance of crawl.

HE 143 ADVANCED SWIMMING (N,R)

Credit Hour
 rerequisites: None
 advanced skills and review of swim strokes, trudgen crawl, butterfly and diving.

PHE 144 SENIOR LIFESAVING (N,R)

1 Credit Hour
 Prerequisites: PHE 143 or pass pre-test
 Advanced lifesaving course including self survival, rescue techniques and general first aid.

PHE 145 WATER SAFETY INSTRUCTOR CERTIFICATION (N,R)

1 Credit Hour
 Prerequisites: Advanced swimming and senior lifesaving or current advanced lifesaving certificate.
 Methods of teaching water safety skill analysis and correction. Course leads to American Red Cross instructor certification.

PHE 146 SCUBA DIVING (N,R)

1 Credit Hour
 Prerequisites: None
 Basic instruction and skills in scuba diving. Aqua charges will be required for participants in this class and individuals must furnish own scuba diving equipment or rent.

PHE 151 BEGINNING TENNIS (N,R)

1 Credit Hour
 Prerequisites: None
 Techniques and skills along with rules and regulations of the game.

PHE 152 INTERMEDIATE TENNIS (N,R)

1 Credit Hour
 Prerequisites: None
 Advanced skills, team play and game strategy.

PHE 153 ADVANCED TENNIS (N,R)

1 Credit Hour
 Prerequisites: None
 Individual competition and team play.

PHE 160 SOCIAL DANCING (N)

1 Credit Hour
 Prerequisites: None
 Introduction to social dancing and various dance formations and rhythms.

PHE 161 BEGINNING COLLEGIATE DANCE (N,R)

1 Credit Hour
 Prerequisites: None
 Exercises fundamental to theatrical dancing.

PHE 162 BEGINNING COLLEGIATE DANCE (N,R)

1 Credit Hour
 Prerequisites: None
 Theatrical dancing with level step combinations.

PHE 165 SQUARE AND FOLK DANCE (N,R)

1 Credit Hour
 Prerequisites: None
 Introduction to various customs and traditions of square and folk dance. Emphasis on basic steps, rhythms and structure of these dances.

PHE 166 ICE SKATING (N,R)

1 Credit Hour
 Prerequisites: None
 Basic instruction and skills of ice skating.

PHE 170 CROSS-COUNTRY SKIING (N,R)

1 Credit Hour

Prerequisites: None

Skills and techniques for cross-country skiing.

PHE 171 BEGINNING SKIING (N,R)

1 Credit Hour

Prerequisites: None

Basic techniques and skills for beginning skiing.

PHE 172 INTERMEDIATE SKIING (N,R)

1 Credit Hour

Prerequisites: None

Continuation of PHE 171.

PHE 173 ADVANCED SKIING (N,R)

1 Credit Hour

Prerequisites: None

Biomechanics of skiing. Parallel, wedin, racing and free style introduction.

PHE 175 SKI INSTRUCTION CERTIFICATION (R)

3 Credit Hours

Prerequisites: None

Preparation for teaching skiing. Includes (a) teaching methodology, (b) A.T.M. sequence, (c) biomechanics, (d) racing free style, (e) ski tuning and maintenance.

PHE 191 BEGINNING SELF DEFENSE (N,R)

1 Credit Hour

Prerequisites: None

Basic skills and techniques on the art of self defense.

PHE 192 INTERMEDIATE SELF DEFENSE (N,R)

1 Credit Hour

Prerequisites: None

Advanced skills and techniques.

PHE 193 ADVANCED SELF DEFENSE (N,R)

1 Credit Hour

Prerequisites: Intermediate self defense.

Emphasis on perfection of self defense movement.

**PHE 200 PHYSICAL EDUCATION IN THE
ELEMENTARY SCHOOL (N,R)**

2 Credit Hours

Prerequisites: None

Theory and techniques involved in teaching elementary school physical education. Includes study of activity areas, program development and organization of learning activities.

PHE 201 BEGINNING MARTIAL ARTS (R)

2 Credit Hours

Prerequisites: None

The history, philosophy, religion, psychology and skills of the martial arts of Karate, Judo, Ju-jitsu, Aikido, and Kendo.

PHE 202 INTERMEDIATE MARTIAL ARTS (R)

1 Credit Hour

Prerequisites: None

Continuation of PHE 201.

PHE 203 ADVANCED MARTIAL ARTS (R)

1 Credit Hour

Prerequisites: None

Continuation of PHE 202.

**PHE 205 INTRODUCTION TO PHYSICAL
EDUCATION (N,R)**

1 Credit Hour

Prerequisites: None

Orientation to history of physical education, objectives, opportunities in the field, professional organizations and literature available.

PHE 206 PHYSICAL EDUCATION ACTIVITIES (N,R)

2 Credit Hours

Prerequisites: None

Instruction and teaching techniques of sports.

PHE 207 PHYSICAL FITNESS FOR WOMEN (N,R)

2 Credit Hours

Prerequisites: None

Fitness program, emphasis on theory of exercise, fundamental movements, body mechanics and health.

PHE 208 PHYSICAL FITNESS FOR MEN (N,R)

2 Credit Hours

Prerequisites: None

Lecture and laboratory course with emphasis on body conditioning, theory of exercise and actions needed to work muscle groups.

**PHE 209 RULES AND MECHANICS OF
OFFICIATING (N,R,AEC)**

2 Credit Hours

Prerequisites: None

Study of rules and mechanics of officiating in group sports.

PHE 211 BEGINNING CONDITIONING (N,R)

1 Credit Hour

Prerequisites: None

Basic program of body conditioning to meet individual needs.

PHE 212 INTERMEDIATE CONDITIONING (N,R)

1 Credit Hour

Prerequisites: None

Continuation of PHE 211.

PHE 251 BEGINNING YOGA (N,R)

1 Credit Hour

Prerequisites: None

Meditation techniques and proper breathing to relax mind and body.

PHE 252 INTERMEDIATE YOGA (N,R)

1 Credit Hour

Prerequisites: None

Intermediate skills and techniques of meditation along with learning to relax the mind and body.

PHE 253 ADVANCED YOGA (N,R)

1 Credit Hour

Prerequisites: None

Concepts of Eastern training of body, mind and spirit through physical culture.

PHE 260 TUMBLING (N,R)

1 Credit Hour

Prerequisites: None

Skill progressions and teaching of stunts and tumbling.

PHE 261 BALLET (N,R)

1 Credit Hour

Prerequisites: None

Emphasis on exercise fundamentals of ballet.

PHE 262 BALLET (N,R)

1 Credit Hour

Prerequisites: None

Continuation of beginning ballet.

PHE 265 GYMNASTICS (R)

1 Credit Hour

Prerequisites: None

Skills, teaching techniques and progression of gymnastics.

PHE 291 ADAPTIVE PHYSICAL EDUCATION (R)

2 Credit Hours

Prerequisites: None

Conditioning involving vascular improvement, weight control, balance and body image.

PHE 292 TECHNIQUES OF ADAPTIVE PHYSICAL EDUCATION (R)

2 Credit Hours

Prerequisites: None

Continuation of PHE 291.

PHI 115 SOCIAL AND POLITICAL PHILOSOPHY (A,R,AEC)

3 Credit Hours

Prerequisites: None

Examines the arguments, values and ideas man uses to explain, criticize and change his society and culture.

45 Contact Hours

PHI 121 EASTERN PHILOSOPHIES (A,R,AEC)

3 Credit Hours

Prerequisites: None

An analysis of the great religions of the Far East, including Hinduism, Buddhism, Confucianism and Taoism.

45 Contact Hours

PHI 122 WESTERN PHILOSOPHIES (A,R,AEC)

3 Credit Hours

Prerequisites: None

Analysis of the great religions of the Middle East and Western Civilization, including Judaism, Christianity and Islam.

45 Contact Hours

PHI 190 AMERICAN PHILOSOPHY (A)

3 Credit Hours

Prerequisites: None

Draws on those currents of thought which shaped the American mind and values throughout the history of the American people. Includes discussion of the Myths of the American Adam, Salvation and Success, America as the chosen people, American Taboo, etc.

45 Contact Hours

PHI 221 ETHICS AND VALUES (A,N,R,AEC)

3 Credit Hours

Prerequisites: None

A comprehensive consideration of the "good life," of the knowledge and values that can be used in the endeavor to master the problems and possibilities of the contemporary human situation.

45 Contact Hours

PHI 222 CONTEMPORARY MORAL ISSUES (A,R,AEC)

3 Credit Hours

Prerequisites: None

Ethical and value considerations of vital current moral issues.

45 Contact Hours

PHI 230 LOGIC (A,N,R,AEC)

3 Credit Hours

Prerequisites: None

The principles of logic applied to the problems and realities encountered in the practical realms of daily life.

45 Contact Hours

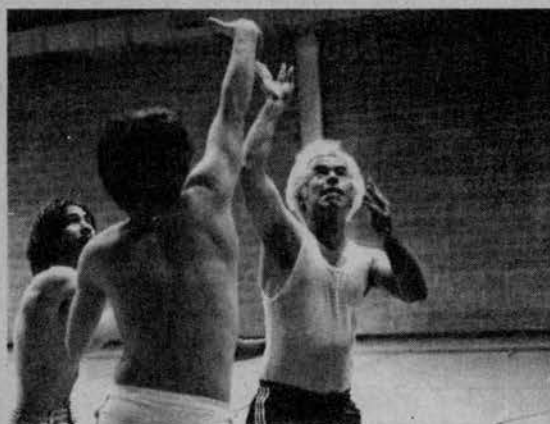
PHI 260 PHILOSOPHIES OF EDUCATION (A,AEC)

3 Credit Hours

Prerequisites: None

Examines the philosophical role of education in society.

45 Contact Hours

**Philosophy****PHI 111 INTRODUCTION TO PHILOSOPHY (A,N,R,AEC)**

3 Credit Hours

Prerequisites: None

A study of the significant questions of the human enterprise with consideration given to human nature and existence, theories of knowledge and reality, freedom, the good life, and religion.

45 Contact Hours

Photography

PHO 100 FUNDAMENTALS OF PHOTOGRAPHY (A)

4 Credit Hours

Prerequisites: None

Introduction to basic black and white techniques — seeing with the camera, camera types, films and exposure, negative processing, enlargers, print finishing and mounting. Emphasis upon sound camera and darkroom techniques producing good negatives and prints, developing a personal awareness of expression and communication through the medium of photography.

32 Theory Hours — 48 Lab Hours — 80 Contact Hours

PHO 105 ADVANCED PHOTOGRAPHY (A)

4 Credit Hours

Prerequisite: PHO 100 Fundamentals of Photography

Introduction to professional quality techniques — the zone system, the view camera, photographic chemistry, proper use of the light meter, how to produce a professional quality black and white print. Emphasis upon practical testing and application of the technical controls which augment expression.

32 Theory Hours — 48 Lab Hours — 80 Contact Hours

PHO 106 FUNDAMENTALS OF COLOR PHOTOGRAPHY (A)

4 Credit Hours

Prerequisite: PHO 100 Fundamentals of Photography

Introduction to color theory, the nature of light and light sources, the reproduction of color, color films, processing. Emphasis upon building individual experience with color transparency films and potential expression through color photography.

32 Theory Hours — 48 Lab Hours — 80 Contact Hours

PHO 107 HISTORY OF PHOTOGRAPHY (A)

4 Credit Hours

Prerequisites: None

A survey of the history of photography from its beginnings to the present. Special emphasis is placed on individual photographers who have made significant contributions to the field. The course will include working photographic assignments which will relate to the technical, commercial, stylistic and innovative developments studied.

32 Theory Hours — 48 Lab Hours — 80 Contact Hours

PHO 200 ADVANCED COLOR PHOTOGRAPHY (A)

4 Credit Hours

Prerequisite: PHO 106 Fundamentals of Color Photography

Introduction to color printing, the nature of photographic color paper, how to make your own standard negative, the use of modern color enlarger and color analyzer, print processing and finishing. Emphasis upon sound procedures and principles as well as experimental techniques that offer greatest freedom of expression through the color print.

32 Theory Hours — 48 Lab Hours — 80 Contact Hours

PHO 205 DOCUMENTARY PHOTOGRAPHY (A)

4 Credit Hours

Prerequisites: PHO 105 Advanced Photography; PHO 106 Fundamentals of Color Photography
Study in the application of photography, as a documentary medium, including the photo essay, photo journalism, and social commentary. Course will include practical assignments in photography for publication and display.

32 Theory Hours — 48 Lab Hours — 80 Contact Hours

PHO 206 PORTRAIT PHOTOGRAPHY (A)

4 Credit Hours

Prerequisites: PHO 105 Advanced Photography; PHO 106 Fundamentals of Color Photography

Introduction to professional techniques in portraiture; the use of studio and natural light, creative and technical controls, as well as stylistic conventions and creative possibilities. Emphasis will include business practices, and how to produce a professional-quality portrait.

32 Theory Hours — 48 Lab Hours — 80 Contact Hours

PHO 207 COMMERCIAL PHOTOGRAPHY (A)

4 Credit Hours

Prerequisites: PHO 105 Advanced Photography; PHO 106 Fundamentals of Color Photography.

An overview of current applications of professional photography in the areas of advertising illustration, editorial, architectural, fashion, and industrial photography. Special emphasis will be given to sound business practices as well as professional quality through a mastery of the equipment and materials.

32 Theory Hours — 48 Lab Hours — 80 Contact Hours

PHO 208 ENVIRONMENTAL PHOTOGRAPHY (A)

4 Credit Hours

Prerequisites: PHO 105 Advanced Photography; PHO 106 Fundamentals of Color Photography

A program of study in the necessary photographic techniques for working with landscapes, natural forms, the qualities of natural light, as well as the purpose and application of environmental photographs. The class includes field trips, demonstrations and individual print critiques on the assignments.

32 Theory Hours — 48 Lab Hours — 80 Contact Hours

PHO 209 THE ART OF PHOTOGRAPHY (A)

4 Credit Hours

Prerequisites: PHO 105 and PHO 106

A course designed to develop the individual's awareness in the creative aspects of photography; composition, photographic seeing, elements of design, visualization and photographic communication. Emphasis will be given to studying different styles, methods of working and individual contributions of various photographers. The purpose of the course is to lead the student to see the potential of photography as the outer expression of inner growth.

32 Theory Hours — 48 Lab Hours — 80 Contact Hours

Physics

PHY 100 BASIC PHYSICS (N)

3 Credit Hours

Prerequisite: MAT 101 or equivalent

This course teaches basic understanding of the laws of physics. Emphasis is on critical thinking skills which allow the student to apply the laws to a wide variety of fields. Applications are illustrated by demonstrations and simple hands-on exercises which involve careful observation, measurement, analysis, and interpretation of phenomena, allowing the student to draw conclusions based on the laws of physics. In addition, the student learns problem solving techniques in which the basic laws are applied in various simple logical or mathematical ways. A variety of media such as strobe photography, diagrams, graphs and films are used to reinforce understanding of the basic laws and their applications. Topics covered include force, laws of motion, energy, heat, nature of materials, waves, electricity and magnetism.

30 Theory Hours — 60 Contact Hours

PHY 101 FUNDAMENTALS OF PHYSICS I (A,N,R)

3 Credit Hours

Prerequisite: MAT 106 or consent of instructor.

Introduces basic physics with an emphasis on concepts and applications. (Class meetings will include lectures, demonstrations, and participatory learning experiences). Topics will include motion, atomic properties of matter and heat.

15 Theory Hours — 45 Contact Hours

PHY 102 FUNDAMENTALS OF PHYSICS II (A,N,R)

3 Credit Hours

Prerequisite: MAT 106 or consent of instructor

Continues PHY 101, emphasizing topics in sound, electromagnetism, and light. Mechanics will be briefly reviewed so that students may take this as a first course in physics.

15 Theory Hours — 45 Contact Hours

PHY 103 FUNDAMENTALS OF PHYSICS III (A,N,R)

3 Credit Hours

Prerequisite: PHY 101 or PHY 102 or consent of instructor

Continues PHY 102, emphasizing topics in atomic and nuclear physics, astrophysics and relativity.

15 Theory Hours — 45 Contact Hours

PHY 105 PHYSICAL SCIENCE AND LIVING SYSTEMS (A)

3 Credit Hours

Prerequisite: MAT 106 or consent of instructor

A nonmathematical course emphasizing topics in the physical sciences that are pertinent to students in the health technologies. Emphasizes mechanics, electromagnetism, radiation and their effects on organisms.

30 Theory Hours — 45 Lab Hours — 75 Contact Hours

PHY 115 INTRODUCTION TO MEDICAL PHYSICS (A)

3 Credit Hours

Prerequisite: MAT 121 or concurrent enrollment in MAT 121

Provides the physical theory pertinent to students of nuclear medicine and radiation therapy technology. Covers fundamentals of mechanics, electromagnetism, radiation, and atomic and nuclear theory.

45 Theory Hours — 45 Lab Hours — 90 Contact Hours

PHY 116 SCIENCE AND SCIENCE FICTION: THE CHANGING VISION (A)

3 Credit Hours

Prerequisite: None (revised SCI 116)

For writers and readers of speculative fiction (fantasy and science fiction). Deals with accepted and speculative theories in science in terms of how they are used in the speculative fiction short story and novel and how they might be used by authors who are writing new novels and short stories. A variety of short stories and novels will be used as examples of how writers use science in speculative fiction.

45 Theory Hours — 45 Contact Hours

PHY 125 ASTRONOMY FOR THE LAYMAN (R,AEC)

2 Credit Hours

Prerequisites: None

Designed for nonscience majors as an introductory course in identification of constellations with telescopic studies of the moon, some planets, nebula, and other stellar objects. Other topics will include: mythology, origin of the universe and solar system, physical characteristics of the solar system and photography through the telescope. Optional field trips included.

30 Theory Hours — 30 Contact Hours

PHY 130 INTRODUCTION TO ASTRONOMY (A,N,AEC)

4 Credit Hours

Prerequisites: None

A nonmathematical introduction to the nature and structure of the universe. Class discussion will include current topics such as the lives of stars, the fate of the universe, and black holes. Each student will learn to recognize many stars and constellations. Opportunities will be provided for telescopic observation of the moon, planets, galaxies, and nebulas.

60 Theory Hours — 60 Contact Hours

PHY 131 GENERAL ASTRONOMY I (A,N,R,AEC)

4 Credit Hours

Prerequisite: MAT 112 or consent of instructor

A study of the history and methods of astronomy and an introduction into our present understanding of the universe in terms of basic physical principles including the most recent discoveries and ideas such as quasars, pulsars, and black holes.

60 Theory Hours — 60 Contact Hours

PHY 132 GENERAL ASTRONOMY II (A,N,R,AEC)

4 Credit Hours

Prerequisite: PHY 131

Continuation of PHY 131.

60 Theory Hours — 60 Contact Hours

PHY 135 SPECIAL TOPICS IN ASTRONOMY (N)

4 Credit Hours

Prerequisite: Consent of instructor

This course is designed for the serious amateur astronomer and has two main objectives: (1) Help the student understand current writings on astronomy at the level of *Scientific American* or *Sky and Telescope Magazine*; (2) Develop observational and photographic skills employing small telescopes.

60 Theory Hours — 60 Contact Hours

PHY 141 PHYSICS FOR ARTS AND HUMANITIES I (A)

5 Credit Hours

Prerequisite: High school algebra or consent of instructor

Deals with topics in motion, energy, momentum, gravitation, atomic theories of matter and heat. These topics will be discussed on a conceptual basis using only basic arithmetic. Their historical and cultural development will be connected to developments in literature and art in terms of four pairs of themes: constancy and change, order and chaos, power and inertia, and the discrete and the continuous.

60 Theory Hours — 45 Lab Hours

105 Contact Hours

PHY 142 PHYSICS FOR ARTS AND HUMANITIES II (A)

5 Credit Hours

Prerequisite: High school algebra or consent of instructor

After a brief review of the essentials of mechanics this course will cover sound and music, electromagnetism, and light. These topics will be discussed on a conceptual basis using only basic arithmetic. Their historical and cultural development will be connected to parallel developments in literature and art in terms of four pairs of themes: constancy and change, order and chaos, power and inertia, and the discrete and the continuous.

60 Theory Hours — 45 Lab Hours

105 Contact Hours

PHY 143 PHYSICS FOR ART AND HUMANITIES III (A)

5 Credit Hours

Prerequisite: PHY 141 or PHY 142 or consent of instructor

This course will deal with topics in atomic physics, nuclear physics, astrophysics and relativity. They will be discussed on a conceptual basis using only basic arithmetic. Their historical and cultural development will be connected to parallel developments in literature and art in terms of four pairs of themes: constancy and change, order and chaos, power and inertia, and the discrete and the continuous. The course will end with a discussion of the possibility of other intelligent life in the universe.

60 Theory Hours — 45 Lab Hours

105 Contact Hours

PHY 151 GENERAL PHYSICS I (A,N,R)

5 Credit Hours

Prerequisite: MAT 121 or consent of instructor

A non-calculus study of classical and modern physics. An elementary but thorough presentation of the fundamental principles of mechanics, heat, electromagnetism, relativity, and quantum mechanics, and the application of these principles on the micro and macro scale.

60 Theory Hours — 45 Lab Hours

105 Contact Hours

PHY 152 GENERAL PHYSICS II (A,N,R)

5 Credit Hours

Prerequisite: PHY 151 or consent of instructor

A continuation of PHY 151. Topics will include sound, electromagnetism and light.

60 Theory Hours — 45 Lab Hours

105 Contact Hours

PHY 153 GENERAL PHYSICS — CALCULUS SUPPLEMENT I (N)

3 Credit Hours

Prerequisite: MAT 201 and concurrent enrollment in PHY 151

Application of calculus to physical concepts discussed in PHY 151.

45 Theory Hours — 45 Contact Hours

PHY 154 GENERAL PHYSICS — CALCULUS SUPPLEMENT II (N)

3 Credit Hours

Prerequisite: PHY 153, MAT 202 and concurrent enrollment in PHY 152

Application of calculus to physical concepts discussed in PHY 152.

45 Theory Hours — 45 Contact Hours

PHY 155 GENERAL PHYSICS III (A)

5 Credit Hours

Prerequisite: PHY 151 or PHY 152 or consent of the instructor

A continuation of PHY 152. Topics will include atomic and nuclear physics, relativity and astrophysics.

60 Theory Hours — 45 Lab Hours

105 Contact Hours

PHY 161 PHYSICS FOR SCIENTISTS AND ENGINEERS I (A,N,R)

4 Credit Hours

Prerequisite: Math 201

A calculus-based study of mechanics, heat, electricity and magnetism, optics and some topics in modern physics.

60 Theory Hours — 60 Contact Hours

PHY 162 PHYSICS FOR SCIENTISTS AND ENGINEERS II (A,N,R)

4 Credit Hours

Prerequisite: PHY 161 and concurrent enrollment in MAT 202.

A continuation of PHY 161. Topics will include thermodynamics, oscillatory motion and electromagnetism.

60 Theory Hours — 60 Contact Hours

PHY 163 EXPERIMENTAL PHYSICS FOR SCIENTISTS AND ENGINEERS I (A,N,R)

Credit Hour
Prerequisite: PHY 161
laboratory course in physics based on the material covered in PHY 161.
5 Lab Hours — 45 Contact Hours

PHY 164 EXPERIMENTAL PHYSICS FOR SCIENTISTS AND ENGINEERS II (A,N,R)

Credit Hour
Prerequisite: PHY 162
laboratory course in physics based on the material covered in PHY 162.
5 Lab Hours — 45 Contact Hours

PHY 201 HUMAN REALITIES: ART, SCIENCE, LITERATURE I (A)

Credit Hours
interdisciplinary, team-taught course using modular approach integrating studies in the humanities and the sciences to meet the diverse needs and interests of inter-city community college students. Students must also register for the humanities section of this course.
Theory Hours — 45 Contact Hours

PHY 202 HUMAN REALITIES: ART, SCIENCE, LITERATURE II (A)

Credit Hours
continuation of PHY 201.
Theory Hours — 45 Contact Hours

PHY 205 MODERN PHYSICS (A,N,R,AEC)

Credit Hours
The principles of quantum mechanics and relativity applied to solid state, radiation, molecules, atoms, nuclei, and elementary particles.
Theory Hours — 60 Contact Hours

PHY 299 INDEPENDENT STUDY (A,N,R)

3 Credit Hours
Prerequisite: Consent of instructor
Please refer to the general description of Independent Study in this catalog.
135 Contact Hours

Plumbing

PLU 100 ORIENTATION OF TOOLS, BASIC PLUMBING AND DRAWINGS (R)

Credit Hours
Prerequisites: None
In this class, the student is introduced to soldering techniques and skill development, bathroom drawings using 1/60 isometric three-dimensional system and material from drawings.
Theory Hours — 45 Lab Hours — 60 Contact Hours

PLU 105 BASIC WASTE LAYOUT AND CODE REGULATIONS (R)

3 Credit Hours
Prerequisites: None
The student is introduced to the installation of small plumbing jobs using soil pipe, plastic or copper tubing to meet code requirements.
15 Theory Hours — 45 Lab Hours — 60 Contact Hours

PLU 106 BASIC VENTING AND CODE REQUIREMENTS (R)

3 Credit Hours
Prerequisites: None
This class introduces the student to venting systems, making material lists and installation.
15 Theory Hours — 45 Lab Hours — 60 Contact Hours

PLU 107 WATER PIPING METHODS (R)

3 Credit Hours
Prerequisites: None
This class is an introduction to drawing water plans, sizing and installation.
15 Theory Hours — 45 Lab Hours — 60 Contact Hours

PLU 108 GAS PIPE, CODE AND SIZING (R)

3 Credit Hours
Prerequisites: None
This class introduces the student to cutting and installing of gas pipe from a drawing to meet required code and safety regulations.
15 Theory Hours — 45 Lab Hours — 60 Contact Hours

PLU 109 RESIDENTIAL PLUMBING (R)

3 Credit Hours
Prerequisites: None
In this class, the student will draw complete soil waste, vent, water, and gas systems which will meet all local codes and safety procedures and will develop skill in installation.
15 Theory Hours — 45 Lab Hours — 60 Contact Hours

PLU 110 FINISH AND INSTALLATION OF PLUMBING FIXTURES (R)

3 Credit Hours
Prerequisites: None
The student is introduced to installing plumbing fixtures on existing rough-ins to meet all code and safety requirements.
15 Theory Hours — 45 Lab Hours — 60 Contact Hours

PLU 115 ROUGH-IN AND SETTING OF SPECIAL FIXTURES (R)

3 Credit Hours
Prerequisites: None
In this class, the student will install special fixtures under special circumstances such as dishwasher disposals, dishwasher service, sinks, urinals, wall-hung water closets and mounting fixtures on concrete.
15 Theory Hours — 45 Lab Hours — 60 Contact Hours

PLU 116 PLUMBING REPAIR (R)

3 Credit Hours

Prerequisites: None

In this class, the student is introduced to repairing, servicing or replacing plumbing equipment.

15 Theory Hours — 45 Lab Hours — 60 Contact Hours

PLU 117 PLUMBING REPAIR — COMMERCIAL AND INDUSTRIAL (R)

3 Credit Hours

Prerequisites: None

In this class, the student will revamp or repair pumps, steam traps, boilers and all commercial installation.

15 Theory Hours — 45 Lab Hours — 60 Contact Hours

PLU 118 LAWN SPRINKLER — DESIGN AND REPAIR (R)

3 Credit Hours

Prerequisites: None

In this class, the student will be introduced to the basic design and layout of lawn sprinkler systems and it will include repair and maintenance of existing systems at the entry level.

15 Theory Hours — 45 Lab Hours — 60 Contact Hours

PLU 120 PLUMBING FOR CONSTRUCTION TRADES (R)

3 Credit Hours

Prerequisites: None

This class is an orientation to the field of plumbing, including general principles, initial techniques and skill development and how plumbing relates to the various construction trades.

15 Theory Hours — 45 Lab Hours — 60 Contact Hours

PLU 200 PLUMBING BUSINESS REQUIREMENTS AND COST ESTIMATING (R)

3 Credit Hours

Prerequisites: None

This class includes setting up plumbing business, estimating, need for licenses, and Federal and State tax procedures.

15 Theory Hours — 45 Lab Hours — 60 Contact Hours

PLU 205 ADVANCED ISOMETRIC BLUEPRINT READING AND LAYOUT (R)

3 Credit Hours

Prerequisites: None

In this class, the student will read and interpret blueprints and draw isometric and orthographic projections.

15 Theory Hours — 45 Lab Hours — 60 Contact Hours

PLU 206 HOT WATER HEATING — INSTALLATION AND MAINTENANCE (R)

3 Credit Hours

Prerequisites: None

This class presents the installation of hot water heating systems, service and maintenance.

15 Theory Hours — 45 Lab Hours — 60 Contact Hours

PLU 207 BASIC SOLAR ENERGY (R)

3 Credit Hours

Prerequisites: None

This class includes drawing and installing solar systems, including panels for collection, storage and distribution.

15 Theory Hours — 45 Lab Hours — 60 Contact Hours

PLU 208 ADVANCED SOLAR ENERGY (R)

3 Credit Hours

Prerequisites: None

This class includes solar panel construction, installing complete solar heating or domestic hot water systems with the study of the variables and flexibility of the system.

15 Theory Hours — 45 Lab Hours — 60 Contact Hours

PLU 209 LEAD REPAIRING, SILVER BRAZING AND WELDING (R)

3 Credit Hours

Prerequisites: None

This class will include lead repairing and silver brazing joints, use of cutting torch and the reaction of heat, dirt and other foreign matter to lead and silver brazing work.

15 Theory Hours — 45 Lab Hours — 60 Contact Hours

PLU 210 COMMERCIAL LAYOUT AND CODE, MULTI-STORY PROJECTS (R)

3 Credit Hours

Prerequisites: None

This class introduces the student to laying commercial and multi-story projects, different types of plumbing installations in commercial work and code applications to layout.

15 Theory Hours — 45 Lab Hours — 60 Contact Hours

PLU 215 COLORADO STATE CODE REQUIREMENTS (R)

3 Credit Hours

Prerequisites: None

Plumbing code violations of State code, endangerment to health and safety, and the State Plumbing Code Tests are presented in this class.

45 Theory Hours — 45 Contact Hours

PLU 216 UNIFORM PLUMBING CODE (R)

3 Credit Hours

Prerequisites: None

The Uniform Plumbing Code, proper installation of the code and the need to enforce it are presented in this class.

45 Theory Hours — 45 Contact Hours

PLU 217 FOREMAN AND SUPERINTENDENT TRAINING (R)

3 Credit Hours

Prerequisites: None

In this class, the student learns about communication between management and labor and the responsibilities to management and the people he/she may supervise.

45 Theory Hours — 45 Contact Hours

U 218 CONTROL FOR HEATING, AIR-CONDITIONING AND PLUMBING (R)

Credit Hours

Prerequisites: None

In this class, the student is introduced to the wiring sequence and how to read basic wiring diagrams for low voltage (24 volt) systems, hook up pumps, zone valves, thermostats, etc., on air-conditioning, plumbing and heat systems.

Theory Hours — 45 Lab Hours — 60 Contact Hours

U 220 CITY OF DENVER CODE (R)

Credit Hours

Prerequisites: None

In this class, the student will learn the City of Denver Code, its use and enforcement.

Theory Hours — 45 Contact Hours

U 297 COOPERATIVE WORK EXPERIENCE (R)

Credit Hours

Prerequisites: None

The student will work with an outside firm in a program of study that is developed with coordinated college coursework and industry work experience.

45 Theory Hours — 45-330 Lab Hours

375 Contact Hours

J 299 INDEPENDENT STUDY (R)

Credit Hours

Prerequisites: None

The student participates in individual study on a special project which is related to the plumbing program outside the program offerings.

Lab Hours — 90 Contact Hours

Political Science

S 111 INTRODUCTION TO POLITICAL SCIENCE (A,N,R,AEC)

Credit Hours

Prerequisites: None

Studies man as a political animal; the nature and use of power; the role of ideology.

Contact Hours

S 121 AMERICAN NATIONAL GOVERNMENT (A,N,R,AEC)

Credit Hours

Prerequisites: None

Study of American government emphasis on the role of institutions, individuals, and groups of informing American political behavior.

Contact Hours

S 122 AMERICAN STATE AND LOCAL GOVERNMENT (A,N,R,AEC)

Credit Hours

Prerequisites: None

Analysis of governmental structure and political behavior states and municipalities; urban problems and the role of government in their solution.

Contact Hours

POS 161 POLITICAL LEADERSHIP (R,AEC)

3 Credit Hours

Prerequisites: None

A study of group process, parliamentary procedures, recruiting, campaigning, publicity, legislation and administration through classroom and laboratory experience.

45 Contact Hours

POS 162 PRACTICAL POLITICS (R,AEC)

3 Credit Hours

Prerequisites: None

Introduction to political action at the local, state and/or national level.

45 Contact Hours

POS 201 COMPARATIVE POLITICS (A,R,AEC)

3 Credit Hours

Prerequisites: None

Introductory survey and analysis of political behavior and institutions in the 20th Century; problems of the "over developed" and "under developed" world.

45 Contact Hours

POS 205 INTERNATIONAL RELATIONS (A,R,AEC)

3 Credit Hours

Prerequisites: None

The international political system and the effects of geography, history, culture, ideology, domestic politics, foreign policies, diplomacy, international law, and international organizations.

45 Contact Hours

POS 206 FEDERAL INDIAN POLICIES (A)

3 Credit Hours

Prerequisite: 3 hours of 100 level political science or permission of instructor

A general overview of federal relationships with the various tribes and the Indian population.

45 Contact Hours

POS 210 UNITED STATES CONSTITUTION (A)

2 Credit Hours

Prerequisite: POS 121 or permission of instructor

A study of the U.S. Constitution and its impact on individual behavior and rights. Case studies and law analysis are emphasized as they pertain to civil rights.

30 Contact Hours

POS 215 CURRENT POLITICAL ISSUES (A)

3 Credit Hours

Prerequisites: None

Studies local, state, national and international political events and developments.

45 Contact Hours

POS 230 CHICANO AND THE LAW (A)

3 Credit Hours

Prerequisites: HUM 115 or 3 hours of 100 level political science or permission of instructor

Provides an insight into all phases of the jurisprudence system both Civil and Criminal.

45 Contact Hours

POS 246 WOMEN, POWER, AND POLITICS (A,R)

3 Credit Hours

Prerequisites: None

Designed to reach the process of political activism to persons interested in changing discrimination activities against women.

45 Contact Hours

POS 247 COLORADO POLITICS (A,R,AEC)

3 Credit Hours

Prerequisites: None

The agents, both individual and organizations, and processes responsible for major social, political, economic, and planning decisions in Colorado.

45 Contact Hours

POS 251 CHICANO POLITICAL EXPERIENCE (A)

3 Credit Hours

Prerequisites: HUM 115 or 3 hours of 100 level political science or permission of instructor

A critical evaluation of leading issues affecting Chicanos in American society.

45 Contact Hours

POS 253 THIRD WORLD POLICIES AND THE CHICANO (A)

3 Credit Hours

Prerequisites: 3 hours of 100 level political science or permission of instructor

Provides a realistic look at the Chicano in relationship to the developing nations presently known as "Third World" countries.

45 Contact Hours

POS 265 BLACK POLITICAL THOUGHT AND EXPERIENCE (A)

3 Credit Hours

Prerequisites: 3 hours of 100 level political science or permission of instructor.

A critical analysis and evaluation of the development of black political thought and the reciprocal impact of political institutions and organizations upon blacks in America.

45 Contact Hours

POS 285 DYNAMICS OF POLITICAL SCIENCE (A,R,AEC)

1-4 Credit Hours

Prerequisite: Consent of instructor

Deals with political forces affecting community development in urban and/or rural environments. Emphasizes problem solving through the use of the tools of political science.

15-60 Contact Hours

Process Pipe Design**PPD 211 PROCESS PIPING DESIGN I (N)**

3 Credit Hours

Prerequisite: IPD 205 or consent of instructor.

Upon satisfactory completion of this module, the student should be able to construct drawings of pumps, turbines plant arrangements, storage tanks, and storage tank piping. Minimum performance of accuracy is eighty per cent.

20 Theory Hours — 40 Lab Hours — 60 Contact Hours

PPD 212 PROCESS PIPING DESIGN II (N)

3 Credit Hours

Prerequisite: PPD 211 or consent of instructor.

Upon satisfactory completion of this module, the student should be able to generate drawings of piping systems details and elevated vessels. Minimum performance of accuracy is eighty percent.

20 Theory Hours — 40 Lab Hours — 60 Contact Hours

PPD 213 PROCESS PIPING DESIGN III (N)

3 Credit Hours

Prerequisite: PPD 212 or consent of instructor.

Upon satisfactory completion of this module, the student should be able to prepare drawings of more complex elevated vessels, products of fractioning towers, pipe supports and exchangers. Minimum performance of accuracy is eighty percent.

20 Theory Hours — 40 Lab Hours — 60 Contact Hours

PPD 214 PROCESS PIPING DESIGN IV (N)

3 Credit Hours

Prerequisite: PPD 214 or consent of instructor.

Upon satisfactory completion of this module, the student should be able to prepare drawings on piping flexibility exchangers and air coolers. Minimum performance of accuracy is eighty percent.

20 Theory Hours — 40 Lab Hours — 60 Contact Hours

PPD 215 PROCESS PIPING DESIGN V (N)

3 Credit Hours

Prerequisite: PPD 214 or consent of instructor.

Upon satisfactory completion of this module, the student should be able to prepare drawings on fired heaters compressors, instrumentations and process unit plans. Minimum performance of accuracy is eighty per cent.

20 Theory Hours — 40 Lab Hours — 60 Contact Hours

Psychiatric Technician**PST 205 COMMUNICATION SKILLS (A)**

2 Credit Hours

Prerequisites: None

Studies basic communication concepts and practices; skill development in observation, interviewing and communication is emphasized.

30 Theory Hours — 30 Contact Hours

ST 206 ASSERTIVE TRAINING (A)

Credit Hours

Prerequisites: None

Addresses an in-depth study of assertive training for the psychiatric technician. Student involvement in the application for assertive training theory through identification of target behaviors is stressed. A planned systematic assertive program to achieve desired behavioral changes is a major outcome of the course.

30 Theory Hours — 30 Contact Hours

ST 207 LEGAL ASPECTS IN WORKING WITH THE MENTALLY ILL (A)

Credit Hour

Prerequisites: None

Introduces the laws governing care of the mentally ill and applications related to the practice of the psychiatric technician.

15 Theory Hours — 15 Contact Hours

ST 208 GROUP PROCESS (A)

Credit Hour

Prerequisites: None

Provides a structured experience in the components of group functioning. Provides the student with a basic understanding of such processes as stages of group development, roles of group members, decision-making, group norms, concept of feedback, styles of leadership and differences between group content and group process.

15 Theory Hours — 15 Contact Hours

ST 209 COMPREHENSIVE APPROACH TO PSYCHIATRIC NURSING (A)

Credit Hours

Prerequisites: None

Presents a comprehensive approach to psychiatric nursing. Content areas include: Fundamentals of psychiatric and mental health nursing, exploration of cultural diversity in application of mental health concepts, role of the psychiatric technician of psychopathology and treatment. Throughout the course cultural, spiritual, environmental and economic factors are appraised as to their effects on the functional and/or organic illness under study.

45 Theory Hours — 45 Contact Hours

ST 210 PSYCHIATRIC TREATMENT MODALITIES (A)

Credit Hours

Prerequisites: None

Addresses major psychiatric treatment modalities used in the care of the mentally ill. Treatment modalities and underlying theories covered in the course are psychoanalysis, interpersonal therapy, transactional analysis, behavior modifications, group therapy, remotivation therapy, reparenting, occupational therapy, recreational therapy and psychodrama.

160 Lab Hours

0 Contact Hours

Psychology**PSY 099 JOB SEARCH TECHNIQUE WORKSHOP (A)**

3 Credit Hours

Prerequisites: None

The student becomes familiar with various aspects of looking for work. Topics covered include resources, non-traditional job search techniques, resume building, applications, interviews, problem solution on the job, career advancement, other aspects of looking for work, holding a job and advancing a career will also be explored.

45 Contact Hours

PSY 100 HUMAN RELATIONS IN BUSINESS AND INDUSTRY (A,N,R,AEC)

3 Credit Hours

Prerequisites: None

Emphasizes psychological principles as related to the working environment. Specific topics include motivation, interpersonal relationships, self-understanding, employee-employer relations and group behavior.

45 Theory Hours — 45 Contact Hours

PSY 105 SELF-EXPLORATION AND UNDERSTANDING (R,AEC)

1-3 Credit Hours

Prerequisites: None

This is an intensive growth experience offering the opportunity for students to explore their identity, feelings, unfinished relationships and the making of new relationships.

15-45 Theory Hours — 15-45 Contact Hours

PSY 106 HUMAN POTENTIAL SEMINAR (R,AEC)

3 Credit Hours

Prerequisites: None

Uses James McHolland's Human Potential Workbook following his structure dealing with subjects of self-affirmation, self-motivation, determination and empathy for others.

15-45 Theory Hours — 15-45 Contact Hours

PSY 108 VOCATIONAL EXPLORATION (A)

3 Credit Hours

Prerequisites: None

The student determines suitable occupations through: 1) positive self-exploration; 2) exploration of occupations; 3) selecting a suitable occupation by matching self-information and occupational information; 4) development of educational plans necessary to obtain chosen occupation.

45 Contact Hours

PSY 111 GENERAL PSYCHOLOGY I (A,N,R,AEC)

3 Credit Hours

Prerequisites: None

Presents an overview of psychology as a behavioral science, with emphasis on psychological concepts and principles. Specific topics include psychological methods, the biological bases of behavior, sensation and perception, learning and thinking and motivation.

45 Theory Hours — 45 Contact Hours

PSY 112 GENERAL PSYCHOLOGY II (A,N,R,AEC)

3 Credit Hours

Prerequisite: PSY 111

Builds on content covered in PSY 111. Specific topics include personality, psychological disorders, therapeutic techniques, attitudes and influence and interpersonal relationships.

45 Theory Hours — 45 Contact Hours

PSY 115 PSYCHOLOGY OF PERSONAL DEVELOPMENT (A,N,R,AEC)

3 Credit Hours

Prerequisites: None

Emphasizes personal growth and the development of interpersonal skills. Focus is on practical application of psychological principles and theories in achieving self-understanding and personal growth.

45 Theory Hours — 45 Contact Hours

PSY 116 STRESS MANAGEMENT (R)

3 Credit Hours

Prerequisites: None

An in-depth examination of interpersonal, health and on-the-job factors that produce stress. Students will explore stress-producing factors in their own lives, investigate techniques for minimizing and reducing stress and practice stress management.

45 Theory Hours — 45 Contact Hours

PSY 125 CHILD GUIDANCE TECHNIQUES (R,AEC)

3 Credit Hours

Prerequisites: None

A practical and in-depth examination of techniques and methods for working with children. Focus will be placed on ways of enhancing the child's self-concept while improving the student's understanding of and ability to communicate with children.

45 Theory Hours — 45 Contact Hours

PSY 126 PSYCHOLOGY OF LAW ENFORCEMENT (R)

3 Credit Hours

Prerequisites: None

Deals with the psychological effects of police work on the officer and the public.

45 Theory Hours — 45 Contact Hours

PSY 200 CURRENT PSYCHOLOGICAL TOPICS (A,N,R)

1-3 Credit Hours

Prerequisites: PSY 111 and PSY 112

Studies specific psychological topics in depth. The topic for a given semester will be determined by the instructor based upon student input.

15-45 Theory Hours — 15-45 Contact Hours

PSY 205 PSYCHOLOGY OF WOMEN (A,N,R,AEC)

3 Credit Hours

Prerequisites: None

The psychological assumptions about the female personality and how these assumptions are being questioned or verified by recent studies and cultural change will be investigated.

45 Theory Hours — 45 Contact Hours

PSY 210 SOCIAL PSYCHOLOGY (A,N,R,AEC)

3 Credit Hours

Prerequisite: PSY 111 or PSY 112 or instructor's permission.

Explores social factors which influence the behavior of individuals as they interact with others. Specific topics include aggression, attraction, prejudice, communication group dynamics, leadership, and non-verbal communication.

45 Theory Hours — 45 Contact Hours

PSY 211 INTRODUCTION TO HUMAN RESOURCES DEVELOPMENT (N,R,AEC)

3 Credit Hours

Prerequisites: None

This course integrates knowledge and theories from a variety of behavioral sciences. It is not intended to develop analysts or therapists, but rather is designed to sensitize the student to the issues and development of human resources.

45 Theory Hours — 45 Contact Hours

PSY 212 INTRODUCTION TO HUMAN RESOURCES DEVELOPMENT (N,R,AEC)

3 Credit Hours

Prerequisites: None

Examines in depth the contemporary phenomenon of complex human behavior. Emphasis will be in the area of group dynamics, the communication process, group problem solving and group growth.

45 Theory Hours — 45 Contact Hours

PSY 215 PSYCHOLOGY OF HUMAN SEXUALITY (A,N,R,AEC)

3 Credit Hours

Prerequisite: One psychology course

Covers the psychological, emotional, social and physical aspects of human sexuality. This interdisciplinary approach will include topics such as deviant sexuality, physical sexual development, love and theories relating to human sexual response.

45 Theory Hours — 45 Contact Hours

PSY 220 PSYCHO-SOCIAL ASPECTS OF DEAFNESS (N)

3 Credit Hours

Prerequisite: ANT 105

Explores the meaning of deafness from infancy through adulthood and its ramifications for both deaf and hearing people in our society.

45 Theory Hours — 45 Contact Hours

PSY 221 CHILD DEVELOPMENT (A,N,R,AEC)

3 Credit Hours

Prerequisite: PSY 111 or permission of instructor.

Studies the physical, emotional, social and intellectual development of the child. Covers the areas of prenatal development through the pre-school years. Theories and topics to be studied include prenatal influences, birth language development, peer groups, family relationships and the school experience.

45 Theory Hours — 45 Contact Hours

**PSY 222 DEVELOPMENTAL PSYCHOLOGY
(A,N,R,AEC)**

Credit Hours

Prerequisite: PSY 111 or PSY 112 or permission of instructor.

The course will familiarize the student with the theory, research and literature in the psychology of adolescence, adulthood and aging.

5 Theory Hours — 45 Contact Hours

**PSY 225 PSYCHOLOGY OF DEATH AND DYING
(A,R,AEC)**

Credit Hours

Prerequisite: PSY 111, 112 or 115 or permission of instructor.

Deals with the social, psychological, emotional and physical aspects of death and the dying experience. Specific topics include grief, funeral practices, abortion, suicide, euthanasia, life after death and acceptance of death.

5 Theory Hours — 45 Contact Hours

PSY 230 ABNORMAL PSYCHOLOGY (A,R,AEC)

Credit Hours

Prerequisite: PSY 111

Presents a general view of psychopathology and abnormal human interactions. Behavioral disorders, their causes and treatment are explored.

5 Theory Hours — 45 Contact Hours

**PSY 235 PSYCHOLOGY OF HUMAN GROWTH
AND DEVELOPMENT (A,N,R,AEC)**

Credit Hours

Prerequisites: None

Examines the developmental stages from early childhood through senescence. Primary focus is on the physical, emotional, social and psychological environments of the developing human. The course is designed primarily for the health occupations.

5 Theory Hours — 45 Contact Hours

PSY 239 INTRODUCTION TO BIOFEEDBACK (R)

Credit Hours

Prerequisites: None

An introduction to the theory, practice and instruments used in biofeedback applications. Practice in the use of biofeedback programs and instruments is required in addition to class attendance.

5 Theory Hours — 45 Contact Hours

PSY 250 PSYCHOLOGY OF PREJUDICE (A,R,AEC)

Credit Hours

Prerequisites: None

Investigates into the nature and extent of human differences designed to assist students to understand in depth the basic causes of prejudice and the learning of prejudiced behavior.

5 Theory Hours — 45 Contact Hours

**PSY 255 PSYCHOLOGICAL DEVELOPMENT OF
THE BLACK PERSONALITY (A)**

3 Credit Hours

Prerequisite: 3 hours 100 level psychology or permission of instructor.

Presents an in-depth study into the psychological factors that influence the development of the black personality.

45 Theory Hours — 45 Contact Hours

PSY 260 PSYCHOLOGY OF THE CHICANO (A)

3 Credit Hours

Prerequisite: 3 hours 100 level psychology or permission of instructor.

Develops an understanding of the psychological impact of the Chicano experience on the Chicano personality.

45 Theory Hours — 45 Contact Hours

**PSY 265 SOCIAL PSYCHOLOGY OF THE NATIVE
AMERICAN (A)**

3 Credit Hours

Prerequisite: 3 hours 100 level psychology or permission of instructor.

Presents a view of the Native American personality in relation to the modern environment of the United States from the Native American perspective.

45 Theory Hours — 45 Contact Hours

**PSY 266 CHICANO COMMUNITY MENTAL
HEALTH (A)**

3 Credit Hours

Prerequisite: 3 hours 100 level psychology or permission of instructor.

Deals with the individual and family mental health of the Chicano community.

45 Theory Hours — 45 Contact Hours

**PSY 270 ORGANIZATIONAL PSYCHOLOGY
(A,R,AEC)**

3 Credit Hours

Prerequisite: PSY 111 or PSY 112 or permission of instructor.

Provides a comprehensive study of psychological principles and theories as applied to organizational behavior. Topics include motivation, job satisfaction, conflict, supervision, human relations and stress management.

45 Theory Hours — 45 Contact Hours

**Commercial-Industrial Refrigeration,
Heating and Air Conditioning**

RAC 100 ORIENTATION, SAFETY AND TOOLS (A)

3 Credit Hours

Prerequisites: None

Presents the important developments in major appliances, refrigeration and air conditioning and the job opportunities at the completion of the program. Safety rules and procedures will be presented for shop and personal safety. Basic hand tools and tools of the trade will be presented and their safe and proper use demonstrated.

24 Theory Hours — 36 Lab Hours — 60 Contact Hours

RAC 105 TUBING, PIPE AND FITTINGS (A)

3 Credit Hours

Prerequisite: RAC 100

Introduces the different types of tubing, pipe and fittings, the method of determining the proper type and size to use for particular applications. This course is also designed to present soldering, brazing, cutting and welding safety procedures and techniques.

24 Theory Hours — 36 Lab Hours — 60 Contact Hours

RAC 106 FUNDAMENTALS OF REFRIGERATION I (A)

3 Credit Hours

Prerequisite: RAC 100

Introduces molecular theory, heat and methods of heat transfer, the basic compression cycle, molecular construction and nature of refrigerants.

24 Theory Hours — 36 Lab Hours — 60 Contact Hours

RAC 111 FUNDAMENTALS OF ELECTRICITY I (A)

3 Credit Hours

Prerequisite: RAC 100

Introduces atomic theory, charges, the basic concepts of electrical circuits and safe procedures when working with electrical breadboards and developing simple circuits.

24 Theory Hours — 36 Lab Hours — 60 Contact Hours

RAC 112 FUNDAMENTALS OF ELECTRICITY II (A)

3 Credit Hours

Prerequisite: RAC 110

Presents an understanding of magnetism, electric motor design and operation and the use and care of testing meters.

24 Theory Hours — 36 Lab Hours — 60 Contact Hours

RAC 116 FUNDAMENTALS OF REFRIGERATION II (A)

3 Credit Hours

Prerequisite: RAC 106

Presents the opportunity to construct, evacuate, charge, start up and test the operation of a basic refrigeration system.

24 Theory Hours — 36 Lab Hours — 60 Contact Hours

RAC 200 REFRIGERATION SYSTEM COMPONENTS AND APPLICATIONS (A)

3 Credit Hours

Prerequisite: RAC 100 series or equivalent experiences.

Presents the individual components of refrigeration systems and their applications. Calculating evaporator and condensing unit capacities and matching components.

24 Theory Hours — 36 Lab Hours — 60 Contact Hours

RAC 205 REFRIGERATION HEAT LOADS, SYSTEM DEVELOPMENT (A)

3 Credit Hours

Prerequisite: RAC 100 series or equivalent experiences.

Presents fundamentals of heat gains and losses of buildings and rooms for refrigeration and air conditioning.

24 Theory Hours — 36 Lab Hours — 60 Contact Hours

RAC 206 INSTALLATION AND START UP (A)

3 Credit Hours

Prerequisite: RAC 100 series or equivalent experiences.

Presents methods of installing various components and piping and code requirements.

24 Theory Hours — 36 Lab Hours — 60 Contact Hours

RAC 207 TROUBLESHOOTING AND SERVICE (A)

3 Credit Hours

Prerequisite: RAC 100 series or equivalent experiences.

Covers procedures in troubleshooting systems and servicing components of refrigeration systems.

24 Theory Hours — 36 Lab Hours — 60 Contact Hours

RAC 208 SPECIAL REFRIGERATION SYSTEMS (A)

3 Credit Hours

Prerequisite: RAC 100 series or equivalent experiences.

Examines absorption units and other industrial applications.

24 Theory Hours — 36 Lab Hours — 60 Contact Hours

RAC 209 FUNDAMENTALS OF AIR CONDITIONING (A)

3 Credit Hours

Prerequisite: RAC 100 series or equivalent experiences.

Examines the principles and definitions of atmosphere, humidity, measurement and control, psychrometric charts and tables.

24 Theory Hours — 36 Lab Hours — 60 Contact Hours

RAC 210 UNITARY AND CENTRAL STATION SYSTEMS (A)

3 Credit Hours

Prerequisite: RAC 100 series or equivalent experiences.

Examines heat pump operation and the installation of packaged units, components and piping for split systems and evaporative coolers.

24 Theory Hours — 36 Lab Hours — 60 Contact Hours

RAC 215 AIR FLOW PRINCIPLES AND DISTRIBUTION (A)

3 Credit Hours

Prerequisite: RAC 100 series or equivalent experiences.

Presents applications of air requirements, flow and sizing of air distribution ducts.

24 Theory Hours — 36 Lab Hours — 60 Contact Hours

RAC 216 CONTROL SYSTEMS (A)

3 Credit Hours

Prerequisite: RAC 100 series or equivalent experiences.

Covers control methods and devices used in air conditioning, electrical and pneumatics.

24 Theory Hours — 36 Lab Hours — 60 Contact Hours

RAC 217 TROUBLESHOOTING AND SERVICE (A)

3 Credit Hours

Prerequisite: RAC 100 series or equivalent experiences.

Examines procedures in troubleshooting systems and servicing components of air conditioning systems.

4 Theory Hours — 36 Lab Hours — 60 Contact Hours

Diagnostic Radiologic Technology**RAT 100 RADIOGRAPHIC TECHNIQUE I (A)**

3 Credit Hours

Prerequisites: Admission to program

Co-requisites: RAT 105, 106, BIO 109

Includes history of radiation opportunities and the role of professional organizations and accreditation has played in advancements in the field. Focuses on general radiographic techniques and principles, use of equipment and accessories, latent image formation, manual and automatic processing fundamentals and radiation protection.

5 Theory Hours — 15 Lab Hours — 60 Contact Hours

RAT 105 RADIOGRAPHIC POSITIONING I (A)

3 Credit Hours

Prerequisites: Admission to program

Co-requisites: RAT 100, 106; BIO 109

Introduces topographic anatomy, positioning, terminology and beginning principles of radiographic positioning. Includes use of the energized lab and phantoms, plus radiographic techniques for those positions.

5 Theory Hours — 15 Lab Hours — 60 Contact Hours

RAT 106 CLINICAL LABORATORY EXPERIENCE I (A)

3 Credit Hours

Prerequisites: Admission to program or permission of instructor

Co-requisites: RAT 100 and RAT 105

Enables student to begin practice of radiographic principles and positioning on patients under direct supervision of registered technologists. Includes rules and regulations for professional development.

20 Lab Hours — 120 Contact Hours

RAT 108 RADIOGRAPHIC POSITIONING II (A)

3 Credit Hours

Prerequisites: RAT 100, RAT 105, BIO 109

Teaches radiographic positioning skills and techniques related to shoulder girdle, knee, hips, pelvis, coccyx, cranium, lumbar, thoracic and cervical spine.

5 Theory Hours — 15 Lab Hours — 60 Contact Hours

RAT 109 RADIOGRAPHIC PHYSICS TECHNIQUES (A)

3 Credit Hours

Prerequisites: Successful completion of all first year courses.

Co-requisites: RAT 206, RAT 207

Provides specialized information on x-ray equipment and theoretical background. Topics are: fundamentals of electricity and radiation physics and basic principles underlying the operation of x-ray equipment and auxiliary devices related to exposure techniques.

45 Theory Hours — 45 Contact Hours

RAT 110 CLINICAL PRACTICUM I (A)

5 Credit Hours

Prerequisites: RAT 100, RAT 105, RAT 106, BIO 109

Co-requisite: RAT 108

Develops skills and provides experience in performing radiologic examination under direct supervision of registered technologists.

240 Practicum Hours — 240 Contact Hours

RAT 115 RADIOGRAPHIC POSITIONING III (A)

4 Credit Hours

Prerequisites: RAT 108 and RAT 110

Co-requisite: RAT 116

Provides in-depth instruction of concepts and principles of radiographic positioning related to cranium and facial, temporal and mastoid bones.

45 Theory Hours — 15 Lab Hours — 60 Contact Hours

RAT 116 CLINICAL PRACTICUM II (A)

5 Credit Hours

Prerequisites: RAT 108, RAT 110

Co-requisite: RAT 115

Provides experience in advanced techniques and positioning skills under supervision of registered technologists. Directly correlates with content presented in RAT 108.

240 Practicum Hours — 240 Contact Hours

RAT 200 SURVEY OF MEDICAL AND SURGICAL DISEASES (A)

2 Credit Hours

Prerequisites: HOC 100, acceptance to Radiologic Technology Program or permission of instructor.

Presents basic causes of diseases, changes that occur in disease and trauma and related diagnostic and therapeutic measures. Discussion and case examples will be related to the students particular occupational interest.

30 Theory Hours — 30 Contact Hours

RAT 205 SPECIAL PROCEDURES AND TECHNIQUES (A)

3 Credit Hours

Prerequisites: RAT 207, RAT 109, RAT 206

Co-requisite: RAT 208

Covers special radiographic procedures, advanced techniques and procedures and radiation biology.

45 Theory Hours — 45 Contact Hours

RAT 206 CLINICAL PRACTICUM III (A)

11 Credit Hours

Prerequisites: RAT 116, RAT 200 or instructor's permission

Co-requisites: RAT 109, RAT 206

Provides opportunities to perform duties typical of a staff radiologic technologist. Includes one to two hours per week of film critique in affiliate hospitals.

480 Practicum Hours — 480 Contact Hours

RAT 207 RADIOGRAPHIC TECHNIQUES II (A)

3 Credit Hours

Prerequisites: RAT 115, RAT 116, RAT 200, instructor's permission

Co-requisites: RAT 109, RAT 206

Presents an exploration of advanced principles and techniques of radiographic exposure and qualities of a good radiograph.

45 Theory Hours — 45 Contact Hours

RAT 208 CLINICAL PRACTICUM IV (A)

12 Credit Hours

Prerequisites: RAT 109, 206, 207, instructor's permission

Co-requisite: RAT 205

Teaches more advanced procedures in clinical radiography and fluoroscopy at participating hospitals. Includes one to two hours per week of film critique in affiliate hospitals.

540 Practicum Hours — 540 Contact Hours

RAT 210 CLINICAL PRACTICUM V (A)

12 Credit Hours

Prerequisites: RAT 206, instructor's permission

Provides student with opportunity to function with minimal supervision. Includes one to two hours per week of film critique in affiliate hospitals. Emphasizes transition from student to graduate role.

540 Practicum Hours — 540 Contact Hours

**Reading****REA 090 INTRODUCTION TO BASIC READING SKILLS (A,AEC)**

3 Credit Hours

Prerequisites: None

Designed for students who need an intensive review of basic reading concepts. Improves vocabulary, reading comprehension, and other basic reading skills. Emphasizes improvement of learning strengths. Requires individual work in the LDC. (Entry level skills: Score of 0 to 1 on reading assessment.)

1-2 Lab Hours (required per week) — 45 Contact Hours

REA 091 INTRODUCTION TO READING AND STUDY SKILLS (A,AEC)

4 Credit Hours

Prerequisites: None

Designed for students who need a quick review of basic reading skills; improves general reading comprehension, vocabulary, notetaking, listening, memory, and test-taking skills. Requires individual work in the LDC. (Entry level skills: Score of 2 or 3 on reading assessment.)

1-2 Lab Hours (required per week) — 60 Contact Hours

REA 100 BASIC READING SKILLS (A,AEC)

3 Credit Hours

Prerequisites: None

Designed for the student who needs a general review of reading techniques. Improves reading skills and emphasizes main idea, vocabulary development, using context, prefixes, suffixes, roots, remembering what is read, and textbook reading. Includes both class and individualized work. Requires individual work in the LDC. (Entry level skills: Score of 2 on the Reading assessment.)

1-2 Lab Hours (required per week) — 45 Contact Hours

REA 101 SKILLS FOR COLLEGE READING I (A,N,R,AEC)

3 Credit Hours

Prerequisites: None

Promotes reading efficiency in visual and perceptual skills, comprehension and rate improvement, vocabulary building, textbook reading, and general reading techniques. Emphasizes the practice of various skills for efficient reading. Requires individual work in the LDC. (Entry level skills: Score of 3 on the Reading assessment.)

1-2 Lab Hours (required per week) — 45 Contact Hours

REA 102 SKILLS FOR COLLEGE READING II (A,AEC)

3 Credit Hours

Prerequisites: None

Further develops the skills taught in REA 101. In addition, introduces methods to improve critical reading skills, including an ability to recognize authors' thesis, intent and inferences. (Entry level skills: Successful completion of REA 101 or a score of 4 on reading assessment.)

45 Contact Hours

REA 103 WORKSHOP IN READING, WRITING AND SPEAKING (A,AEC)

1-3 Credit Hours

Prerequisites: None

NOTE: This course may be taken for either English or Reading credit depending on the student's needs. (See Eng 103)

Designed for students whose reading skills are adequate for freshmen courses but who wish to integrate three basic communication areas — reading, writing, and speaking. Emphasizes the skills common to all three areas in order to facilitate the transfer of knowledge from one area to another. The student also learns to apply these skills to other college studies. (Entry level skills: Score of 3 on English assessment and a score of 3 on reading assessment.)

1-2 Lab Hours (required per week)

15-45 Contact Hours

REA 104 SKILL IN TEST-TAKING (A,AEC)

1 Credit Hour

Prerequisites: None

Improves test taking skills and/or reduces the nervous tension experienced before or during a test. Involves stress reduction and the development of the skill for taking multiple-choice, true-false, and essay tests.

15 Contact Hours

REA 105 STUDY SKILLS (A,AEC)

1-5 Credit Hours

Prerequisites: None

Teaches methods necessary to improve study skills. Methods include the following: making better use of time, improving reading rate, note-taking, outlining, skimming and scanning, test taking techniques, library use, critical reading, and vocabulary building. Uses lecture and class discussion techniques. (Entry level skills: Score of 4 on reading assessment or grade of C or better in REA 101.)

5-75 Contact Hours

REA 106 VOCABULARY DEVELOPMENT (A,AEC)

1 Credit Hour

Prerequisites: None

Develops vocabulary in several ways. Includes identifying words in context, learning affixes and roots, and developing a technical or specialized vocabulary.

1 Lab Hour (required per week) — 15 Contact Hours

REA 109 READING EFFICIENCY (A,N,R,AEC)

1 Credit Hours

Prerequisites: None

Emphasizes reading speed, development of a flexible reading rate, and the techniques of rapid reading. Also gives attention to increasing comprehension. (Entry level skills: Score of 4 on reading assessment.)

2 Lab Hours (required per week)

15-30 Contact Hours

REA 110 ADVANCED COLLEGE READING (A,R,AEC)

1 Credit Hours

Prerequisites: None

Improves speed, comprehension, and critical reading skills for advanced readers. (Entry level skills: Score of 4 on reading assessment or successful completion of REA 109.)

2 Lab Hours (Required per week)

30 Contact Hours

REA 110 SPEED READING (N)

1 Credit Hours

Prerequisites: None

Increases reading speed, a more flexible reading pace and better comprehension.

15 Contact Hours

REA 299 INDEPENDENT STUDY (A,AEC)

1 Credit Hours

Prerequisite: Permission of the director

Earns college credit for students in a Developmental Studies peer-tutor program; sharpens an individual's learning and critical thinking skills while helping other students.

15 Contact Hours

Real Estate**REE 100 REAL ESTATE FUNDAMENTALS (R,AEC)**

3 Credit Hours

Prerequisites: None

A general survey of real estate principles and practices designed to provide basic knowledge of real estate. Career information and real estate office practices and procedures will be covered.

45 Theory Hours — 45 Contact Hours

REE 105 REAL ESTATE FINANCE (R,AEC)

3 Credit Hours

Prerequisites: None

A course of study covering the various methods of financing real property and the financial institutions that provide the funds for financing residential, commercial and income properties.

45 Theory Hours — 45 Contact Hours

REE 111 REAL ESTATE LAW (R,AEC)

3 Credit Hours

Prerequisites: None

A comprehensive case study of real estate law as it pertains to individuals, real estate brokers, subdividers, and developers, with special emphasis on ethics, statutes, and the law as applied in the State of Colorado.

45 Theory Hours — 45 Contact Hours

REE 115 REAL ESTATE LICENSE PREPARATION (R,AEC)

3 Credit Hours

Prerequisite: Consent of instructor

This course is designed to prepare students for the Colorado Real Estate Examination.

45 Theory Hours — 45 Contact Hours

REE 118 THE REAL ESTATE BROKERAGE AND THE CONSUMER (R)

2 Credit Hours

Prerequisites: None

This course is an introductory survey of real estate when viewed by the consumer. Emphasis will be directed toward the expectations that a broker must fulfill in light of the consumer needs and anticipations. Particular reference will be made to residential transactions.

30 Theory Hours — 30 Contact Hours

REE 200 PRINCIPLES OF INSURANCE (R,AEC)

2 Credit Hours

Prerequisites: None

A general survey of all types of insurance with special emphasis on property, life and automobile insurance.

30 Theory Hours — 30 Contact Hours

REE 205 REAL ESTATE APPRAISAL (R,AEC)

4 Credit Hours

Prerequisites: None

A basic course in principles, techniques and accepted methods of evaluating real property. Emphasis is on the appraisal of residential property, however, the ways by which commercial property is appraised is also covered.

60 Theory Hours — 60 Contact Hours

REE 207 REAL ESTATE INVESTMENTS (R,AEC)

3 Credit Hours

Prerequisites: None

A study of the investment opportunities in the real estate market including tax benefits derived from depreciation, tax free exchanges and preferred types of ownership.

45 Theory Hours — 45 Contact Hours

REE 209 REAL ESTATE CLOSINGS (R,AEC)

3 Credit Hours

Prerequisites: None

An in-depth study of documents related to closings. This includes the understanding of debit and credit items on the closing statement itself.

45 Theory Hours — 45 Contact Hours

REE 210 REAL ESTATE TAX FACTORS (R,AEC)

3 Credit Hours

Prerequisites: None

This course covers capital and ordinary gains, basis, installment sales, depreciation, and postponement of income tax.

45 Theory Hours — 45 Contact Hours

REE 215 REAL ESTATE EXCHANGING (R,AEC)

3 Credit Hours

Prerequisites: None

For advanced students, the mechanics of exchanging, including documents involved. This course also covers an evaluation of the motivations for trading.

45 Contact Hours

REE 216 REAL ESTATE LISTINGS AND SELLING TECHNIQUES (R,AEC)

4 Credit Hours

Prerequisites: None

A study of listing contracts, the various types and how to use them. An in-depth study of real estate selling and how it differs from other types of selling.

60 Theory Hours — 60 Contact Hours

REE 217 REAL ESTATE CONTRACTS (R,AEC)

3 Credit Hours

Prerequisites: None

This course involves the preparation of the common real estate contracts used in typical real estate transactions. Current legal aspects as well as ethical considerations will be discussed.

45 Theory Hours — 45 Contact Hours

Recreational Leadership**REL 110 INTRODUCTION TO RECREATION SERVICES (R)**

3 Credit Hours

Prerequisites: None

Introduces the basic fundamentals of the nature, scope and significance of organized recreation services. It includes study of factors involved in the operation of basic recreation units, major program areas, organizational patterns and the interrelationships of special agencies and institutions which serve the recreational needs of society.

45 Theory Hours — 45 Contact Hours

REL 111 FIELD WORK (R)

3 Credit Hours

Prerequisite: REL 110

A course designed to give the recreation student practical experience under supervision. This first experience should have the student working with an agency leader. Exposure to leadership responsibilities of planning, conducting and evaluating an activity or program should result.

45 Theory Hours — 45 Contact Hours

REL 112 FIELD WORK (R)

3 Credit Hours

Prerequisite: REL 111

Second supervised course is designed to give the recreation student practical experience in developing recreation leadership skills. This experience should have the student working as direct leader with the responsibility for planning, conducting and evaluating an activity or program.

45 Theory Hours — 45 Contact Hours

REL 113 FIELD WORK (R)

3 Credit Hours

Prerequisite: REL 112

Third supervised course is to give the recreation student practical experience under supervision. This experience should involve the student working as an indirect leader by assisting a group or individual in the planning, conducting and evaluating of the group's or individual's desired experience.

45 Theory Hours — 45 Contact Hours

REL 121 SPORTS OFFICIATING (R)

5 Credit Hours

Prerequisite: REL 201

A study of the rules and mechanics of officiating. This course includes practical experience in competitive recreational sports of basketball and volleyball.

30 Theory Hours — 68 Lab Hours — 98 Contact Hours

REL 122 SPORTS OFFICIATING (R)

5 Credit Hours

Prerequisite: REL 202

A study of the rules and mechanics of officiating. This course includes practical experience in competitive recreational sports of baseball and softball.

30 Theory Hours — 68 Lab Hours — 98 Contact Hours

REL 123 SPORTS OFFICIATING (R)

5 Credit Hours

Prerequisite: REL 203

A study of the rules and mechanics of officiating. This course includes practical experience in competitive recreational sports of football and soccer.

30 Theory Hours — 68 Lab Hours — 98 Contact Hours

REL 125 DANCE ACTIVITIES (R)

5 Credit Hours

Prerequisites: None

Introduces methods and materials for folk, square and social dance. Attention is given to terminology, selection and presentation of dances. Emphasis is on knowledge and understanding of administration and motion rather than on mastery of performance skills.

30 Theory Hours — 68 Lab Hours — 98 Contact Hours

REL 126 TUMBLING AND GYMNASTICS (R)

2 Credit Hours

Prerequisites: None

Designed to acquaint the student with skills, teaching techniques and progression of tumbling, stunts and gymnastics for elementary and secondary school students.

30 Theory Hours — 30 Contact Hours

REL 145 ARTS AND CRAFTS (R)

2 Credit Hours

Prerequisites: None

Demonstrates the methods and materials used in arts and crafts projects for a variety of recreational settings: school, camp, playground, recreation center and clubs. Emphasis is on constructing, administering, promoting, and teaching crafts.

30 Theory Hours — 30 Contact Hours

REL 147 SOCIAL RECREATION (R)

3 Credit Hours

Prerequisites: None

Introduces methods and materials for planning, organizing and conducting social activities for groups of various sizes and ages in a variety of social situations. Emphasis is on the mechanics of planning and presenting a repertoire of activities for social recreation events. Major activities will be discussed, played and/or demonstrated.

15 Theory Hours — 45 Contact Hours

REL 180 BASIC MOUNTAINEERING (R)

1 Credit Hours

Prerequisites: None

Mountain climbing techniques, including route finding and rope handling.

15 Theory Hours — 45 Contact Hours

REL 181 BEGINNING ROCK CLIMBING (R)

2 Credit Hours

Prerequisites: None

Fundamentals of hand and foot holds. Top roped climbing.

30 Theory Hours — 30 Contact Hours

REL 182 INTERMEDIATE ROCK CLIMBING (R)

2 Credit Hours

Prerequisites: None

Continuation of REL 181.

30 Theory Hours — 30 Contact Hours

REL 183 BASIC ICE CLIMBING (R)

1 Credit Hour

Prerequisites: None

Fundamental of climbing high angle ice.

15 Theory Hours — 15 Contact Hours

REL 185 SNOW AND GLACIER CLIMBING (R)

2 Credit Hours

Prerequisites: None

Use of ice axe, crampons and rope, including route finding and crevasse rescue.

45 Theory Hours — 45 Contact Hours

REL 186 ORIENTEERING (R)

2 Credit Hours

Prerequisites: None

Competitive cross country walking and running using map and compass.

30 Theory Hours — 30 Contact Hours

REL 187 MAP AND COMPASS FOR THE OUTDOORSMAN (R)

3 Credit Hours

Prerequisites: None

Route-finding, map reading and navigational principles. Field trips.

45 Theory Hours — 45 Contact Hours

REL 188 BACKPACKING (R)

2 Credit Hours

Prerequisites: None

The fundamentals of backpacking involving the factors of clothing and equipment.

30 Theory Hours — 30 Contact Hours

REL 189 CLIMBING / BACKPACKING EXPEDITION (R)

3 Credit Hours

Prerequisites: None

Expedition covering seven to ten days hiking and climbing in remote North American regions.

45 Theory Hours — 45 Contact Hours

REL 190 SNOWSHOEING (R)

1 Credit Hour

Prerequisites: None

Basic skills and techniques.

15 Theory Hours — 15 Contact Hours

REL 191 BICYCLE CAMPING (R)

2 Credit Hours

Prerequisites: None

Fundamentals of using the bicycle for camping recreation.

30 Theory Hours — 30 Contact Hours

REL 192 GUIDE TO HIKING / CLIMBING (R)

1 Credit Hour

Prerequisites: None

Places one can go to hike or camp and how to use guide books.

15 Theory Hours — 15 Contact Hours

REL 201 TEAM SPORTS (R)

2 Credit Hours

Prerequisites: None

A course of study covering the fundamental skills, systems and rules of team sports. Emphasis is upon knowledge and understanding of the organization and promotion of sports rather than mastery of performance skills for basketball and volleyball.

30 Theory Hours — 30 Contact Hours

REL 202 TEAM SPORTS (R)

2 Credit Hours

Prerequisites: None

A course of study covering the fundamental skills, systems and rules of team sports. Emphasis is upon knowledge and understanding of the organization and promotion of sports rather than mastery of performance skills of baseball and softball.

30 Theory Hours — 30 Contact Hours

REL 203 TEAM SPORTS (R)

2 Credit Hours

Prerequisites: None

A course of study covering the fundamental skills, systems and rules of team sports. Emphasis is upon knowledge and understanding of the organization and promotion of sports rather than mastery of performance skills of football and soccer.

30 Theory Hours — 30 Contact Hours

REL 205 GROUP LEADERSHIP (R)

3 Credit Hours

Prerequisites: None

Provides insight into the theory, principles and practice of planning, organizing and conducting effective recreation programs for various groups. Emphasis is on group involvement.

45 Theory Hours — 45 Contact Hours

REL 207 ELEMENTARY GAMES AND ACTIVITIES (R)

5 Credit Hours

Prerequisites: None

Introduces methods and procedures in the instruction of recreational games and rhythmical activities. Course includes basic skills of games and activities at the elementary and secondary levels.

30 Theory Hours — 68 Lab Hours — 98 Contact Hours

REL 208 PROGRAMMING AQUATIC ACTIVITIES (R)

2 Credit Hours

Prerequisites: None

Includes the basic terminology, skills and techniques of selected water related activities and their use in recreation programs.

30 Theory Hours — 30 Contact Hours

REL 209 CREATIVE DRAMATICS (R)

5 Credit Hours

Prerequisites: None

A survey of the scope, values and fundamental skills of drama and its role in recreation. Emphasis is on knowledge, understanding and promotion of drama rather than mastery of performance skills.

30 Theory Hours — 68 Lab Hours — 98 Contact Hours

REL 211 INDIVIDUAL LIFETIME SPORTS (R)

2 Credit Hours

Prerequisites: None

An introductory course designed to acquaint the student with skills necessary to organize and conduct activities in the area of individual games with emphasis on the lifetime approach to tennis and badminton.

30 Theory Hours — 30 Contact Hours

REL 212 INDIVIDUAL LIFETIME SPORTS (R)

2 Credit Hours

Prerequisites: None

An introductory course designed to acquaint the student with skills necessary to organize and conduct activities in the area of individual games with emphasis on the lifetime approach to bowling and billiards.

30 Theory Hours — 30 Contact Hours

REL 213 INDIVIDUAL LIFETIME SPORTS (R)

2 Credit Hours

Prerequisites: None

An introductory course designed to acquaint the student with skills necessary to organize and conduct activities in the area of individual games with emphasis on the lifetime approach to golf and handball.

30 Theory Hours — 30 Contact Hours

REL 215 RECREATIONAL EQUIPMENT AND FACILITIES (R)

3 Credit Hours

Prerequisites: None

Designed to acquaint and familiarize the student with recreational equipment and program facilities.

45 Theory Hours — 45 Contact Hours

REL 216 RECREATION IN SPECIAL SETTINGS (R)

2 Credit Hours

Prerequisites: None

Insight into special recreation programming: therapeutic recreation; recreation for aged; recreation for the handicapped as related to community and volunteer services; recreation, rehabilitation for the alcoholic, juvenile delinquent and criminal.

30 Theory Hours — 30 Contact Hours

REL 217 TECHNIQUES IN PROGRAM PLANNING AND ORGANIZATION (R)

3 Credit Hours

Prerequisites: None

A study of the essential elements and basic principles involved in the organization, supervision, promotion and evaluation of various types of recreation programs. Emphasis is on organized programs and services.

45 Theory Hours — 45 Contact Hours

REL 218 OUTDOOR RECREATION AND CAMPING (R)

2 Credit Hours

Prerequisites: None

Includes study of the history, development and trends of outdoor recreation, conservation and organized camping. Emphasis is on laboratory work, field trips and development of outdoor skills.

30 Theory Hours — 30 Contact Hours

REL 220 WILDERNESS EQUIPMENT AND FACILITIES (R)

3 Credit Hours

Prerequisites: None

Designed to acquaint and familiarize the student with wilderness equipment and program facilities.

45 Theory Hours — 45 Contact Hours

REL 221 MOUNTAINEERING TEACHING CONCEPTS (R)

3 Credit Hours
Prerequisites: None
Planning and methods required to teach mountaineering skills.
45 Theory Hours — 45 Contact Hours

REL 222 BASIC SEARCH AND RESCUE (R)

3 Credit Hours
Prerequisites: None
The basic fundamentals required for search and rescue in a wilderness environment.
45 Theory Hours — 45 Contact Hours

REL 223 WILDERNESS NUTRITION (R)

1 Credit Hour
Prerequisites: None
Menu planning and nutritional requirements for wilderness camping.
15 Theory Hours — 15 Contact Hours

REL 224 COLORADO'S FOURTEENERS (R)

1 Credit Hour
Prerequisites: None
A historical look into the naming and climbing of Colorado's 14,000 foot mountain peaks.
15 Theory Hours — 15 Contact Hours

REL 225 ROUTEFINDING (R)

1 Credit Hour
Prerequisites: None
Concepts of finding the optimum path in climbing a mountain.
15 Theory Hours — 15 Contact Hours

REL 226 WILDERNESS DANGERS (R)

1 Credit Hour
Prerequisites: None
Familiarization of the objective and subjective dangers of wilderness.
15 Theory Hours — 15 Contact Hours

REL 227 ADVANCED MOUNTAINEERING (R)

3 Credit Hours
Prerequisites: None
Continuation of REL 180 and REL 185.
30 Theory Hours — 30 Contact Hours

REL 280 WILDERNESS ETHICS (R)

1 Credit Hours
Prerequisites: None
Motivation, esthetics, and ethics of mountaineering, including conservation principles.
30 Theory Hours — 30 Contact Hours

REL 281 WILDERNESS SURVIVAL (R)

1 Credit Hours
Prerequisites: None
Physical, physiological and psychological principles of survival. Field trip.
45 Theory Hours — 45 Contact Hours

REL 285 MOUNTAINEERING PHOTOGRAPHY (R)

3 Credit Hours
Prerequisites: None
The fundamentals of mountaineering and mountain photography.
45 Theory Hours — 45 Contact Hours

REL 299 INDEPENDENT STUDY (R)

2-6 Credit Hours
Prerequisites: None
Student will study intensively a topic of interest under the direction of a qualified faculty member. The number of credit hours to be allowed for successful completion of the course will be determined cooperatively by the instructor and the division director.
45-135 Independent Study Hours
45-135 Contact Hours

Respiratory Therapy Technology

RIT 100 RESPIRATORY TECHNOLOGY (N)

4 Credit Hours
Prerequisites: None
An introduction to sterilization techniques and basic equipment maintenance, assisted and controlled ventilation, chest physiotherapy, ancillary techniques of bronchial hygiene, humidification and aerosols.
45 Theory Hours — 15 Lab Hours — 60 Contact Hours

RIT 106 BASIC PATIENT CARE (N)

2 Credit Hours
Prerequisites: None
Focuses on the basic concepts and technical skills common to all health care deliverers. Ethical and legal responsibilities, basic techniques necessary to meet care needs and emergency measures are included. An introduction to the principles of respiratory therapy.
30 Theory Hours — 30 Contact Hours

RIT 205 INTRODUCTION TO CRITICAL CARE (N)

3 Credit Hours
Prerequisite: BIO 112
An in-depth study of the structure and function of the cardiac and respiratory systems as this knowledge relates to intensive respiratory care.
45 Theory Hours — 45 Contact Hours

RIT 206 CLINICAL PRACTICUM (N)

6 Credit Hours
Prerequisite: HOC 106
Clinical application orientation to basic respiratory therapy procedures in the clinical setting. Emphasis placed on development of basic skills.
270 Hospital Lab Hours — 270 Contact Hours

RIT 207 PULMONARY FUNCTION (N)

2 Credit Hours
Prerequisites: None
An orientation to the basic and advanced pulmonary function studies utilized in Respiratory Therapy.
30 Theory Hours — 30 Contact Hours

RIT 208 RESPIRATORY PATHOPHYSIOLOGY (N)

3 Credit Hours

Prerequisite: RIT 205, RIT 207

An in-depth study of cardio-pulmonary anatomy-physiology and disorders. Etiology and course of the disease are discussed.

45 Theory Hours — 45 Contact Hours

RIT 209 PHARMACOLOGY FOR RESPIRATORY THERAPY (N)

2 Credit Hours

Prerequisite: BIO 112

Study of the biochemical and physiologic effects of pharmacologic agents commonly encountered in medical conditions requiring respiratory care or respiratory therapy measures.

30 Theory Hours — 30 Contact Hours

RIT 210 RESPIRATORY CRITICAL CARE (N)

11 Credit Hours

Prerequisite: RIT 204 and RIT 206

An in-depth study of basic and advanced techniques utilized in the management of prolonged artificial ventilation and the patient who is critically ill and the role of the therapist on the critical care team.

45 Theory Hours — 360 Hospital Lab Hours

405 Contact Hours

RIT 215 DEPARTMENT MANAGEMENT (N)

2 Credit Hours

Prerequisites: None

This course includes an introduction to departmental administration. Attention is directed to the organization and operation of a Respiratory Therapy department. The administrative problems, factors influencing a solution and methods of solution are emphasized.

30 Theory Hours — 30 Contact Hours

RIT 216 THERAPY SEMINAR (N)

1 Credit Hour

Prerequisites: None

A review and discussion of current topics in Respiratory Therapy and areas of special interest to the student.

45 Theory Hours — 360 Hospital Lab Hours

405 Contact Hours

RIT 217 PEDIATRIC RESPIRATORY THERAPY (N)

2 Credit Hours

Prerequisites: None

An in-depth study of the pediatric respiratory system from embryology to the first breath. Also included is the pathological entities most often seen and treated in Pediatric Respiratory Therapy.

30 Theory Hours — 30 Contact Hours

RIT 220 REGISTRATION AND CERTIFICATION REVIEW (N)

3 Credit Hours

Prerequisite: Permission of instructor or RIT 205, RIT 210.

This course is designed to help prepare those people taking the Registry (ARRT) or Certification (CRTT) Examinations in Respiratory Therapy. The basic principles and practices of Respiratory Therapy as well as clinical applications will be reviewed.

45 Theory Hours — 45 Contact Hours

RIT 227 EKG ANALYSIS (N)

2 Credit Hours

Prerequisites: None

An introductory, self-paced analysis of electrocardiograph patterns as related to their physiologic origin. Designed for ancillary medical personnel not primarily involved in critical care medicine and responsible for EKG interpretation.

30 Theory Hours — 30 Contact Hours

Radiation Therapy Technology**RTT 125 RADIATION THERAPY PRACTICUM I (A)**

4 Credit Hours

Prerequisites: Basic Patient Care

Provides for application of patient care skills in the clinical education center. Emphasizes teamwork through rotation to other departments; focuses on mastery of specific duties in radiation oncology.

200 Lab Hours — 200 Contact Hours

RTT 200 PHYSICS OF RADIATION THERAPY I (A)

2 Credit Hours

Prerequisites: Admission to the Radiation Therapy Program

Provides the student with the fundamentals of radiative physics, with emphasis on the structure of matter, the nature of radiation, and the interaction of radiation with matter.

30 Theory Hours — 30 Contact Hours

RTT 205 RADIATION THERAPY METHODOLOGY (A)

2 Credit Hours

Prerequisites: Admission to Radiation Therapy Program

Introduces the student to types of treatment machines, emphasizes principles of patient set-ups, geometric considerations, patient immobilization devices and calculation of radiation dose. Corresponds closely with radiation oncology courses, providing for discussion of primary cancer sites.

30 Theory Hours — 30 Contact Hours

RRT 206 RADIATION ONCOLOGY I (A)

3 Credit Hours

Prerequisites: Admission to Radiation Therapy Program

Includes presenting symptoms, diagnostic work-up, staging, histologies, treatment portals, critical organs, their tissue tolerances, and survival statistics.

45 Theory Hours — 45 Contact Hours

RTT 207 RADIATION THERAPY PRACTICUM II (A)

11 Credit Hours

Prerequisites: Admission to Radiation Therapy Program

Provides for application of skills in patient record keeping, set-ups, delivery of treatment and development of rapport with patients.

496 Theory Hours — 496 Contact Hours

RTT 208 PHYSICS OF RADIATION THERAPY II (A)

2 Credit Hours

Prerequisites: Successful completion of RTT 200
Emphasizes the physical principles of radiation therapy and use of related equipment.

30 Theory Hours — 30 Contact Hours

RTT 209 RADIATION DOSIMETRY (A)

2 Credit Hours

Prerequisites: Successful completion of fall courses.
Instructs the student in the technical aspects of radiation oncology with emphasis on the protective application of treatment planning.

30 Theory Hours — 30 Contact Hours

RTT 210 RADIATION ONCOLOGY II (A)

2 Credit Hours

Prerequisites: Successful completion of RTT 206
Discusses biological and pathological effects of radiation at the chemical, cellular, organ and whole body levels. Emphasis is placed on the practical aspects of radiation oncology with respect to radiation therapy and nuclear medicine.

30 Theory Hours — 15 Contact Hours

RTT 215 RADIATION BIOLOGY AND PATHOLOGY (A)

2 Credit Hours

Prerequisites: None
Provides students in Nuclear Medicine and those in Radiation Therapy with basic knowledge of the biological effects of radiation.

30 Theory Hours — 30 Contact Hours

RTT 216 RADIATION THERAPY PRACTICUM III (A)

2 Credit Hours

Prerequisites: Successful completion of RTT 207
Develops an increased level of responsibility in the overall operation of a radiation therapy department. Includes rotation to other clinical education centers.

500 Lab Hours — 500 Contact Hours

RTT 217 SELECTED TOPICS IN RADIATION THERAPY (A)

2 Credit Hours

Prerequisites: Successful completion of spring courses
Reviews courses and clinical work in preparation for the certificate examination given by the American Registry of Radiologic Technologists.

45 Theory Hours — 45 Contact Hours

RTT 218 RADIATION THERAPY PRACTICUM IV (A)

2 Credit Hours

Prerequisites: Successful completion of spring courses
Prepares the student for job entry through performance skills typical of a staff radiation therapy technologist.

45 Theory Hours — 45 Contact Hours

Science**SCI 105 THE METRIC SYSTEM (N,AEC)**

1 Credit Hour

Prerequisites: None

A comprehensive coverage of metric area, cubic volume, and capacity volume. Also included are conversions of English area, land area, cubic volume, capacity volume to metric units. Fahrenheit and Celsius temperatures and density and specific gravity are also included.

15 Contact Hours

SCI 106 SCIENCE AND THE PRESCHOOL CHILD (A,N,R)

2 Credit Hours

Prerequisites: None

A course for the teacher or parent who desires an insight into the natural sciences and their meaning to the preschool child. It will provide the student with concepts and facts which will stimulate a child's interest in the natural sciences.

30 Contact Hours

SCI 111 SCIENCE FOR THE EARTH CITIZEN I (N)

4 Credit Hours

Prerequisites: None

This course is a general introduction to the scientific view of the world designed to help nonscience majors live and vote intelligently in a world shaped by science. Basic concepts in astronomy, biology, chemistry, geology, physics and technology are studied in terms of words and pictures with no mathematics other than arithmetic being employed.

45 Lecture Hours — 45 Lab Hours — 90 Contact Hours

SCI 112 SCIENCE FOR THE EARTH CITIZEN II (N)

4 Credit Hours

Prerequisites: None

Continuation of SCI 111.

45 Lecture Hours — 45 Lab Hours — 90 Contact Hours

SCI 115 THE ASCENT OF MAN (R)

2 Credit Hours

Prerequisites: None

An overview of the many disciplines which have contributed to the knowledge of human origins, based upon the popular television series broadcast on BBC-TV.

30 Contact Hours

SCI 116 SCIENCE AND SCIENCE FICTION: A CHANGING VISION (A,N,R)

3 Credit Hours

Prerequisites: None

This course will deal with the major revolutionary developments in modern science and how science fiction literature views these developments including their impact on the values and goals of our society and the changing vision of the place of man in his universe.

45 Contact Hours

SCI 299 INDEPENDENT STUDY (A,N,R)

1-3 Credit Hours

Prerequisite: Consent of instructor.

Please refer to the general description of Independent Study in this catalog.

45-135 Contact Hours

**Sports Crafts and Specialty Area
Mechanics****SCS 100 BASIC ENGINES, TOOLS AND SAFETY
(N)**

3 Credit Hours

Prerequisites: None

Identify and demonstrate the proper use of hand tools, express the principles of operation of a two-stroke and four-stroke internal combustion engine, and identify the component parts of each, using engines and tools available, following all safety practices to produce engines that will operate in accordance with the manufacturer's specifications.

45 Theory Hours — 15 Lab Hours — 60 Contact Hours

**SCS 105 ENGINE REBUILD AND SPECIAL TOOLS
(N)**

3 Credit Hours

Prerequisites: None

Rebuild two-stroke and four-stroke internal combustion engines using available special tools as required to produce engines that meet manufacturer's specifications.

20 Theory Hours — 40 Lab Hours — 60 Contact Hours

SCS 106 CARBURETOR AND FUEL SYSTEMS (N)

3 Credit Hours

Prerequisites: None

Identify the types of fuel systems and list the components of each. The student should rebuild and service each type of carburetor in accordance with the manufacturer's specifications and procedures.

20 Theory Hours — 40 Lab Hours — 60 Contact Hours

**SCS 107 BASIC ELECTRICAL THEORY AND TEST
EQUIPMENT (N)**

3 Credit Hours

Prerequisites: None

Identify schematic symbols and read schematic diagrams used throughout the Small Engine Industry by using textbooks and training aids available to demonstrate the ability to follow manufacturer's procedures and specifications to troubleshoot and service simple AC/DC electrical circuits.

20 Lecture Hours — 40 Lab Hours — 60 Contact Hours

SCS 108 IGNITION SYSTEMS (N)

3 Credit Hours

Prerequisites: None

Identify, troubleshoot and repair battery, magneto and electronics ignition systems, using available test equipment and tools to produce ignition systems that will perform in accordance with the manufacturer's specifications.

20 Theory Hours — 40 Lab Hours — 60 Contact Hours

**SCS 109 CHARGING AND STARTING SYSTEMS
(N)**

3 Credit Hours

Prerequisites: None

Identify, troubleshoot and service charging and starting systems, using available test equipment and tools to produce charging and starting systems that will perform in accordance with the manufacturer's specifications.

20 Theory Hours — 40 Lab Hours — 60 Contact Hours

SCS 110 ENGINE CONTROL SYSTEMS (N)

3 Credit Hours

Prerequisites: None

Identify, troubleshoot, adjust and repair engine governors and control systems using tools and test equipment so that the systems will operate in accordance with the manufacturer's specifications.

20 Theory Hours — 40 Lab Hours — 60 Contact Hours

**SCS 115 ENGINE TROUBLESHOOTING AND TUNE
UP (N)**

3 Credit Hours

Prerequisites: None

Troubleshoot and tune-up small engines, using knowledge gained in previous modules, plus special tools and test equipment to produce engines that will operate in accordance with the manufacturer's specifications.

20 Theory Hours — 40 Lab Hours — 60 Contact Hours

SCS 116 GENERAL SERVICE I (N)

3 Credit Hours

Prerequisites: None

Repair small engines using special tools and equipment to produce engines that will operate in accordance with manufacturer's specifications.

20 Theory Hours — 40 Lab Hours — 60 Contact Hours

SCS 117 GENERAL SERVICE II (N)

3 Credit Hours

Prerequisites: None

Use knowledge and skills gained in previous modules identify area of deficiency and additionally strengthen their skills for use in the job market.

20 Theory Hours — 40 Lab Hours — 60 Contact Hours

**SCS 200 CLUTCHES, TRANSMISSIONS AND
DRIVE SYSTEMS (N)**

3 Credit Hours

Prerequisites: None

Identify, service and repair the components of hydraulic systems found on lawn and garden equipment, meet manufacturer's specifications.

20 Theory Hours — 40 Lab Hours — 60 Contact Hours

**SCS 205 BASIC HYDRAULICS, SERVICE AND
REPAIR (N)**

3 Credit Hours

Prerequisites: None

Identify, service and repair the components of hydraulic systems found on lawn and garden equipment, meet manufacturer's specifications.

20 Theory Hours — 40 Lab Hours — 60 Contact Hours

SCS 206 BRAKE SYSTEMS, SERVICE AND REPAIR (N)

3 Credit Hours

Prerequisites: None

Identify, service and repair hydraulic and manual brake systems, using test equipment, gauges and bleeders available to produce systems that operate efficiently and safely in accordance with the manufacturer's specifications.

20 Theory Hours — 40 Lab Hours — 60 Contact Hours

SCS 207 HYDROSTATIC DRIVE, SERVICE AND REPAIR (N)

3 Credit Hours

Prerequisites: None

Inspect, service and repair hydrostatic drive systems, using available test equipment to produce systems that operate in accordance with the manufacturer's specifications.

20 Theory Hours — 40 Lab Hours — 60 Contact Hours

SCS 208 ROTARY AND REEL MOWERS, SERVICE AND REPAIR (N)

3 Credit Hours

Prerequisites: None

Service and repair rotary and reel-type lawn mowers using special tools and equipment available to produce mowers that will operate in accordance with manufacturer's specifications.

20 Theory Hours — 40 Lab Hours — 60 Contact Hours

SCS 209 ROTO-TILLERS AND SNOW BLOWERS (N)

3 Credit Hours

Prerequisites: None

Identify, service and repair roto-tillers and snow blowers, using available equipment and tools to produce roto-tillers and snow blowers that will operate in accordance with the manufacturer's specifications.

20 Theory Hours — 40 Lab Hours — 60 Contact Hours

SCS 210 GARDEN TRACTORS AND RIDER MOWERS (N)

3 Credit Hours

Prerequisites: None

Identify all components of chainsaws, edgers and power trimmers using available sharpeners and tools to produce equipment that will operate in accordance with the manufacturer's specifications.

20 Theory Hours — 40 Lab Hours — 60 Contact Hours

SCS 215 CHAINSAWS, EDGERS AND POWER TRIMMERS (N)

3 Credit Hours

Prerequisites: None

Identify, service and repair all components of chainsaws, edgers and power trimmers using available sharpeners and tools to produce equipment that will operate in accordance with the manufacturer's specifications.

20 Theory Hours — 40 Lab Hours — 60 Contact Hours

SCS 216 FRONT AXLES AND STEERING SYSTEMS (N)

3 Credit Hours

Prerequisites: None

Identify the types of steering gears and components of the axle and to disassemble and repair a front axle and steering system using technical data and tools available to produce a system that will operate in accordance with the manufacturer's specifications.

20 Theory Hours — 40 Lab Hours — 60 Contact Hours

SCS 217 CUSTOMER SERVICE (N)

3 Credit Hours

Prerequisites: None

Diagnose, troubleshoot and repair all types of lawn and garden equipment, using knowledge gained from previous modules to provide equipment that will operate in accordance with the manufacturer's specifications. Also, the students should be able to strengthen their skills and identify weak or deficient areas before entering the job market.

20 Theory Hours — 40 Lab Hours — 60 Contact Hours

SCS 220 BRAKE AND SUSPENSION SYSTEMS (N)

3 Credit Hours

Prerequisites: None

Identify, service and repair brakes and suspension systems, using special tools and technical data available to produce systems that will meet manufacturer's specifications.

20 Theory Hours — 40 Lab Hours — 60 Contact Hours

SCS 225 MOTORCYCLE DRIVE SYSTEMS (N)

3 Credit Hours

Prerequisites: None

Identify, service and repair clutches, transmissions and drive systems using tools and technical data available to produce systems that will meet manufacturer's specifications.

20 Theory Hours — 40 Lab Hours — 60 Contact Hours

SCS 226 ELECTRICAL SYSTEM TROUBLESHOOTING AND SERVICE (N)

3 Credit Hours

Prerequisites: None

Identify symbols and read schematics, troubleshoot and repair motorcycle electrical systems using available technical data and test equipment to produce electrical systems that will operate in accordance with the manufacturer's specifications.

20 Theory Hours — 40 Lab Hours — 60 Contact Hours

SCS 227 CARBURETOR SERVICE AND REPAIR (N)

3 Credit Hours

Prerequisites: None

Identify, service and repair carburetor systems on motorcycles, using available data and test equipment to produce carburetors that will operate in accordance with the manufacturer's specifications.

20 Theory Hours — 40 Lab Hours — 60 Contact Hours

SCS 228 JAPANESE SINGLE CYLINDER FOUR-CYCLE ENGINES (N)

3 Credit Hours

Prerequisites: None

Identify, service and repair single-cylinder, four-cycle engines, using data and special tools available to produce engines that will operate in accordance with the manufacturer's specifications.

20 Theory Hours — 40 Lab Hours — 60 Contact Hours

SCS 229 JAPANESE MULTI-CYLINDER FOUR-CYCLE ENGINES (N)

3 Credit Hours

Prerequisites: None

Identify, service and repair multi-cylinder four-cycle engines, using data and special tools available to produce engines that will operate in accordance with the manufacturer's specifications.

20 Theory Hours — 40 Lab Hours — 60 Contact Hours

SCS 230 JAPANESE TWO-CYCLE ENGINES (N)

3 Credit Hours

Prerequisites: None

Identify and service two-cycle engines using available data and special tools to produce engines that will operate in accordance with the manufacturer's specifications.

20 Theory Hours — 40 Lab Hours — 60 Contact Hours

SCS 235 HARLEY-DAVIDSON (N)

3 Credit Hours

Prerequisites: None

Identify, service and repair Harley-Davidson engines using available technical data and tools to produce engines that will operate in accordance with the manufacturer's specifications.

20 Theory Hours — 40 Lab Hours — 60 Contact Hours

SCS 240 ELECTRICAL SYSTEMS (N)

3 Credit Hours

Prerequisites: None

Identify, service and repair ignition, starting and charging systems on outboard motors, using available data and equipment to produce motors that will perform in accordance with the manufacturer's specifications.

20 Theory Hours — 40 Lab Hours — 60 Contact Hours

SCS 245 CARBURETOR AND FUEL SYSTEM SERVICE AND REPAIR (N)

3 Credit Hours

Prerequisites: None

Identify, service and repair carburetors (single to multi), fuel pumps and pressurized fuel systems using technical data and available test equipment to produce fuel systems that will operate in accordance with the manufacturer's specifications.

20 Theory Hours — 40 Lab Hours — 60 Contact Hours

SCS 246 POWER HEADS THROUGH 18 H.P. (N)

3 Credit Hours

Prerequisites: None

Identify, service and repair power heads using available tools and test equipment to produce outboard motor power heads that will perform in accordance with the manufacturer's specifications.

20 Theory Hours — 40 Lab Hours — 60 Contact Hours

SCS 247 POWER HEADS 20 H.P. AND UP (N)

3 Credit Hours

Prerequisites: None

Identify, service and repair power heads using available tools and test equipment to produce outboard motor power heads that will perform in accordance with the manufacturer's specifications.

20 Theory Hours — 40 Lab Hours — 60 Contact Hours

SCS 248 LOWER DRIVE UNITS (N)

3 Credit Hours

Prerequisites: None

Identify, service and repair lower units, including water pumps, propellers, shift linkage and gear systems, using special tools and technical data to produce lower drive units that will operate in accordance with the manufacturer's specifications.

20 Theory Hours — 40 Lab Hours — 60 Contact Hours

SCS 249 STEERING AND REMOTE CONTROL SYSTEMS (N)

3 Credit Hours

Prerequisites: None

Identify, rig, service and repair remote control (Teleflex or Cable) steering and engine control systems using available data and tools so that systems will perform as designed by the manufacturer.

20 Theory Hours — 40 Lab Hours — 60 Contact Hours

SCS 250 TROUBLESHOOTING AND REPAIR (N)

3 Credit Hours

Prerequisites: None

Troubleshoot, repair and service outboard motors a boat rigging using tools and data available so that the boats and motors will operate in accordance with the manufacturer's specifications and procedures.

20 Theory Hours — 40 Lab Hours — 60 Contact Hours

SCS 251 GENERAL SERVICE AND REPAIR (N)

3 Credit Hours

Prerequisites: None

Demonstrate the ability to perform all types of service and repair on equipment from knowledge and skill gained in previous modules according to the manufacturer's specifications. The student should strengthen skills or find areas of deficiency.

20 Theory Hours — 40 Lab Hours — 60 Contact Hours

SCS 252 OUTBOARD CUSTOMER SERVICE AND REPAIR I (N)

3 Credit Hours

Prerequisites: None

Service and/or repair outboard motors using the knowledge, skills and equipment the student has gained in the previous eight modules using special tools and equipment available to produce engines that will perform in accordance with the manufacturer's specifications.

20 Theory Hours — 40 Lab Hours — 60 Contact Hours

SCS 253 OUTBOARD CUSTOMER SERVICE AND REPAIR II (N)

3 Credit Hours

Prerequisites: None

Service and/or repair outboard motors including rigging or power and steering, using knowledge and skills and equipment to produce engines that will perform in accordance with manufacturer's specifications and satisfaction of the customer.

20 Theory Hours — 40 Lab Hours — 60 Contact Hours

SCS 255 MOTORCYCLE GENERAL SERVICE AND REPAIR (N)

3 Credit Hours

Prerequisites: None

Demonstrate the ability to service and repair all types of motorcycles using knowledge and skills gained in previous modules to produce motorcycles that will operate in accordance with manufacturer's specifications. In this module, the students should strengthen their skills and/or identify deficient areas.

20 Theory Hours — 40 Lab Hours — 60 Contact Hours

SCS 260 SNOWMOBILE SUSPENSION SYSTEMS (N)

3 Credit Hours

Prerequisites: None

Identify, service and repair steering, brake and suspension systems, using available data and equipment to produce snowmobiles that will handle in accordance with the manufacturer's specifications.

20 Theory Hours — 40 Lab Hours — 60 Contact Hours

SCS 265 SNOWMOBILE DRIVE MECHANISMS (N)

3 Credit Hours

Prerequisites: None

Identify, service and repair drive systems, including tracks and tracks, using available equipment and technical data so that snowmobiles will operate in accordance with the manufacturer's specifications.

20 Theory Hours — 40 Lab Hours — 60 Contact Hours

Secretarial

SCS 100 SPANISH TYPEWRITING (N)

3 Credit Hours

Prerequisite: Spanish I or equivalent

Introduction of the Spanish typewriting keyboard and principles of typewriting in Spanish. The student is encouraged to develop proficiency in speed and accuracy.

45 Theory Hours — 30 Lab Hours — 75 Contact Hours

SEC 101 TYPEWRITING I (A,N,R)

4 Credit Hours

Prerequisites: None

For students without previous typewriting instruction. Introduces keyboard, machine parts, correct techniques, and accuracy in typewritten applications: centering, letters, tabulation, and manuscript. Designed for students with either vocational or non-business objectives.

45 Theory Hours — 30 Lab Hours — 75 Contact Hours

SEC 102 TYPEWRITING II (A,N,R)

4 Credit Hours

Prerequisite: SEC 101 Typewriting I or Equivalent

Reinforcement of fundamentals of typewriting procedures. Development of speed and accuracy in more advanced levels of production work, using the prevailing business forms. Emphasis on quality of output.

45 Theory Hours — 30 Lab Hours — 75 Contact Hours

SEC 103 TYPEWRITING III (A,N,R)

4 Credit Hours

Prerequisite: SEC 102 Typewriting II or equivalent

Emphasizes attainment of professional levels of speed and accuracy, especially in production output. Concentration on problem typewriting with the student assuming the initiative for determining correct action and using appropriate business forms in completing the work.

45 Theory Hours — 30 Lab Hours — 75 Contact Hours

SEC 105 FILING AND RECORDS CONTROL (A,N,R)

2 Credit Hours

Prerequisites: None

Develops the ability to file and retrieve documents using alphabetic, numeric, and geographic systems, and provides the participant with records management skills.

30 Theory Hours — 30 Contact Hours

SEC 111 ALPHA SHORTHAND PRINCIPLES I (A,N,R)

5 Credit Hours

Prerequisite: SEC 101 Typewriting I or equivalent (SEC 111 and SEC 101 may be taken concurrently)

An introductory course covering the theory of alphabetic shorthand.

75 Theory Hours — 75 Contact Hours

SEC 112 ALPHA SHORTHAND PRINCIPLES II (A,N,R)

4 Credit Hours

Prerequisite: SEC 111 Alpha Shorthand Principles I

A continuation of Alpha Shorthand Principles I.

60 Theory Hours — 60 Contact Hours

SEC 116 MAGNETIC TYPEWRITING (MEMORY) (A,N,R)

3 Credit Hours

Prerequisite: SEC 102 Typewriting II or equivalent

Instruction in operating techniques of a magnetic-media typewriter with memory feature to develop an employable skill in the operation of equipment.

45 Theory Hours — 45 Contact Hours

SEC 117 CRT TYPING (A,N,R)

3 Credit Hours

Prerequisite: SEC 102 or equivalent

This course is designed to enable a student to transfer typing skills to the use of a cathode ray video screen. It includes the creating, editing, printing and storage of material on diskettes.

15 Theory Hours — 30 Lab Hours — 45 Contact Hours

SEC 119 INTRODUCTION TO WORD PROCESSING (A,N,R)

3 Credit Hours

Prerequisites: None

This course is designed to acquaint the student with word-processing systems, equipment, vocabulary and reprographics. Career paths in this field are explored both in class and by visiting word-processing installations.

45 Theory Hours — 45 Contact Hours

SEC 121 GREGG SHORTHAND PRINCIPLES I (A,N,R)

5 Credit Hours

Prerequisite: SEC 101 Typewriting I or equivalent (SEC 121 and SEC 101 may be taken concurrently)

An introductory course covering the theory of Gregg Shorthand, Diamond Jubilee Series.

75 Theory Hours — 75 Contact Hours

SEC 122 GREGG SHORTHAND PRINCIPLES II (A,N,R)

4 Credit Hours

Prerequisite: SEC 121 Gregg Shorthand Principles I or equivalent

Reinforcement of basic Gregg Theory and development of skills in taking dictation.

60 Theory Hours — 60 Contact Hours

SEC 123 SHORTHAND SPEED BUILDING AND TRANSCRIPTION SKILLS (A,N,R)

4 Credit Hours

Prerequisite: SEC 112 Alpha Shorthand Principles II or SEC 122 Gregg Shorthand Principles II

Intensive practice in taking dictation and transcribing mailable materials.

45 Theory Hours — 15 Lab Hours — 60 Contact Hours

SEC 130 MACHINE TRANSCRIPTION (A,N,R)

4 Credit Hours

Prerequisite: SEC 102 Typewriting II and BUS 135 Business Correspondence

This course provides instruction in the use of transcribing machines in the preparation of business letters and other correspondence. The course includes a review of letter styles, rules of transcription and punctuation, and the mechanics of producing mailable letters at high production rates.

45 Theory Hours — 15 Lab Hours — 60 Contact Hours

SEC 200 OFFICE PROCEDURES (A,N,R)

3 Credit Hours

Prerequisite: SEC 102 Typewriting II or equivalent

This course introduces the student to the business world and acquaints the prospective office employee with the various office duties. Units covered include organization of office work, incoming and outgoing mail, postal and shipping services, telephone techniques, maintenance and control of office supplies, and business and social conduct. A practicum is used in the course which correlates classroom discussion with related office projects.

45 Theory Hours — 45 Contact Hours

SEC 205 OFFICE SIMULATION (A,N,R)

3 Credit Hours

Prerequisites: None

Simulated office experience, including work flow, human relations, filing, record keeping and accounting. This course is designed to make the transition from school to employment easier for those who have no actual office experience. Weekly seminars covering a variety of related topics will be held.

45 Theory Hours — 45 Contact Hours

SEC 206 LEGAL PROCEDURE, TERMINOLOGY AND DICTATION (A)

5 Credit Hours

Prerequisite: SEC 111 Alpha Shorthand Principles I or SEC 121 Gregg Shorthand Principles I

This course provides intensive practice in preparing many types of legal documents, and introduces routing procedures in a legal office. Attention will be given to mastering terminology, meaning, spelling, and shorthand forms for dictation and transcription.

75 Theory Hours — 75 Contact Hours

SEC 209 LEGAL TERMINOLOGY (A,N,R)

2 Credit Hours

Prerequisites: None

Prepares secretarial students for taking and transcribing legal documents efficiently using office style dictation.

30 Theory Hours — 30 Contact Hours

SEC 210 LEGAL DICTATION AND TRANSCRIPTION (A,N,R)

3 Credit Hours

Prerequisite: SEC 209

Course to familiarize the student with spelling and defining of commonly used legal terms and their uses in documents.

45 Theory Hours — 45 Contact Hours

SEC 256 SPANISH BUSINESS TERMINOLOGY AND TRANSLATION TECHNIQUES (N)

2 Credit Hours

Prerequisites: None

This course will present vocabulary from various business areas; in addition, there will be an emphasis on translating techniques and oral interpreting. Business correspondence and documents will be presented in the class.

30 Theory Hours — 30 Contact Hours

SEC 260 SPANISH BUSINESS CORRESPONDENCE AND DOCUMENTATION (N)

3 Credits

Prerequisite: Spanish III

This course is designed primarily for students enrolled in the Secretarial-Bilingual Office Careers program, and other students meeting the above prerequisites. The emphasis of this course is business communications, business correspondence, translating and interpreting techniques, and documents through simulated transactions.

45 Theory Hours — 45 Contact Hours

Sheet Metal

SHM 100 BASIC SHEET METAL FOR SOLAR ENERGY (R)

1 Credit Hours

Prerequisites: None

This class is an introduction to the sheet metal field, safety, basic equipment and tools. Fabrication techniques and blueprint interpretation are also taught in this unit.

5 Theory Hours — 45 Lab Hours — 60 Contact Hours



Sociology

SOC 111 INTRODUCTION TO SOCIOLOGY I (A,N,R,AEC)

3 Credit Hours

Prerequisites: None

Deals with the basic concepts and principles of sociology that pertain to the individual in society. Studies culture, social organizations, socialization, stratification and intergroup relations.

45 Contact Hours

SOC 112 INTRODUCTION TO SOCIOLOGY II (A,N,R,AEC)

3 Credit Hours

Prerequisites: None

Emphasizes analysis of factors that contribute to social and cultural changes and resistance to change; examines problems associated with population growth, urbanization, collective behaviors, mass communication and deviance.

45 Contact Hours

SOC 116 THE INDIVIDUAL IN SOCIETY (R)

3 Credit Hours

Prerequisites: None

A number of issues having a direct bearing on the student's life are treated in this seminar which meets five times during the semester, including one weekend retreat. The impact of society upon the individual; individualism and conformity; loneliness; work; are some of the issues dealt with in this seminar.

45 Contact Hours

SOC 150 MARRIAGE AND THE FAMILY (A,N,R,AEC)

3 Credit Hours

Prerequisites: None

Develops an understanding of the social role of marriage and family living and of those factors that affect family relations. The family as a universal institution with diverse forms and patterns related to culture will also be considered.

45 Contact Hours

SOC 156 SOCIOLOGY OF WOMEN: SELECTED TOPIC (A,N,R,AEC)

3 Credit Hours

Prerequisites: None

Interdisciplinary study of women — past and present — provides a perspective for research and understanding of changing roles for women in various levels of society.

45 Contact Hours

SOC 165 MOVIMIENTO ESTUDIANTIL CHICANO DE AZTLAN (A)

3 Credit Hours

Prerequisites: None

Designed to acquaint Chicano and bilingual students with general college information and educate them in the area of academic planning.

45 Contact Hours

SOC 200 URBAN SOCIOLOGY (A,R,AEC)

3 Credit Hours

Prerequisites: None

City and metropolitan growth is examined in terms of the human factors and social issues. Social structures, form and processes of interaction, residential and institutional patterns are investigated. The metropolitan area is treated as a living laboratory to be explored.

45 Contact Hours

SOC 205 INDUSTRIAL SOCIOLOGY (A,R,AEC)

3 Credit Hours

Prerequisites: None

Studies industrial systems, problems, human relations in the industrial system for the individual and the society. Alternative types of industrial systems are examined in terms of different types of political and economic systems.

45 Contact Hours

SOC 210 LA FAMILIA CHICANA (A)

3 Credit Hours

Prerequisite: HUM 115 or 100 level sociology or permission of instructor.

Provides insight into the structure and traditions of the Chicano family as compared and contrasted with other American family structures.

45 Contact Hours

SOC 215 CURRENT SOCIAL PROBLEMS**(A,N,R,AEC)**

3 Credit Hours

Prerequisites: None

Presents introductory considerations of some major current social issues designed to improve the student ability to understand and systematically investigate concerns vital to everyday life.

45 Contact Hours

SOC 217 SOCIAL STRATIFICATION (A,R,AEC)

3 Credit Hours

Prerequisites: None

Examines and critically evaluates major theories of class and distribution of power, prestige and wealth. The relationship between class and personality will also be studied.

45 Contact Hours

SOC 220 MINORITY GROUPS IN AMERICAN SOCIETY (A,N,R,AEC)

3 Credit Hours

Prerequisites: None

Introduces the student to the culture and contemporary lifestyles of minority groups in American society. Emphasis is placed on basic sociological concepts with respect to selected minority groups.

45 Contact Hours

SOC 223 YOUTH IN SOCIETY (R)

3 Credit Hours

Prerequisites: None

Presents issues confronting youth in society: alienation, drugs, education, political involvement, relations with adults, the creation of countercultures and conflict. The impact of the mass media, advertising and the arts is considered.

45 Contact Hours

SOC 225 DEVIANT BEHAVIOR (A,R)

3 Credit Hours

Prerequisite: SOC 111 or 112

Examines sociological perspectives on behavior defined as deviant or socially unacceptable.

45 Contact Hours

SOC 226 AGING AND THE AGED (R,AEC)

3 Credit Hours

Prerequisites: None

Cultural alternatives of viewing the aging process and treatment of the aged studied from sociological, psychological and political perspectives.

45 Contact Hours

SOC 230 SOCIOLOGY OF THE CHICANO COMMUNITY (A)

3 Credit Hours

Prerequisite: HUM 115 or 100 level sociology or permission of instructor.

Fundamental concepts and theories of sociology with comparative emphasis on the Chicano and his culture in America.

45 Contact Hours

SOC 235 SOCIOLOGY OF RELIGION (A,R,AEC)

3 Credit Hours

Prerequisites: None

Studies how and why religion was developed in human society, what sociological parameters of a given society affect its religion and how religion has affected the society. Looks at psychological, biological or social reasons for supernatural beliefs, reasons why certain beliefs and practices change. Regional similarities in beliefs are investigated.

45 Contact Hours

SOC 236 THE CHICANO AND THE SCHOOLS (A)

3 Credit Hours

Prerequisite: HUM 115 or 100 level sociology or permission of the instructor.

Studies problems of Chicano students adapting to the schools and teachers' response to them. Special emphasis is on higher education.

45 Contact Hours

SOC 238 FIELD WORK IN BARRIO STUDIES (A)

3 Credit Hours

Prerequisite: HUM 115 or 100 level sociology or permission of instructor.

Observation of selected barrios, institutions and agencies to be conducted under supervision and after preparatory instruction to acquaint students with the barrio atmosphere.

45 Contact Hours

SOC 240 MOODS OF MODERN SOCIETY (R)

3 Credit Hours

Prerequisites: None

Freedom and individualism, their emphasis on life and thought in the western world, are treated. Some of the issues brought about by these ideas are studied. In addition to the sociological focus, attention is given to the psychological and political issues.

45 Contact Hours

SOC 241 SOCIOLOGY OF THE BLACK COMMUNITY I (A)

3 Credit Hours

Prerequisite: 3 hours of 100 level political science or permission of instructor.

Relates fundamental concepts and theories of sociology to Black people, their culture and contributions to America.

45 Contact Hours

SOC 242 SOCIOLOGY OF THE BLACK COMMUNITY II (A)

3 Credit Hours
Prerequisite: SOC 241 or any 100 level sociology or permission of instructor.

Presents the problems and characteristics of Black communities in relation to various agencies and institutions operating within them.

45 Contact Hours

SOC 254 JUVENILE DELINQUENCY (A,N,R,AEC)

3 Credit Hours
Prerequisites: None
The causes and consequences of delinquency are studied. Types of young people committing offenses, the acts committed, juvenile courts, detention centers, parole and probation are included.

45 Contact Hours

SOC 255 CRIMINOLOGY I (A,R,AEC)

3 Credit Hours
Prerequisites: None
Studies the nature and causes of crime as a social phenomenon. Major criminological theories are covered; the characteristics of criminal behavior and the processes of making laws, breaking laws and the reaction toward the breaking of laws will be studied.

45 Contact Hours

SOC 256 CRIMINOLOGY II (A,R)

3 Credit Hours
Prerequisites: None
Studies, in detail, punishment, social control, rehabilitation and crime prevention.

45 Contact Hours

SOC 257 CORRECTION, TREATMENT AND CUSTODY (A,R)

3 Credit Hours
Prerequisite: SOC 111 or SOC 255 or permission of instructor.

Includes an overview of correctional approach: probation and parole but with primary emphasis on incarceration. Various types of prisons from maximum security to community-based corrections, and the internal structure and procedures of today's prisons will be studied.

45 Contact Hours

SOC 258 FIELD PRACTICUM IN CORRECTIONS (A,R)

5 Credit Hours
Prerequisites: SOC 255 and 256 or permission of instructor.

Exposes students with community organizations, programs, agencies and studies the application of treatment of offenders in order to aid the student in developing the perspectives, skills and methods vital in corrections.

135-225 Practicum Hours — 135-225 Contact Hours

SOC 266 THE CONTEMPORARY NATIVE AMERICAN (A)

3 Credit Hours
Prerequisite: 3 hours 100 level sociology or permission of instructor.

Presents an intensive survey of the contemporary problems, issues and developments involving American Indians, both urban and rural.

45 Contact Hours

SOC 267 THE NATIVE AMERICAN IN URBAN AMERICA (A)

3 Credit Hours
Prerequisite: 3 hours 100 level sociology or permission of instructor.

Studies the historical development of Native American communities within urban areas and an analysis of what it means to be an "urban Indian" in modern America.

45 Contact Hours

SOC 285 DYNAMICS OF SOCIOLOGY (A,N,R,AEC)

1-3 Credit Hours
Prerequisites: None
Focuses on selected areas of sociological investigation to be announced in each semester's schedule.

15-45 Contact Hours

Solar Energy Installation and Maintenance

SOM 220 BASIC SOLAR SYSTEMS (R,AEC)

3 Credit Hours
Prerequisites: None
In this class, the student is informed about the different solar systems, collectors, storage and distribution. Also the student learns about solar heating, solar domestic hot water and solar air-conditioning and the difference between air and liquid systems.

15 Theory Hours — 45 Lab Hours — 60 Contact Hours

SOM 221 SOLAR ENGINEERING TECHNOLOGY I (R)

4 Credit Hours
Prerequisites: None
The purpose of this course is to develop the capability of practitioners in the home building industry to size, install and operate solar heating and cooling systems for residential buildings. Also this class includes an overview of our energy problems today, a review of engineering math pertaining directly to this course and basic physics.

45 Theory Hours — 23 Lab Hours — 68 Contact Hours

SOM 222 SOLAR ENGINEERING TECHNOLOGY II (R)

4 Credit Hours
Prerequisites: None
This course is limited in scope to the design of solar heating and cooling systems for residential buildings with primary emphasis on heating systems. Although solar cooling systems are discussed, design and economic analysis of systems are the topics. A review of engineering math related to this class is also given.

45 Theory Hours — 23 Lab Hours — 68 Contact Hours

SOM 223 SOLAR ENGINEERING TECHNOLOGY III (R)

4 Credit Hours

Prerequisites: None

This class is an introduction to solar power and process heat. It includes collection systems, heat engines, thermal storage applications, principles of fluid mechanics, heat transfer and thermodynamics.

45 Theory Hours — 23 Lab Hours — 68 Contact Hours

SOM 225 SOLAR SYSTEM DESIGN AND LAYOUT (R)

3 Credit Hours

Prerequisites: None

In this class, the student is presented a practical design approach to solar energy systems and collector piping and ducting layouts as they apply to buildings. Also the student is presented construction techniques in new and retrofit application.

15 Theory Hours — 45 Lab Hours — 60 Contact Hours

SOM 226 SOLAR PANEL ARRAYS (R)

3 Credit Hours

Prerequisites: None

In this class, the student is introduced to principles of design and operation of solar panel arrays; material analysis and construction features of flat plate collectors; mounting techniques and construction of a basic air and liquid collector array and distribution from collectors to storage; and building, mechanical and plumbing codes as they apply to the solar industry.

15 Theory Hours — 45 Lab Hours — 60 Contact Hours

SOM 227 DOMESTIC HOT WATER SYSTEMS (R)

3 Credit Hours

Prerequisites: None

This course will provide a working knowledge of sizing, installation and maintenance of solar domestic hot water systems and residential application, and components parts and cost efficiency analysis.

15 Theory Hours — 45 Lab Hours — 60 Contact Hours

SOM 228 SOLAR SYSTEM ESTIMATING AND MAINTENANCE TECHNIQUES (R)

3 Credit Hours

Prerequisites: None

This course will cover the techniques to correct operational problems in solar equipment; repairs and upgrading of systems; and cost estimates of solar energy systems.

15 Theory Hours — 45 Lab Hours — 60 Contact Hours

SOM 229 SOLAR PANEL INSTALLATION (R)

3 Credit Hours

Prerequisites: None

In this class, the student will be presented the installation of all types of panels on all types of roofs and vertical wall mounting techniques.

15 Theory Hours — 45 Lab Hours — 60 Contact Hours

SOM 235 BASIC SOLAR CONTROLS (R)

3 Credit Hours

Prerequisites: None

This course will familiarize the practitioner with commercially available controls that are used in solar heating systems. The controls will be shown in schematic form and actual circuit layout. Lab work will consist of setting up, testing and reporting on control circuits discussed in class. Basic electric principles necessary to understand the control logic and circuits will also be covered.

15 Theory Hours — 45 Lab Hours — 60 Contact Hours

SOM 236 ADVANCED SOLAR CONTROLS (R)

3 Credit Hours

Prerequisite: SOM 235 or previous basic electrical experience.

This course will cover general concepts of controls for flat-plate collector heating systems, tracking systems and solar cooling. Control logic for complex systems will be covered and set up in the lab. Failures will be introduced into the system so the practitioner may gain troubleshooting experience on the system level. SOM 235 or previous experience with basic electrical principles is a prerequisite to this course.

15 Theory Hours — 45 Lab Hours — 60 Contact Hours

SOM 237 PASSIVE SOLAR SYSTEMS (R)

3 Credit Hours

Prerequisites: None

The student will be presented a state-of-the-art study of the design and installation techniques of passive/natural solar energy systems.

15 Theory Hours — 45 Lab Hours — 60 Contact Hours

SOM 238 ALTERNATIVE SUPPORT SYSTEMS FOR SOLAR ENERGY (R)

3 Credit Hours

Prerequisites: None

This class is a review and study of conventional and non conventional support heating equipment used in combination with solar energy systems and methods of application.

15 Theory Hours — 45 Lab Hours — 60 Contact Hours

SOM 239 INTRODUCTION TO WIND ENERGY (R)

3 Credit Hours

Prerequisites: None

This course will explore the state-of-the-art hardware and its application for residential use. Discussion will include electrical circuits and components, power regulation and storage of electrical energy, and methods of wind tower applications.

15 Theory Hours — 45 Lab Hours — 60 Contact Hours

SOM 240 ADVANCE PASSIVE SOLAR SYSTEMS (R)

3 Credit Hours

Prerequisites: None

This class will present an advance study of passive design in buildings, advance calculation techniques, material and cost efficiency analysis.

15 Theory Hours — 45 Lab Hours — 60 Contact Hours

SOM 245 GREENHOUSES (R)

4 Credit Hours

Prerequisites: None

In this class, the student is introduced to various designs of greenhouses, parameters affecting heating and cooling loads of greenhouses, contribution of solar energy in winter heating of greenhouses and measures of maximizing this contribution, and modifications in greenhouse design.

15 Theory Hours — 23 Lab Hours — 68 Contact Hours

SOM 246 AGRICULTURAL APPLICATIONS OF RENEWABLE ENERGY RESOURCES (R)

1 Credit Hours

Prerequisites: None

In this class, the student is presented simple, inexpensive methods for use of energy on farms, rock storage, solar ponds, crop drying, desalination, livestock and rural house heating through the use of solar energy, passive poultry houses and use of biogas on farms.

5 Theory Hours — 23 Lab Hours — 68 Contact Hours

SOM 247 SITE-BUILT SOLAR SYSTEMS (R)

1 Credit Hours

Prerequisites: None

In this class, the student is introduced to construction of site-built collectors on roofs and walls integrated harmoniously with the building structure that include liquid and air collectors, waterwalls and south wall glazing techniques applicable on both regular and modular construction. Also this class covers codes, materials and cost efficiency analysis.

5 Theory Hours — 45 Lab Hours — 60 Contact Hours

SOM 248 SOLAR GREENHOUSE CONSTRUCTION (R)

1 Credit Hours

Prerequisites: None

Instruction techniques and materials necessary for building a greenhouse; footing, stem walls and floors; structure and framing techniques; exterior paneling and glazing; insulating and ventilating techniques; and codes are presented in this class.

5 Theory Hours — 45 Lab Hours — 60 Contact Hours

SOM 249 EARTH SHELTER DWELLINGS (R)

1 Credit Hours

Prerequisites: None

This class presents a state-of-the-art study to cover site planning, structural design, cold and warm climate designs, waterproofing and insulation, public policy issues and marketing techniques.

5 Theory Hours — 23 Lab Hours — 68 Contact Hours

SOM 250 RESIDENTIAL ENERGY AUDIT AND CONSERVATION (R)

1 Credit Hours

Prerequisites: None

This course will explain all forms of residential heat loss and how they are corrected. Various home energy audits will be discussed and conducted. Available devices which conserve or manage energy will be included along with lab work on measures recommended in the audit.

5 Theory Hours — 23 Lab Hours — 53 Contact Hours

SOM 260 COMPUTER AND CALCULATOR TECHNIQUES FOR SOLAR ENERGY (R)

2 Credit Hours

Prerequisites: None

This course will familiarize the practitioner to the use of the TI-59 Calculator for technical problem solving, algebraic entry procedure, chain calculation, keyboard functions, use of memory, programming techniques, and use of printer and magnetic card storage.

30 Theory Hours — 30 Contact Hours

SOM 265 INTRODUCTION TO PHOTOVOLTAICS (R)

3 Credit Hours

Prerequisites: None

This course will explore the state-of-the-art hardware and its applications for agricultural, commercial and residential use. Also the course will include electrical circuits and components, power regulation and storage of electrical energy and methods of application.

30 Theory Hours — 23 Lab Hours — 53 Contact Hours

SOM 297 COOPERATIVE WORK EXPERIENCE (R)

1-15 Credit Hours

Prerequisites: None

This program of study is developed with coordinated college course work and industry work experience.

40-600 Lab Hours — 40-600 Contact Hours

SOM 298 SOLAR LAB (R)

3-12 Credit Hours

Prerequisites: None

In this class, students will improve their basic solar construction skills, such as soldering, brazing, use of power tools, panel design and construction.

60-240 Lab Hours — 60-240 Contact Hours

SOM 299 INDEPENDENT STUDY (R)

3-6 Credit Hours

Prerequisites: None

This class is an individual study on a project which is related to the Solar Energy Program and outside the program offering.

90-540 Lab Hours — 90-540 Contact Hours

Social Science**SOS 101 FIELD EXPERIENCE IN COMMUNITY ORGANIZATIONS I (A,N,R,AEC)**

3 Credit Hours

Prerequisites: None

Students will perform human service work in community organizations, programs and agencies of their choice. Arrangement with instructor required.

15 Theory Hours — 90 Field Experience Hours

105 Contact Hours

SOS 102 FIELD EXPERIENCE IN COMMUNITY ORGANIZATIONS II (A,N,R,AEC)

3 Credit Hours

Prerequisites: None

Continuation of Field Experience I. Arrangement with instructor required.

15 Theory Hours — 90 Field Experience Hours

105 Contact Hours

**SOS 115 INTRODUCTION TO SOCIAL SCIENCE
(A,N,R,AEC)**

3 Credit Hours

Prerequisites: None

Surveys each of the social science disciplines in terms of basic concepts and methodology.

45 Theory Hours — 45 Contact Hours

**SOS 216 THE URBAN SETTING: METRO DENVER
(R,AEC)**

3 Credit Hours

Prerequisites: None

Metro Denver will be used as a comparative case study in American urban areas.

45 Theory Hours — 45 Contact Hours

**SOS 260 RESEARCH METHODS IN THE SOCIAL
SCIENCES (A,R,AEC)**

3 Credit Hours

Prerequisites: None

Designed to aid the student to develop the skills, methods and techniques of research required for systematically exploring the socio-psychological world in which he lives.

45 Theory Hours — 45 Contact Hours



Spanish

SPA 101 BASIC APPLIED SPANISH I (A,R,AEC)

3 Credit Hours

Prerequisites: None

Designed for beginning students who wish to understand and speak Spanish. The material will include oral pattern drills, repetition, substitution and completion, films, slides, music and songs, vocabulary and questions based on daily conversations.

45 Contact Hours

SPA 102 BASIC APPLIED SPANISH II (A,R,AEC)

3 Credit Hours

Prerequisite: SPA 101 or permission of instructor.

A continuation of SPA 101. Designed for students who wish to understand and speak basic conversational Spanish. Students will take imaginary trips to different Spanish-speaking countries and will use their knowledge of Spanish in order to survive.

45 Contact Hours

SPA 111 FIRST YEAR SPANISH I (A,N,R,AEC)

5 Credit Hours

Prerequisites: None

Designed for beginning students who wish to understand, speak, read, and write Spanish. Grammar rules will be studied in detail and students will learn to use three tenses: present, past and future. The emphasis will be on learning through participation in everyday situations.

75 Contact Hours

SPA 112 FIRST-YEAR SPANISH II (A,N,R,AEC)

5 Credit Hours

Prerequisite: SPA 111 or permission of the instructor.

Designed to develop principles of grammar and syntax, simple and compound terms, reading and writing of simple Spanish, correct pronunciation and rudimentary conversation. Students will be prepared for a trip to any Spanish-speaking country.

75 Contact Hours

SPA 121 SPANISH FOR THE CHICANO I (A)

3 Credit Hours

Prerequisites: None

Designed for the student who has some knowledge of the Spanish spoken in Chicano communities or who wants to learn this variation of Spanish. Students will learn vocabulary, expressions and sentence structure.

45 Contact Hours

SPA 122 SPANISH FOR THE CHICANO II (A)

3 Credit Hours

Prerequisite: SPA 121 or SPA 111 or SPA 112 or permission of instructor.

A continuation of SPA 121. Designed to teach student about the history, culture and other aspects of the life of the Chicanos. The course will be taught in Spanish. Basic grammar concepts will be learned to compare them with grammar usage in the barrios.

45 Contact Hours

SPA 130 IDIOMA AZTEKA (AZTEC LANGUAGE) (A)

3 Credit Hours

Prerequisite: SPA 112 or SPA 122 or permission of instructor.

A course designed to teach students basic grammar and elementary vocabulary of the true Mexican language called Nahuatl. Philosophy, culture and history as it relates to the people who spoke and still speak the Nahuatl language will also be discussed. The course will be taught in Spanish to give students the opportunity to practice their knowledge in that language.

45 Contact Hours

SPA 211 INTERMEDIATE SPANISH I (A,N,R,AEC)

3 Credit Hours

Prerequisite: SPA 112 or SPA 122 or permission of instructor.

Designed to teach students advanced skills in speaking, reading and writing Spanish. Students will use and organize their knowledge acquired in the previous year. Lectures prepared by the instructor will be used to train the students to better speak, read and write the language. The course will be taught in Spanish and students will be required to give weekly oral presentations.

45 Contact Hours

SPA 212 INTERMEDIATE SPANISH II (A,N,R,AEC)

3 Credit Hours

Prerequisite: SPA 211 or permission of instructor.

A continuation of SPA 211. Designed to give students the opportunity to speak, read and write in Spanish. The course is taught in Spanish to give students the opportunity to think in Spanish. Short stories, essays, compositions and other related material will be read and discussed in detail.

45 Contact Hours

SPA 220 DIALECTS OF THE SOUTHWEST (A)

3 Credit Hours

Prerequisite: One semester of Spanish or permission of instructor.

Designed to study the development of language and dialects relevant to the Chicano. Language emphasis will be on Spanish spoken in the Chicano communities of five states in the Southwest: California, Texas, New Mexico, Arizona and Colorado.

45 Contact Hours

SPA 221 CURRENT SPANISH — SPOKEN AND WRITTEN I (A,R)

3 Credit Hours

Prerequisite: SPA 112 or permission of instructor.

Second-year course leading to more fluent and current usage of Spanish. May be substituted for SPA 211.

45 Contact Hours

SPA 222 CURRENT SPANISH — SPOKEN AND WRITTEN II (A,R)

3 Credit Hours

Prerequisite: SPA 221 or permission of instructor.

Continuation of SPA 221 with more emphasis on fluency in speaking and current idioms in reading.

45 Contact Hours

SPA 225 SPANISH FOR THE PROFESSIONAL (A)

3 Credit Hours

Prerequisite: SPA 212 or SPA 222 or permission of instructor.

Job-related Spanish including technical vocabulary for the professional.

45 Contact Hours

Speech**COM 107 OCCUPATIONAL COMMUNICATION (N,AEC)**

3 Credit Hours

Prerequisites: None

Basic communication skills with emphasis on speaking and listening and on-the-job communication. (Can be substituted as COM 107.)

45 Contact Hours

COM 111 INTRODUCTION TO SPEECH (A,N,R,AEC)

3 Credit Hours

Prerequisites: None

Develops skills in interpersonal communication and public speaking emphasizing student participation and practice in areas such as organization and natural expression. Offered normally every term.

45 Contact Hours

SPE 112 PUBLIC SPEAKING (A,N,AEC)

3 Credit Hours

Prerequisite: SPE 111 or permission of instructor.

Continues building skills learned in SPE 111. Offered normally spring term.

45 Contact Hours

SPE 121 ORAL INTERPRETATION (A,AEC)

3 Credit Hours

Prerequisites: None

Develops skills for selection, analysis and performance of a variety of literary forms. Normally offered spring term.

45 Contact Hours

SPE 141 FORENSICS I (A,R,AEC)

3 Credit Hours

Prerequisite: SPE 111 or permission of instructor.

Introduces techniques of debate and extemporaneous speaking. Offered normally fall term.

45 Contact Hours

SPE 142 FORENSICS II (A,R,AEC)

3 Credit Hours

Prerequisite: SPE 111 or permission of instructor.

Develops techniques of oratory and oral interpretation. Offered normally spring term.

45 Contact Hours

SPE 211 ADVANCED PUBLIC SPEAKING (A,R,AEC)

3 Credit Hours

Prerequisite: SPE 111 or permission of instructor.

Reinforces basic public speaking skills through further practice with emphasis upon persuasive techniques.

45 Contact Hours

SPE 214 PROFESSIONAL AND BUSINESS SPEAKING (A,R,AEC)

3 Credit Hours

Prerequisite: SPE 111 or permission of instructor.

Strengthens skills in presenting briefings, sales presentations, public relations speeches, argumentation and conference speaking. Offered as needed or interest arises.

45 Contact Hours

SPE 231 VOICE AND DICTION (A,R,AEC)

3 Credit Hours

Prerequisite: SPE 111 or permission of instructor.

Explores the mechanisms of voice productions and aids with the improvement of individual voice utilization. Offered normally spring term.

45 Contact Hours

SPE 299 INDEPENDENT STUDY (A,N,R,AEC)

1-3 Credit Hours

Prerequisite: Consent of instructor.

Please refer to the general description of Independent Study in this catalog.

15-45 Contact Hours

Surgical Technology

STE 100 INTRODUCTION TO SURGICAL TECHNOLOGY (A)

4 Credit Hours

Prerequisite: Admission to STE program or permission of instructor.

Geared to the introductory aspects of surgical care. Emphasizes theoretical application in areas of asepsis, anesthesia, hemostasis, radiology and care of the surgical patient in the operating room.

60 Theory Hours — 60 Contact Hours

STE 105 PHARMACOLOGY FOR SURGICAL TECHNOLOGISTS (A)

2 Credit Hours

Prerequisites: None

Co-requisite: STE 106 and STE 107

Explores chemical therapy utilized preoperatively, intra-operatively and postoperatively for the patient undergoing surgical intervention. Emphasis is on drug types, effects/side effects, principles of administration and appropriate personnel actions.

30 Theory Hours — 30 Contact Hours

STE 106 SURGICAL SKILLS (A)

6 Credit Hours

Prerequisites: None

Co-requisite: Concurrent with STE 105 and STE 107

Presents principles and application of basic operating room skills with emphasis upon safe and efficient use of mechanized and nonmechanized equipment common to surgery.

30 Theory Hours — 90 Lab Hours

120 Contact Hours

STE 107 SURGICAL INSTRUMENTATION (A)

3 Credit Hours

Prerequisites: None

Co-requisite: STE 105 and STE 106

Presents application of principles related to use and management of instruments, sutures, needles, sponges and dressings commonly utilized in major and minor surgical procedures.

30 Theory Hours — 30 Lab Hours — 60 Contact Hours

STE 108 SURGICAL TRENDS (A)

2 Credit Hours

Prerequisite: Permission of instructor

Presents historical aspects of surgical care, emphasizes individualistic approaches to continuing education and discusses professional, legal and ethical responsibilities in surgical emergencies or death.

30 Theory Hours — 30 Contact Hours

STE 109 SURGICAL TECHNOLOGY LABORATORY EXPERIENCE (A)

5 Credit Hours

Prerequisites: STE 100, STE 105, STE 106, STE 107, STE 108

Applies surgical principles in the clinical setting under supervision of instructor. Emphasizes skill refinement and performance evaluation.

115 Lab Hours — 115 Contact Hours

STE 110 SURGICAL TECHNOLOGY PRACTICUM (A)

7 Credit Hours

Prerequisites: None

Co-requisite: STE 109

Emphasizes refinement of skills begun in STE 122, application of proper aseptic technique provision of quality patient care in the clinical setting under supervision of hospital personnel.

325 Contact Hours — 325 Practicum Hours

STE 115 SURGICAL PATHOLOGY AND INTERVENTION (A)

4 Credit Hours

Prerequisite: BIO 111, 112

Co-requisite: STE 109, STE 110

Presents surgical intervention theory related to pathology of body systems with focus on preoperative, intra-operative and postoperative progression, prognosis complications and appropriate action by operating room staff. Covers surgical procedures of abdomen, chest, head, cancer, plastic, pediatrics and reproductive system. Deals with functions of the surgical technician related to instrumentation and supplies.

60 Theory Hours — 60 Contact Hours

STE 119 SELECTED TOPICS IN SURGICAL TECHNOLOGY (A)

2 Credit Hours

Prerequisite: Permission of instructor

Reviews theory/skills content and focuses on integration of concepts in preparation for certification exam. Emphasizes job-entry skills and functions of a surgical technician in the operating room and/or related area.

30 Theory Hours — 30 Contact Hours

Sign Teacher Program

STP 100 UTILIZATION OF INSTRUCTIONAL MEDIA FOR SIGN LANGUAGE INSTRUCTION (N)

1 Credit Hour

Prerequisite: ASL 201, ASL 212

Co-requisite: STP 115

Introduces the basic communication process, need instructional media for sign language teaching, select and utilization of media and basic software product techniques.

23 Lab Hours — 23 Contact Hours

STP 105 STUDENT INTERACTION (N)

1 Credit Hour

Prerequisite: ASL 201, 212

Co-requisite: STP 115

Use of sign language games and other techniques for interacting with students in a sign language lab setting.

23 Lab Hours — 23 Contact Hours

STP 110 SEMINAR IN SIGN LANGUAGE ISSUES (N)

3 Credit Hours
Prerequisite: ASL 201, ANT 105, AMT 215
Co-requisite: ASL 202, STP 115
Lecture and discussion of issues pertaining to American Sign Language, use of sign systems language learning, mainstreaming, sign teacher certification, and communication with the deaf community.
15 Theory Hours — 45 Contact Hours

STP 115 THEORIES AND METHODS FOR TEACHING SIGN LANGUAGE (N)

3 Credit Hours
Prerequisite: ASL 201
Co-requisite: ASL 202, STP 110
An overview of approaches to second language learning and teaching from theoretical and practical points of view. Topics include first and second language acquisitions and contributions of psychology and linguistics. Observations will be required.
60 Theory Hours — 60 Contact Hours

STP 200 INSTRUCTIONAL DESIGN (N)

3 Credit Hours
Prerequisites: None
Development of competence in utilizing a paradigm of instructional processes, identification of entering behavior, setting of behavioral objectives and lesson planning, selection of learning activities and use of evaluation.
30 Theory Hours — 30 Contact Hours

STP 205 TECHNIQUES FOR TEACHING SIGN LANGUAGE (N)

3 Credit Hours
Prerequisite: STP 115
Development of skills in using a variety of classroom techniques to teach sign language as a second language.
45 Theory Hours — 45 Contact Hours

STP 206 SIGN LANGUAGE EVALUATION: THEORY TO PRACTICE (N)

3 Credit Hours
Prerequisite: STP 115, ASL 202
Study of techniques for ASL testing with emphasis on student developed evaluation.
45 Theory Hours — 45 Contact Hours

STP 210 SIGN LANGUAGE PRACTICUM SEMINAR (N)

3 Credit Hours
Prerequisite: Successful completion of Sign Language teaching courses
Co-requisite: STP 215
Seminar for STP majors covering a variety of topics and questions in relation to Sign Language teaching as a profession.
45 Theory Hours — 45 Contact Hours

STP 215 SIGN LANGUAGE TEACHING PRACTICUM (N)

6 Credit Hours
Prerequisite: Successful completion of Sign Language teaching courses
Co-requisite: Practicum Seminar STP 210
Observation, participation and teaching in Sign Language classes.
135 Lab Hours — 135 Contact Hours

STP 285 WORKSHOP IN SIGN LANGUAGE TEACHING (N)

1-9 Credit Hours
Prerequisite: Experience as a Sign Language teacher, qualifying score on sign language proficiency exam.
Conducted on a periodic basis, workshops will be designed to upgrade the skills of teachers in the field. Topics will include the nature of Language, the structures of American Sign Language, second language teaching theories, methods and techniques and sign variation in the deaf community.
15-135 Theory Hours — 15-135 Contact Hours

STP 299 INDEPENDENT STUDY (N)

2-4 Credit Hours
Prerequisite: STP 110
Intensive study or research on a specific area of sign language or sign language teaching under the direction of a qualified faculty member.
30-60 Contact Hours

Supervisory Management

SUM 100 GETTING READY TO SUPERVISE (N,AEC)

3 Credit Hours
Prerequisites: None
This is the first in a series of nine courses designed to develop job entry and job upgrading opportunities for positions as supervisor, foreman, leadman and other management positions in business, industry and government. Material covered includes an overview of the supervisory role, the basics of business organization, legal requirements of supervision and decision making.
45 Theory Hours — 45 Contact Hours

SUM 101 SELECTING YOUR SUBORDINATES (N,AEC)

3 Credit Hours
Prerequisites: None
Concentrates on developing the skills needed to post job vacancies, advertise position openings, write job notices, develop interviewing skills, develop selection skills, learn screening techniques and develop induction and orientation programs.
45 Theory Hours — 45 Contact Hours

SUM 111 MANAGING PEOPLE I (N,AEC)

3 Credit Hours

Prerequisites: None

Human skills development is the objective of this course. Communication techniques, learning the reasons behind attitudes, how they affect production and how to create positive attitudes are emphasized. Concepts are used to study and apply motivational techniques in work situations. Emphasis is placed on learning to motivate people to work for you.

45 Theory Hours — 45 Contact Hours

SUM 112 MANAGING PEOPLE II (N,AEC)

3 Credit Hours

Prerequisites: None

Emphasis is placed on how to discipline employees, how to motivate subordinates who are problem workers, and how to recognize and work with groups within the organization. Case histories, video tape sessions and other learning tools are used to reinforce people-oriented management concepts and practices.

45 Theory Hours — 45 Contact Hours

SUM 113 MANAGING PEOPLE III (N,AEC)

3 Credit Hours

Prerequisites: None

Course content is centered on the concepts, practices and strategies of administering union contracts. The student will develop coordination techniques and perform the function through role playing and simulation in handling union labor situations. Leadership is used as a capstone in the learning process. The role of leadership, the various aspects of leadership and leadership techniques are emphasized.

45 Theory Hours — 45 Contact Hours

SUM 121 MANAGING RESOURCES I (N,AEC)

3 Credit Hours

Prerequisites: None

This course concentrates on the management of activities, work simplification and time management. Principles and concepts in management activities will be developed as well as techniques of work/job analysis and work simplification. Time management concentrates on time as it relates to planning, organizing, blocking interruptions, handling decisions, delegation and managing the subordinates' time.

45 Theory Hours — 45 Contact Hours

SUM 122 MANAGING RESOURCES II (N,AEC)

3 Credit Hours

Prerequisites: None

Course work centers on cost management, management tools, and management by objectives. Concentrates on finalizing the techniques and skills needed in bringing together resource utilization of time, cost and activities. Emphasis is placed on the principles, concepts, structure and application of M.B.O. in the students' work environment.

45 Theory Hours — 45 Contact Hours

SUM 125 PERFORMANCE APPRAISAL (N,AEC)

3 Credit Hours

Prerequisites: None

Provides the student with the skills required to properly research, prepare, evaluate and perform appraisal activities. Attention is given to the need for a formal appraisal process and how to conduct the interview. In addition, personnel administration activities will be discussed with emphasis on wage administration, termination techniques and the role of the personnel departments.

45 Theory Hours — 45 Contact Hours

SUM 126 ON THE JOB TRAINING (N,AEC)

3 Credit Hours

Prerequisites: None

Deals with training requirements in handling day to day responsibilities. Emphasis is on training psychology techniques used in developing training programs and how to administer the function. Attention is given to the techniques used in coordinating the training function and to the tools used in measuring the accomplishment of performance objectives. Methods and procedures used in measuring the overall effectiveness of the training program are considered.

45 Theory Hours — 45 Contact Hours

Surveying**SUR 100 SURVEYING FIELDWORK, ELEMENTARY (R)**

11 Credit Hours

Prerequisite: Consent of instructor

Use, care and theory of the chain and level, introduction to transit, field practice in chaining, elevations with hand and engineer level and introductory transit work. Office practice stresses theory and importance of field notes.

60 Theory Hours — 158 Lab Hours

218 Contact Hours

SUR 101 SURVEYING CALCULATIONS I (R)

4 Credit Hours

Prerequisite: Consent of instructor

Hand solutions with and without calculators of applied mathematical surveying relationships.

53 Theory Hours — 11 Lab Hours — 64 Contact Hours

SUR 201 SURVEYING CALCULATIONS II (R)

3 Credit Hours

Prerequisite: SUR 100, SUR 101

Understanding of application and theory of: plane coordinates, traverse calculations, area calculations, horizontal curves.

45 Theory Hours — 45 Contact Hours

SUR 202 SURVEYING CALCULATIONS III (R)

3 Credit Hours

Prerequisite: SUR 201

Continuation of SUR 201 — Vertical curves, route surveys, earth work, error analysis, least square adjustments.

45 Theory Hours — 45 Contact Hours

SUR 105 SURVEYING DRAFTING (R)

3 Credit Hours

Prerequisite: SUR 100

Basic drafting techniques and principles of three dimensional projection applied to surveying problems. Surveying drafting of traverses, plats, route survey drawings and maps.

30 Theory Hours — 120 Lab Hours

60 Contact Hours

SUR 120 SURVEYING FOR CONSTRUCTION AND TECHNICAL TRADES (R)

3 Credit Hours

Prerequisites: None

General surveying concepts of distance, elevation and angles. Emphasis on field work, enough theory to understand basic principles. This course can be substituted for any surveying major course.

15 Theory Hours — 45 Lab Hours — 60 Contact Hours

SUR 200 SURVEYING — FIELD WORK, ADVANCED (R)

3 Credit Hours

Prerequisites: SUR 100, SUR 101, SUR 105

Use, care and theory of transit, modern levels, theodolites, EDM and plane table, field and office practice with horizontal and vertical angles applied to line, curve area problems and astronomical observations. Field problems stress application, accuracy and evaluation of the field data.

100 Theory Hours — 158 Lab Hours

8 Contact Hours

SUR 203 SURVEYING CALCULATIONS IV (R)

3 Credit Hours

Prerequisite: SUR 201

Review of rectangular coordinates, state plane coordinate systems, United States Public Land survey system, calculations for astronomical observations.

15 Theory Hours — 11 Lab Hours — 49 Contact Hours

SUR 204 SURVEYING COMPUTER APPLICATIONS (R)

3 Credit Hours

Prerequisite: SUR 201

Understanding the use of the computer as it relates to surveying problems. Programming may be taught in RPN, BASIC, FORTRAN or COGO.

15 Theory Hours — 60 Contact Hours

SUR 205 PHOTOGRAMMETRY FOR SURVEYORS (R)

3 Credit Hours

Prerequisite: SUR 201

Interpretation and evaluation of aerial photographs and photogrammetric instruments from packet stereopairs to projection plotters.

15 Theory Hours — 56 Lab Hours

60 Contact Hours

SUR 206 LEGAL ASPECTS OF SURVEYING (R)

3 Credit Hours

Prerequisite: SUR 200

Problems encountered by the surveyor dealing with boundary control, property disputes and legal cases.

45 Theory Hours — 45 Contact Hours

SUR 216 SURVEYING CALCULATION REFRESHER (R)

4 Credit Hours

Prerequisites: None

Refresher course for practicing surveyors who need a review in surveying calculations and theory. Course not suitable for first-time student. H&V curves, earth work, coordinates, astronomical observations and topics selected by the class.

60 Theory Hours — 60 Contact Hours

Consumer Electronics Technology**TCE 100 ANALYZE AND TROUBLESHOOT DC CIRCUITS (N)**

3 Credit Hours

Prerequisite: Consent of the instructor.

The Consumer Electronics student should be able to diagnose, troubleshoot and repair a series, parallel and series-parallel circuits to the instructor's standards.

20 Theory Hours — 40 Lab Hours — 60 Contact Hours

TCE 105 ANALYZE AND TROUBLESHOOT AC CIRCUITS (N)

3 Credit Hours

Prerequisite: TCE 100

The Consumer Electronics student should be able to diagnose and detect faults in capacitors, coils, transformers and other AC circuits to the instructor's standards.

20 Theory Hours — 40 Lab Hours — 60 Contact Hours

TCE 106 ANALYZE AND TROUBLESHOOT VACUUM TUBE CIRCUITS (N)

3 Credit Hours

Prerequisite: TCE 105

The Consumer Electronics student should be able to diagnose, troubleshoot and repair faults in vacuum tube circuits to the instructor's standards.

20 Theory Hours — 40 Lab Hours — 60 Contact Hours

TCE 107 OPERATIONS OF TRANSISTOR CIRCUITS (N)

3 Credit Hours

Prerequisite: TCE 106

The Consumer Electronics student should be able to describe the circuit action, on the given circuit formed by a PNP and NPN transistors, to the instructor's standards.

20 Theory Hours — 40 Lab Hours — 60 Contact Hours

TCE 108 TROUBLESHOOT SOLID STATE CIRCUITS (N)

3 Credit Hours

Prerequisite: TCE 107

The Consumer Electronics student should be able to troubleshoot circuits and analyze a functional electronics system to the instructor's standards.

20 Theory Hours — 40 Lab Hours — 60 Contact Hours

TCE 109 TROUBLESHOOT OTHER SOLID STATE DEVICES, POWER SUPPLIES, MICROPHONES AND SPEAKERS (N)

3 Credit Hours

Prerequisite: TCE 108

The Consumer Electronics student should be able to describe the operation of other solid state devices (FET, SCR, UJT, DIAC and TRIAC) and perform functional tests on these devices. In addition, the student should be able to troubleshoot and repair electronic power supplies to the instructor's standards.

20 Theory Hours — 40 Lab Hours — 60 Contact Hours

TCE 110 TROUBLESHOOT AND REPAIR VT RADIOS (N)

3 Credit Hours

Prerequisite: TCE 107

The Consumer Electronics student should be able to troubleshoot and repair an AM vacuum tube radio receiver to the instructor's standards.

20 Theory Hours — 40 Lab Hours — 60 Contact Hours

TCE 115 TROUBLESHOOT AND REPAIR SOLID STATE AM RADIOS (N)

3 Credit Hours

Prerequisite: TCE 110

The Consumer Electronics student should be able to troubleshoot and repair a solid state AM radio receiver to the instructor's standards.

20 Theory Hours — 40 Lab Hours — 60 Contact Hours

TCE 116 TROUBLESHOOT AND REPAIR FM RADIOS (N)

3 Credit Hours

Prerequisite: TCE 115

The Consumer Electronics student should be able to troubleshoot and repair an FM radio to the instructor's standards.

20 Theory Hours — 40 Lab Hours — 60 Contact Hours

TCE 117 TROUBLESHOOT AND REPAIR STEREO AUDIO AMPLIFIERS (N)

3 Credit Hours

Prerequisite: TCE 116

The Consumer Electronics student should be able to troubleshoot and repair stereo audio amplifiers to the instructor's standards.

20 Theory Hours — 40 Lab Hours — 60 Contact Hours

TCE 200 SYMPTOM DIAGNOSE MONOCHROME TV (N)

3 Credit Hours

Prerequisite: TCE 117

The Consumer Electronics student, upon completion of this module, should be able to diagnose logically B&W television receiver troubles to the instructor's standards.

20 Theory Hours — 40 Lab Hours — 60 Contact Hours

TCE 205 TROUBLESHOOT AND REPAIR MONOCHROME TV AND PRINCIPLES OF COLOR TV (N)

3 Credit Hours

Prerequisite: TCE 200

The Consumer Electronics student should be able to field repair a B&W television receiver and describe the operation of a color television receiver to the instructor's standards.

20 Theory Hours — 40 Lab Hours — 60 Contact Hours

TCE 206 TROUBLESHOOT AND REPAIR COLOR TV (N)

3 Credit Hours

Prerequisite: TCE 205

The Consumer Electronics student should be able to diagnose and field repair a color television. In addition, bench repair troubles in power supplies, timing and deflection circuits to the instructor's standards.

20 Theory Hours — 40 Lab Hours — 60 Contact Hours

TCE 207 PEAK AND SWEEP ALIGNMENT (N)

3 Credit Hours

Prerequisite: TCE 206

The Consumer Electronics student should be able to peak and sweep align the chroma and VIF channels to the instructor's standards.

20 Theory Hours — 40 Lab Hours — 60 Contact Hours

TCE 208 TROUBLESHOOT AND REPAIR PICTURE TUBE CIRCUITS, VIDEO AND AGC (N)

3 Credit Hours

Prerequisite: TCE 207

The Consumer Electronics student should be able to bench troubleshoot and repair troubles in the picture tube, video and AGC circuits of a B&W and color television receiver to the instructor's standards.

20 Theory Hours — 40 Lab Hours — 60 Contact Hours

TCE 209 TROUBLESHOOT AND REPAIR CHROMA CIRCUITS (N)

3 Credit Hours

Prerequisite: TCE 208

The Consumer Electronics student should be able to bench troubleshoot and repair troubles in chroma, IAFPC and automatic color circuits of a color television receiver to meet the instructor's standards.

20 Theory Hours — 40 Lab Hours — 60 Contact Hours

TCE 210 TROUBLESHOOT AND REPAIR VIF, TUNER AND SOUND (N)

3 Credit Hours

Prerequisite: TCE 209

The Consumer Electronics student should be able to bench troubleshoot and repair VIF, tuner and sound circuits of a color television receiver to the instructor's standards.

20 Theory Hours — 40 Lab Hours — 60 Contact Hours

**TCE 215 TROUBLESHOOT AND REPAIR MPX
STEREO RECEIVERS (N)**

3 Credit Hours

Prerequisite: Consent of instructor

The Consumer Electronics student should be able to diagnose, troubleshoot and repair MPX stereo receivers to the instructor's standards.

20 Theory Hours — 40 Lab Hours — 60 Contact Hours

**TCE 216 TROUBLESHOOT AND REPAIR CB
TRANSCEIVERS (N)**

3 Credit Hours

Prerequisite: Consent of instructor

The Consumer Electronics student should be able to troubleshoot and repair CB transceivers to the instructor's standards.

20 Theory Hours — 40 Lab Hours — 60 Contact Hours

**TCE 217 TROUBLESHOOT AND REPAIR TAPE
RECORDERS AND STEREOS (N)**

3 Credit Hours

Prerequisite: Consent of instructor

The Consumer Electronics student should be able to troubleshoot and repair cassette tape recorders and players to the instructor's standards.

20 Theory Hours — 40 Lab Hours — 60 Contact Hours

**TCE 218 TROUBLESHOOT AND REPAIR
AUTOMATIC RECORD CHANGERS (N)**

3 Credit Hours

Prerequisite: Consent of instructor

The Consumer Electronics student should be able to troubleshoot and repair automatic record changers to the instructor's standards.

20 Theory Hours — 40 Lab Hours — 60 Contact Hours

TCE 219 DESIGN AND INSTALL MATV (N)

3 Credit Hours

Prerequisite: Consent of instructor

The Consumer Electronics students, upon completion of this module, should be able to demonstrate his knowledge of an MATV distribution system.

20 Theory Hours — 40 Lab Hours — 60 Contact Hours

**TCE 220 TRANSMISSION LINES AND ANTENNAS
(N)**

3 Credit Hours

Prerequisite: Consent of instructor

The Consumer Electronics student should be able to demonstrate his knowledge of the principles of transmission lines and home antenna systems.

20 Theory Hours — 40 Lab Hours — 60 Contact Hours

**TCE 225 INSTALL, TEST AND REPAIR SECURITY
SYSTEMS (N)**

3 Credit Hours

Prerequisite: TCE 229

The Consumer Electronics student should be able to demonstrate a working knowledge of the various home and industrial security systems to meet the instructor's standards.

20 Theory Hours — 40 Lab Hours — 60 Contact Hours

**TCE 226 TROUBLESHOOT AND REPAIR
MICROWAVE OVEN (N)**

3 Credit Hours

Prerequisite: TCE 229

The Consumer Electronics student should be able to troubleshoot and repair a microwave oven to meet the instructor's standards.

20 Theory Hours — 40 Lab Hours — 60 Contact Hours

**TCE 227 TROUBLESHOOT AND REPAIR TV
REMOTE CONTROL (N)**

3 Credit Hours

Prerequisite: TCE 210

The Consumer Electronics student should be able to troubleshoot and repair television remote control systems to the instructor's standards.

20 Theory Hours — 40 Lab Hours — 60 Contact Hours

TCE 228 ANALYZE DIGITAL LOGIC CIRCUITS (N)

3 Credit Hours

Prerequisite: Consent of instructor

The Consumer Electronics student should be able to demonstrate the operation of basic logic circuits to the instructor's standards.

20 Theory Hours — 40 Lab Hours — 60 Contact Hours

**TCE 229 TROUBLESHOOT AND REPAIR
CONSUMER DIGITAL LOGIC CIRCUITS
(N)**

3 Credit Hours

Prerequisite: TCE 228

The Consumer Electronics student should be able to troubleshoot and repair digital circuits to the instructor's standards.

20 Theory Hours — 40 Lab Hours — 60 Contact Hours

**TCE 230 BASIC OPERATION OF HOME VIDEO
CASSETTE RECORDER (HVCR) (N)**

3 Credit Hours

Prerequisite: Consent of instructor

The Consumer Electronics student should be able to demonstrate a working knowledge of home video cassette recorders (HVCR) to the instructor's standards.

20 Theory Hours — 40 Lab Hours — 60 Contact Hours

**TCE 235 DIAGNOSE, TROUBLESHOOT AND
REPAIR HOME VIDEO CASSETTE
RECORDERS (N)**

3 Credit Hours

Prerequisite: TCE 230

The Consumer Electronics student should be able to troubleshoot and repair an HVCR to the instructor's standards.

20 Theory Hours — 40 Lab Hours — 60 Contact Hours

**TCE 237 ASSOCIATED CERTIFIED ELECTRONICS
TECHNICIAN (N)**

3 Credit Hours

Prerequisite: Consent of instructor

The Consumer Electronics student, upon completion of this module, should be able to pass an Associate Level Certified Electronics Technician Exam.

20 Theory Hours — 40 Lab Hours — 60 Contact Hours

**TCE 238 JOURNEYMAN CERTIFIED ELECTRONICS
TECHNICIAN (N)**

3 Credit Hours

Prerequisite: TCE 237

The Consumer Electronics student, upon completion of this module, should be able to pass a Journeyman Certified Electronics Technician Exam.

20 Theory Hours — 40 Lab Hours — 60 Contact Hours

TCE 299 INDEPENDENT STUDY (N)

6 Credit Hours

Prerequisite: Consent of instructor

The Consumer Electronics students should be able to develop their program of study in consultation with the instructor and complete to the instructor's standards.

20 Theory Hours — 40 Lab Hours

120 Contact Hours

Technical Illustration

TEI 200 AIRBRUSH I (A)

6 Credit Hours

Prerequisite: None

Provides fundamental training necessary to produce line and continuous tone drawings through the use of graphic pencil, various types of pens and inks.

120 Contact Hours

TEI 205 AIRBRUSH II (A)

3 Credit Hours

Prerequisite: None

Provides training in advanced airbrush techniques in shading and introductory photo retouching techniques.

60 Contact Hours

TEI 207 SPECIAL PROBLEMS (A)

6 Credit Hours

Prerequisite: None

Requires preparation of a presentation portfolio preparatory to employment. Includes work in black and white as well as color. Includes assemblies, cut aways, exploded views, spot drawings, visual aids and advanced photo retouching.

120 Contact Hours

Traffic Engineering Technology

**TET 100 INTRODUCTION TO TRAFFIC
ENGINEERING (R)**

3 Credit Hours

Prerequisite: None

This course offers a general overview of the field of traffic engineering technology and provides an insight to related career opportunities. It relates human factors and driver characteristics to the vehicle, roadway and environment. Traffic characteristics are defined in terms of speed, design, zoning, density, gaps and lags, and traffic volume. The course serves as an introduction for traffic engineering technology students and as a survey course for students majoring in other related fields.

45 Theory Hours — 45 Contact Hours

TET 105 TRAFFIC ENGINEERING STUDIES I (R)

3 Credit Hours

Prerequisite: None

Course includes problems applicable to surveys, survey types, execution, analysis, and field techniques. Stressed are statistical significance, innovations of applications and hands-on procedures.

45 Theory Hours — 45 Contact Hours

TET 106 TRAFFIC ENGINEERING STUDIES II (R)

3 Credit Hours

Prerequisite: None

A continuation of TET 105 with emphasis placed upon such topics as origin-destination surveys, transit studies, parking studies, lighting studies and observance studies.

45 Theory Hours — 45 Contact Hours

**TET 107 TRAFFIC ADMINISTRATION AND
SAFETY (R)**

3 Credit Hours

Prerequisite: None

By studying traffic administration and safety, the student learns how budget, public relations, interagency problems and other systems operations affect traffic engineering. Stressing traffic safety as a basic consideration for all technical aspects of the field, the student is shown that the field traffic surveys, control devices, geometric design, traffic studies, traffic laws and urban transportation planning constitute the major subject areas of traffic engineering technology.

45 Theory Hours — 45 Contact Hours

TET 108 CONTROL DEVICES (R)

5 Credit Hours

Prerequisite: None

In the general context of design maintenance and placement, the course emphasizes sign (illumination, lettering, response time, type and design) signals (cycle lengths, phases, offsets, equipment and maintenance) marking, lighting (highways, intersections, special areas) and delineation.

45 Theory Hours — 45 Lab Hours — 90 Contact Hours

**TET 109 TRAFFIC ENGINEERING PSYCHOLOGY
(R)**

3 Credit Hours

Prerequisite: None

Course objectives include behavioral theory, behavioral measurements and driver expectancy. Course will stress practical application and research techniques.

45 Theory Hours — 45 Contact Hours

**TET 110 TRAFFIC LAWS, ORDINANCES AND
REGULATIONS (R)**

3 Credit Hours

Prerequisite: None

Course covers the court system, legislative procedure, legislative language, judicial interpretation and their application to traffic control.

45 Theory Hours — 45 Contact Hours

TET 201 GEOMETRIC DESIGN I (R)

5 Credit Hours

Prerequisite: None

Geometrics will be defined and geometric design will be applied to accident and traffic operations. Capacity will also be covered.

45 Theory Hours — 45 Lab Hours — 90 Contact Hours

TET 202 GEOMETRIC DESIGN II (R)

6 Credit Hours

Prerequisite: TET 201

A continuation of TET 201 with added instruction in topics such as control of access, grade separations and interchanges, safety, research, capacity, freeways and the expressways, etc.

60 Theory Hours — 45 Lab Hours

105 Contact Hours

TET 205 TRAFFIC ACCIDENT REPORTING AND ANALYSIS (R)

3 Credit Hours

Prerequisite: None

Course objectives include reporting an accident, determining violations and causes, analyzing mass accident data, determining causative elements, and proposing solutions to accident problems.

45 Theory Hours — 45 Contact Hours

TET 207 DATA COLLECTION TECHNIQUES AND EVALUATION (R)

3 Credit Hours

Prerequisite: None

Basic principles of sampling: survey designs; systems of sampling; methods of estimation; problem definition; evaluation of information collected; organization and preparation of reports including techniques of collecting, interpreting and presenting information useful in traffic engineering.

45 Theory Hours — 45 Contact Hours

TET 211 URBAN TRANSPORTATION PLANNING I (R)

3 Credit Hours

Prerequisite: None

Course includes an introduction to the purpose, technique and limitations of urban transportation planning. The use of output from the planning process as an operational tool and the limitations on accuracy will be covered.

45 Theory Hours — 45 Contact Hours

TET 212 URBAN TRANSPORTATION PLANNING II (R)

3 Credit Hours

Prerequisite: TET 211

A continuation of TET 211 with additional instruction in model split techniques, parking, traffic assignments, environmental considerations, development of alternatives and economic analysis.

45 Theory Hours — 45 Contact Hours

TET 215 DATA PROCESSING FOR TRAFFIC ENGINEERS (R)

3 Credit Hours

Prerequisite: None

Effective use of automatic equipment necessary to meet the information needs of traffic engineers. Study of the basic data processing concepts and procedures including management information systems, the hardware and software necessary for system implementation and intra-firm and agency coordination.

45 Theory Hours — 45 Contact Hours

TET 216 PICTORIAL DRAFTING (R)

3 Credit Hours

Prerequisite: None

Problems involving the construction, layout, and rendering of pictorial illustrations of a technical nature, including exploded assemblies and assembled sections, using axonometrics, and perspective projection.

45 Theory Hours — 45 Contact Hours

TET 217 MAP READING AND PHOTO INTERPRETATION (R)

3 Credit Hours

Prerequisite: None

Interpretation and information gathering from maps and aerial photos. Use and application of black and white and color photos to traffic engineers. Final project will be evaluation of an area for specific proposal.

45 Theory Hours — 45 Contact Hours

TET 218 LAND USE AND THE QUALITY OF LIFE (R)

6 Credit Hours

Prerequisite: None

This course brings together the concepts of traffic engineering and relates them to the broader concepts of land use. Studies will include municipal government and the citizen processes involved in local land use decision-making systems.

60 Theory Hours — 45 Lab Hours

105 Contact Hours

TET 219 TRAFFIC ENGINEERING PROBLEMS (R)

3 Credit Hours

Prerequisite: None

Social, economic and psychological factors which influence traffic engineering, traffic engineering issues and problems of contemporary importance will be discussed.

45 Theory Hours — 45 Contact Hours

TET 225 CONSTRUCTION DEVICES FOR TRAFFIC CONTROL (R)

2 Credit Hours

Prerequisite: None

To assist participants in identifying and applying workable concepts and techniques for planning, designing, installing and maintaining signing and marking installations in construction and maintenance areas.

30 Theory Hours — 30 Contact Hours

**TET 226 ADVANCED CONSTRUCTION DEVICES
FOR TRAFFIC CONTROL (R)**

4 Credit Hours

Prerequisite: None

To assist participants in identifying and applying workable concepts and techniques for planning, designing, installing and maintaining signing and marking installations in construction and maintenance areas. Includes legal, environmental, administrative problems and solutions associated with these areas. Also, legal and moral consequences of their actions (and inactions).

60 Theory Hours — 60 Contact Hours

**TET 297 COOPERATIVE WORK EXPERIENCE /
PRACTICAL EXPERIENCE (R)**

1-6 Credit Hours

Prerequisite: None

The student is assigned to a local traffic engineering department and is given duties related to the Traffic Engineering Technology degree program. This practical training program is supervised and coordinated by a College instructor. The student works with an experienced preselected supervisor on the job who will grade his/her performance according to College standards. Regular school class attendance is required by all students participating in the course.

45-270 Coop Hours — 45-270 Contact Hours

TET 299 INDEPENDENT STUDY (R)

2-6 Credit Hours

Prerequisite: None

The student will study intensively a topic of interest under the direction of a qualified faculty member. The number of credit hours to be allowed for successful completion of the course will be determined cooperatively by the instructor and the division director.

45-135 Independent Study Hours

45-135 Contact Hours

**Traffic and Transportation
Management**

**TTM 101 FUNDAMENTALS OF COMMERCIAL
TRANSPORTATION (A)**

3 Credit Hours

Prerequisite: None

A beginning course in the study of the U.S. transportation system. Designed to acquaint the student with the why and how we manage transportation, the history of transportation regulation and other government functions; freight classification; the domestic bill of lading; rates; routing; packaging; loading; materials handling; freight claims; distribution and warehousing.

45 Theory Hours — 45 Contact Hours

**TTM 102 FUNDAMENTALS OF COMMERCIAL
TRANSPORTATION II (A)**

3 Credit Hours

Prerequisite: TTM 101 or Instructor Permission

Deals with contract and private motor carriage, expediting and tracing, detention charges, demurrage, siding and weight agreements, organizing, operating and equipping a traffic department, data processing in transportation, U.S. government traffic, international shipments, the transportation of hazardous materials, and the ocean bill of lading contract.

45 Theory Hours — 45 Contact Hours

TTM 115 FREIGHT CLAIMS (A)

2 Credit Hours

Prerequisite: None

Further student understanding of the processing and management of freight claims and claim prevention.

30 Theory Hours — 30 Contact Hours

TTM 116 BASICS IN AIR CARGO (A)

2 Credit Hours

Prerequisite: None

Introduces the developing field of air cargo. Topics include air freight rates, tariff rules, regulations and hazardous articles. Course will also cover domestic and international cargo operations, marketing and total cost concepts.

30 Theory Hours — 30 Contact Hours

**TTM 141 MANAGEMENT TOOLS AND CONCEPTS
I (A)**

4 Credit Hours

Prerequisite: None

This course is designed to afford the student an opportunity to relate general management concepts to the problems of transportation, traffic and physical distribution management with an emphasis on accounting and law.

60 Theory Hours — 60 Contact Hours

**TTM 142 MANAGEMENT TOOLS AND CONCEPTS
II (A)**

4 Credit Hours

Prerequisite: None

A continuation of Management Tools and Concepts I with emphasis on marketing and management concepts.

60 Theory Hours — 60 Contact Hours

TTM 151 FREIGHT RATES I (A)

2 Credit Hours

Prerequisite: None

Introduces freight rates and tariffs beginning with parcel post, U.P.S., express and air freight forwarders. Studies of the national motor freight classification and related work problems leading into motor carrier tariff procedures, rules and interpretation.

30 Theory Hours — 30 Contact Hours

TTM 152 FREIGHT RATES II (A)

2 Credit Hours

Prerequisites: 1st semester or working knowledge of motor classification and tariffs

Continues work problems involving motor tariffs of different bureaus covering a variety of situations.

30 Theory Hours — 30 Contact Hours

TTM 161 TECHNIQUES OF WAREHOUSING (A)

2 Credit Hours

Prerequisite: None

Designed for those interested in, or engaged in the area of physical distribution and aspiring to move into management. Includes a brief history of warehousing; (1) its development as an integral segment of the distribution function, (2) types of warehouses, and (3) an outline of warehouse layout and physical handling methods.

30 Theory Hours — 30 Contact Hours

TTM 201 INTERNATIONAL TRADE — EXPORTS (A)

3 Credit Hours

Prerequisite: None

A comprehensive study of doing business overseas. Includes geography review, methods of locating and servicing markets, documentation, transportation methods and rates, case problems from receipt of inquiry to receipt of order by overseas buyer.

45 Theory Hours — 45 Contact Hours

TTM 202 INTERNATIONAL TRADE — IMPORTS (A)

3 Credit Hours

Prerequisite: None

Acquaints the student with transportation and related matters for international import freight movement.

45 Theory Hours — 45 Contact Hours

TTM 211 ECONOMICS OF TRANSPORTATION I (A)

2 Credit Hours

Prerequisites: TTM 101, 102, 231 and 232

Covers the development of transportation systems, theory of pricing, cost structures, and rate making.

30 Theory Hours — 30 Contact Hours

TTM 212 ECONOMICS OF TRANSPORTATION II (A)

2 Credit Hours

Prerequisites: TTM 211 or instructor permission

The competition between modes, transportation regulations, finance and problems of transportation policies.

30 Theory Hours — 30 Contact Hours

TTM 221 TRANSPORTATION REGULATIONS I (A)

3 Credit Hours

Prerequisites: TTM 101, 102, 231 and 232

Prepares students for admission to practice before the Interstate Commerce Commission in regulation areas. A study of the first four parts of the Interstate Commerce Act.

45 Theory Hours — 45 Contact Hours

TTM 222 TRANSPORTATION REGULATIONS II (A)

3 Credit Hours

Prerequisites: TTM 221 or instructor permission

Focuses on court decisions, the rules of practice before the Interstate Commerce Commission and the code of ethics.

45 Theory Hours — 45 Contact Hours

TTM 231 TRANSPORTATION MANAGEMENT I (A)

2 Credit Hours

Prerequisites: TTM 101 and 102

Analysis of the modern transportation manager's role within the complex American transportation system. Emphasis is on identification of the competing forces within that system — private vs. for-hire transportation, interstate vs. intrastate transportation, market forces vs. regulatory pressures, etc.

30 Theory Hours — 30 Contact Hours

TTM 232 TRANSPORTATION MANAGEMENT II (A)

2 Credit Hours

Prerequisites: TTM 231 or instructor permission

Continues in-depth study of the factors surrounding modern transportation management. Narrows the issues explored in Transportation Management I, e.g., by analyzing specific differences among modes of transport.

30 Theory Hours — 30 Contact Hours

Travel and Tourism Occupations**TTO 101 GEOGRAPHY FOR TRAVEL AND TOURISM (A)**

4 Credit Hours

Prerequisite: None

Presents the location of countries and capital cities, as well as major tourist attractions, throughout the world.

60 Theory Hours — 60 Contact Hours

TTO 102 DOMESTIC TRAVEL AND TARIFFS (A)

4 Credit Hours

Prerequisite: None

Examines airline ticketing, fares, tariffs, reservations and scheduling, as practiced in North America.

40 Theory Hours — 20 Lab Hours — 60 Contact Hours

TTO 103 INTERNATIONAL TRAVEL AND TARIFFS (A)

4 Credit Hours

Prerequisite: TTO 102

Covers all aspects of international travel, including various modes of transportation, airline tariffs, and ticketing, cruises, hotels, and resorts, tour planning, documentation.

40 Theory Hours — 20 Lab Hours — 60 Contact Hours

TTO 104 TRAVEL AGENCY MANAGEMENT AND PROCEDURES (A)

4 Credit Hours

Prerequisite: TTO 102

Emphasizes travel agency organization and procedures, responsibilities, advertising, profitability, and sales techniques.

60 Theory Hours — 60 Contact Hours

TTO 297 COOPERATIVE WORK EXPERIENCE (A)

1-6 Credit Hours

Prerequisite: None

Provides the student with work in an area related to his/her vocational course of study. Supervision is by the employer under a planned program developed by the Coop Work Experience Coordinator, the student, and the direct employer supervisor. An in-class seminar of fifteen (15) hours per semester is included.

15 Theory Hours — 45 Lab Hours (equals 1 sem. credit)

15-240 Contact Hours

Urban Planning Technology**UPT 100 INTRODUCTION TO PLANNING (R)**

3 Credit Hours

Prerequisite: None

An introduction to the planning process as it is currently operating in the urban setting with an emphasis on basic planning philosophy, techniques and the function of the planning technician in development of solutions to urban problems including mass transportation, housing and pollution.

45 Theory Hours — 45 Contact Hours

UPT 105 DATA COLLECTING TECHNIQUES AND EVALUATION I (R)

5 Credit Hours

Prerequisite: None

Basic principles of sampling, survey designs, systems of sampling, methods of estimation, problem definition, evaluation of information collected, organization and preparation of reports including techniques of collecting, interpreting and presenting information useful in urban planning.

45 Theory Hours — 45 Lab Hours — 90 Contact Hours

UPT 106 DATA COLLECTING TECHNIQUES AND EVALUATION II (R)

5 Credit Hours

Prerequisite: UPT 105

Preparation of statistical reports for establishment of an on-going data base emphasizing cybernetic looping and information upgrading for cities and counties.

45 Theory Hours — 45 Lab Hours — 90 Contact Hours

UPT 108 PROBLEMS IN URBAN PLANNING (R)

3 Credit Hours

Prerequisite: None

Social, economic and psychological factors which influence social stratification and their effect on urban planning. Urban planning issues and problems of contemporary importance such as social attitudes, public opinion, etc.

45 Theory Hours — 45 Contact Hours

UPT 109 STATISTICS FOR PLANNERS (R)

3 Credit Hours

Prerequisite: None

Data handling, methods of analysis and interpretation, application of techniques to gather data rather than development of formulas, with examples drawn from urban planning situations.

45 Theory Hours — 45 Contact Hours

UPT 115 DATA PROCESSING FOR PLANNERS (R)

5 Credit Hours

Prerequisite: None

Effective use of automatic equipment necessary to meet the information needs of urban planners. Study of the basic data processing concepts and procedures including management information systems, the hardware and software necessary for system implementation and intra-firm and agency coordination.

45 Theory Hours — 45 Lab Hours — 90 Contact Hours

UPT 201 MAP READING AND PHOTO INTERPRETATION I (R)

5 Credit Hours

Prerequisite: None

Interpretation and information gathering from maps and aerial photos. Use and application of black and white photos of urban planning. Final project will be an evaluation of an area for specific proposal.

45 Theory Hours — 45 Lab Hours — 90 Contact Hours

UPT 202 MAP READING AND PHOTO INTERPRETATION II (R)

5 Credit Hours

Prerequisite: UPT 201

Interpretation and information gathering from maps and color aerial photos. Extending the theory and practice of black and white photo interpretation to colored and stereoscopic photos.

45 Theory Hours — 45 Lab Hours — 90 Contact Hours

UPT 205 DRAFTING FOR URBAN PLANNING (R)

6 Credit Hours

Prerequisite: None

Problems involving the construction, layout and rendering of pictorial illustrations of a technical nature, including exploded assemblies and assembled sections, using axonometric and perspective projection.

60 Theory Hours — 45 Lab Hours

105 Contact Hours

UPT 206 PLANNING LAW (R)

3 Credit Hours

Prerequisite: None

An introduction to the legal basis for planning, including such topics as basic court cases and federal laws which delineate the planning function in the urban setting and the State, enabling legislation and a review of local jurisdiction ordinance forms. This is followed by a review of the process which is required for the passage of new state and local laws.

45 Theory Hours — 45 Contact Hours

UPT 207 TRANSPORTATION PLANNING (R)

3 Credit Hours

Prerequisite: None

This course is an introduction to the purpose, techniques and limitations of urban transportation planning. The use of output from the planning process as an operational tool and the limitations on accuracy will be covered.

45 Theory Hours — 45 Contact Hours

UPT 215 PLANNING FOR SOLID WASTE (R)

3 Credit Hours

Prerequisite: None

A study of the sources of solid waste and the problems relative to land use, water and people. Traditional, new and experimental methods of control and planning for abatement will be identified.

45 Theory Hours — 45 Contact Hours

UPT 216 URBAN ENVIRONMENT DECISION MAKING (R)

3 Credit Hours

Prerequisite: None

This course brings together the techniques involved in urban decision making including ecological, social, economic and cultural considerations. The concepts of environmental impact statements required by federal law will be explored.

45 Theory Hours — 45 Contact Hours

UPT 217 LAND USE AND THE QUALITY OF LIFE (R)

6 Credit Hours

Prerequisite: None

The student will gain an awareness of municipal government and citizen processes involved in the local land use decision making systems. Integration of project management techniques and the evaluations of actual environmental impact development proposals for municipalities.

60 Theory Hours — 45 Lab Hours

105 Contact Hours

Urban Horticulture**URH 100 ROCKY MOUNTAIN HORTICULTURE (N)**

2 Credit Hours

Prerequisites: None

Rocky Mountain horticulture is different, but not impossible. Cultural methods and plant materials are suggested which will aid the horticulturist in adjusting to our existing climatic conditions. Basic design principles and maintenance are also covered. Of interest to general public.

30 Theory Hours — 30 Contact Hours

URH 101 PLANT SCIENCE I (N)

4 Credit Hours

Prerequisites: None

A study of fundamentals of plant growth with major emphasis upon the seed plants. Plant processes and growth with major emphasis upon the seed plants. Plant processes and growth related to commercial horticultural practices.

45 Theory Hours — 23 Lab Hours — 68 Contact Hours

URH 102 PLANT SCIENCE II (N)

4 Credit Hours

Prerequisite: URH 101

A continuation of Plant Science URH 101, including factors affecting flowering, seeds, fruits, plant genetics and the lower plants, related to plant diseases likely to be encountered in the field.

45 Theory Hours — 23 Lab Hours — 68 Contact Hours

URH 105 INTRO TO LANDSCAPE CONSTRUCTION DRAFTING (N)

3 Credit Hours

Prerequisites: None

This course introduces the student to the proper use of drafting equipment, printing techniques, scale drawings, and isometric drawings designing landscape structures.

15 Theory Hours — 45 Lab Hours — 60 Contact Hours

URH 107 PLANTS IN THE LANDSCAPE (N)

2 Credit Hours

Prerequisites: None

A class offered for summer study of the woody plants in our area.

30 Theory Hours — 30 Contact Hours

URH 115 PLANT USAGE (N)

4 Credit Hours

Prerequisite suggested: URH 106

Landscape and native plants are discussed with regard to their individual characteristics, acclimation and usage in the Rocky Mountain area.

30 Theory Hours — 45 Lab Hours — 75 Contact Hours

URH 116 LANDSCAPE PLANNING (N)

4 Credit Hours

Prerequisites suggested: URH 105, URH 106, URH 115

Practical experience in drafting and design principles used in planning the home grounds and other areas.

30 Theory Hours — 45 Lab Hours — 75 Contact Hours

URH 125 SOILS AND FERTILIZERS (N)

4 Credit Hours

Prerequisites suggested: math elective

The properties and management of soils in relation to plant growth with emphasis on the principles of soil fertility and practice of fertilizer use.

30 Theory Hours — 45 Lab Hours — 75 Contact Hours

URH 126 SMALL ENGINE AND CARBURETOR REPAIR FOR URBAN HORTICULTURE (N)

3 Credit Hours

Prerequisites: None

The servicing, operation, troubleshooting and major overhaul of small engines (both two and four cycle) are studied, both in theory and practical application.

15 Theory Hours — 45 Lab Hours — 60 Contact Hours

URH 135 PLANT PROPAGATION (N)

4 Credit Hours

Prerequisite suggested: URH 106

The theory and practical application of propagation by seed, cuttings, budding, grafting and layering with proper usage of chemical root stimulators.

45 Theory Hours — 23 Lab Hours — 68 Contact Hours

URH 145 SPRINKLER SYSTEM DESIGN (N)

3 Credit Hours

Prerequisites: None

Functional components of a residential sprinkler system, design principles, and hydraulic analysis are studied in preparing a residential irrigation design.

30 Theory Hours — 23 Lab Hours — 53 Contact Hours

URH 146 SPRINKLER SYSTEM INSTALLATION (N)

3 Credit Hours

Prerequisites: None

An automatic sprinkler system is installed from a design drawing following preparation of a parts list and cost estimating of the project.

15 Theory Hours — 45 Lab Hours — 60 Contact Hours

URH 147 SPRINKLER SERVICE AND REPAIR (N)

2 Credit Hours

Prerequisites suggested: URH 145, URH 146

This course is designed to give the student exposure to trouble shooting sprinkler systems.

30 Theory Hours — 30 Contact Hours

URH 155 ARBORICULTURE (N)

3 Credit Hours

Prerequisite Suggested: URH 101

Selection, planting and care of woody plants.

30 Theory Hours — 23 Lab Hours — 53 Contact Hours

URH 200 GREENHOUSE AND FIELD EXPERIENCE (N)

3 Credit Hours

Prerequisites: None

Practical experience in mixing soil, planting, calculating and applying fertilizers. Greenhouse design, layout, and procedures are discussed.

15 Theory Hours — 45 Lab Hours — 60 Contact Hours

URH 204 GARDEN CENTER OPERATIONS (N)

2 Credit Hours

Prerequisites: None

Methods employed in setting-up, operating and maintaining a garden center are studied.

30 Theory Hours — 30 Contact Hours

URH 205 NURSERY MANAGEMENT (N)

4 Credit Hours

Prerequisites suggested: URH 101, URH 106, URH 125

Propagation, planting, crop rotation, business and cultural practices involved in operating a nursery.

45 Theory Hours — 30 Lab Hours — 75 Contact Hours

URH 206 INTERIOR LANDSCAPE DESIGN (N)

3 Credit Hours

Prerequisites: None

Design, use and maintenance of green plants in public and commercial interiors. Of interest to general public.

30 Theory Hours — 23 Lab Hours — 53 Contact Hours

URH 210 LANDSCAPE MANAGEMENT (N)

3 Credit Hours

Prerequisites suggested: URH 101, URH 106, URH 125

The application of cultural techniques, problem diagnosis and maintenance practices for landscape areas.

45 Theory Hours — 45 Contact Hours

URH 211 GARDEN MANAGEMENT (N)

2 Credit Hours

Prerequisites: None

Abbreviated version of URH 212. Generally offered summers only.

30 Theory Hours — 30 Contact Hours

URH 212 GARDEN MANAGEMENT (N)

3 Credit Hours

Prerequisites: None

Perennials, annuals, ground covers and roses are studied and worked with. Development of garden areas and alternatives to sod are discussed.

45 Theory Hours — 45 Contact Hours

URH 215 GREENHOUSE MANAGEMENT (N)

3 Credit Hours

Prerequisites suggested: URH 101, URH 125

Environmental control, culture and production crops employed in producing some of the leading florist crops.

45 Theory Hours — 45 Contact Hours

URH 216 LANDSCAPE GRADING (N)

3 Credit Hours

Prerequisite suggested: math elective

The student will use surveying equipment in the following operations: Grade establishment, construction, contouring, drainage, etc. Cut and fill quantities will be calculated.

15 Theory Hours — 45 Lab Hours — 60 Contact Hours

URH 225 HORTICULTURE EQUIPMENT (N)

4 Credit Hours

Prerequisites: None

Practical experience is gained in the operation of landscape nursery and turf equipment: tractors, front-end loaders, etc., along with their proper servicing and maintenance. Both large and small equipment are covered.

30 Theory Hours — 45 Lab Hours — 75 Contact Hours

URH 226 HORTICULTURE BUSINESS OPERATIONS (N)

3 Credit Hours

Prerequisites: None

A study of the methods and problems involved in operating a small business with emphasis on horticulture businesses.

30 Theory Hours — 23 Lab Hours — 53 Contact Hours

URH 234 FIELD STUDY OF DISEASE AND PESTS (N)

2 Credit Hours

Prerequisites: None

A field study of local insect and disease problems. Generally offered summers only.

30 Theory Hours — 30 Contact Hours

URH 235 DISEASES AND PESTS (N)

4 Credit Hours

Prerequisites: None

Identification, prevention and control of diseases and insect problems. Special consideration will be given to the use of insecticides and other chemicals.

45 Theory Hours — 23 Lab Hours — 68 Contact Hours

URH 236 BASIC LANDSCAPE CONSTRUCTION (N)

4 Credit Hours

Prerequisite suggested: math elective

Students will learn basic landscape construction methods and equipment operation; i.e., grading and sod laying, seeding, retaining wall and step construction, edging, mulching techniques and estimating costs.

45 Theory Hours — 23 Lab Hours — 68 Contact Hours

URH 237 BIDDING AND ESTIMATING (N)

2 Credit Hours

Prerequisites: None

The student will do take-offs and prepare bids for various landscape and sprinkler projects.

30 Theory Hours — 30 Contact Hours

URH 239 ADVANCED LANDSCAPE CONSTRUCTION (N)

2 Credit Hours

Prerequisites: None

Five-week modules covering outdoor landscape projects such as walkways, patios, decks, retainer walls, fences, pools and water falls, etc. Practical experience is gained in building actual projects.

30 Theory Hours — 30 Contact Hours

URH 240 PREPARATION FOR COMMERCIAL APPLICATION CERTIFICATION (N)

3 Credit Hours

Prerequisites: None

Commercial and private applicator preparation for EPA Certification in the ornamental and turf grass pest control and general examinations.

45 Theory Hours — 45 Contact Hours

URH 245 TURF PRODUCTION AND MANAGEMENT (N)

4 Credit Hours

Prerequisite suggested: URH 125

The principles and practices involved in the establishment and maintenance of turf grass for parks, golf courses and home grounds.

30 Theory Hours — 45 Lab Hours — 75 Contact Hours

URH 246 ADVANCED LANDSCAPE PLANNING (N)

4 Credit Hours

Prerequisites suggested: URH 105, URH 106, URH 115, URH 116, URH 216, URH 236

Practical experience in drafting, design principles and cost estimating of commercial projects. Emphasis is placed upon developing a landscape portfolio.

30 Theory Hours — 45 Lab Hours — 75 Contact Hours

URH 255 HORTICULTURE MANAGEMENT (N)

2 Credit Hours

Prerequisites: None

Problem-solving employer-employee relationships, motivations, morale building and goal orientation.

30 Theory Hours — 30 Contact Hours

URH 256 LANDSCAPE PERSPECTIVE DRAWING (N)

3 Credit Hours

Prerequisites: None

Students will learn how to illustrate landscape plans in three-dimensional drawings.

15 Theory Hours — 45 Lab Hours — 60 Contact Hours

URH 297 COOPERATIVE WORK EXPERIENCE (N)

4 Credit Hours

Prerequisites: Permission of the instructor and approval of the Division Director. One hour per week in class.

The student is placed at a work station, somewhere in the metropolitan Denver area, which is related to his educational program and occupational objective. He works under the immediate supervision of experienced personnel at the business, industry or agency involved with a college instructor providing coordination.

15 Theory Hours — 135 Lab Hours

150 Contact Hours

Welding and Fabrication**WEF 100 OXY-ACETYLENE SAFETY CUTTING AND WELDING (A,R)**

3 Credit Hours

Prerequisites: None

Introduces shop safety rules and working in a safe conscious manner, fuel gas burning with oxy-acetylene, and cutting with the hand-held torch as well as with the track torch.

20 Theory Hours — 40 Lab Hours — 60 Contact Hours

WEF 101 FUEL GAS SAFETY AND CUTTING (N)

3 Credit Hours

Prerequisites: None

Follow all shop safety rules and work in a safety conscious manner at all times. Fuel gas burning will be done with oxy-acetylene and mapp gas. The student will cut with the hand-held torch as well as the mechanical torch. Results will meet known standard practices. Safety quiz will be completed at 100%.

20 Theory Hours — 40 Lab Hours — 60 Contact Hours

WEF 105 OXY-ACETYLENE WELDING JOINTS (A,N,R)

3 Credit Hours

Prerequisites: None

Introduces metal sizes commonly used in the Welding Shop, tip sizes and working pressures for the oxy-acetylene welding torch, correct size filler rods to correspond with tip sizes, working pressures and metals to be welded. The butt, lap, tee and corner joints will be welded in the following positions: flat, horizontal, vertical and overhead.

20 Theory Hours — 40 Lab Hours — 60 Contact Hours

WEF 106 BRAZING AND SPECIAL APPLICATIONS (A,N,R)

3 Credit Hours

Prerequisites: None

Introduces (in flat, horizontal, vertical, and overhead positions) the following joints in the brazing method: butt, lap, tee, and corner. Special applications on stainless steel and copper will be done with solders.

20 Theory Hours — 40 Lab Hours — 60 Contact Hours

WEF 107 BLUEPRINT READING AND ESTIMATING (A,R)

3 Credit Hours

Prerequisites: General Education — Computation — recommended

Presents fundamentals of reading welding blueprints and identifying various welding processes and welding symbols. A basic course in estimating cost, materials, labor and overhead.

20 Theory Hours — 40 Lab Hours — 60 Contact Hours

WEF 108 S.M.A.W. SAFETY, ELECTRODE IDENTIFICATION AND SURFACE PADDING (A,R)

3 Credit Hours

Prerequisites: None

Covers safety rules and regulations applicable to S.M.A.W. power supplies, accessories, identification of electrodes by the A.W.S.-ASTM numbering system, and surface padding in the 1F and 2F positions using E7018, E7024/7014, E6013, E6011, E6010 electrodes.

20 Theory Hours — 40 Lab Hours — 60 Contact Hours

WEF 109 S.M.A.W. SURFACE PADDING (A,R)

3 Credit Hours

Prerequisites: None

Includes surface padding in the 3F and 4F positions.

20 Theory Hours — 40 Lab Hours — 60 Contact Hours

WEF 110 S.M.A.W. JOINTS, IN THREE POSITIONS (A,R)

3 Credit Hours

Prerequisite: Welding instructor permission required

Introduces welding of lap, tee, butt, and corner joints in the 2F, 3F and 4F positions using varied electrodes in each position and on each joint design.

20 Theory Hours — 40 Lab Hours — 60 Contact Hours

WEF 115 A.S.M.E. / A.W.S. TESTING E7018, WITH BACKING (A)

3 Credit Hours

Prerequisites: WEF 108, WEF 109, WEF 110 or welding instructor's permission required.

Introduces welding of beveled test plates using a backing, in the 2G, 3G and 4G positions with E7018, in accordance with standards set by the American Society for Testing Materials, and the American Welding Society.

20 Theory Hours — 40 Lab Hours — 60 Contact Hours

WEF 115 SPECIAL APPLICATIONS IN ARC WELDING (R)

3 Credit Hours

Prerequisites: WEF 108, WEF 109, WEF 110

The student will learn how to use air-arc, weld with stainless steel electrodes, weld cast iron, use large diameter electrodes.

20 Theory Hours — 40 Lab Hours — 60 Contact Hours

WEF 116 A.S.M.E. / A.W.S. TESTING E6010/6011 (A,R)

3 Credit Hours

Prerequisites: WEF 108, WEF 109, WEF 110, WEF 115 or welding instructor's permission required.

Introduces welding of beveled test plates without a backing in the 2G, 3G and 4G positions with E6010/6011 in accordance with standards set by the American Society of Testing Materials and the American Welding Society.

20 Theory Hours — 40 Lab Hours — 60 Contact Hours

WEF 117 A.S.M.E. / A.W.S. TESTING E6010/6011, E7018, WITHOUT BACKING (A,R)

3 Credit Hours

Prerequisites: WEF 108, WEF 109, WEF 110, WEF 115, WEF 116 or welding instructor's permission required

Introduces welding of beveled test plates without a backing in the 2G, 3G and 4G positions using E6010/11 for the root and E7018 all additional passes in accordance with standards set by the American Society for Testing Materials and the American Welding Society.

20 Theory Hours — 40 Lab Hours — 60 Contact Hours

WEF 118 DRAFTING AND BLUEPRINT READING FOR WELDERS (N)

3 Credit Hours

Prerequisites: None

Demonstrate an understanding of the fundamentals of drafting and reading welding blueprints and identifying various welding symbols.

20 Theory Hours — 40 Lab Hours — 60 Contact Hours

WEF 119 METALLURGY FOR WELDERS (N)

3 Credit Hours

Prerequisites: None

Identify the different types of ferrous and non-ferrous metals utilizing basic spark and chip techniques known to the trade, understand chemical and structural change of metal brought about when heating and welding, for a working knowledge of destructive and non-destructive weld testing.

20 Theory Hours — 40 Lab Hours — 60 Contact Hours

WEF 120 WELDING FOR CONSTRUCTION AND MECHANICAL TRADES (R)

3 Credit Hours

Prerequisites: None

This class is an orientation to the field of welding, general principles, initial techniques and skill development, and how welding relates to the various trades.

15 Theory Hours — 45 Lab Hours — 60 Contact Hours

WEF 125 S.M.A.W. INTRODUCTION AND SAFETY (N)

3 Credit Hours

Prerequisites: None

Weld with the E-7024, E-6013, E-7018 and E-6010 electrodes in the flat position. The horizontal, vertical and overhead padding will be done with E-7018 and E-6010 electrodes. Safety quiz will be completed at 100%. Welds results will meet known standard practices.

20 Theory Hours — 40 Lab Hours — 60 Contact Hours

WEF 126 S.M.A.W. JOINT DESIGNS, ALL POSITIONS (N)

3 Credits Hours

Prerequisite: WEF 125 or permission of instructor

Demonstrate the ability to properly set up and weld the lap, tee and corner joints using E-6010 and E-7018 in the flat, horizontal, vertical and overhead positions. Results will meet A.W.S. standards.

20 Theory Hours — 40 Lab Hours — 60 Contact Hours

WEF 127 A.W.S. TESTING 7018 (N)

3 Credit Hours

Prerequisite: WEF 126 or permission of instructor

Produce a weldment capable of passing the slide bend test using E-6010 on the open bevel without a backing strip. This will be done in horizontal, vertical and overhead positions to meet S.W.S. standards.

20 Theory Hours — 40 Lab Hours — 60 Contact Hours

WEF 128 A.W.S. TESTING 6010 (N)

3 Credit Hours

Prerequisite: WEF 127 or permission of instructor

Pass the slide bend test using E-6010 on the open bevel without a backing strip. This will be done in horizontal, vertical and overhead positions to meet A.W.S. standards.

20 Theory Hours — 40 Lab Hours — 60 Contact Hours

WEF 129 WELDING LIGHT AND HEAVY GAUGE MILD STEEL (N)

3 Credit Hours

Prerequisite: WEF 126 or permission of instructor

Weld 12 to 16 gauge sheet metal using E-6011 and E-7014 electrodes 3/32" in the G1 and G2 positions. The butt, lap, tee, and corner joints will be performed to A.W.S. standards. Carbon arc cutting and welding will be introduced. Large-size-electrode welding using 1/4" E-7024 in the G1 position will be practiced.

20 Theory Hours — 40 Lab Hours — 60 Contact Hours

WEF 200 PIPE JOINT DESIGN AND FABRICATION, A.S.M.E. / A.W.S. PIPE TESTING (A,R)

3 Credit Hours

Prerequisite: Welding instructor's permission required

Presents identification, fabrication, and set-up of the standard open-butt joint designs, also the welding of beveled open-butt pipe joints in the 2G position using E6010/ 11 electrode in accordance with the standards set by the American Society for Testing Materials and the American Welding Society.

20 Theory Hours — 40 Lab Hours — 60 Contact Hours

WEF 201 PIPE PREPARATION AND TEST A.S.M.E. SECTION IX, E-6010 (R)

3 Credit Hours

Prerequisite: WEF 200

The student will learn to prepare pipe using hand torch, automatic torch, and beveling machine and will weld prepared pipe using E-6010 electrode in all positions.

20 Theory Hours — 40 Lab Hours — 60 Contact Hours

WEF 202 PIPE TEST A.S.M.E. SECTION IX, E-7018 (R)

3 Credit Hours

Prerequisites: WEF 200, WEF 201

The student will prepare and weld pipe using E-7018 in all positions in accordance with A.S.M.E. Section IX.

20 Theory Hours — 40 Lab Hours — 60 Contact Hours

WEF 203 A.W.S. PIPE TESTING 2G AND 5G (N)

3 Credit Hours

Prerequisite: WEF 128 or permission of instructor

Properly identify the common sizes of pipe and know their O.D.'s. Welding will be taught using the beveled butt joint in the rolled and 2G position. A test using E-6010 electrode will be made in the 2G and 5G position. Proper root gap and set up will be shown. Results will meet A.W.S. standards.

20 Theory Hours — 40 Lab Hours — 60 Contact Hours

WEF 204 A.W.S. PIPE TESTING 6G (N)

3 Credit Hours

Prerequisite: WEF 203 or permission of instructor

Set up and weld pipe in the 6G position. A test will be given following the A.W.S. guidelines. The E-6010 electrode will be used for the root pass. All other passes will be E-7018.

20 Theory Hours — 40 Lab Hours — 60 Contact Hours

WEF 205 PIPE TESTING A.S.M.E. / A.W.S. — 5G POSITION (A)

3 Credit Hours

Prerequisite: Welding instructor's permission required

Presents fabrication, set-up and welding of standard open beveled butt joints in the 5G position, using E6010/ 6011 electrodes in accordance with the standards set by the American Society for Testing Materials and the American Welding Society.

20 Theory Hours — 40 Lab Hours — 60 Contact Hours

WEF 206 PIPE TESTING A.S.M.E. / A.W.S. — 6G POSITION (A)

3 Credit Hours

Prerequisite: Welding instructor's permission required

Presents fabrication, set-up, and welding of standard open beveled butt joints in the 6G position using E6010/ 6011 and E7018 electrodes. Testing will be within the standards set by the American Society for Testing Materials and the American Welding Society.

20 Theory Hours — 40 Lab Hours — 60 Contact Hours

WEF 207 G.T.A.W. SAFETY AND WELDING JOINTS (A,R)

3 Credit Hours

Prerequisite: Welding instructor's permission required
Presents fusion welding of low carbon steel joints (lap, tee, open butt) and the study of the power supply and accessories needed for this welding process. Also low-carbon steel joints will be welded using silicon bronze filler material.

20 Theory Hours — 40 Lab Hours — 60 Contact Hours

WEF 208 G.T.A.W. WELDING ALLOYS AND JOINING VARIED SHAPES (A)

3 Credit Hours

Prerequisite: Welding instructor's permission required
Covers welding of stainless steel and aluminum joints. Pipe-to-pipe, tubing, and platesheet welding using the GRAW process.

20 Theory Hours — 40 Lab Hours — 60 Contact Hours

WEF 209 G.M.A.W. — PIPE AND PLATE, A.S.M.E. / A.W.S. (A)

3 Credit Hours

Prerequisite: Welding instructor's permission required
Examines types of power supplies and other accessories needed for the welding process. Presents the short circuit method of welding on low carbon steel sheet, plate, and pipe. A test specimen will be run on the 3G vertical down plate and the 5G pipe joint. Introduces the flux core process.

20 Theory Hours — 40 Lab Hours — 60 Contact Hours

WEF 210 STRUCTURAL SHAPES AND JOINTS DESIGN-PROJECT DEVELOPMENT (A,R)

3 Credit Hours

Prerequisite: Welding instructor's permission required
Teaches identification and measurement of various structural shapes and joint designs. Requires development (drawing a shop print) of a project of student's choice or one selected by the instructor.

20 Theory Hours — 40 Lab Hours — 60 Contact Hours

WEF 211 G.M.A.W. — A.W.S. PIPE AND PLATE (N)

3 Credit Hours

Prerequisites: None

Weld in the 1G and 3G positions on steel and aluminum. A steel test plate will be run in the 3G position. A 5G pipe test will be run. The flux core process will be introduced. All tests will meet A.W.S. standards.

20 Theory Hours — 40 Lab Hours — 60 Contact Hours

WEF 215 STRUCTURAL PROJECT LAYOUT AND FABRICATION (A,R)

3 Credit Hours

Prerequisite: Welding instructor's permission required
Continuation of WEF 215. The student will complete the fabrication project by the end of this course.

20 Theory Hours — 40 Lab Hours — 60 Contact Hours

WEF 217 MAINTENANCE WELDING AND REPAIR (A,N,R)

3 Credit Hours

Prerequisite: Welding instructor's permission required
Presents the repair and replacement of broken parts on machinery and equipment, as well as the addition of new metals to worn parts by different welding techniques.

20 Theory Hours — 40 Lab Hours — 60 Contact Hours

WEF 218 HEAVY EQUIPMENT WELDING REPAIR (R)

3 Credit Hours

Prerequisites: None

This unit involves safety related to heavy equipment welding, electrode selection, joint design and preparation, the uses of primary, secondary, parallel weld joints, estimating cost of repairs, and outside field repair using field equipment and actual industrial applications.

20 Theory Hours — 40 Lab Hours — 60 Contact Hours

WEF 219 CERTIFICATION PROCEDURE AND PREPARATION (A)

3 Credit Hours

Prerequisite: Welding instructor's permission required
Develops the ability to prepare and test all welding joints using applicable procedures.

20 Theory Hours — 40 Lab Hours — 60 Contact Hours

WEF 220 GENERAL SHOP AND IMPROVEMENT (N)

3 Credit Hours

Prerequisite: All Other WEF Courses

Have an opportunity for improvement in any area of welding.

20 Theory Hours — 40 Lab Hours — 60 Contact Hours

WEF 221 ORNAMENTAL IRON I (N)

3 Credit Hours

Prerequisite: WEF 129 or WEF 211 or permission of instructor

Demonstrate the ability to work in a safe manner, to maintain and operate a bending machine and other metal forming and cutting equipment. To figure bill of materials, layout, build, and estimate cost of basic metal designs. Selection of smaller project with instructor approval.

20 Theory Hours — 40 Lab Hours — 60 Contact Hours

WEF 222 ORNAMENTAL IRON II (N)

3 Credit Hours

Prerequisite: WEF 221

Build a project/projects using either the S.M.A.W. or G.M.A.W. process. Proper metal preparation, fit up and design will be met before welding is completed. All welds will ground when exposed or when necessary.

20 Theory Hours — 40 Lab Hours — 60 Contact Hours

WEF 223 ORNAMENTAL IRON III (N)

3 Credit Hours

Prerequisite: WEF 222

After completion of this unit, a continuation of course WEF 222, the student will work on larger and more difficult projects. Designs and methods of building rails with slopes, walk and drive gates, furniture, porch rails and posts for patio covers are among some of the designs to be introduced to the advanced student.

20 Theory Hours — 40 Lab Hours — 60 Contact Hours

WEF 225 GENERAL FABRICATION AND DESIGN (R)

4 Credit Hours

Prerequisite: Permission of instructor

This class includes project design and fabrication using welding techniques and skills previously developed.

20 Theory Hours — 60 Lab Hours — 80 Contact Hours

WEF 226 G.T.A.W. WELDING ALLOYS (N)

3 Credit Hours

Prerequisites: None

Upon completion of this unit, the student should be able to identify the alloys used and the filler rod for welding carbon steel and stainless steel. Welding will be done in the four positions G1, G2, G3 and G4. The use of a back purge will be taught on the open butt for stainless steel. The butt, lap, tee and edge joints will be done. Results will meet A.S.W. standards.

20 Theory Hours — 40 Lab Hours — 60 Contact Hours

WEF 227 G.T.A.W. SAFETY AND WELDING, ALL JOINTS (N)

3 Credit Hours

Prerequisites: None

Upon completion of this unit, the student should be able to perform most of the average jobs using the G.T.A.W. process. Welding will be done in the G1, G2, G3 and G4 positions using aluminum as a base metal with proper selection of filler rod. The student will weld the following joints: butt, lap, tee, and edge in the above listed positions. Results will meet A.W.S. standards.

20 Theory Hours — 40 Lab Hours — 60 Contact Hours

WEF 235 PIPE TEST A.S.M.E. SECTION IX, E-6010 AND E-7018 (R)

3 Credit Hours

Prerequisites: WEF 200, WEF 201, WEF 202

The student will prepare and weld pipe in all positions using E-6010 for root and E-7018 for fill in accordance with A.S.M.E. Section IX.

20 Theory Hours — 40 Lab Hours — 60 Contact Hours

WEF 236 PIPE JOINT DESIGN (R)

3 Credit Hours

Prerequisites: WEF 200, WEF 201, WEF 202, WEF 235

The student will lay out and fabricate pipe joints including three-piece 90 degree turns, branch to header and reducers using E-6010.

20 Theory Hours — 40 Lab Hours — 60 Contact Hours

WEF 237 G.T.A.W. PLATE AND PIPE TEST (R)

3 Credit Hours

Prerequisites: None

The student will prepare and weld test plate 3G and 4G positions, test pipe in 2G, 5G and 6G positions in accordance with A.S.M.E. Section IX.

20 Theory Hours — 40 Lab Hours — 60 Contact Hours

WEF 238 G.M.A.W. PLATE AND PIPE A.S.M.E. SECTION IX (R)

3 Credit Hours

Prerequisites: None

The student will prepare and weld plate and pipe in all positions in accordance with A.S.M.E. Section IX using carbon steel, stainless and aluminum wire processes.

20 Theory Hours — 40 Lab Hours — 60 Contact Hours

WEF 297 COOPERATIVE WORK EXPERIENCE (A,N,R)

3 Credit Hours

Prerequisite: Welding instructor's permission required
Coordinates college course work and industry work experience.

20 Theory Hours — 40 Lab Hours — 60 Contact Hours

WEF 299 INDEPENDENT STUDY (A,N,R)

3 Credit Hours

Prerequisite: Welding instructor's permission required
Individual study on a special project which is related to the Welding program and is outside the program offering. Students majoring in one of the areas of the Division of Science & Technology may enroll in independent study intensive library and/or laboratory research on a specific topic under the direction of a qualified member of the division faculty. To be eligible, the student must have successfully completed one or more second year courses in the subject matter area in which he is majoring and give evidence that he can successfully engage in independent study. Independent study carries 1 to 3 hours credit involving a minimum of 3 to 9 hours per week. Permission to enroll must be obtained from the instructor under whose direction the independent study will be carried out and from the Director of the Division.

20 Theory Hours — 40 Lab Hours — 60 Contact Hours

Water-Wastewater Technology**WWT100 INTRODUCTION TO WATER-WASTEWATER (R)**

3 Credit Hours

Prerequisites: None

This course is designed to introduce the student to the characteristic effects of wastewater upon water quality. Treatment operations used to remove objectionable pollutants. Characteristics of water, water treatment, and protection of ground water.

45 Theory Hours — 45 Contact Hours

WWT105 SPECIFIC CALCULATIONS FOR WW (R)

4 Credit Hours

Prerequisites: None

A course designed to familiarize a student with the various math calculations associated with the field of water and wastewater. General areas of study will include manipulation of conversion factors, geometric figures, organic and hydraulic loading problems and chemical dosage and solution problems.

60 Theory Hours — 60 Contact Hours

WWT106 MECHANICAL PHYSICAL TREATMENT (R)

2 Credit Hours

Prerequisites: None

The course will include the principles of pre-treatment of wastewater, study of screens and racks, comminution grit removal and grit chambers and pre-aeration. Also studied will be the technical processes of sedimentation and flocculation.

30 Theory Hours — 30 Contact Hours

WWT107 SLUDGE TREATMENT (R)

3 Credit Hours

Prerequisites: None

A course designed to give the student a basic understanding of the principles of sludge digestion, sludge drying on sand beds, and the use of chemicals for conditioning. Also covered will be vacuum filtration, flotation and centrifuging.

45 Theory Hours — 45 Contact Hours

WWT108 ADVANCED TREATMENT (R)

3 Credit Hours

Prerequisites: None

Introduction to some of the more sophisticated methods used in water and wastewater treatment. Tertiary treatment methods are discussed such as ion exchange, activated carbon and reverse osmosis. Disinfection is also discussed.

45 Theory Hours — 45 Contact Hours

WWT109 WATER DISTRIBUTION SYSTEMS (R)

3 Credit Hours

Prerequisites: None

A course designed to introduce the student to the water distribution system and its component parts, equipment and operation. Some specifics include distribution and service fittings and appurtenances, tapping methods, valves, hydrants, meters and installation, maintenance and cleaning of water mains.

45 Theory Hours — 45 Contact Hours

WWT110 METER SHOP OPERATIONS (R)

3 Credit Hours

Prerequisites: None

A course designed to show how to set up a routine meter repair program. Topics to be covered will be types of meters, determination of meter accuracy, selection of meters, repair of meters, field installation and testing and the care and protection of meters.

45 Theory Hours — 45 Contact Hours

WWT115 WATER SOURCES AND SUPPLY (R)

3 Credit Hours

Prerequisites: None

A study of the aspects of water sources and supply. Included topics will be surface water, ground water, water storage, effects of storage, water shed protection and raw water transmission.

45 Theory Hours — 45 Contact Hours

WWT116 WATER PRE-TREATMENT PROCESSES (R)

2 Credit Hours

Prerequisites: None

A study of treatment processes available to operations prior to conventional treatment processes. Topics of study will be: self-purification, pre-chlorination, pre-sedimentation, water shed protection and lab analysis.

30 Theory Hours — 30 Contact Hours

WWT117 FILTERS AND FILTRATION PRACTICES (R)

3 Credit Hours

Prerequisites: None

A study of the principles of filtration and the various types and methods used in the filtration processes. Included studies will be slow sand, rapid sand, mixed media, pressure and diatomaceous earth filters.

45 Theory Hours — 45 Contact Hours

WWT118 WASTEWATER COLLECTION SYSTEMS (R)

3 Credit Hours

Prerequisites: None

The course will develop an understanding of information and procedures used in design, construction and maintenance of sanitary sewers, lift stations and sewage pumps, measurement of wastewater flow and sewage disposal for residences and institutions through discussion.

45 Theory Hours — 45 Contact Hours

WWT119 BASIC WATER ANALYSIS (R)

5 Credit Hours

Prerequisites: None

This course is designed to familiarize the student with the basic water-wastewater testing procedures for dissolved oxygen analysis, pH determination and turbidity testing, according to "Standard Methods for Water Examination." Other topics covered will include laboratory safety, identification of laboratory equipment and the ordering of laboratory supplies.

60 Theory Hours — 23 Lab Hours — 83 Contact Hours

WWT120 WATER-WASTEWATER EQUIPMENT MAINTENANCE (R)

5 Credit Hours

Prerequisites: None

A course designed to acquaint the student with routine maintenance practices in a water or wastewater plant. Equipment to be covered will include, but not be limited to, pumps, valves, plant structures and appurtenances and chlorination equipment. Planning and scheduling of maintenance, the use of hand tools and safety will also be discussed.

60 Theory Hours — 23 Lab Hours — 83 Contact Hours

WWT121 PUBLIC RELATIONS FOR WATER-WASTEWATER (R)

3 Credit Hours

Prerequisites: None

This course is designed to acquaint WW students with public relations and its application to the water-wastewater industry. Topics to be discussed will be: tools available for a public relations program, obtaining public support and how to work directly with the public.

45 Theory Hours — 45 Contact Hours

WWT122 BASIC ELECTRICITY FOR WATER-WASTEWATER (R)

3 Credit Hours

Prerequisites: None

An elementary study of electricity, electrical terms and how to troubleshoot basic electrical problems that may be incurred in day-to-day plant operations.

45 Theory Hours — 45 Contact Hours

WWT125 WATER CERT. REV. C AND D (R)

3 Credit Hours

Prerequisites: None

This course is designed to prepare students for the Colorado water operator's certification tests, Level C and D. Materials covered will be 1) methods of study, 2) test taking, 3) general knowledge of water treatment processes.

45 Theory Hours — 45 Contact Hours

WWT126 WASTEWATER CERT. REV. C AND D (R)

3 Credit Hours

Prerequisites: None

This course is designed to prepare students for the Colorado wastewater treatment plant operator's certification exam, Level C and D. Materials covered will include 1) methods of study, 2) taking exams, 3) general principles of wastewater treatment plant operators.

45 Theory Hours — 45 Contact Hours

WWT127 ADVANCED WASTEWATER TREATMENT II (R)

3 Credit Hours

Prerequisites: None

A course designed to familiarize the student with the progress made in advanced wastewater treatment methods. Topics covered will be biological nitrogen removal, ion exchange, demineralization and chemical clarification. Also covered will be methods for estimating the cost of advanced wastewater treatment facilities.

45 Theory Hours — 45 Contact Hours

WWT128 WATER-WASTEWATER TERMINOLOGY (R)

1 Credit Hour

Prerequisites: None

A course designed to help the student interpret and understand those terms regularly used or having special meaning in the water-wastewater industry.

15 Theory Hours — 15 Contact Hours

WWT129 RECORDS AND RECORDKEEPING FOR WATER-WASTEWATER (R)

2 Credit Hours

Prerequisites: None

A course designed to acquaint the student with the records, recordkeeping methods and reports that are an integral part of all water-wastewater operations. Topics to be discussed will include, but not be limited to, information to be included in records and reports, how records and reports should be kept and the main function of records and reports.

30 Theory Hours — 30 Contact Hours

WWT130 INDUSTRIAL WATER TREATMENT (R)

2 Credit Hours

Prerequisites: None

A basic study of the principles and methods used for treating water for commercial and industrial uses. Topics of study will include air conditioning absorption equipment, evaporative cooling equipment, hot and cold closed water systems, boiler feed water, boiler condensate, chemical feed systems and chemical and laboratory analysis of commercial/industrial waters.

30 Theory Hours — 30 Contact Hours

WWT200 HYDRAULICS FOR WATER-WASTEWATER (R)

5 Credit Hours

Prerequisites: None

Introduction to principles of density, specific gravity, Pascal's Law, pressures, force, heads, friction loss, flow measurement and other topics related specifically to liquids and their properties in water and wastewater operations.

45 Theory Hours — 45 Lab Hours — 90 Contact Hours

WWT206 DESIGN INTERPRETATION OF WATER-WASTEWATER SYSTEMS (R)

5 Credit Hours

Prerequisites: None

Instruction in reading and interpreting drawings of treatment works, equipment, distribution and collection systems, introduction to different types of graphical presentation and interpretations and the use of various graphs and nomographs.

60 Theory Hours — 23 Lab Hours — 83 Contact Hours

WWT207 BIOLOGICAL TREATMENT (R)

3 Credit Hours

Prerequisites: None

A study of how biological treatment is used in the field of wastewater treatment. Included topics that will be covered are: activated sludge, trickling filters and oxidation ponds.

45 Theory Hours — 45 Contact Hours

WWT208 WATER-WASTEWATER ADMINISTRATION AND FINANCE (R)

3 Credit Hours

Prerequisites: None

Sound practices in project service costs, rate structure, municipal finance, safety programs and personnel practices are to be taught.

45 Theory Hours — 45 Contact Hours

WWT209 CLARIFICATION PROCESSES FOR WATER

3 Credit Hours

Prerequisites: None

A study of coagulation, flocculation and sedimentation processes. Studies will include chemical dosage, mixing techniques. Also included will be an in-depth study of the equipment used in these processes.

45 Theory Hours — 45 Contact Hours

WWT210 ADVANCED WATER ANALYSIS (R)

5 Credit Hours

Prerequisites: None

A continuation of basic water analysis with emphasis on performing the following water purification and wastewater treatment laboratory tests: BOD, phosphorus, nitrogen, taste and odor, colors, suspended solids, COD, alkalinity, hardness, etc. Studies will also include the correct methods for sampling and monitoring a water or wastewater treatment process.

60 Theory Hours — 23 Lab Hours — 83 Contact Hours

WWT216 BIOLOGICAL AND BACTERIOLOGICAL WATER ANALYSIS (R)

5 Credit Hours

Prerequisites: None

A course designed to familiarize the student with the procedures for isolating and identifying microorganisms associated with the treatment of water and wastewater. Topics to be covered will be pathogenic organisms, fecal coliform testing (MF and MTF), and control tests for aerobic and anaerobic digestion.

60 Theory Hours — 23 Lab Hours — 83 Contact Hours

WWT217 W / W DISINFECTION TECHNIQUES (R)

3 Credit Hours

Prerequisites: None

A study of the most common methods of disinfection — chlorination — as well as the lesser used methods utilizing ozone, iodine, bromine and other chemicals. Studies will include analyzing and calculating dosage, maintenance and operation of chemical equipment.

45 Theory Hours — 45 Contact Hours

WWT226 T.V. SURVEILLANCE OF COLLECTION SYSTEMS (R)

3 Credit Hours

Prerequisites: None

A course designed to introduce the student to T.V. inspection of collection systems. Topics to be covered will be basic T.V. inspection techniques, how T.V. and video systems operate and the development of reports and files.

45 Theory Hours — 45 Contact Hours

WWT235 WATER SOFTENING PROCESSES (R)

1 Credit Hour

Prerequisites: None

A study of methods used for removing hardness from water. Major methods to be discussed will be chemical precipitation and ion exchange. Oriented toward A and B operators.

15 Theory Hours — 15 Contact Hours

WWT236 SAFETY PRACTICES FOR WATER / WASTEWATER (R)

1 Credit Hours

Prerequisites: None

A study of the principles and procedures for water utility safety. Intended to show how these principles and procedures operate in actual practice. Oriented toward A and B operators and operators in responsible charge.

15 Theory Hours — 15 Contact Hours

WWT237 FLUORIDATION PRACTICES (R)

1 Credit Hour

Prerequisites: None

A study of fluoridation methods and equipment. Intended to familiarize the A and B operator and operator in responsible charge with chemical equipment and procedures used in fluoridation of water supplies.

15 Theory Hours — 15 Contact Hours

WWT250 WASTEWATER DISCHARGE STANDARDS (R)

1 Credit Hour

Prerequisites: None

A course designed to familiarize the student with the National Pollution Discharge Elimination System (NPDES) guidelines. The student will become acquainted with the effluent limitations permit system as it applies to Colorado. Also included will be information on sampling, monitoring and compliance to the system. Special attention will be given to proper methods of filling in an application for a discharge permit.

15 Theory Hours — 15 Contact Hours

WWT297 COOPERATIVE WORK EXPERIENCE (R)

1-4 Credit Hours

Prerequisites: Permission of the instructor and approval of the Division Director.

In the water-wastewater technology program cooperative work experience is a part of the course of study. The student is placed at a work station somewhere in the metropolitan Denver area which is related to his educational program and occupational objective. He works under the immediate supervision of experienced personnel at the business industry or agency involved with a College instructor providing coordination.

15 Theory Hours — 45-180 Coop Hours

45-180 Contact Hours

WWT299 INDEPENDENT STUDY (R)

1-4 Credit Hours

Prerequisites: Permission to enroll for independent study must be obtained from the Division Director and the assigned instructor.

The number of credit hours to be allowed for successful completion of the course will be determined cooperatively by the instructor and the division director. The course provides opportunity for a student to intensively study a specific topic of interest under the direction of a qualified faculty member.

23-90 Independent Study Hours

23-90 Contact Hours

Faculty and Administration

Central Administration

President's Office

Lahti, Robert E. President
Groth, David A. Vice-President for
Instructional Affairs

Administrative Services

Lutes, Thomas R. Vice President, Administration
Miller, James L. Manager, Business Services

Automated Data Processing

Sanders, Robert J. Director

Budget

Williams, Gary Acting Budget Director

College Relations

Hamilton, Jan D. Director

Controller

Cunningham, George Controller
Asher, Gary W. Assistant Controller

Personnel Services

Taylor, Edwin M. Director
Zewe, Judith L. Manager, Compensation
Montoya, Ron Manager, Employee Relations

Purchasing

Finlay, William Agent

Resource Development

Zgut, JoElen K. Officer

Statistical Services

Casto, Lawrence T. Supervisor

Auraria Campus

General Administration

Gonzales, Thomas Campus Vice President

Hall, Marlene Dean of Instruction
Smith, Mary Coordinator, Community Relations

Auraria Media Center

Open Director
Barnes, Barry Chief of Media Instruction
Brockman, Vivian Chief of Campus Services

Arts and Humanities

McDonald, Dean Division Director
Battey, Robert Coordinator/Paralegal Program
Brigham, Elizabeth G. Instructor/English
Carter, Melvin Instructor/Art
Garbutt, Beth Instructor/Commercial Art
Gleeson, Michael Instructor/Commercial Art
Haney, Patrick Instructor/Graphic Arts
Knauber, Dave Instructor/Communications
Lehman, Patricia Instructor/Art
Lopez, Rafael C. Instructor/Music
Lowry, Jack Instructor/Graphic Arts
McCarthy, Mike Instructor/History
Miles, Kathleen S. Instructor/English
Mojica, Humberto Instructor/History
Padilla, Francisco Instructor/Spanish
Phillips, Pamela Instructor/Literature, Drama
Salaz, Roberto Instructor/Spanish
Sheppard, William Instructor/Paralegal
Siddeek, Maria Instructor/Humanities, Literature
Simons, Susan Instructor/English
Valdez-Ferguson, Peggy Instructor/English
Whiting, Ray H. Instructor/Commercial Photography
Wohlauer, Ron Instructor/Commercial Photography

Business and Governmental Studies

Kossik, Joseph Division Director
Baade, Randy Instructor/Economics, Political Science
Cordova, Lucille Instructor/Management
Curtis, Ivory T. Instructor/Economics, Political Science
Fekete, Anita Instructor/Business
Gilmore, Marjorie Instructor/Elect. Data Processing,
Management
Kleysteuber, Helen Instructor/Secretarial
Krane, John Instructor/Business
Norden, Robert Instructor/Business
Pigford, Lois Instructor/Business
Robnett, Harris H. Instructor/Information Media Tech
Rucker, Jennie Instructor/Business
Thomas, Judy Instructor/Secretarial
Vaughns, Louis Instructor/Hotel-Motel Mgmt.
White, Eugene Instructor/Elect. Data Processing,
Management

Community Services

Collier, Sara Coordinator

Health and Human Services

Davis, Mary J. Division Director
Bisch, Marjorie C. Instructor/Nursing
Blasius, Ronald R. Instructor/Psychology
Dolfinger, David Instructor/Psychology
Earnest, Vicki V. Instructor/Nursing
Faubion, Betty Instructor/Coordinator/
Radiation Therapy Tech
Hamann, Loy W. Instructor/Nursing
Hoffman, Robert Instructor/Human Services
Holliman, Juanita Instructor/Nursing
Killeen, John Instructor/Psychology
Kumagai, May Instructor/Nursing
Miller, Marcella Instructor/Nursing
Mutzebaugh, Carole A. . Instructor/Coordinator/Nursing
Noyes, Lance Instructor/Sociology
Ortega, Donna Instructor/Sociology
Padilla, Roberto Instructor/Psychology
Perkins, Deborah Instructor/Coordinator/
Nuclear Medicine Tech
Roberts, Evelyn Instructor/Coordinator/
Radiologic Tech
Rubridge, Barbara Instructor/Coordinator/
Early Childhood Education
Salaiz, Theodore R. Instructor/Coordinator/
Surgical Tech
Susman, Mary Beth Instructor/Sociology
Todd, Stayton Instructor/Radiologic Tech
Young, Sung Instructor/Coordinator/
Gerontology-Geriatrics and Activities Directing

Learning Development Center

Richards, William Coordinator
Conway, Sally Instructor
Frye, Yvonne Instructor
Loggins, Zenia Instructor
Martinez, Cleopatria Instructor
(DEVELOPMENTAL STUDIES)
Griego, Orlando D. Instructor
Richards, Charles P. Instructor
(SUPPLEMENTAL SERVICES)
Ross, Chuck Coordinator

Science and Technology

Allen, Jim Division Director
Baade, Randy Instructor/Geography
Beisswanger, Carl Instructor/Appliance
and Refrigeration
Biagi, Jr., Paul E. Instructor/Physics
Breslin, Edward Instructor/Electronics
Dallas, Keith Instructor/Math
DeRoos, Jr., Barry Instructor/Chemistry
Foreman, Maxine Instructor/Biology
Hall, Clem Instructor/Electronics

Holmes, Theodore Instructor/Drafting
Johnson, Jr., Sidney Instructor/Math
Lundgren, Mary Instructor/Biology
Pacheco, Nelson . . . Instructor/Business Machine Repair
Rogers, Guy E. Instructor/Drafting
Ross, William Instructor/Foreign
Automotive Mechanics
Smith, Frederick Instructor/Foreign
Automotive Mechanics
Thomas, Jr., Arthur W. Instructor/Welding and
Fabrication
Wood, Robert M. . . . Instructor/Welding and Fabrication

Student Services

Van de Visse, Martin Dean

Admissions and Records

Gallegos, George Registrar
Loomis, Jan Assistant Registrar

Career Planning and Counseling

Brooks, Larry Vocational Guidance Specialist
Hamilton, Delmar Student Advisor
Harris, Ottawa Counselor
Martinez, Ed Counselor
Perez, Louise Student Advisor

Center for Physically Disadvantaged

Hunsaker, Lil Coordinator
O'Cain, Barbara Asst. Coordinator

Educational Opportunity Center

Young, Ronald Director
Taylor, Michael Coordinator
Aire, Jay Counselor
Brooks, Betty Counselor
Davis, Dan Counselor
Humachi, Carol Counselor
Jackson, Ruby Counselor
Porter, Larry Counselor
Tasher, Vickie Counselor
White, Mary Jo Counselor

Financial Aid

Leary, Kathleen Coordinator
Dominguez, Anna Student Services Spec

Student Activities

Hughes, Eric Coordinator

Student Health Services

Jacquez, Rafael Health Counselor

Veterans' Affairs

Pelter, Joseph Coordinator

Women's Center

Copeland, Shyrel Coordinator

North Campus

General Administration

Swenson, John H. Campus Vice President

Mankenberg, Donald R. Dean of Instruction

Moore, William I. Superintendent of Buildings
and Grounds

Richman, Nancy Coordinator, Community Relations

Arts and Humanities

Graves, Paul G. Director

Amick, David A. Instructor/Psychology

Benavidez, Vera C. Instruction Associate/
English & Language Lab

Bowman, Michele D. Instructor/Reading & English

Bruington, Patricia Instructor/English

Carpenter, Garrett R. Instructor/Philosophy

Cattell, Judith Instructional Associate/CDA

Davis, William A. Instructor/Political Science

Dudley, David A. Instructor/Geography

French, Treva I. Instructor/English & Literature

Hinga, John A. Instructor/Sociology

Hoglin, Donald A. Instructor/English & Literature

Hunter, Kenneth Instructor/Anthropology

Kantor, Sherrie Instructor/
Early Childhood Education

Koch, Joseph J. Instructor/History

Lavroff, Ellen C. Instructor/Spanish

McLeran, Paul D. Instructor/English,
Speech & Drama

Ott, Charles F. Instructor/Art

Preskorn, Barbara J. Instructor/Art

Robinson, John A. Instructor/History

Schwartz, Jackie Coordinator/CDA

Stuska, Sarah Instructor/
Early Childhood Education

Sweeney, Roger L. Instructor/English

Ulman, Florence A. Instructor/English & Speech

Van Dyke, Louis J. Instructor/Psychology

Wagoner, James L. Instructor/Psychology

Business

Archer, Donald W. Director

Bowe, Mary Ellen Instructor/Secretarial Science

Brasselero, Michael Instructor/Economics

Christenson, William R. Instructor/Management

Collins, Marian J. Instructor/Accounting

Earle, William E. Instructor/Secretarial Science

Espinoza, Jose C. Instructor/Bilingual
Office Careers

Gomez, Joseph Instructor/Data Processing

Langley, Barbara A. Instructor/Accounting

Moore, James E. Instructor/Management

Napue, Norma R. Instructor/Secretarial Science

Nickel, Barbara A. Instructor/Secretarial Science

Roberts, Joan M. Instructor/Data Processing

Schupbach, Warren Instructor/Economics

Terada, James H. Instructor/Management

Zamarripa, Alice L. Instructor/Basic Business

Industrial Applied Science

Duncan, Ralph Director

Adams, Hugh Instructor/Welding

Brown, Edwin Instructor/Welding

Daffin, Donald Instructor/Auto Body

Doty, David Instructor/Auto Mechanics

Etter, Cecil Instructor/Electronics

Fedro, William Instructor/Arch. Drafting

Jarrell, James Instructor/Auto Body

Maybury, Paul Instructor/Arch. Drafting

Minamoto, Mitsue Instructor/Electronics

Payne, William Instructor/Ind. Mech. Drafting

Sanchez, Joe Instructor/Welding

Semp, Jacobus Instructor/Machine Shop

Seward, Roland Instructor/Welding

Sheldon, Gary Instructor/Auto Mechanics

Shivers, M.L. Instructor/Auto Mechanics

Smith, Charles Instructor/Auto Body Paint

Smith, Jack Instructor/Electronics

Thomas, John Instructor/Electronics

Tuffel, Jeffrey Instructor/Ind. Mech. Drafting

West, Jack Instructor/Machine Shop

Wheeler, Charles Instructor/Electronics

Winterhalder, Roy Instructor/Auto Body

Science and Health

Brown, Robert E. Director

Jones, Audrey A. Assistant Director

Boersema, Raymond G. Instructor/Mathematics

Bouse, Edward F. Instructor/Mathematics

Bradford, M. Sue Instructional Associate/Nursing

Brian, Bruce, M.D. Medical Director

Burton, Gwendolyn R. Instructor/Biology

Crenshaw, Barbara Instructor/Nursing

Doran, Edward Instructor/Mathematics

Dotson, Gerald R. Instructor/Biology

Edwards, Carol M. Instructor/Dental Assisting

Elrod, Rachel Instructor/Nursing

Hale, Beverly B. Instructor/Respiratory Therapy

Hannaford, Carla Instructor/Biology

Hannaford, James Instructor/Biology

Harris, Sendia Instructor/Nursing

Smith, Janice Instructor/Nursing
 Sullivan, Francis Instructor/Biology
 Sukle, Daniel Instructor/Physics
 Thomas, Robert Coordinator/Respiratory Therapy
 Trujillo, Julie Instructor/Dental Assisting
 Vaden, James Instructor/Food Service
 VanDyke, Martin Instructor/Chemistry
 Wecal, Robert Instructor/Urban Horticulture
 Younger, Paul Instructor/Mathematics
 Cheng-Fan I, Jesse Instructor/Chemistry
 James, Evelyn Y. Instructor/Nursing
 Kindle, E. Glenn Instructor/Mathematics
 Law, Helen M. Instructional Associate/
 Food Service
 McCulloch, James E. Instructor/Urban Horticulture
 Mueller, Alma L. Coordinator/Nursing
 O'Shea, James V. Instructor/Urban Horticulture
 Owen, Aubrey P. Instructor/Mathematics
 Palmer, David Instructor/Physics
 Pinar, Elizabeth Instructor/Dietetics Tech.
 Pirollo, Dorothy Instructor/Nursing
 Robinson, Judith F. Instructor/
 Optometric Assisting
 Roffers, Sharon K. Instructor/Mathematics
 Sabus, John Instructor/Physical Education

Community Services

Braman, David W. Coordinator
 Waldo, Deborah W. Assistant Coordinator

Student Services

Trujillo, Orlando H. Dean

Admissions and Records

Albright, Morris G. Director and Registrar
 Boyko, Mark M. Assistant Registrar

Counseling

Ashcraft, Kenneth B. Director
 Carson, Alexander A. Counselor
 Casper, Mary L. Counselor
 Lang, Jr., Edward M. Counselor
 Metz, Marshall T. Counselor

Financial Aid

Thornton, Ronald D. Coordinator

Job Development and Placement

Epperson, Charles Coordinator

Student Activities

Romero, Ben Officer
 Mehlin, Jan Student Activities Adviser

Childcare Center

Latronica, Toni M. Director
 Cornelsen, Connie S. Instructional Associate

Student Health Services

Green, Nancy L. Health Counselor

Veterans' Affairs

Amanna, Vincent J. Coordinator

Center for the Physically Disadvantaged

Bosch, Kenneth L. Director
 Avalos, Elizabeth Riley Vocational Evaluator
 Bassett, Tonya Lab Coordinator
 Beyeler, Tom Assistant Counselor for the
 Deaf and Blind Services
 Carfrae, Cal B. Counselor for the Disabled
 Cochrane, Donna Assistant Vocational Evaluator
 Custer, Carole Job Placement Specialist
 Ensenat, Darlene Interpreter/Tutor
 King, Jackie Interpreter/Tutor
 Manuele, Magdalene ... Coordinator/Counselor for the
 Deaf and Blind Services
 Pino, Agnes Health Specialist
 Roybal, Barbara Assistant Health Specialist

Learning Development Center

Shiple, Sandra J. Coordinator
 Boast, Mary C. Instructor/Communications Lab
 Zeches, Hubert E. Instructor/Communications Lab

Learning Materials Center

Wong, Clark Director
 Hall, Josephine L. Assistant Director
 Bond, Dorothy Library Assistant
 Brito, Rodney Graphic Designer
 Cain-Seiler, Kathi Library Technician
 Crawford, Betsy Library Assistant
 David, Janet Library Technician
 Jones, Ronald Instructional Media Specialist
 Murphy, Suzanne Library Assistant
 Pratecavage, Marion Library Assistant
 Ronbinson, Betty Librarian
 Sacher, David Audiovisual Production Assistant
 Shoemaker, Karen Library Assistant II
 Widner, Vicki Audiovisual Technician

Women's Resource Center

Darr, Dixie L. Coordinator

Perkins, P.E. Instructor/Biology
 Salzman, John Instructor/Chemistry
 Smith, Mike Instructor/Surveying
 Stanesco, Jack Instructor/Earth Science
 Stephens, Carl Instructor/Drafting
 Stratton, Milton Instructor/Electronics (Digital)
 Tomkinson, Chuck Instructor/Mathematics
 Townrow, John Instructor/Biology
 Tuggle, Dorothy Instructor/Mathematics
 White, Robert Instructor/Earth Science
 Williams, Roy Instructor/Electronics (Digital)
 Yee, Leland Instructor/Biology

Student Services

Post, Richard Dean

Admissions & Records

Sullivan, James Registrar

Counseling

Riley, Russell Director/Counselor
 Adlfinger, Annette Counselor
 Anderson, Daniel Counselor
 Blackman, Robert Counselor
 Carrillo, Virginia Counselor
 Harris, Roy Counselor
 Swain, Barbara Counselor

Financial Aid

Zamarripa, Robert Coordinator

Center for Physically Disadvantaged

Wooster, Alice Director

Job Development & Placement

Porter, Harlan Coordinator

Learning Development Center

Dey, Sally Coordinator
 Johnson, Ann General Education
 Marks, Alan General Education
 Summerton, Laurita Communications Lab
 Vaiana, Mike Communications Lab
 Vizvary, J.C. General Education

Learning Materials Center

Woods, Muriel E. Director
 Berg, Robert G., Jr. Asst. Director
 Connole, Thomas P. Librarian
 Moyer, Karen Librarian

Student Activities

Corsentino, James Coordinator

Student Health Services

Garcia, Jo Ann Nurse

Veterans' Affairs

Vacant Coordinator

Women's Resource Center

Forney, Joyce Coordinator

Aurora Education Center

General Administration

Chang, Nai-Kwang Executive Director
 Ulrich, Gerald Administrator,
 Educational Support Services
 Fielden, William Building and Grounds
 Smolka, Cathy Office Manager
 Bell, Mary Instructional Associate

General Education and Service Occupations

Baade, Randolph Geography
 Borringer, Fred Criminal Justice
 Davis, William Philosophy and Political Science
 Hart, Richard Economics
 Kantor, Sherri Early Childhood Education
 McCarthy, Michael History
 Perkins, Everett Biology
 Ramsey, Joe English
 Schlegel, Walter Mathematics
 Wagoner, James Psychology

Business and Management

Collins, Marian Business
 Cunningham, Ken Management
 Frey, Harold Accounting
 Gordon, Dee Business
 McAndrew, Michael Management
 McCracken, Marline Business
 Terada, James Management
 Walters, Ronald Accounting

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