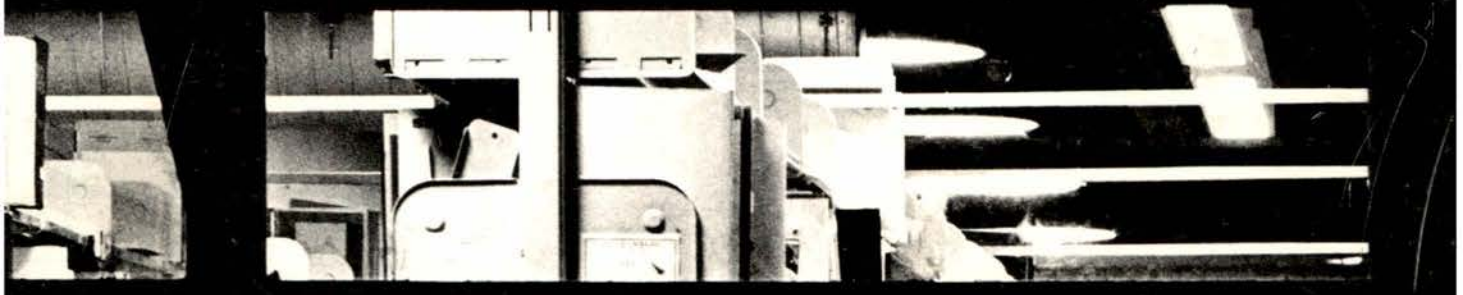
COMMUNITY COLLEGE OF DENVER



CATALOG 1981-83

Auraria Campus
North Campus
Red Rocks Campus
Aurora Education Center

Community College of Denver

College Addresses

Central Administration
1600 Downing Street
Denver, Colorado 80218
Phone: 866-3481

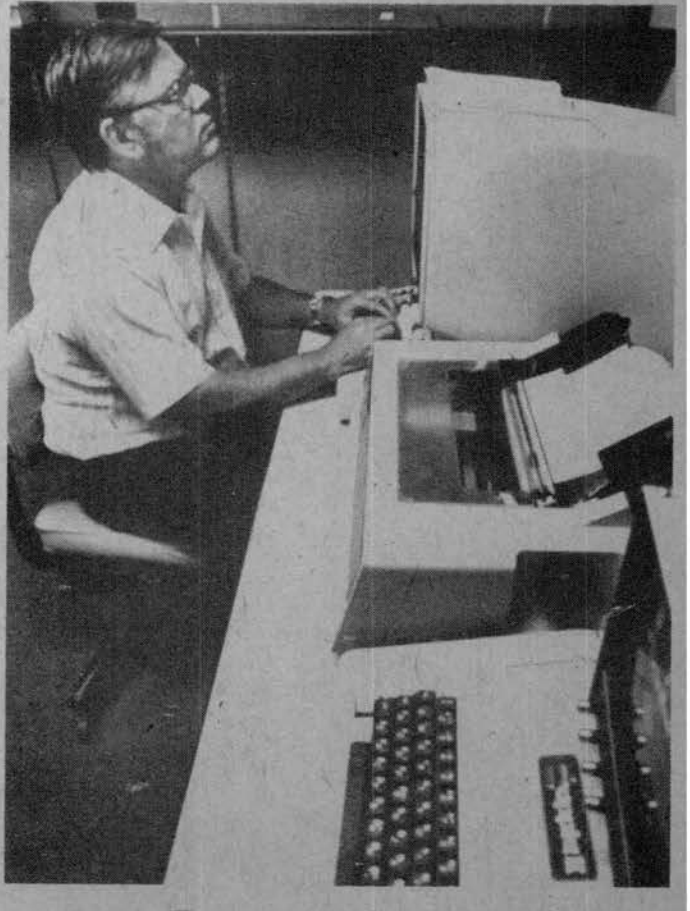
Auraria Campus
1111 West Colfax
Denver, Colorado 80204
Phone: 629-3285

North Campus
3645 West 112th Avenue
Westminster, Colorado 80030
Phone: 466-8811

Red Rocks Campus
12600 West 6th Avenue
Golden, Colorado 80401
Phone: 988-6160

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

1981-83 College Catalog



Robert E. Lahti

Welcome to the community College of Denver, where you will find a wealth of educational opportunities available to you. We offer a variety of programs, certificates, and associate degrees to anyone wishing to profit from our instructional services.

The College catalog describes all of the CCD programs and services, which are provided by an excellent staff dedicated to serving your needs. You will find that CCD strives to meet all of your individual instructional and support needs. Should there be additional instructional activities which would allow us to be more responsive to you or to our five-county service area, we hope you will call them to our attention.

All of us here at the Community College of Denver pledge to do our best to help you in the achievement of your educational goals, and we are committed to the dignity and significance of each individual student.

Welcome to our College!

Robert E. Lahti
President

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.

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.

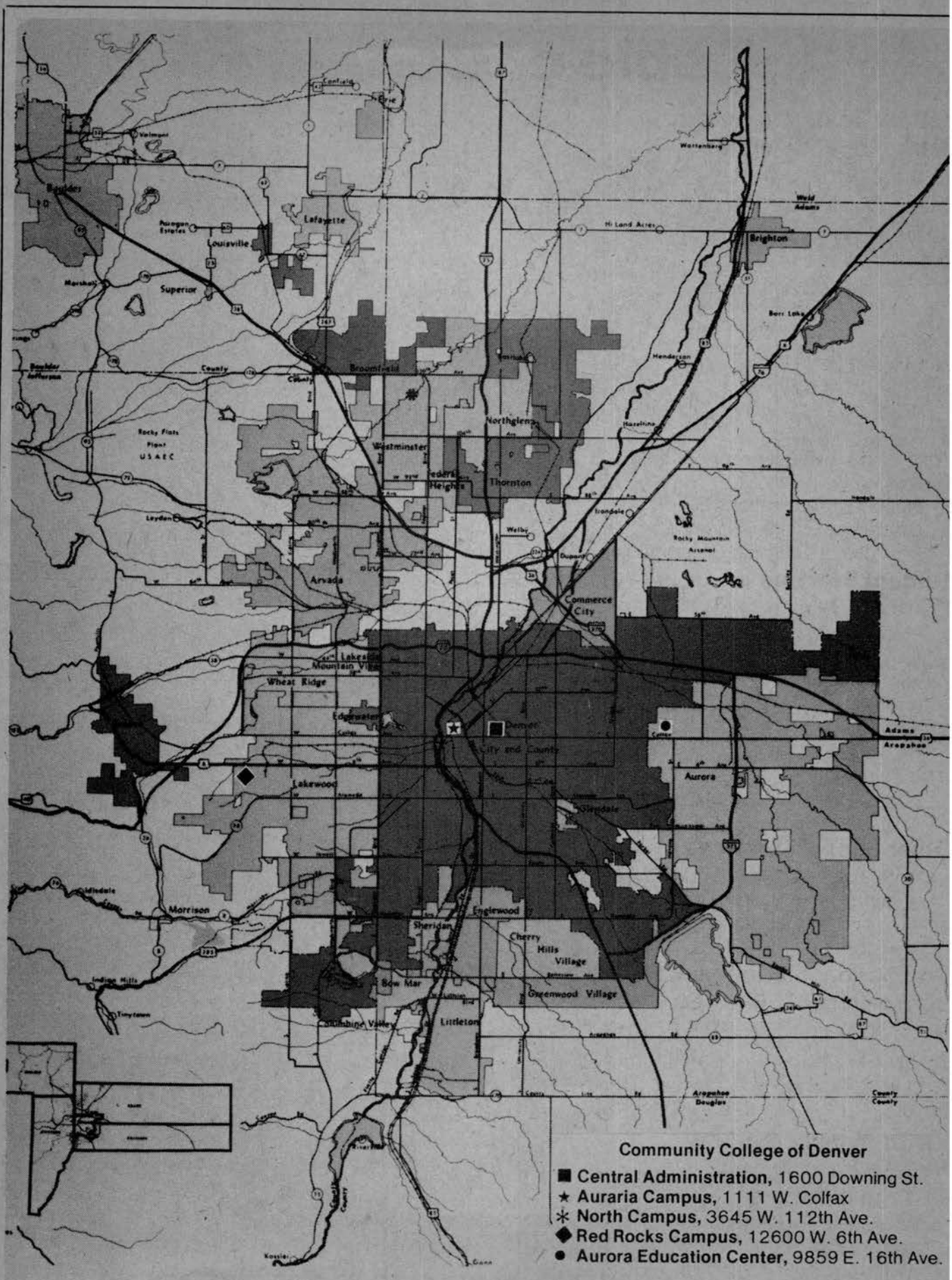
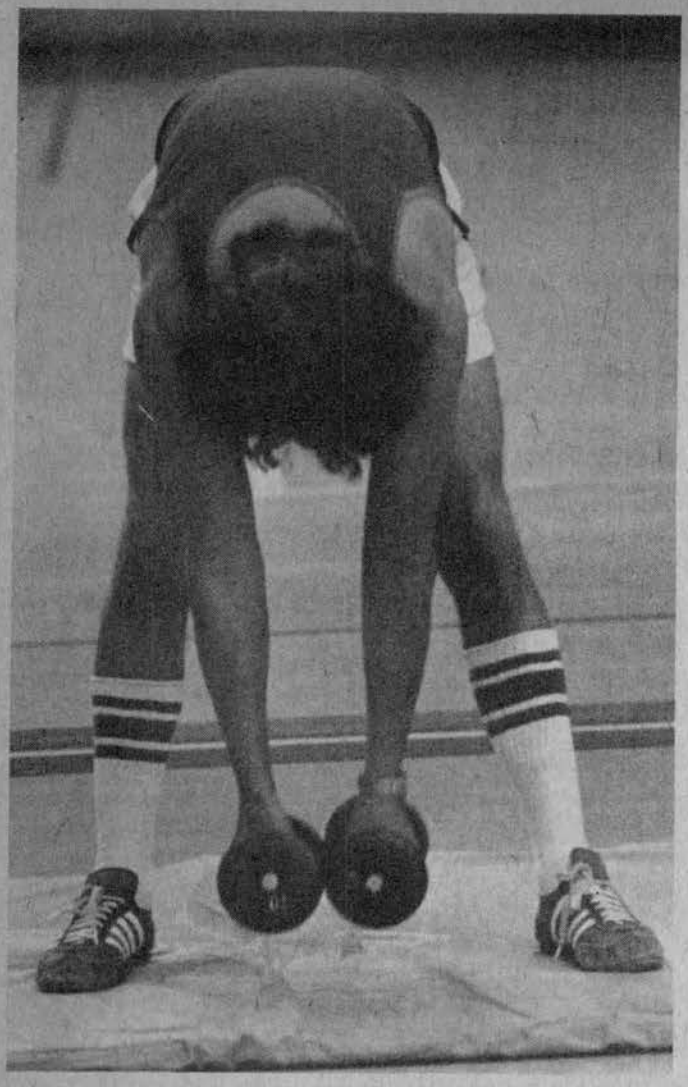
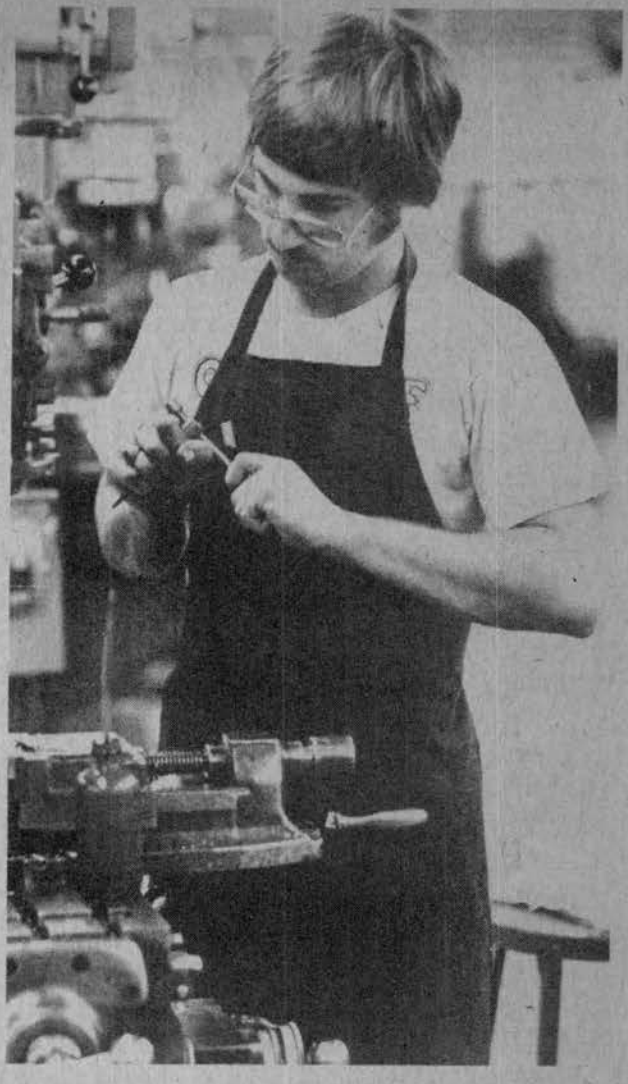

Community College of Denver
■ Central Administration, 1600 Downing St.
★ Auraria Campus, 1111 W. Colfax
✳ North Campus, 3645 W. 112th Ave.
◆ Red Rocks Campus, 12600 W. 6th Ave.
● Aurora Education Center, 9859 E. 16th Ave.
Boulder
Superior
Louisville
Lafayette
Broomfield
Westminster
Northglenn
Thornton
Arvada
Wheat Ridge
Lakewood
Denver
City and County
Commerce City
Aurora
Brighton
Englewood
Littleton
Sheridan
Cherry Hills Village
Greenwood Village
Bow Mar
Morrison
Rocky Flats Plant USAEC
Rocky Mountain Arsenal

Table of Contents





Community College of Denver
Instructional Calendar

Summer 1981 (15 week term)

Monday, May 18	Faculty Report
Monday, May 18	Registration
Wednesday, May 20	Classes Begin
Monday, May 25	Memorial Day (no classes)
Friday, July 3	Independence Day (no classes)
Thursday, August 20	Classes End

Summer 1981 (10 week term)

Wednesday, June 3	Faculty Report
Wednesday, June 3	Registration
Thursday, June 4	Classes Begin
Friday, July 3	Independence Day (no classes)
Thursday, August 13	Classes End

Fall Semester 1981

Monday, August 24	Faculty Report
Wednesday, Thursday, August 26-27	Registration
Monday, August 31	Classes Begin
Monday, September 7	Labor Day (no classes)
Thursday, Friday, November 26-27	Thanksgiving holidays (no classes)
Wednesday, December 16	Classes End

Spring Semester 1982

Tuesday, January 12	Faculty Report
Wednesday, Thursday, January 20-21	Registration
Monday, January 25	Classes Begin
Monday-Friday, March 22-26	Spring Vacation
Friday, May 14	Classes End

Summer 1982 (15 Week Term)

Monday, May 17	Faculty Report
Monday, May 17	Registration
Wednesday, May 19	Classes Begin
Monday, May 31	Memorial Day (no classes)
Wednesday, August 18	Classes End

Summer 1982 (10 Week Term)

Thursday, June 3	Faculty Report
Thursday, June 3	Registration
Monday, June 7	Classes Begin
Friday, August 13	Classes End

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

Instructional Programs

	Prefix	Associate of Arts or Associate of Science Degree Emphasis	Associate of Applied Science Degree	Certificates	Program Page	Course Description Page
Accounting	ACC		A,N,R	A,N,R	40	
Administrative Support Occupations Options						
Administrative Assistant			A,N,R	*	42	
Clerical				A,N,R	44	
Credit Operations				A	44	
Legal Secretarial			A,N		43	
Medical Secretarial			A	A	43	
Secretarial-Bilingual Office Careers			N		43	
Secretarial			A,N,R		43	
Stenographic				A,N,R	44	
Word Processing			A,N,R	N	44	
Airframe Power Plant			A		47	
Architectural Technology	ATE		N		46	9
Art	ART	A,N,R			45	9
Audiovisual Technology	AVT		R		47	10
Auto Body Painting	ABP			N	39	8
Auto Body Service	ABS		N	N	39	9
Automotive Mechanics	AUM		N,R	N,R	46	9
Foreign Automotive Mechanics	FAM		A	A	61	14
Biology	BIO	A,N,R			48	10
Black Studies		A			49	
Bricklaying	BRI		R	R	48	10
Building and Grounds Management	BGM			A	47	10
Business Machine Technology	BMT			A	48	10
Carpentry	CAR		R	R	49	10
Chemistry	CHE	A,N,R			50	11
Chicano Studies		A			53	
Child Development Associate			N	N	56	12
Civil Engineering Technology	CET		R	R	49	11
Clerical — General				A,N,R	44	
Commercial Art	COA		A		50	11
Communications	COM	A,R			50	11
Computer Programming for Business	CPB		N		51	11
Credit Operations				A	*	11
Computer Science	CSC	A			52	11
Criminal Justice	CRJ		R	R	52	11
Dental Assisting	DEA		N	N	53	12
Diagnostic Radiologic Technology	RAT		A		75	20
Dietetic Technology	DIT		N	N	53	12
Diesel Power/Heavy Equipment and Truck Mechanics	DPE		R	R	54	12
Drafting						
Drafting forCivil/Topographic Mapping	DRM		A,R		55	12
Drafting for Construction	DRC		R	R	55	12
Drafting for Industry	DRI		A,R	A,R	54	12
Technical Illustration	TEI		A		55	22
Early Childhood Education and Management	ECE		A,N,R	A,N	56	12
Earth Science	EAS	R			55	12
Economics	ECO	A,N,R			57	13
Electronics						
Consumer Electronics Technology	TCE		N	N	80	22
Electricity Industrial/Commercial	EIC		R	R	58	13
Electronics Digital Technology	EDT		R	R	58	13
Electronics Technology	ELT		A,N	A,N	58	13
English	ENG	A,N,R			60	14
Environmental and Refrigeration Technology Options			A	A	45	9

* This program is composed of courses from several different disciplines.

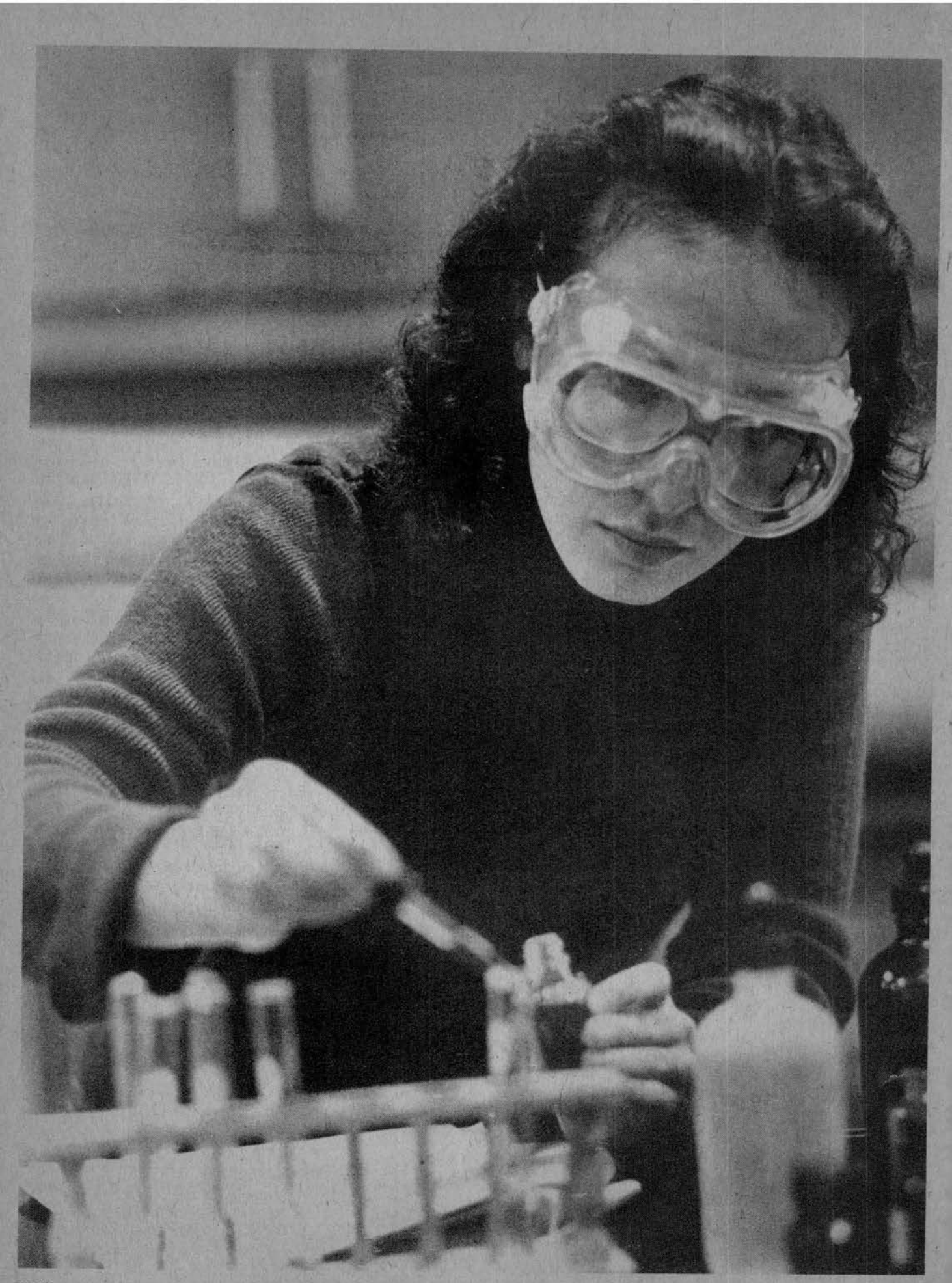
*See advisor

Instructional Programs

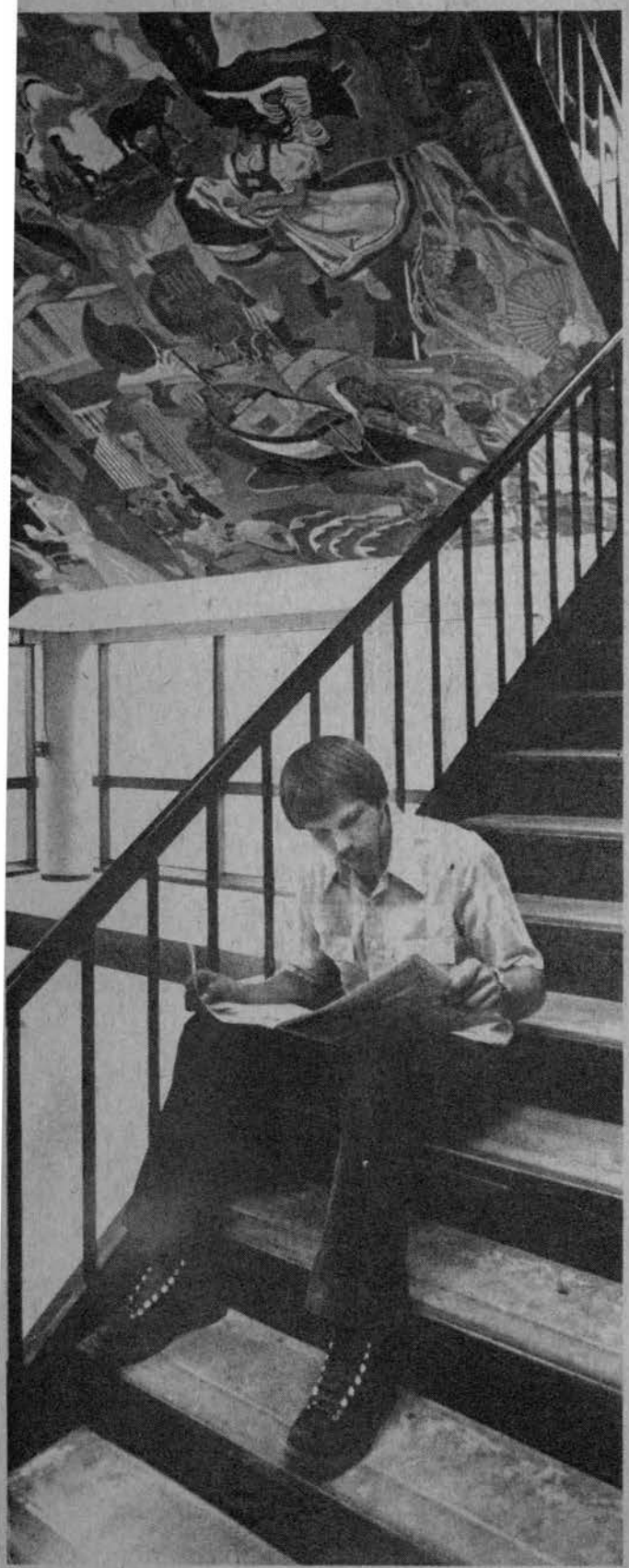
	Prefix	Associate of Arts or Associate of Science Degree Emphasis	Associate of Applied Science Degree	Certificates	Program Page	Course Description Page
Commercial-Industrial Refrigeration/Heating and Air Conditioning	RAC		A	A	45	202
Major Appliance Repair	APT		A	A	45	94
Environmental Technology	EVT		R	R	60	142
Fire Science Technology	FST		R	R	62	147
Fluid Power	FLP		R	R	61	145
Geography	GEO	A,N,R			62	150
Graphic Arts	GRA		A	A	63	151
Heavy Equipment Operations and Preventative Maintenance	HEO		R	R	64	153
History	HIS	A,N,R			64	154
Hospitality and Restaurant Administration	HRA		A	A	64	156
Human Services	HSE		A		65	157
Industrial Electrical Maintenance Technology	IMA		R	R	65	159
Industrial Management	INM		R		66	161
Information Media Technology	IMT		A	A	66	160
Machine Drafting Technology	MDT		N	N	68	170
Machine Shop	MAS		N	N	67	166
Management	MAN		A,N,R		67	164
Machine Tool Technology	MTT			R	69	172
Marketing	MAR		A,N,R		67	165
Mathematics	MAT	A,N,R			68	168
Nuclear Medicine Technology	NMT		A	A	71	181
Nursing	NUR		A,N	A,N	71	182
Continuing Education for Nursing	NCE			A,N,R	69	175
Optometric Assisting	OPA			N	72	187
Paralegal	PAR		A	A	73	187
Petroleum Technology-Exploration/Production	PET		R		73	189
Photography	PHO		A	A	74	193
Physics	PHY	A,N,R			74	194
Plumbing	PLU		R	R	74	197
Political Science	POS	A,N,R			75	198
Public Administration			R		75	*
Radiation Therapy Technology	RTT		A	A	77	209
Real Estate	REE		R		76	205
Recreational Leadership	REL		R	R	76	206
Respiratory Therapy Technology	RIT		N		76	208
Secretarial			A,N,R		*	214
Secretarial/Bilingual Office Careers			N		43	*
Legal Secretarial			A,N		43	*
Medical Secretarial			A	A	43	*
Social Science	SOS	A			79	221
Solar Energy — Installation and Maintenance	SOM		R	R	78	219
Sports Crafts and Specialty Area Mechanics	SCS		N	N	77	211
Stenographic				A,N,R	44	*
Surgical Technology	STE			A	80	223
Surveying	SUR		R		80	225
Traffic Engineering Technology	TET		R		82	228
Traffic and Transportation Management	TTM		A		82	230
Travel and Tourism Occupations	TTO			A	83	231
Urban Horticulture	URH		N	N	83	233
Urban Planning Technology	UPT		R		83	231
Water-Wastewater Technology	WWT		R	R	86	239
Welding and Fabrication	WEF		A,N,R	A,N,R	85	235
Word Processing			A,N,R	N	44	*

* This program is composed of courses from several different disciplines.

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



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 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 had previously found post-secondary education inaccessible because of the high tuition or limited offerings among existing Colorado higher-education institutions.

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.

CCD chose downtown Denver as the site for its third campus, Auraria, in order to make education readily available to people who live and work in Denver proper.

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. Auraria has the distinction of being the only urban community-college 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.

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. Additionally, a variety of transfer-oriented and skill-improvement courses are available.

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 has an impact on the lives of approximately one out of ten metropolitan Denver residents. From an initial one campus with 1,861 students, the college has expanded to four locations with an enrollment of over 13,000 students, making it 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 being a truly 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 was 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 eac individual, regardless of sex, race, religion, age, nation origin, handicap or financial resources, should b provided the opportunity to develop his or her fu potential to the individual's ultimate benefit. The Colleg further believes that quality education support individuals as they are and assists them in attaining stronger and more purposeful goal in life. The College i dedicated to accepting those who can benefit from th educational programs of the College. The Community College of Denver pledges itself to the continuing role o developing and maintaining the best educationa opportunities possible, within the limits of resources, fo all citizens in its service area.

Implementation of this philosophy will include the following goals:

- To offer a high-quality, balanced general educatior program designed to provide students with essentia 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 enver's dedication to remaining a comprehensive, ulti-campus community college that is sensitive and alert the evolving nature of society and to the changing eds of those served.

ffirmative Action Program nd Statement

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

It is not sufficient to state a policy of ondiscrimination. The College has a legal and moral bligation to take positive action to ensure the full alization of equal opportunity for all who are employed seek employment at the Community College of enver. Special effort is made to identify promising inority persons and women for positions in all areas and all levels in which these groups are unrepresented lative to their availability. Selection must be based olely on the candidates' qualifications to carry out the esponsibilities that the positions require. Such actions an only result in raising the quality and competence of he College faculty and staff.

All College staff members should share the esponsibility for implementing and maintaining an ggressive Affirmative Action Program. An Affirmative ction office has been established to serve the students nd staff of the three campuses and Central dministration in all cases of discrimination. The ffirmative Action function is located in the office of ersonnel Services at Central Administration, 1600 owning Steet.

Nondiscrimination on Basis of Handicap

As part of the Rehabilitation Act of 1973 (Public Law 3-112), Congress enacted section 504 which provides hat no physically or mentally handicapped individual in he United States shall, solely by reason of handicap, be xcluded from the participation in, be denied the benefits f, or be subjected to discrimination under any program r activity receiving Federal financial assistance. Subpart of the regulations, dealing with employment practices, ars descrimination by recipients of Federal assistance in ecruitment hiring, compensation, job assignment and lassification, and fringe benefits. It also requires mployers to make reasonable accommodation to ualified handicapped applicants or employees.

It is the intention of the Community College of Denver o comply fully with the guidelines of Section 504. Further information or copies of the regulations are vailable from the Center for the Physically Disadvantaged at any campus.

Continuing Education/ Community Services

Office Numbers:

North — 466-8811 Extension 512, 513
Red Rocks — 988-6160 Extension 260, 300
Auraria — 629-2442

Non-Credit Program Sessions Start:

North — September, January, April and selected summer programs
Red Rocks — September, January and June
Auraria — September, January and June

Summer College for Kids: Starts in June for all campuses

Coordination of off-campus Credit Programs: Requests for classes welcomed at any time at all campuses

Women's Center Activities:

North — 466-8811 Extension 466
Red Rocks — 988-6160 Extension 213
Auraria — 629-3302

Senior Citizens Audit Policy:

North — Register with Community Services/Continuing Education Division. Semesters begin: Janurary 26, May 20, and August 31.
Red Rocks — Register with Admissions Center for credit classes and with Community Services/Continuing Education Division for non-credit classes.
Auraria — Register with Continuing Education office.

Assistance with Community Problem Solving:

North — Office open to ideas for participation in Community Development Activities — primarily education related services.
Red Rocks — Office open to ideas for participation in Community Development Activities — primarily education related services.
Auraria — Office open primarily to educational related services.

Professional/Managerial Programs for Business, Industry, Government Agencies, etc:

North — Programs tailored to organizational needs. Staff will make personal contact with organization representative.

Red Rocks — Programs tailored to organizational needs. Staff will make personal contact with organization representative.

Auraria — Programs tailored to organizational needs.

Non-Credit Programs Offered

Dance • Conditioning • Investing • Aviation • Cultural • Career Planning • Personal Social Growth • Real Estate • Energy • Health • Womens Programs • Arts and Crafts • Business • Language • Learning Skills • Food • Professional Development • Psychic • Vocational • Fine Arts • Home Creativity

and more

Your Program Suggestions are Welcome

Professional/Managerial Development

(Offered on campus or at organization locations, credit or non-credit)

Supervisory Communications • Writing Skills on the Job • Accounting • Human Relations • Leadership Development • Management for Women • Time Management • Negotiating • Conflict • Stress Management • Goal Setting • Program Planning • Interpersonal Communications • Effective Meetings Presentations • Career Development • Computer Basics • Listening Skills • Interviewing Skills • Training the Trainer • Dealing with Change

Programs can be developed or changed according to the needs of your organization.

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 and accommodate more student diversity.
2. Offer courses of instruction and provide services that could not ordinarily be provided from present operating funds.
3. Enrich present programs.
4. Support and enhance the philosophical commitment and mission of the College.
5. Augment the financial and human resources of the College.

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

Advisory Committees

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.

Each campus has a General Advisory Committee serve as a communication link between the campus a the constituency to be served. The General Advis Committee also provides information on program nee as well as communication with secondary schools, legislature and the public.

Women's Centers

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

The Women's Centers act as clearing houses f information which provides services and data relevant women and their needs. Each campus has progra designed to serve the unique needs of their particul campus community. Special programs are offered f displaced homemakers. The Centers also work wi faculty and administrators to develop an awareness c the campus and in the community regarding the speci needs of women.

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

Auraria Campus — 629-3302
North Campus — 466-8811, X466
Red Rocks Campus — 988-6160, X213

Admissions Information

Admissions Policy

Admission to the Community College of Denver is open to high school graduates and non-graduates who are 18 years of age or older, and to any other persons who can profit from instruction. Admission to the College does not assure acceptance of a student in a particular course or program. Students may enroll in any courses in which there is a reasonable expectation for completion. However, students may be requested to enroll in courses designed to correct learning deficiencies.

The College reserves the right to review the enrollment of those students who do not appear to be profiting from instruction and whose enrollment poses a hazard to themselves or to others in the College community.

Students should be aware that some programs have limited space and have special admissions procedures. Applicants for these programs are responsible for contacting the particular division on the campus of their choice.

Occupational students must declare their program major at the time of registration. Any changes in program major must be recorded in the Registrar's Office.

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 student assessment, counseling, advising, and registration of 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 ensure 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 Admissions Office. Transcripts of previous high school or college credit are

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 semester preceeding the final term of graduation. Veterans using V.A. benefits must submit transcripts of all previous post-secondary education and training no later than 30 days after the beginning of the first semester of attendance.
2. The College reserves the right to request transcripts of students in cases where it is determined that the student can be better served through use of transcripts.
3. International students should refer to International Student section.

Documents mentioned above 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 obtainable from the Admissions Office.
3. Submit the special under age student application.

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.

International Students

The Community College of Denver is authorized under Federal law to enroll 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. One official copy of the appropriate high school, college or equivalent transcript. This transcript must be a certified English translation.
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).
   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.
5. All students are required to pay tuition and fees in full at the time of registration.

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.

Transfer of Credit

Students needing transcript evaluations for educational planning should contact the Admissions Center and will be directed to the proper office for transcript evaluation.

Due to staff limitations, transcripts will not be evaulated on registration days.

The Community College of Denver will accept "D's" from other institutions, but in order to graduate from Community College of Denver with a Certificate or an Associate Degree, a student 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 familarize themselves with the general education requirements of that instituion. Since graduation requirements vary among institutions, it is important to obtain assistance from an advisor 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 should follow a prescribed transfer program (recommended by an advisor) in order to make a smooth transition to the four-year college or university.

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 registrars office. There is no charge for the first transcript requested. A fee of $1 will be charged for all subsequent copies. 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 Registrars Office 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 University of Colorado at Denver 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 his/her 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 institutional 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 or subpoena.
10. Persons dealing with emergency that threatens 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.

Release of Student Information

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 release that information. Directory Information consists of: 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 twelve class days of the semester. Forms for such purpose are available in the Registar'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 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. Official 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 and grade change forms.

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.

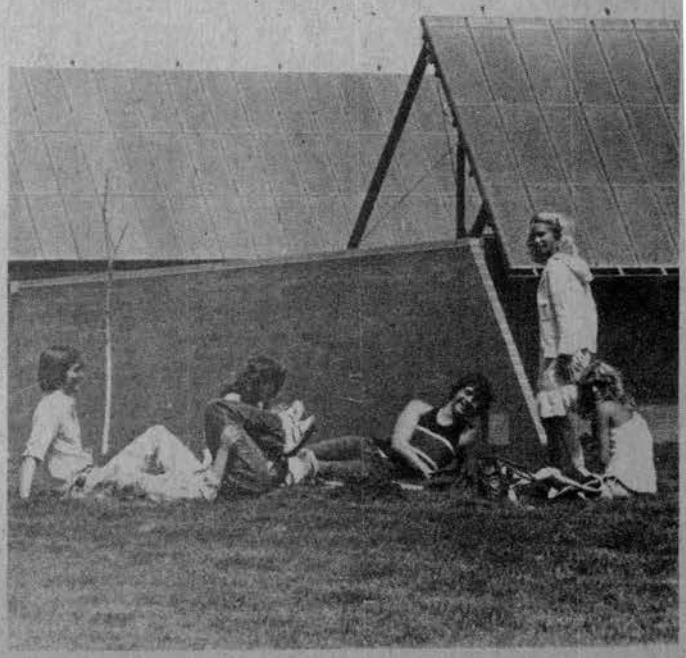
This notice supersedes all previous notices on the Family Educational Rights and Privacy Act of 1974 published by or for the Community College of Denver. Revisions and clarifications will be published as experience with the law and institutional policy warrants.

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.

Students with health problems that may be a hazard to themselves or to others must report such information to the campus Health Service Office.

If an injury occurs either during instruction or at any other time while on campus, the student must report the injury so that first aid may be administered or the student may be directed to the campus Health Service Office.



Tuition, Fees and Refunds

Tuition

The tuition for state supported institutions is determined by the State Board for Community Colleges and Occupational Education and is subject to change.

Summer Term, Fall and Spring Semester

Resident

1-11 credit hours — $23.00 per credit hour
12-18 credit hours — $276.00
Each hour over 18 is an additional $18.40

Non-Resident

1-11 Credit hours — $107.00 per credit hour
12-18 credit hours — $1284.00
Each hour over 18 is an additional $85.60

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 $13 per semester which is for the payment for the construction of the Auraria Student Center and Child Care Center.

Deadline For Tuition Payment

Students who are not enrolled with complete payment will not be permitted to enroll or attend classes under any circumstances after the 12th instructional day of the term. Enrollment after the 12th day will be limited to "open entry/open exit," self-paced, short-term and modular courses.

Late Registration Fee

Students who register after the 5th instructional day of the term will be charged a $10 late Registration Fee. This fee may not be applicable to certain "Open Entry/Open Exit," self-paced, short-term and modular courses. This fee is not refundable.

Tuition Policy For Senior Citizens

Persons over the age of sixty who are classified as in-state students may take regularly scheduled courses for credit or audit on a space-available basis, free of tuition charges. However, the student activities fee and the parking fee (if applicable) may be assessed. This provision concerning free tuition does not apply to Continuing Education courses.

Residence Classification for Tuition Purposes

At the time of application for admission, students are classified for tuition purposes as In-State 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.

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.

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 it becomes necessary to initiate a complete withdrawal from the College, students should check with the Registrar's office for the proper procedures and obtain the necessary forms.

1. 100 percent tuition and fees will be refunded for courses dropped between the day of registration and the first day of the term.

2. A 75 percent refund of tuition only for total or partial withdrawal from the first day of the term through the 12th day of the term. No tuition or fee refund of less than $1 will be made.

3. No refund will be made subsequent to the 12th day of the term.

4. Prior to the 12th day of the term, 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.

Tuition Adjustment Related To 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 instructional day of the term. 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 instructional day of the term, 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.

Assessment Program

Assessment is a program designed to help students identify the most appropriate courses with which to begin their college studies. Assessment consists of four short tests in reading, math, English and study skills. Testing time is approximately 1 to 1½ hours including administration and scoring. All new students are required to complete assessment. Students must complete assessment prior to their first semester's registration. For further information contact the Learning Development Center (LDC) on any campus. The assessment process has proven to be very helpful to new students in choosing courses.

The assessment process may be waived for those students who meet at least one of the following criteria:

1) previous recent college credit, including freshman mathematics and English, (NOTE: students wishing to qualify for this waiver *MUST* bring a copy of their college transcript),
2) college degree,
3) SAT or ACT records (NOTE: students wishing to qualify for this waiver *MUST* bring a copy of these scores),
4) registration for one course, not considered a requirement for a CCD degree or certificate program.

Those students registering for GED prep, Health Occupations programs, or English as a Second Language (ESL) should check with the Learning Development Center on the campus of their choice for test information.

Educational Standards

Attendance

Regular class attendance is necessary if a student is to obtain maximum benefits from instruction. Students are expected to comply with the attendance policy as set by individual instructors and divisions.

Course Load

The normal course load is 15 credit hours. Students who are registered for fewer than 12 credit hours are regarded as part-time students.

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

Academic Standards

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 are in a "progress alert" status or 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. They must meet with an advisor in the Career Planning and Advising Center and complete an Academic Progress Review Plan before registering for the next semester. Such students may also be subject to enrollment restrictions.

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
D	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
CR	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
SP	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
NC	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

Grade Symbol	Quality of Work Indicated by Symbol	Grade Points
I	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
W	The student has officially withdrawn from the course.	Not computed in GPA
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.

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 in 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, unit credit and a grade will be awarded. Regulations for such courses are these:

1. In courses for which this grade is authorized, the SP will be given to —
   a. the student who has attended for a full term and has shown satisfactory progress, but has not yet mastered required course objectives, or
   b. 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.
2. 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:

1. 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.
2. 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.

Credit Hours

Generally, one credit hour is earned by attending a lecture 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.

Grade Point Average Calculation

Under this system, grade points measure the achievement of the student for the number of credits taken. To calculate the grade point average, multiply the number of grade points per credit by the number of credits for each course. Total the credits and points and divide the grade points by the credits.

A equals 4 grade points
B equals 3 grade points
C equals 2 grade points
D equals 1 grade point

The following example will enable the student to calculate a grade point average:

Course	Course Title	Credits	Grade	Points
ELT 100	DC Fundamentals	3	A (3X4)	12
ELT 105	DC Circuits and Magnetism	3	A (3X4)	12
ELT 106	AC Fundamentals	3	B (3X3)	9
ENG 111	English Composition	3	C (3X2)	6
MAT 111	Introductory Algebra	3	B (3X3)	9
	Totals:	15		48

Total grade points divided by total credits equals the cumulative grade point average. Therefore, the grade point average for the above example woould be: 48 divided by 15 equals 3.20

Cooperative Education Program

The Cooperative Education Program provides opportunities to supplement course work with practical work 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.

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 college equivalent education which has been acquired through earlier schooling, work, or other life experiences. Such prior learning must be comparable to CCD courses or curricula and must relate to the student's educational objectives; however, appropriate elective credit may be accepted.

Students may document prior learning through successful completion of any of the following:

1. Military courses
2. selected CLEP and ACT examinations
3. CCD challenge examinations
4. portfolio of learning outcomes

Military Courses

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.

Students desiring credit for military training not covered under the Commission of guidelines, may apply under the guidelines for "portfolio of learning outcomes."

National Examinations

College Level Examination Program. The College recognizes the College Level Examination Program (CLEP) examinations 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.

ACT 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 award by examination for advanced placement in this program. Students achieving a score of 45 in Adult Nursing — A.D., on the ACT Proficiency Examination Program may receive credit for first year nursing courses.

Challenge Examinations

Most CCD courses may be challenged by currently enrolled students. Information on challenging courses and the necessary forms are available in the division offices. No more than one challenge of a particular course will be arranged during any one semester. Students pay tuition only if they pass.

Portfolio of Learning Outcomes

Currently enrolled students may petition the College for credit by developing a portfolio that describes and documents pertinent learning comparable to CCD courses. A faculty committee in the appropriate program area will evaluate the portfolio and award credit commensurate with the learning.

No more than one portfolio evaluation for a particular evaluation for a particular course will be arranged during any one semester. Students pay tuition only if they pass.

Student Services—

Financial Aid

General Information:

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

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

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

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

Application Procedures:

All students must apply and be accepted for admis- ion to the College before disbursement of any financial id can be made.

Applications for financial aid are required to be com- leted 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. Institutional application or student data form.

Additional supporting documents may be requested y the Office of Financial Aid, such as Federal Income ax Return Forms 1040A, 1040, Affidavit of Non-sup- ort, statements of Welfare, Social Security, Vocational ehabilitation benefits, etc.

Applications are available in the Office of Financial Aid.

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

Summer 1981 — April 1, 1981
Academic Year 1981-82 — June 1, 1981
Spring 1982 — December 1, 1981
Summer 1982 — April 1, 1982

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, $17.00 per credit hour for books and $15.00 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 (Pell Grants)

The BEOG (Pell Grants) program provides federal grants to assist with educational expenses. Award amounts range from $200 to $1400 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 their demonstrated financial need. Repayment begins not later than seven (7) months after graduation or termination of student status. The interest rate is four (4) percent per annum with mimimum payments of $30 per month.

Repayment may be deferred for a period not to exceed three (3) years for: (1) Peace Corps or Vista; (2) total disability; or (3) service in the commissioned corps of the U.S. Public Health Service.

The period of repayment cannot exceed ten (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 ten 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 $2,000 depending on financial need.

d. **Nursing Scholarship Program**
Scholarships are available to students enrolled in a course of study leading to an associate degree in nursing. Awards may 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 wh have completed a minimum of 12 credit hours at CC with at least a 3.0 grade point average in all courses a tempted. Applications are available in the Office of Fina cial Aid. Scholarships are limited and dependent upon th availability of funds.

5. Guaranteed Student Loan

a. **Loans to Students**
Effective January 1, 1981, the GSL pro gram provides loans to students at 9 percen interest rates per annum. Dependent unde graduate students may borrow up t $2,500 per year, not to exceed an aggregat amount of $12,500 for their undergraduat studies. Independent undergraduate stu dents may borrow up to $3,000 per yea not to exceed an aggregate amount o $15,000. Loans will have a fixed 6-montl grace period.

b. **Loans to Parents**
The maximum amount a parent of a depen dent under-graduate student may borrow fo any one student in any academic year is $3,000. The aggregate loan limit is $15,000. The interest rate is 9 percent pe annum and the parent has up to ten years to repay the loan. NOTE: The loan may not be implemented in some states until a later date because of the need to amend state laws.

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) 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 to 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 and employment.

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 19-20 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 credits taken. To calculate the grade point average, multiply the number of grade points per credit by the number of credits for each course. Total the credits and points and divide the grade points by the credits.

A equals 4 grade points — C equals 2 grade points
B equals 3 grade points — D equals 1 grade point

The following example will enable the student to calculate a grade point average:

Course No.	Course Title	No. Credits	Grade	Grade Points
ELT 100	DC Fundamentals	3	A (3X4)	12
ELT 105	DC Circuits and Magnetism	3	A (3X4)	12
ELT 106	AC Fundamentals	3	B (3X3)	9
ENG 111	English Composition	3	C (3X2)	6
MAT 111	Introductory Algebra	3	B (3X3)	9
	Totals:	15		48

Total grade points divided by total credits equals the cumulative grade point average. Therefore, the grade point average for the above example would be: 48 divided by 15 equals 3.20

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. 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 (indicates that the student audited the course). No credit is allowed for audited courses.
   B. I Grade (incomplete). Please refer to page 20 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 for training.
   F. Withdrawal from a course or receipt of a nonpunitive grade upon completion of a course due to unsatisfactory work may be considered to be under mitigating circumstances if the student can demonstrate good faith pursuit of the course up to the point of withdrawal or completion and the student submits evidence that he or she applied for tutorial aid, consulted a Veterans Administration counselor, or consulted a school academic counselor or advisor regarding an attempt to remedy the unsatisfactory work before withdrawal or 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 on three campuses and through a community-based outreach program.

Career Planning and Advising Center

The Career Planning and Advising Center provides services to assist students and community members to explore career options, make educational and career decisions and develop plans to act on the decisions made. Career counselors conduct career exploration and planning classes (Career Search Seminars) on a credit or non-credit basis and are available to class members for individual career counseling as a follow-up to the class. Career counselors are also available for individual appointments to discuss educational and/or career decisions.

Reference materials are available for obtaining information about various educational and career opportunities.

The Colorado Career Information System (COCIS) is available to provide information about job duties, skills, licensing, preparation, salary and predictions about the extent of the current and projected demand in Colorado for various careers. Interest tests or inventories are also used by Career counselors to help individuals in the process of exploring and planning a career. A minimal fee may be charged for classes and some of the testing.

The Career Exploration Program is a project in which members of the Career Planning and Advising Center Staff offer several Career Exploration Seminars each semester. The purpose of the seminars are to help students discover and narrow their career interest and develop a career plan. They also provide an opportunity to examine options for considering a change in careers. These seminars meet for two and one-half hours a week for five weeks and are offered days and evenings.

The first part of a Career Exploration Seminar is devoted to self-discovery. Career interest tests and specially designed exercises enable each person to decide which occupational areas are most suited to his/her career goal. During the latter part, it is possible to further clarify career areas by gathering information through reading and use of a computerized data bank.

Following the five-week module, persons desiring further career search activities are encouraged to sign up for individual career counseling appointments.

Advising is a joint endeavor, staffed by members of the Career Planning and Advising Center Staff and members of the instructional divisions. Faculty advisors provide specific information to students about the educational programs in which they teach. Information about the locations of faculty advisors and their office hours are available in the Center.

It is the student's responsibility to:

1. Meet with a member of the Center staff and/or faculty advisor to discuss the most appropriate classes for his/her educational or career goal.
2. Discuss their plans for enrolling in the next term's classes *prior* to each registration.
3. Contact their instructor or advisor when problems arise in their programs.
4. Contact their advisor or a career counselor if they are thinking about a change in programs.
5. Make certain they are fulfilling their specific division's requirements.

The Center staff is available to serve students both during the day and in the evening.

Job Development and Placement

The Job Development and Placement Office on the three 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.

Food Service

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

Health Services

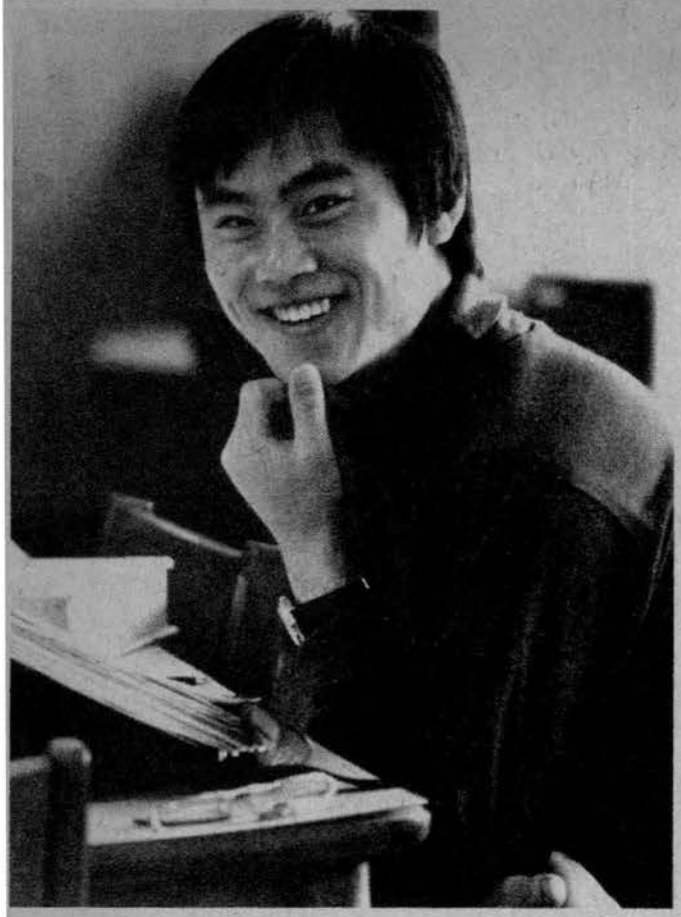
Student Health Services is designed to foster and maintain proper attitudes and habits of personal and community health. Various programs and activities related to current health problems are planned each semester. These programs are designed to educate students, faculty and staff regarding health problems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



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.

Offices, club rooms, lounges, activity areas and student government rooms are located in special areas on each campus.

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 organizations 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.

Educational Opportunity Center

The Educational Opportunity Center provides counseling services, and is a clearinghouse of information on Post-secondary education. These services are offered to provide information on aspects of educational admissions, career planning and financial aid options.

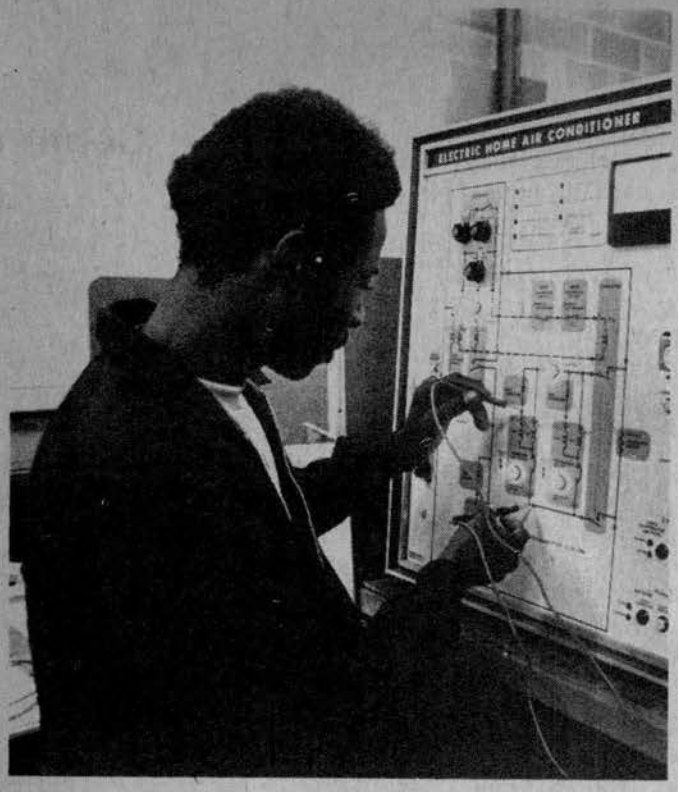
This service is free, and is located at 938 Bannock Street, Suite 330. Please call for an appointment at 839-2101.

ROTC Information

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

Students at all three CCD campuses may participate, through cross-enrollment procedures, in the ROTC program. For specific information regarding your campus please contact:

Department of Military Science
Metropolitan State College
Box 93
Denver, Colorado 80204
Telephone: 629-3491


ELECTRIC HOME AIR CONDITIONER

Oth r Support S rvices

Center for the Physically Disadvantaged

It is the policy of the Community College of Denver to provide equitable opportunities for 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.

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. Numerous auxiliary services are provided at each campus to assist the disabled student in the obtainment of 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 persons to the Community College of Denver. To accommodate this component of the student body the College has established the Center for the Physically Disadvantaged (CPD) through which approximately 30 professional and paraprofessional personnel offer services on the three campuses of the College.

Services include:
- Registration Assistance.
- Vocational evaluation.
- Curriculum adaptation and adapted scheduling.
- Interpreting for hearing impaired students.
- Job placement for disabled students.
- Emergency wheelchair loan.
- Liaison with rehabilitation agencies.
- Modifications of classroom setting.
- Notetaking.
- Parking privileges.
- Reading and Braille transcribing.
- Health maintenance and advising.
- Specialized career planning and academic advising.
- Specialized media.
- Tutorial assistance.

Services are without cost (except for a vocational evaluation processing fee) for all handicapped students at the college, including those with temporary disabilities.

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

It is recognized that some candidates seeking admission to or presently pursuing studies at the College cannot succeed in this mainstreamed environment despite the accessible programs and facilities, the broad choice of career options, and the full range of supportive services. Because mainstreaming in regular classes is an integral part of the College philosophy, retention of the candidate is based upon the student's capability of succeeding in college classes.

Learning Development Centers

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 (A,N,R)
- ESL Tutoring and Tapes (A,N,R)

Additional Taped Instruction (N)

Tapes in Hebrew, Greek, Russian, Japanese, Arabic, Swedish, Portuguese, Italian.
- Tapes in English for Arabic speakers.
- Tapes in Spanish for Medical Professions.

Health Occupations (A)
- Basic Skills in Nursing Fundamentals

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

Math Skills (A,N,R)
Nursing
Drafting
Automotive
Welding
Graphics
Hydraulics
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 (A)
Achievement Testing (A)
Learning Potential Battery (A)

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. See page 36.

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.) See page 36.

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 a 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.

Disadvantaged Supplemental Services

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

Learning Materials Center (North and Red Rocks Campuses)

The Learning Materials Centers (LMC), which are located on North and Red Rocks Campuses, are a combination of library, audio-visual department and independent learning center. They provide learning materials, audio-visual equipment, study and program production facilities and staff services to supplement and support the curriculum of the College. The LMCs also provide resources of a cultural and recreational nature, not necessarily stemming from the curriculum, and cooperate with other libraries in borrowing and lending books and other information resources.

To meet the needs of a diverse student population, the LMCs provide a variety of educational materials consisting of: books, periodicals, newspapers, microforms, audio and videotapes, films, filmstrips, slides, transparencies, recordings, and multi-media kits. The LMCs also instruct students in exploring and using these varied resources and increasing their skills in finding answers to many questions related to their studies.

In addition to providing information, educational material and a capable staff to serve the total student body, the LMCs also make similar services available to the general public.

Auraria Libraries (Auraria Campus)

Housed in the Learning Resources Center, the Auraria Library covers an entire city block and offers seating for about 2,000 people. The Library serves students and faculty from the University of Colorado at Denver, Metropolitan State College and Community College of Denver-Auraria. Strong subject collections at Auraria are in the fields of public administration, urban studies, and criminal justice. The main library's collection of over 600,000 volumes is supplemented by the Environmental Design Branch Library located in UCD's Bromley Building and by the Vocational Technical (Vo-Tech) Branch Library in Auraria's South Classroom Building. Services offered by Auraria Libraries include computer-assisted research, class sessions in research techniques, and fully-automated circulation of materials. Information on Library services and resources may be found by calling 629-2740.

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.

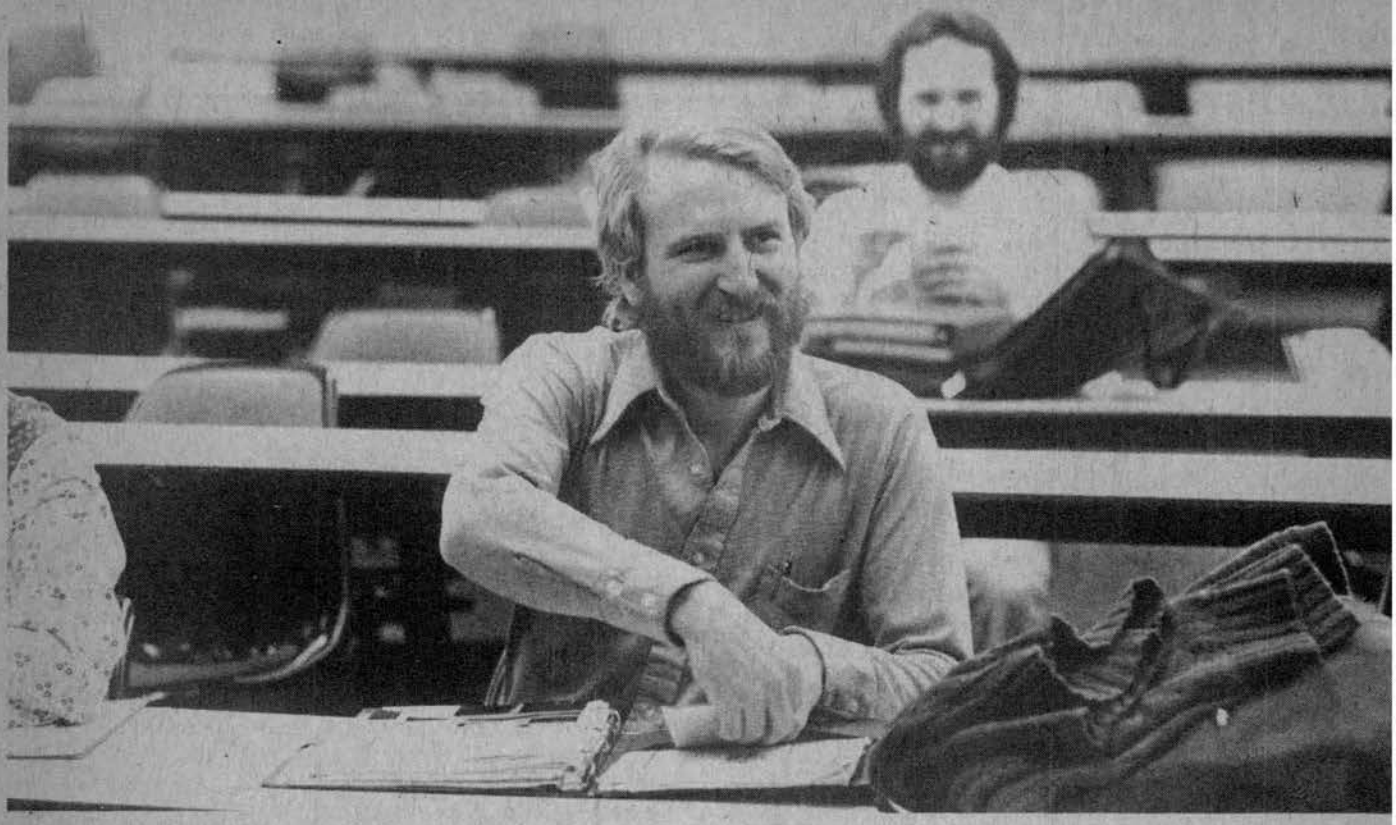
North Campus Bookstore
Serving the North Campus.
Telephone: 466-8811
Location: 3645 W. 112th Ave. in the Student Center.
Hours (during class sessions): 9:00 a.m.-8:30 p.m. Mon.-Thur.; 9:00 a.m.-3:00 p.m. Fri.

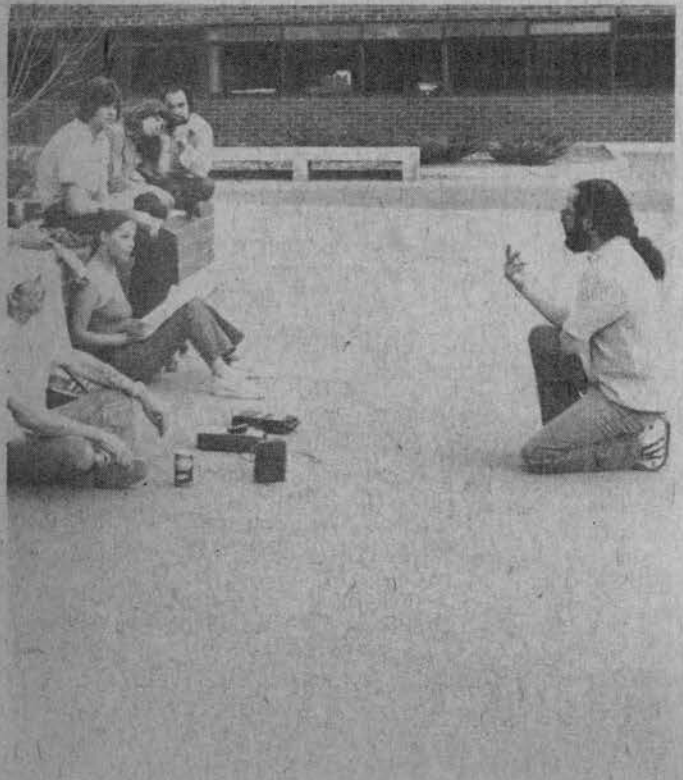
Red Rocks Bookstore
Serving the Red Rocks Campus
Telephone: 988-6160
Location: 12600 W. 6th Ave. on the Bridge.
Hours (during class sessions): 9:00 a.m.-8:30 p.m. Mon.-Thur.; 9:00 a.m.-4:00 p.m. Fri.

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.





Graduation Requirements for Degrees and Certificates

Community College of Denver awards the following degrees:

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 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 as published in the semester schedule of courses. This form is available from the Registrar's Office.

Certificates

To receive a CERTIFICATE a student shall:

1. Complete the specified subject matter or course requirements of an approved vocational/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 Registrar's Office.

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.

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 to which they plan to transfer in order to determine specific course requirements. Information concerning transfer to Colorado universities and colleges is available on 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.

Degree 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 34

Core Requirements	12 credits
Distribution Requirements	15 credits
Interdisciplinary Requirements	3 credits
Total	30 credits

2. Electives to complete student's transfer program * 30 credits

Total 60 credits

* Excluding courses not intended for transfer 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.

Degree Requirements

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

1. General Education Requirements including:

Core Requirements	12 credits
Distribution Requirements	15 credits
Interdisciplinary Requirements	3 credits
Total	30 credits
2. Science and Mathematics*	20 credits
3. Electives**	10 credits
Total	60 credits

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

** Excluding courses not intended for transfer and limited to no more than 3 credits in physical education.

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:

1. General Education Requirements including:

Core Requirements	12 credits
2. 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:

1. General Education Requirements including:

Core Requirements	12 credits
Distribution Requirements	4-6 credits
	Total 16-18 credits

2. Electives* 42-44 credits

* May be selected from transfer or occupational courses.

Total 60 credits

General Education Requirements

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

Students seeking the AA, AS, AAS, or AGS Degrees should be familiar with these requirements.

DEFINITION OF TERMS

Core Requirements — These are basic courses that all students must complete for an Associate Degree.

Interdisciplinary Requirements — These are courses which are designed to include information drawn from two or more academic subjects.

Distribution Requirements — This requirement specifies that students must distribute their studies over a number of different broad, academic areas (Communications, Social Sciences, Humanities and the Arts, and Science and Mathematics.)

A. Core Credit Requirements – 3 credits must be completed from each of the four areas.
   1. Communication Skills — 3 credits are required.
   2. Interpersonal Skills — 3 credits are required
   3. Computation Skills — 3 credits are required
   4. Scientific and Critical Thinking Skills — 3 credits are required.

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 for three additional credits for the AA and AS Degrees. 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 must select any 15 credit hours from courses intended for transfer including *a minimum of 3 credit hours* from each of the following areas:

1. Social Sciences (ANT, ECO, GEO, HIS, POS, PSY, SOC, SOS)
2. Communications (COM, ENG, JOU, LIT, SPE, FRE, GER, SPA)
3. Humanities and the Arts (ART, DRA, HUM, MUS, PHI)
4. Science and Mathematics (BIO, CHE, CSC, 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 any of the above four areas.

STUDENTS SEEKING THE A.A. OR A.S. DEGREE WHO PLAN TO TRANSFER TO A COLLEGE OR UNIVERSITY SHOULD CONSULT THEIR ADVISOR, 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.

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.

Consortium of Ethnic Studies

The College offers the Associate of Arts Degree with an emphasis in Black Studies or Chicano Studies on the *Auraria 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
COM	109	Barriology Communications
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	241	Black Civilization — Africa
HIS	242	Black Civilization — America
HIS	243	Land Grants and Thier Relationship To The Contemporary Chicano
HIS	246	Mexico: Colonial Period — Present
HIS	271	Meso America: Middle America
HUM	115	Introduction to Chicano Studies
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	228	Contemporary Chicano Literature
LIT	229	Contemporary Black Literature
MUS	101	History of Afro-American Music
POS	206	Federal Indian Policies
POS	251	Chicano Political Experience
POS	253	Third World Politics and The Chicanos
POS	265	Black Political Thought and Experience
PSY	255	Psychological Development of The Black Personality
PSY	260	Psychology of The Chicano
SOC	210	La Familia Chicana
SOC	230	Sociology of the Chicano Community
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 coping 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:

ENG	090	2-5 Credit Hours	English as a Second Language I
ENG	091	2-5 Credit Hours	English as a Second Language II
ENG	092	2-5 Credit Hours	English as a Second Language III
ENG	099	1-3 Credit Hours	Sound and Spelling
ENG	103	1-3 Credit Hours	Workshop in Reading, Writing and Speaking
ENG	105	1-3 Credit Hours	Study Skills
ENG	107	3 Credit Hours	Language Fundamentals I
ENG	108	3 Credit Hours	Language Fundamentals II
GED	090	1-5 Credit Hours	GED Preparation: Reading and Writing
GED	011	1-5 Credit Hours	GED Preparation: Mathematics
MAT	090	3 Credit Hours	Basic Operations on Whole Numbers
MAT	095	1-3 Credit Hours	Process and Procedures of Mathematics I
MAT	096	1-3 Credit Hours	Process and Procedures of Mathematics II
MAT	101	1-3 Credit Hours	Applied Mathematics I
MAT	102	1-3 Credit Hours	Applied Mathematics II
MAT	103	1-3 Credit Hours	Math Anxiety
MAT	105	1-2 Credit Hours	Mathematics for the Physical Sciences
MAT	106	3 Credit hours	Introduction to Mathematics
MAT	107	5 Credit Hours	Mathematics for Electronics
PSY	099	3 Credit Hours	Job Search Technique Workshop
PSY	108	3 Credit Hours	Vocational Exploration
REA	090	1-3 Credit Hours	Introduction to Basic Reading Skills
REA	091	1-3 Credit Hours	Introduction to Reading and Study Skills
REA	100	1-3 Credit Hours	Building Everday Reading Skills
REA	101	1-3 Credit Hours	Skills for College Reading
REA	102	1-3 Credit Hours	Skills for College Reading II
REA	103	1-3 Credit Hours	Workshop in Reading, Writing and Speaking
REA	104	1-3 Credit Hours	Skill in Test-Taking
REA	105	1-5 Credit Hours	Study Skills
REA	106	1-3 Credit Hours	Vocabulary Development
REA	109	1-3 Credit Hours	Reading Efficiency
REA	110	1-3 Credit Hours	Speed Reading
REA	299	1-3 Credit Hours	Independent Study

Aurora Education Center

The Community College of Denver Aurora Education Center (AEC), located at 9859 E. 16th Ave., Aurora, serves the city of Aurora, part of eastern Denver and the Montbello, Cherry Creek and Eastridge areas. Information is available at 344-1463.

Courses which may be offered include the following instructional areas:

Accounting
Anthropology
Art
Biology
Business
Computer Science
Communications
Credit Management
Criminal Justice
Dietetic Technology
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
Speech

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

Red Rocks Campus Coordinated Programs With Warren Occupational Technical Center

There is an increased number of educational programs available to students as a result of a cooperative agreement between the Community College of Denver/Red Rocks Campus and the Warren Occupational Technical Center. The Warren Center is a Jefferson County technical center for high school students. Through the cooperative agreement, adults may enroll in the following vocational-technical programs offered at the Warren Center:

Auto Body Trades
Computer Operator
Copy Preparation
Cosmetology
Data Entry
Health Occupations
Industrial Machine Maintenance and Repair
Litho Preparation
Machine Tool Technology
Major Appliance and/or Refrigeration Repair
Offset Printing
Radio and TV Technology
Restaurant Arts
Sheet Metal
Small Engine Mechanics
Upholstery
Urban Horticulture

The cooperative agreement also allows high school students to enroll in selected vocational programs at the Red Rocks Campus. The selected programs are listed in the Warren Center Information Bulletin.

High School Students Wanting to Take Classes at the Red Rocks Campus

High school students interested in taking an occupational program at the Red Rocks Campus should contact their high school counselor.

Adult Students Wanting to Take Courses at the Warren Technical Center

Adults interested in taking a daytime occupational program at the Warren Center should call the Advising Center at the Red Rocks Campus. The telephone number is 988-6160, Ext. 288.

Instructional Programs

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 Sanding	3	60
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
	Total Required Hours	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 Remove and Replace Front Sheet Metal and Bolt-on Body Parts	3	60
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 120	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	3	60
ABS 215	General Auto Body Repair V	3	60
General Education Courses		12	180
	Total Required Hours	72	1380

NOTE
Additional courses are listed and described in the Course Description section of the catalog.

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

Frame Repair
3 Week Certificate

Prerequisites: ABS 100, 109 and 120

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

Auto Body Repair and Refinishing Option (N)
Required Major Courses

Course No.	Title	Credits	Ct. Hrs.
ABS 100	Orientation Remove and Replace Front Sheet Metal and Bolt-on Body Parts	3	60
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 120	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
ABP 100	Orientation on Shop Policy and Auto Body Painting Safety Sanding	3	60
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
		60	1200
General Education Courses		12	180
	Total Required Hours	72	1380

Auto Body Repair, Fiberglass and Radiator Repair Option (N)

Required Major Courses

Course No.	Title	Credits	Ct. Hrs.
ABS 100	Orientation		
ABS 107	Remove and Replace Front Sheet Metal and Bolt-on Body Parts	3	60
	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 120	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 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
General Education Courses		12	180
	Total Required Hours	72	1380

Accounting

Associate of Applied Science Degree (A,N,R)

This program is designed for students whose objective is to obtain a technical degree in accounting. A variety of opportunities are available in this program including: in-depth studies in accounting theory; emphasis in computers, taxation, or management; on-the-job training; career specialization; etc. Students with an existing associate or baccalaureate degree in non-accounting areas or with sufficient earned college credit may be able to qualify for the Accounting Associate of Applied Science Degree by taking accounting courses only. (To assure maximum transferability to a four-year institution for a degree in accounting requires careful planning of the Associate Degree and regular consultation with an accounting adviser.)

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	3	45
ACC 221	Cost Accounting	3	45
ACC 131	Individual Income Tax I	3	45
CPB 100	Introduction to Computers[1]	4	60
SEC 105	Office Skills for Non-Secretarial Students[1]	3	45
General Education Courses		12	180
	Total Required Hours	38	570

Additional Required Courses

Credits and contact hours listed below represent the minimum requirements to be satisfied for each area. The specific courses selected may result in a higher total of credits and contact hours.

Computational

(Select a minimum of 3 credits with adviser approval.)

BUS 110	Mathematics of Business/ Personal Finance	3	
	or Modules A, B, and C of BUS 110 (1 credit hour each)		
	or		
MAT 121	College Algebra	4	
		3	45

Economics/Management

(Select a minimum of 6 credits with adviser approval.)

Course No.	Title	Credits	Ct. Hrs.
ECO 201	Principles of Economics (Macro)	3	
MAN 105	Introduction to Business	3	
MAN 206	Business Law	4	
MAN 215	Principles of Management	3	
MAN 225	Managerial Finance	3	
		6	90

Accounting/Computers/Career[2]

(Select a minimum of 9 credits with adviser approval.)

ACC 216	Governmental Accounting	3	
ACC 104	Advanced Bookkeeping	3	
ACC 132	Individual Income Tax II	2	
ACC 133	Income Tax Service	3	
ACC 212	Intermediate Accounting II	3	
ACC 215	Accounting Systems	3	
ACC 235	Business Taxation	3	
ACC 255	Computerized Accounting	3	
ACC 297	Cooperative Education[3]	6	
CPB 106	COBOL	4	
CPB 108	BASIC	3	
	or		
	Career[2]	9	135

Elective

(Select a minimum of 6 credits with adviser approval.)

	6	90
Total Minimum Required Electives	24	360
Total Required Hours (excluding lab credits)	62	930

SEC 105 may require the student to take an additional laboratory credit hour of BUS 095. CPB 100 requires one additional laboratory credit hour of CPB 095.

Career: Any college-level course work that is pertinent to a career objective may, with written approval of an accounting adviser, be used to satisfy the specified 9 credits of electives listed as Accounting/Computers/Career.

Cooperative Education: Students desiring to acquire work experience as part of the Associate of Applied Science degree program should consult an accounting adviser.

Accounting (A,N,R)
Two-Semester Accounting/Business Certificate

This program is recommended for students who wish to study basic business fundamentals while developing entry-level accounting skills. The certificate program constitutes an acceptable first-year curriculum in accounting and business for an associate degree at CCD and applies towards a baccalaureate degree at many senior institutions. This certificate is also recommended for students who have not selected an option in accounting or business, but who wish to complete a program which permits many continuing options without loss of credit. Students should consult an adviser for counseling concerning any courses with alternatives, for information about continuing opportunities at CCD, and/or for details regarding transfer to senior institutions upon completion of this certificate program.

Required Courses

Course No.	Title	Credits	Ct. Hrs.
ACC 111	Accounting Principles I	5	75
ACC 112	Accounting Principles II or ACC 116-221	5	75
CPB 100	Introduction to Computer Programming[1]	4	60
MAN 206	Business Law	4	60
SEC 105	Office Skills for Non-Secretarial Students[1]	3	45
	or Elective with approval of accounting adviser	3	45
	Total Required Hours	21	315

Required Electives

(Select a minimum of 3 credits of each with adviser approval.)

	Mathematics elective	3	45
	Communications elective	3	45
	Economics elective	3	45
Total Required Electives		9	135
	Total Required Hours (excluding lab credits)[1]	30	450

[1]SEC 105 may require the student to take an additional laboratory credit hour of BUS 095. CPB 100 requires one additional laboratory credit (CPB 095).

Accounting
Analytical Accounting (A,N,R)
One-Semester Certificate Program
(Special Block Scheduling)

This program is designed to fulfill the needs of students who require an in-depth exposure to accounting theory and wish to accomplish this objective in the shortest possible time. It is also designed for students who have completed the Bookkeeping/General Office Procedures Certificate Program. All courses in this program are acceptable towards the Accounting Associate of Applied Science Degree. Students who complete ACC 116 — Corporate Accounting and ACC 221 — Cost Accounting and enter the Accounting Associate of Applied Science Degree Program are not required to take ACC 112, but must meet the minimum 60-credit requirement for the degree.

Required Courses

Course No.	Title	Credits	Ct. Hrs.
ACC 111	Accounting Principles I	5	75
ACC 116	Corporate Accounting	2	30
ACC 221	Cost Accounting[1]	3	45
ACC 196	Accounting Practicum		
	or		
ACC 295	Cooperative Education Seminar[2]	1	15
CPB 100	Introduction to Computers[3]		
	or		
	Elective approved by accounting adviser	4	60
	Total Required Hours (excluding lab credits)	15	225

[1]ACC 112 will be substituted for ACC 116 and ACC 221 at campuses not offering ACC 116.

[2]To be eligible to register for ACC 295, students must have completed the Bookkeeping/General Office Procedures Certificate Program and must be enrolled full time in the Analytical Accounting Certificate Program. Students interested in on-the-job training through Cooperative Education should consult an accounting adviser.

[3]CPB 100 requires students to take an additional laboratory credit (CPB 095).

Accounting
Cooperative Education (A,N,R)
One-Semester Certificate Program

Cooperative education is offered to provide on-the-job training in an accounting or accounting-related position. To be eligible, students must have completed ACC 295 — Cooperative Education Seminar. Additionally, students must have completed either a) both the Bookkeeping/General Office Procedures and the Analytical Accounting Certificate Programs or b) 3 semesters of course work towards the Accounting Associate of Applied Science Degree.

Required Courses

Course No.	Title	Credits	Ct. Hrs.
ACC 297	Cooperative Education	6	180
Electives[1]	Selected from related courses listed in the Accounting A.A.S. degree program Minimum:	6	90
	Total Required Hours (excluding lab credits)	12	270

[1]Electives must be selected with approval of an accounting adviser.

Accounting
Bookkeeping/General Office Procedures (A,N,R)
One-Semester Certificate Program
(Special Block Scheduling)

This program is designed to provide entry-level skills in bookkeeping and related office procedures. Upon completion, several continuing opportunities are available. These include, but are not limited to, entry into the Analytical Accounting Certificate or the Associate of Applied Science Degree programs, with an option for on-the-job training through cooperative education. Students should consult an adviser for details.

Required Courses

Course No.	Title	Credits	Ct. Hrs.
ACC 103	Bookkeeping	3	45
ACC 104	Advanced Bookkeeping	3	45
ACC 105	Payroll Procedures	3	45
BUS 110	Business Mathematics or BUS 110 (modules A,B, and C)	3	45
SEC 105	Office Skills for Non-secretarial Students[1]		
	or		
	Elective approved by accounting adviser	3	45
	Total Required Hours (excluding lab credits)	15	225

[1]Course may require the student to take an additional laboratory hour of BUS 095.

Administrative Support Occupations (A,N,R)

These program options are designed to prepare students for entry level positions and/ advancement in businesses governmental agencies and other institutions which employ persons in administrative support areas.

Core Course Requirements

Course No.	Title	Credits	Ct. Hrs
ACC 103	Bookkeeping	3-5	45-75
	or		
ACC 111	Accounting Principles I		
BUS 110	Mathematics of Business/ Personal Finance		
	or		
BUS 110	Modules A, B, and C (1 Credit Hour each)		
	and		
SEC 115	Business Machines (1 Credit Hour)		
	or		
BUS 115	Business Math by Machines	4	60-75
BUS 136	Business Communications Applications	3	45
MAN 105	Introduction to Business	3	45
SEC 101	Typewriting I	4	75
SEC 102	Typewriting II	4	75
SEC 200	Office Procedures		
	or		
BUS 297	Cooperative Education	3-6	45-270
		24-29	390-660

Administrative Assistant Option (A,N,R)
Associate of Applied Science Degree

Required Major Courses

Course No.	Title	Credits	Ct. Hrs.
Core Course Requirements		24-29	390-660
	plus		
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 230	Machine Transcription	4	60
MAN 215	Principles of Management	3	45
MAN 116	Principles of Supervision	3	45
CPB 100	Introduction to Computers[1]	4	60
Economics Elective		3	45
General Education Courses		12	180
	Total Required Hours	62-67	960-1230

[1]CPB 100 requires BUS 095 (1 credit hour)

Legal Secretarial Option (A,N)
Associate of Applied Science Degree
Required Major Courses

Course No.	Title	Credits	Ct. Hrs.
Core Course Requirements		24-29	390-660
	plus		
MAN 206	Business Law	4	60
PAR 107	Para Legal Research	3	45
SEC 209	Legal Terminology	2	30
SEC 223	Shorthand Speedbuilding	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 135	Mag Card Typewriting II	3	45
SEC 230	Machine Transcription	4	60
General Education Courses		12	180
	Total Required Hours	65-70	1005-1275

Secretarial-Bilingual Office Careers Option (N)
Associate of Applied Science Degree

Required Major Courses

Course No.	Title	Credits	Ct. Hrs.
Core Course Requirements		24-29	390-660
	plus		
SEC 100	Spanish Typewriting	3	45
SEC 260	Spanish Bus. Correspondence & Documents	3	45
SEC 256	Sp. Bus. Terminology & Translation Techniques	3	45
SEC 230	Machine Transcription		
	or		
SEC 113	Shorthand Spanish	4	60
SPA 111	Spanish — First Year	5	75
SPA 112	Spanish — First Year		
	or		
SPA 211	Intermediate Spanish I	3-5	45-75
SPA 213	Intermediate Spanish II	3	45
SPA 221	Current Spanish	3	45
Electives		5	45
General Education Courses		12	180
	Total Required Hours	68-75	1020-1320

Medical Secretarial Option (A)
Associate of Applied Science Degree
Required Major Courses

Course No.	Title	Credits	Ct. Hrs.
Core Course Requirements		24-29	390-660
	plus		
HOC 100	Medical Terminology	1	15
CPB 100	Introduction to Computers	4	60
ACC 105	Payroll Procedures	3	45
SEC 111	Alpha Shorthand I	5	75
SEC 112	Alpha Shorthand II		
	or		
SEC 203	Typewriting III	4	60
SEC 135	Magnetic Card Typewriting	3	45
SEC 206	Insurance Methods and Claims	3	45
SEC 230	Machine Transcription	4	60
General Education Courses		12	180
		39	585
	Total Required Hours	63-68	975-1245

Secretarial Option (A,N,R,)
Associate of Applied Science Degree
Required Major Courses

Course No.	Title	Credits	Ct. Hrs.
Core Course Requirements		24-29	390-660
	plus		
SEC 115	Business Machines	1	25
CPB 100	Introduction to Computers	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 203	Typewriting III	4	60
SEC 230	Machine Transcription	4	60
SEC 223	Shorthand Speedbuilding	4	60
General Education Courses		12	180
	Total Required Hours	66-71	1030-1300

Word Processing Option (A,N,R)
Associate of Applied Science Degree

Course No.	Title	Credits	Ct. Hrs.
Core Course Requirements		24-29	390-660
	plus		

CPB 100	Introduction to Computers	4	60
MAN 116	Principles of Supervision	3	45
MAN 206	Business Law	4	60
SEC 203	Typewriting III	4	60
SEC 120	Filing & Record Control	2	30
SEC 217	CRT Typing	3	45
SEC 131	Introduction to Word Processing	3	45
Electives		3	45
General Education Courses		12	180
	Total Required Hours	62-67	960-1230

General Clerical Option (A,N,R) Certificate
Required Major Courses

Course No.	Title	Credits	Ct. Hrs.
ACC 103	Bookkeeping	3	45
BUS 115	Business Math by Machines	4	60
BUS 136	Business Communication Applications	3	45
SEC 101	Typewriting I	4	75
SEC 102	Typewriting II	4	75
SEC 120	Filing & Records Control	2	30
SEC 200	Office Procedures		
	or		
SEC 205	Office Simulation	3	45
Business Elective[1]		3	45
		26	390
	Required Related Courses		
English elective		3	45
	Total Required Hours	29	435

[1]Elective chosen must have approval of adviser.

Credit Operations Option (A) Certificate

Course No.	Title	Credits	Ct. Hrs.
Core Course Requirements		24-29	390-660
	plus		
CRM 111	Financial Institutions	2	30
CRM 112	Credit Fundamentals	3	45
CRM 205	Credit Management Problems	3	45
Electives (1)		3	45
	Total Required Hours	35-40	555-825

Medical Secretarial Option (A) Certificate
Required Major Courses

Course No.	Title	Credits	Ct. Hrs.
ACC 103	Bookkeeping	3	45
ACC 105	Payroll Procedures	3	45
SEC 115	Business Machines	1	25
BUS 110	Mathematics of Business/ Personal Finance	3	45
English Elective		3	45
SEC 101	Typewriting I	4	75
SEC 102	Typewriting II	4	75
SEC 120	Filing and Records Control	2	30
HOC 100	Medical Terminology	1	15
SEC 200	Office Procedures		
	or		
BUS 297	Cooperative Education	3-6	45-270
SEC 206	Insurance Methods and Claims	3	45
SEC 135	Magnetic Typewriting (Memory)	3	45
	or		
Sec 230	Machine Transcription	4	60
	Total Required Hours	37-40	595-820

Stenographic (A,N,R) Certificate
Required Major Courses

Course No.	Title	Credits	Ct. Hrs.
ACC 103	Bookkeeping	3	45
BUS 115	Business Math by Machines	4	60
BUS 136	Business Communications Applications	3	45
MAN 105	Introduction to Business	3	45
SEC 101	Typewriting I	4	75
SEC 102	Typewriting II	4	75
SEC 203	Typewriting III	4	75
SEC 120	Filing & Records Control	2	30
SEC 111	Alphabetic Shorthand I		
	or		
SEC 121	Gregg Shorthand I	5	75
SEC 112	Alphabetic Shorthand II		
	or		
SEC 122	Gregg Shortand II	4	60
SEC 223	Shorthand Speedbuilding and Transcription	4	60
SEC 230	Machine Transcription	4	60
SEC 200	Office Procedures		
	or		
SEC 205	Office Simulation	3	45
BUS 297	Cooperative Education	3	45
Additional Required Courses		50	795
ENG 111	English Composition	3	45
	Total Required Hours	53	840

Word Processing (N) Certificate

This program is designed to prepare students for entry-level positions and/or career advancement in businesses, governmental agencies, and other institutions which employ persons in structured word processing centers.

Required Major Courses

Course No.	Title	Credits	Ct. Hrs.
SEC 217	CRT Typing	3	45
SEC 131	Intro to Word Processing	3	45
	Total Required Hours	6	90

Environmental 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 air 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.
RAC 100	Safety, Tools, and Piping	3	60
RAC 106	Fund. of Refrigeration	3	60
RAC 110	Fund. of Electricity I	3	60
RAC 115	Fund. of Electricity II	3	60
RAC 116	Fund. of Refrigeration II	3	60
*RAC 200	Refrig. Sys. Comp. & Applications	3	60
*RAC 205	Refrig. Heat Loads & System Development	3	60
*RAC 206	Install. & Startup	3	60
*RAC 207	Troubleshooting & Service	3	60
*RAC 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
		45	900

Additional Required Courses
(To be taken at any time)

RAC 297	Cooperative Education	3	90
	or		
RAC 299	Independent Study	3	90
General Education Courses		12	180
	Total Required Hours	60	1170

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	Safety, Tool, and Piping	3	60
RAC 106	Fund. of Refrigeration I	3	60
RAC 111	Fund. of Electricity I	3	60
RAC 112	Fund. of Elect. II	3	60
RAC 116	Fund. of Refrig. II	3	60
*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
		45	900

Additional Required Courses
(To be taken at any time)

RAC 297	Cooperative Education	3	90
	or		
RAC 299	Independent Study	3	90
General Education Courses		12	180
	Total Required Hours	60	1170

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	3	90
ART 102	Basic Design	3	90
ART 111	Basic Drawing	3	90
ART 112	Basic Drawing	3	90
ART 141	Oil and Acrylic	3	90
ART 142	Oil and Acrylic	3	90
ART 191	Survey of Art Masterpieces	3	90
ART 192	Survey of Art Masterpieces	3	90
ART 221	Figure Drawing	3	90
ART 222	Figure Drawing	3	90
	or		
ART 211	Second Year Drawing	3	90
ART 271	Printmaking	3	90
ART 241	Second Year Oil and Acrylic	3	90
	or		
ART 272	Printmaking	3	90
COA 100	Lettering and Typography	4	100
TEI 201	Airbrush	3	60
General Education Core Courses		12	180
General Education Interdisciplinary and Distribution Requirements		18	270
	Total Required Hours	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 (HVAC)	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
		60	1200
General Education Courses		12	180
	Total Required Hours	72	1380

Automotive Mechanics (N,R)

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.

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
AUM 216	Engine Recondition & Assembly	3	60
AUM 217	Air Conditioning, Theory, Service, & Safety	3	60
AUM 218	General Service Repair, or one of the following: Elective, Cooperative Education or Independent Study	3	60
		60	1200
General Education Courses		12	180
	Total Required Hours	72	1380

Note
Additional courses are listed and described in the Course Description section of this catalog.

Tune-Up and Emission Controls (N,R)
15-Week Certificate

Course No.	Title	Credits	Ct. Hrs.
AUM 100	Principles of Engine Operation, Basic Electricity and Ignition Systems	6	120
AUM 106	Starting and Charging Systems	3	60
AUM 107	Fuel Systems	3	60
AUM 110	Electronic Testing and Emission Control	3	60

Check with advisor for prerequisites.

Drum and Disc Brakes (N,R)
6-Week Certificate

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

Check with advisor for prerequisites.

Automatic Transmissions (N,R)
9-Week Certificate

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

Check with advisor for prerequisites.

Wheel Alignment and Suspensions (N,R)
9-Week Certificate

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

Check with advisor for prerequisites.

Air Conditioning (N,R)
3-Week Certificate

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

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	53
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	16	293-498
General Education Courses		12	180
	Total Required Hours	60	1060-1265

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 Education	2-6	90-270
AVT 299	Independent Study	2-6	45-135

*Students who are not presently employed in the profession will be required to take a minimum of 6 credit hours of AVT 297, Cooperative Education before they can receive their Associate Degree.

Note
Additional courses are listed and described in the Course Description section of this catalog.

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.)

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	30
BGM 105	Building and Grounds Management Operations	3	45
BGM 110	Maintenance Equipment for Building and Grounds	3	50
BGM 115	Physical Maintenance Control	3	50
BGM 117	Care of Outside Area	3	50
BGM 119	Basic Interior Decorating	3	50
BGM 125	Sanitation and Surgical Cleaning	3	50
BGM 126	Purchasing Economics for Bldgs. & Grounds	2	30
BGM 297	Cooperative Education	6	270
		28	625

Additional Required Courses

MAN 215	Principles of Management	3	45

MAN 200	Human Resources Management	3	45
English Elective		3	45
Elective		3	45
	Total Required Hours	40	805

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.

Course No.	Title	Credit	Ct. Hrs.
BIO 131	Gen. Coll. Bio. I	4	90
BIO 132	Gen. Coll. Bio. II	4	90
CHE 111	Gen. Coll. Chem. I	5	105
CHE 112	Gen. Coll. Chem. II	5	105
MAT 121	College Algebra	4	60
MAT 122	Trigonometry and Functions	3	45
	or		
MAT 201	Calculus I	5	75
	or		
CSC 111	Intro. to Computing w. Basic	4	90
PHY 151	Gen. Phys. I	4	105
PHY 152	Gen. Phys. II	4	105
BIO 205	Gen. Microbiology	4	90
	or		
BIO 216	Cell Biology	4	90
	or		
BIO 246	Genetics	3	45
MAT 207	Statistics (optional)	4	60
		41-45	750-840
General Education Core Courses		12	180
Distribution Requirements		15	225
Interdisciplinary Requirements		3	45
	Total Required Hours	71-75	1200-1290

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.

Course No.	Title	Credits	Ct. Hrs.
BIO 111	Hum. Anat. and Phys. I	4	90
BIO 112	Hum. Anat. and Phys. II	4	90
BIO 216	Cell Biology	4	90
CHE 111	Gen. Coll. Chem. I	5	105
CHE 112	Gen. Coll. Chem. II	5	105
BIO 157	Drugs: Use and Abuse	3	45
	or		
BIO 167	Biology of Women	3	45
BIO 205	Gen. Microbiology	4	90
	or		
BIO 246	Genetics	3	45
MAT 121	College Algebra	4	60
MAT 122	Trigonometry and Funct.	3	45
CSC 111	Intro. to Computing w Basic	4	90
BIO elective			
		39-40	765-810
General Education Core Courses		12	180
Distribution Requirements		15	225
Interdisciplinary Requirements		3	45
	Total Required Hours	69-70	1215-1260

Business Machine Technology (A)

Certificate

This program teaches the student to maintain, trouble-shoot, and repair a specific range of modern business machines.

The Business Machine Technology Program is now a one-year (two semester) certificate program.

Required Major Courses

Course No.	Title	Credits	Ct. Hrs.
BMT 105	IBM Typebar Typewriter	9	180
BMT 107	Adler and Royal "970" Typewriter	6	120
BMT 110	IBM "Selectric" Typewriter	9	180
BMT 116	Basic Electronic Theory	6	120
	Total Required Hours	30	600

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, moss rock and advanced masonry techniques.

Required Major Courses

Course No.	Title	Credits	Ct. Hrs.
*BRI 100	Safety, History, Glossary, Use of Mason Tools and Related Equipment Used by a Brickmason	6	120
*BRI 105	Safety Codes Used in Masonry, State of Colorado	1	20
*BRI 106	Spreading Mortar, Laying to Line, Use of Masonry Tools, Basic Leads, Masonry Walls	6	120
*BRI 107	Bonded Brick Leads, Joints, Striking and Brushing	2	40
*BRI 109	Masonry Piers, Pilasters, Solid and Hollow Masonry, Bonds, Floors, and Masonry Walls	6	120
*BRI 110	Laying to the Line, Headers, Soldiers, Sailors, Rollock, Miter Corners	6	120
*BRI 115	Through-the-Wall Units, Laying to the Line	2	40
*BRI 116	Masonry Codes	1	20

BRI 200	Mortar Types, Masonry Cement and Fireplace Basics	6	120
BRI 206	Fireplace Construction and Heatilator Construction	6	120
BRI 207	Chimney Construction, Flashing and Cooping	2	40
BRI 208	Masonry Materials	1	20
BRI 210	Fireplace Codes, Flagstone and Moss Rock	6	120
BRI 215	Reinforced Masonry and Over-the-Wall Construction	5	100
BRI 217	Mason Tender	3	60
BRI 218	Building Codes	1	20
		60	1200

Additional Required Courses

General Education Courses	12	180
Electives	6	90
Total Required Hours	78	1470

* Certificate Requirements

Note
Additional courses are listed and described in the Course Description section of this catalog.

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 No.	Title	Credits	Ct. Hrs.
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 Core Courses		12	180
General Education Interdisciplinary and Distribution Courses		24	360
	Total Required Hours	60	900

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

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

Additional Required Courses

General Education Courses	12	180
Elective	3	45
Total Required Hours	75	1425

* Certificate Requirements

Note
Additional courses are listed and described in the Course Description section of this catalog.

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
		44	835
	Additional Required Courses		
EAS 111	Physical Geology	4	90
MAT 121	College Algebra	4	60
MAT 122	Trig. and Func.	3	45
Chemistry elective		2	60
Computer Science elective		4	90
General Education Courses		12	180
		29	525
	Total Required Hours	73	1360

Note
Additional courses are listed and described in the Course Description section of this catalog.

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 adviser, the Transfer Guide, and the current catalog of the receiving institution.

Course No.	Title	Credits	Ct. Hrs.
BIO 132	Gen. Coll. Bio. II	4	90
CHE 111	Gen. Coll. Chem. I	5	105
CHE 112	Gen. Coll. Chem. II	5	105
MAT 201	Calculus I	5	75
MAT 202	Calculus II	5	75
MAT 203	Calculus III	4	60
PHY 151	Gen. Physics I	5	105
PHY 152	Gen. Physics II	5	105
PHY 153	Gen. Physics-Calc. Supp. I	3	45
PHY 154	Gen. Physics-Calc. Supp. II	3	45
	or		
PHY 161	Phys. for Sci. and Engin. I	4	60
PHY 162	Phys. for Sci. and Engin. II	4	60
PHY 163	Exp. Phys. for Sci. and Engin. I	1	45
Phy 164	Exp. Phys. for Sci. and Engin. II	1	45
General Education Core Courses		12	180
Distribution Requirements		15	225
Interdisciplinary Requirements		3	45
	Total Required Hours	74-78	1260-1470

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 up art, graphic or advertising design and illustration. Each of these broad specialties overlap and specialization in any 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 original investment of between $100 and $300 and the student is expected to add needed tools and materials as the program progresses.

Required Major Courses

Course No.	Title	Credits	Ct. Hrs.
COA 100	Lettering/Typographic Design and Career Survey	5	100
COA 105	Advertising Typography and Laybut	5	100
COA 106	Descriptive Drawing and Rendering	5	100
COA 107	Rendering for Advertising Design	5	100
COA 200	Advertising Design and Portfolio Preparation	5	100
COA 205	Creative Graphic Design and Portfolio Preparation	5	100
COA 206	Art Preparation for Reproduction	5	100
COA 207	Advanced Art Preparation for Reproduction	5	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
PHO 100	Fundamentals of Photography	4	80
	or		
GRA 120	Process Camera and Halftones	6	120
General Education Courses		12	180
	Total Required Hours	62-68	1420-1460

Communications (A,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. Nucleus Courses — 18 credits
2. Area of Emphasis — 12-14 credits
3. General Education Core Courses — *12 credits
4. Distribution Requirements — *15 credits
5. Interdisciplinary Requirements — *3 credits

Total Required Credits 60-62

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
			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

* Students should contact faculty advisor for specific course selection.

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	Credits	Ct. Hrs.
CPB 100*	Introduction to Computers	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[1]	6	90
	(Select 2 from below:)		
CPB 207	PL/1 (3)		
CPB 208	RPG (3)		
CPB 209	FORTRAN (3)		
CPB 215	Operating Systems and JCL (3)		
		31	465

Additional Required Courses

ACC 111*	Accounting Principles I	5	75
ACC 112*	Accounting Principles II	5	75
ENG 111*	English Composition		
	or		
BUS 136*	Business Communications Applications	3	45
MAN 105*	Introduction to Business	3	45
MAT 225*	Introductory Statistics	3	45
	Elective[1]	3	45
		22	330

General Education Courses

COM 130	Topics in Communication	3	45
SOS 129	Search for Significance	3	45
SCI 130	Critical Thinking and Problem Solving	3	45
MAT 130	General Math for College Students (12 Modules required and must be approved by Advisor	3	45
		12	180
	Total Required Hours	65	975

* These courses must be completed to obtain a certificate in Computer Programming.
[1]Elective options must be approved by advisor.

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, or CPB 104 Flowcharting and Structural Design.

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.
CRJ 110	Intro. to Criminal Justice	4	60
CRJ 115	Criminal Law	3	45
CRJ 116	Constitutional Law	3	45
CRJ 126	Patrol Procedures	4	75
CRJ 201	Introduction to Criminal Investigation	4	75
CRJ 202	Advanced Investigation	4	75
CRJ 210	Community Relations	3	45
CRJ 220	Traffic Enforcement	3	53
CRJ 297	Cooperative Work Education	1-4	45-180
		32	653
General Education Courses		12	180
An additional 16 credits in major courses are required		16	
	Total Required Hours	60	

Note
Additional courses are listed and described in the Course Catalog section of this catalog.

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 Required Hours	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
	Total Required Hours	30	496

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
	Total Required Hours	30	480

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.

Course No.	Title	Credits	Ct. Hrs.
CSC 111	Intro. Computers	4	90
CSC 150	Fortran IV	4	90
	or		
CSC 155	PASCAL	4	90
CSC 200	Intro. Comp. Sci.	3	45
CSC 210	Prog. Assem. Lang.	4	90
CSC 216	Data Structures	3	45
MAT 201	Calculus I	5	75
MAT 202	Calculus II	5	75
MAT 203	Calculus III	4	60
MAT 205	Ord. Diff. Equations	3	45
PHY 161	Physics (elect.)	5	60
PHY 162	Physics (elect.)	5	60
		35-45	615-735
General Education Core Courses		12	180
Distribution Requirements		15	225
Interdisciplinary Requirements		3	45
	Total Required Hours	65-75	1065-1185

Chemical Operators Training Program (R)

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

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 No.	Title	Credits	Ct. Hrs.
HIS 271	MesoAmerica / Middle America	3	45
HUM 115	Introduction to Chicano Studies	3	45
HUM 127	Indigenismo and the Chicano	3	45
LIT 125	Introduction to Chicano Literature	3	45
HUM 225	Contemporary Chicano	3	45
LIT 228	Contemporary Chicano Literature	3	45
SOC 210	La Familia Chicano	3	45
SPA 111	First Year Spanish	5	75
SPA 112	First Year Spanish	5	75
General Education Core Courses		12	180
General Education Interdisciplinary and Distribution Courses		18	270
	Total Required Hours	61	915

Dental Assisting (N)

Certificate

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	3	45
DEA 106	Dental Materials	2	38
DEA 107	Dental Science	4	60
DEA 108	Dental Chairside Procedures	3	45
DEA 110	Dental Office Procedure	3	45
DEA 111	Clinic I	2	45
DEA 112	Clinic II	2	45
DEA 121	Dental Radiology I	2	38
DEA 122	Dental Radiology II	2	38
DEA 125	Dental Lab Procedures	4	68
DEA 126	Clinical Practicum	5	225
		34	722

Additional Required Courses

BIO 108 or BIO 110	Introduction to Human Biology / Dimensions of Human Living	3	45
DIT 105	Basic Nutrition	2	30
	Communication	3	45
	Psychology	3	45
		11	165
	Total Required Hours	45	887

Note: It is also possible to earn an Associate of Applied Science Degree in Dental Assisting. For information, please contact the Division Director.

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	Introduction to Food Service	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	Quantity Food Purchasing	3	45
*DIT 212	Nutrition Care Seminar	3	45
DIT 215	Personnel Supervision	3	45
DIT 220	Management by Menu	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
		51	1103

*Seminars must be scheduled concurrently with clinical experiences.

Additional Required Courses

ACC 109	Bookkeeping and Accounting	3	45
		3	45
General Education Courses		12	180
	Total Required Hours	66	1328

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	Introduction to Food Service	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	Quantity Food Purchasing	3	45
DIT 215	Personnel Supervision	3	45
DIT 220	Management by Menu	3	45
		27	533

Additional Required Courses

PSY 115	Psychology of Personal Adjustment	3	45
SPE 111	Intro. to Speech	3	45
		6	90
	Total Required Hours	33	623

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 the heavy duty mechanic field. In addition, courses are offered for job refreshing and upgrading.

Required Major Courses

Course No.	Title	Credits	Ct. Hrs.
* 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
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	3	60
DPE 210	Practical Shop Experience	9	180
		60	1200

Additional Required Courses

General Education Courses		12	180
Approved Elective		3	45
		15	225
	Total Required Hours	75	1425

* Certificate Requirements

Note

Additional courses are listed and described in the Course Description section of this catalog.

Drafting

Certificate or Associate of Applied Science Degree

The Drafting Program includes four options:

a. Drafting for Industry (A,R)
b. Drafting for Construction (R)
c. Drafting for Civil/Topographic Mapping (A,R)
d. Technical Illustration (A)

Students entering Drafting must have a writing and speaking command of English for technical purposes.

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.

Required Major Courses

Course No.	Title	Credits	Ct. Hrs.
*DRI 105	Intro. to Drafting	6	120
*DRI 106	Basic Descrip. Geom and Aux. View Proj.	3	60
*DRI 107	Drafting and Dimension Pract.	6	120
*MAT 110	The Metric System	1	15
*DRI 109	Intersect. and Devel.	3	60
*DRI 110	Intro. to Assem. and Weld. Draw.	3	60
*DRI 115	Perspective Drawing	3	60
*DRI 116	Mechanical Assembly and Detail Proj.	6	120
DRI 200	Industrial Plant Devel.	6	120
DRI 205	Intro. to Archit-Struct. Plans and Det.	6	120
DRI 206	Indust. Piping and Utility. Consid.	3	60
DRI 207	Large Mech. Equip.	6	120
DRI 208	Material Handling and Convey Meth.	6	120
DRI 209	Install. Plans and Details	3	60
		61	1215

General Education Courses 12		180
Total Required Hours	73	1395

* Certificate Requirements

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.

Required Major Courses

Course No.	Title	Credits	Ct. Hrs.
*DRI 105	Intro. to Drafting	6	120
*DRI 106	Basic Descrip. Geom. and Aux. View Proj.	3	60
*DRI 107	Drafting & Dimensioning ...	6	120
*MAT 110	The Metric System	1	15
*DRI 109	Intersect. & Develop.	3	60
*DRI 110	Intro to Assem. & Weld. Draw	3	60
*DRI 115	Perspective Drawings	3	60
*DRC 116	Intro. to Arch. Draft; Frame Const.	6	120
DRC 200	Intro. to Com. Arch.-Mason. Const.	6	120
DRI 205	Intro. to Archo.-Struct. Plans & Details	6	120
DRI 206	Indust. Piping & Util. Consid..		
DRC 207	Archit - Dev. of Ind. Commer. Facil.	6	120
DRC 208	Struct. Deve. of Ind. Commer. Facil.	6	120
CET 101	Structures I	3	60
		61	1215
General Education Courses		12	180
Total Required Hours		73	1395

* Certificate Requirements

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.

Required Major Courses

Course No.	Title	Credits	Ct. Hrs.
*DRI 105	Intro. to Drafting	6	120
*DRI 106	Basic Descrip. Geom. and Aux. View Proj.	3	60
*DRI 107	Draft and Dimension Pract.	6	120
*MAT 110	The Metric System	1	15
*DRI 109	Intersect. and Devel.	3	60
*DRI 110	Intro. to Assem. and Weld. Draw.	3	60
*DRI 115	Perspective Drawing	3	60
*DRM 116	Intro. to Civil/ Topo. Map	6	120
DRM 200	Map Construct. Tech.	9	180
EAS 107	Air Photo. Interp.	3	105
DRM 205	Adv. Map. Construct.	6	120
DRI 297	Cooperative Education	3	120
		52	1140
General Education Courses		12	180
Total Required Hours		64	1320

* Certificate Requirements

Technical Illustration — Option D (A)

Associate of Applied Science Degree

The Technical Illustration program prepares students 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.

Required Major Courses

Course No.	Title	Credits	Ct. Hrs.
DRI 105	Intro. to Drafting.	6	120
DRI 106	Basic Descript. Geon. And Aux. View Proj. Pract.	6	120
DRI 107	Drafting and Dimension Pract.	6	120
DRI 109	Intersect. and Devel.	3	60
DRI 110	Intro. to Assem. and Weld. Draw.	3	60
DRI 115	Perspect. Drawings	3	60
GRA 120	Process Camera and Halftones	6	120
TEI 200	Airbrush I	6	120
TEI 205	Airbrush II	3	60
ART 101	Basic Design	3	90
ART III	Basic Drawing	3	90
COA 200	Advert. Design and Rendering	4	80
TEI 207	Special Problems.	6	120
ART 112	Basic Drawing	3	90
COA 205	Creative Graphic Design	3	80
		61	1330
General Education Courses		12	180
Total Required Hours		73	1510

Note

Additional Courses for all four drafting options are listed and described in the Course Description section of this Catalog.

Earth Science (R)

The following courses are recommended for an Associate of Science Degree with emphasis in Earth Science. A student interested in obtaining a baccalaureate degree should consult an Earth Science faculty member, the Transfer Guide and the current catalog of the receiving institution.

Required Courses

Course No.	Title	Credits
CHE 111	General College Chemistry I	5
CHE 112	General College Chemistry II	5

CSC 111	Introduction to Computing with Basic	4
EAS 111	Physical Geology	4
EAS 112	Historical Geology	4
EAS 201	Introduction to Mineralogy	4
EAS 202	Introduction to Petrology	4
EAS 207	Geologic Field Methods	3
ENG 111	English Composition: Essay	3
ENG 112	English Composition: Research Paper	3
MAT 121*	College Algebra	4
MAT 122*	Trigonometry and Functions	3
General Education Core:		
Interpersonal Skills		3
General Education Interdisciplinary		3
Humanities and Arts Elective		3
Social Science Elective		3
Elective		2
	Total Required Hours	60

* MAT 201, 202, 203 Calculus may be substituted, all or in part for MAT 121 and 122.

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 109	Home Center Cord.	1-3	15-45
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	54-56	930-960

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 Social Sciences Science or Math	12	180
	Total Required Hours	66-68	1110-1140

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	Credit	Ct. Hrs.
ECE 102	Applied Child Growth and Development	3	45
*ECE 165	Initial Assessment for the C.D.A.	3	45
*ECE 175	Creative Learning Environments	6	98
*ECE 176	Physical and Intellectual Development of the Child	6	98
*ECE 177	Self Concept and Individual Strength of the Child	6	98
*ECE 178	Children and Adults — Group Mangement	6	98
*ECE 179	Administration I Home-Center/ Parent Involvement	6	98
*ECE 180	Administration II Staff Development	6	98
ECE 185	Child Abuse and Neglect	6	98
*ECE 190	Final Assessment for the C.D.A.	3	45

ECE 216	Child Care Business Operations	3	45
ECE 150	Nutrition for the Young Child	2	39
		56	896

* Certificate Requirements

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.

Title	Credits	Ct. Hrs.
Communications Social Sciences Math or Science	12 —	180 —
Total Required Hours	68	1076

The Following are Specialized Certificates:

Infant Toddler Certificate (N)

The following 36 credit hours will lead to an Infant/Toddler Specialization certificate. Students will be permitted to make substitutions from the Associate Degree core only with prior instructor/advisor approval.

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 130	Developmental Issues	3	45
ECE 132	Supervised Lab Experience	8	165
ECE 133	Supervised Education — Internship & Seminar	8	165
ECE 136	Infant/Toddler Parent Seminar I	2	30
ECE 138	Infant/Toddler Parent Seminar II	2	30
ECE 146	Safety & the Preschool Child	2	30
ECE 195	Infant Stimulation	3	45
DIT 150	Infant Nutrition	1	15

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	165
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		
ECE 126	Classroom Application to Music & Movement		
ECE 127	Classroom Application to Science & Math		
ECE 196	Classroom Management Techniques	3	45
	Total Required Hours	31	540

Colorado Department of Social Services Licensing Requirements

To be Director qualified by the State Social Services Department, 24 semester hours must be completed:

12 semester hours in:	Child Growth and Development, Methods/ Curriculum and Early Childhood related courses.
3 semester hours in:	Psychology
3 semester hours in:	Sociology
4 semester hours in:	Administration
2 semester hours in:	Basic Nutrition
24 Semester hours	

Please see advisor for specific course(s) that meet the above requirements.

NOTE: Additional courses are listed and described in the Course Description section of this catalog.

Economics (A,N,R)

The following selection of courses is recommended for an Associate of Arts Degree with an emphasis on 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.

Required Major Courses

Course No.	Title	Credits	Ct. Hrs.
ECO 119	Applied Economics	3	45
ECO 118	Labor Relations	3	45
ECO 120	Consumer Economics	3	45
ECO 175	Government and the US Economy	3	45
ECO 201	Principles of Economics (Macro)	3	45
ECO 202	Principles of Economics (Micro)	3	45
ECO 285	Dynamics of Economics	3	45
	ECO Electives	9	135
		30	450
General Education Core Courses		12	180
Interdisciplinary Requirements		3	45
Distribution Requirements		15	225
		30	450
	Total Required Hours	60	900

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	7	140
EDT 220	Computer Troubleshooting	7	140
EDT 230	Interfacing/Computer Peripheral	7	140
EDT 240	Microprocessors	7	140
		58	1160
	Additional Required Courses		
	General Education Courses	12	180
	Total Required Hours	70	1340

* Certificate Requirements

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.

Note
Additional courses are listed and described in the Course Description section of this catalog.

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

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	4
* EIC 121	Electrical Installations I	3	6
* EIC 122	Electrical Installations II	3	6
* EIC 131	National Electric Code I	3	4
EIC 132	National Electric Code II	3	4
EIC 200	Electrical Calculations	4	6
EIC 201	Transformer Installation and Theory	3	6
EIC 202	AC and DC Machines, Installation and Theory	3	6
EIC 203	Polyphase Rotating Machines and Transformers	3	6
EIC 207	Electrical Control Wiring for Plumbing, Heating, Air-Conditioning Trades	3	6
EIC 211	Installation and Operation of Distribution Systems I	3	6
EIC 212	Installation and Operation of Distribution Systems II	3	6
EIC 215	Advanced Electrical Installation	3	6
EIC 216	Advanced Electrical Planning	3	4
		61	1125
	Additional Required Courses		
	General Education Courses	12	18
	Elective	3	4
		15	22
	Total Required Hours	76	135

* Certificate Requirements

Note
Additional courses are listed and described in the Course Description section of this catalog.

Electronics Technology (A)

Associate of Applied Science Degree

This program is designed to prepare individuals 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.

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 Tubes	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	SCR, UJT and Special Devices	3	60
ELT 117	IC Operational Amplifiers	3	60
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
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
General Education Courses		12	180
	Total Required Hours	72	1380

Note
Additional courses are listed and described in the Course Description section of this Catalog.

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-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
		60	1200
General Education Courses		12	180
Total Required Hours		72	1380

NOTE
Additional courses are listed and described in the Course Description section of this Catalog.

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 fo an Associate of Arts Degree with an emphasis in English A student interested in obtaining a baccalaureate degree should consult a CCD adviser, the Transfer Guide, and the current catalog of the receiving institution.

Course No.	Title	Credits	Ct. Hrs
ENG 111	Eng. Comp: Essay Writing	3	45
ENG 112	Eng. Comp: Coll. Research Paper	3	45
2-100 level Literature courses*		6	90
2-200 level writing courses*		6	90
ENG or LIT, or COM electives*		12	180
		30	450
General Education Core Courses		12	180
Distribution Requirements		15	225
Interdisciplinary Requirements		3	45
		30	450
Total Required Hours		60	900

* Approved by adviser

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	Cooperative Education	4	180
		50	885
Additional Required Courses			
General Education Courses		12	180
Total Required Hours		62	1065

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
FAM 206	Automatic Transmission Theory and Maintenance	3	60
FAM 207	Automatic Transmission Rebuilding	6	120
FAM 208	Engine Operation, Diagnosis, Disassembly and Measurement	6	120
FAM 209	Engine Reconditioning and Assembly	3	60
FAM 210	Air Conditioning Theory, Service and Safety	3	60
FAM 215	General Service Repair or one of the following: inter-department elective or cooperative education	3	60
General Education Courses		12	180
	Total Required Hours	72	1380

* Certificate Requirements

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.

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 the program with which to start, FLP 100 or FLP 200. 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 required 15 credits of electives — math, English, social science, etc.

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
FLP 208	Cylinders, Motors, Pneumatics	3	60
FLP 209	Piping, Hose, Fitting, Pneumatic Systems	3	60
FLP 210	Pressure Control Valves, Pneumatic Systems	3	60
FLP 215	Pneumatic Logic Controls	3	60
FLP 216	Troubleshooting, Print Reading	3	60
FLP 217	Basic Fluidics	3	60
		60	1200

Additional Required Courses

General Education Courses	12	180
Approved elective	3	45
	15	225
Total Required Hours	75	1425

Note

Additional courses are listed and described in the Course Description section of this catalog.

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	Cooperative Education	4	120
FST 299	Independent Study	3	69
		50	850

Additional Required Courses

General Education Courses	12	180
Total Required Hours	63	1053

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

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	3	45
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	Cooperative Education	4	120
FST 299	Independent Study	3	69
		50	850

Additional Required Courses

General Education Courses	12	180
Total Required Hours	62	1030

Note
Additional courses are listed and described in the Course Description section of this Catalog.

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 adviser, the Transfer Guide, and the current catalog of the receiving institution.

Course No.	Title	Credits	Ct. Hrs.
GEO 105	Fundamental Geog.	1	15
GEO 108	Maps and Compass Use	1	15
GEO 111	Physical Geog. (Land)	4	90
GEO 112	Physical Geog.	4	90
GEO 121	Geog. of Man	3	45
GEO 150	World Regional Geog.	4	60
GEO 165	Geog. of Latin Amer.	3	45
GEO 210	Geog. of Econ. Act.	3	45

GEO 220	Many Colorados	3	45
GEO 235	Urban Geog.	3	45
BIO 125	Urban Ecology (elect.)	3	45
MAT 111	Intro. to Algebra (elect.)	3	45
MAT 112	Intermed. Algebra (elect.)	4	60
Political Science or Economics elective		3	45
		42	690
General Education Core Courses		12	180
Distribution Requirements		15	225
Interdisciplinary Requirements		3	45
	Total Required Hours	72	1140

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 299	Independent Study	5	150
General Education Courses		12	180
COA 105	Typography and Layout	4	100
PHO 100	Fundamentals of Photography	4	80
SEC 110	Typing I	2	40
TEI 201	Airbrush I	3	60
	Total Required Hours	75	1510

* 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

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
*HEO 118	Advanced Maintenance	3	60
*HEO 119	Advanced Field Tasks —	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

Additional Required Courses

General Education Courses	12	180
Approved elective	3	45
	15	225
Total Required Hours	75	1425

* Certificate Requirements

Note

Additional courses are listed and described in the Course Description section of this catalog.

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 adviser, the Transfer Guide, and the current catalog of the receiving institution.

Required Courses

Course No.	Title	Credits	Ct. Hrs.
HIS 111	World Civilization	4	60
HIS 112	World Civilization	4	60
	or		
HIS 211	The United States to 1865	3	45
HIS 212	The United States 1865 to Present	3	45
HIS 220	Colorado History	3	45
HIS	Electives	21	315
General Education Core Courses		12	180
Interdisciplinary Requirements		3	45
Distribution Requirements		15	225
Total Required Hours		60 or 63	900 or 930

Hospitality and Restaurant Administration (A)

Associate of Applied Science Degree

This program is designed to prepare students for entry level employment within the hospitality industry to include hotels, motels, restaurants, hospitals, state, city and federal institutions.

Required Major Courses

Course No.	Title	Credits	Ct. Hrs.
HRA 110	Intro. to the Hospitality Industry	3	45
HRA 130	Administration and Front Office Management	3	45
HRA 125	Maintenance and Engineering for the Hospitality Industry	3	45
HRA 200	Sanitation Policies and Procedures	3	45
HRA 207	Food and Beverage Controls	3	45
HRA 221	Accounting Practices for the Hospitality Industry	5	75
HRA 297	Cooperative Education or Electives[1]	12	540
	Electives[1]	6	90
		41	975

	Additional Required Courses		
CPB 100	Introduction to Computers	4	60
MAN 116	Principles of Supervision or Elective	3	45
MAR 216	Principles of Purchasing	3	45
Typewriting	Elective	4	75
SEC 115	Business Machines	1	25
General Education Courses		12	180
		27	430
	Total Required Hours	68	1400

[1]Elective must have advisor approval
[2]CPB 100 requires CPB 095 Computer Lab (1 Credit Hr.)

Hospitality and Restaurant Administration (A)

Certificate

This program is designed to upgrade students already employed within the hospitality industry.

Required Major Courses

Course No.	Title	Credits	Ct. Hrs.
HRA 110	Introduction to the Hospitality Industry	3	45
HRA 297	Cooperative Education	6	270
HRA Electives[1]		12	180
Electives[1]		9	135
	Total Required Hours	30	630

[1]Electives must be selected with adviser approval.

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	Social Issues In Human Services	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	H P..	7	285
General Education Courses		12	180
Electives		6	90
	Total Required Hours	63	1305

Industrial Electrical 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

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
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
	Additional Required Courses		
General Education Courses		12	180
Elective		3	45
		15	225
	Total Required Hours	75	1425

Note
Additional courses are listed and described in the Course Description section of this catalog.

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
Management Information Systems

These programs prepare students to organize and manage informational resources not only in libraries but also in business and industrial enterprises.

Library Media Technician I
Certificate

Required Major Courses

Course No.	Title	Credits	Ct. Hrs.
IMT 101	Introduction to Library Resources	1	20
IMT 111	Library Public Services	3	50
IMT 113	Library Technical Services	3	50
IMT 115	Library Catalog Services	3	50
IMT 117	Audio Visual Skills	3	50
IMT 119	Library Reference and Selection Skills	4	75
IMT 201	Library Special Operations	3	50
IMT 297	Cooperative Education	6	270
		26	615

Additional Required Courses

Typewriting Elective		4	75
	Total Required Hours	30	790

Library Media Technician II
Associate of Applied Science Degree

Completion of courses required for Library Media Technician I plus:

Course No.	Title	Credits	Ct. Hrs.
IMT 203	Library Community Seminar	3	50
CPB 103	Data Entry Systems	5	75
Electives		10	150
General Education Courses		12	180
		30	455
	Total Required Hours	60	1245

Management Information Systems
Certificate

This program prepares the student to organize and use the informational resources of business, government and industry.

Required Major Courses

Course No.	Title	Credits	Ct. Hrs.
MIS 110	Introduction to Records Management	3	45
MIS 112	Records Indexing and Coding	3	45
MIS 114	Forms Design and Control	3	45
SEC 131	Introduction to Word Processing	3	45
BUS 297	Cooperative Education	6	270
		18	450

Additional Required Courses

CPB 100	Introduction to Computers[1]	4	60
SEC 148	Communications in the Office	1	15
CPB 103	Data Entry Systems	5	75
SEC 101	Typewriting Elective	4	75
		14	225
	Total Required Hours	32	675

[1]CPB 100 requires CPB 095 Computer Programming Lab with variable contact hours.

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	Class	Ct. Hrs.
BUS 110	Business Mathematics	3	45
BUS 136	Business Communications Applications	3	45
INM 211	Production Management I	3	45
INM 215	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
		27	405

Additional Required Courses

ACC 111	Accounting Principles I	5	75
ACC 112	Accounting Principles II	5	75
CPB 100	Introduction to Computers	4	60
MAR 107	Principles of Marketing	3	45
MAT 111	Introductory Algebra	3	45
MAT 225	Statistics	3	45
		23	345
General Education Courses		12	180
	Total Required Hours	62	930

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 215	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	Business Policies	3	45
MAN 240	Management Information Systems	3	45
		22	330

Additional Required 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 Computers	4	60
ECO 118	Labor Relations or Elective[1]	3	45
ECO 201	Principles of Economics (Macro)	3	45
MAR 107	Principles of Marketing		
Elective[1]		3	45
		32	480
General Education Courses		12	180
	Total Required Hours	66	990

[1]Electives to be selected with advisor approval

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 215	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 and Promotion	3	45
MAR 215	Retail Management	3	45
MAR 216	Principles of Purchasing	3	45
MAR 207	Marketing Seminar	2	30
		27	405

Additional Required Courses

ACC 111	Principles of Accounting I	5	75
BUS 110	Business Mathematics	3	45
BUS 136	Business Communications Applications	3	45
BUS 297	Cooperative Work Experience or Marketing Electives[1]	6	90
CPB 100	Introduction to Computers	4	60
ECO 201	Principles of Economics (Macro)	3	45
		24	360

Electives[1]
(Select 3 hours from courses listed below)

BUS 137	Listening Skills	2	
MAN 116	Principles of Supervision	3	
MAN 205	Small Business Management	3	
MAR 115	Visual Merchandising	2	
MAR 208	Sales Seminar	2	
MAR 211	Wholesaling and Distribution	3	
PSY 100	Human Relations in Business and Industry	3	
Required Electives (Minimum)		3	45
General Education Courses		12	180
	Total Required Hours	66	990

[1]Electives to be selected with advisor approval

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
		60	1185
General Education Courses		12	180
	Total Required Hours	72	1365

NOTE
Additional courses are listed and described in the Course Description section of the catalog.

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	6
MAS 207	Point-to-Point Numerical Control	3	6
MAS 212	Job Shop Machining II	3	6

Check with advisor for prerequisites

Mathematics (A,N,R)

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

Course No.	Title	Credits	Ct. Hrs
BIO 131	Gen. Coll. Bio	4	9
BIO 132	Gen. Coll. Bio	4	9
CHE 111	Gen. Coll. Chem I	5	10
CHE 112	Gen. Coll. Chem II	5	10
CSC 111	Intro. Computers	4	9
CSC 150	Fortran IV	4	9
	or		
CSC 160	PASCAL		
MAT 201	Calculus I	5	7
MAT 202	Calculus II	5	7
MAT 203	Calculus III	4	7
MAT 205	Diff. Equations	3	4
MAT 206	Linear Algebra	3	4
		46	88
General Education Courses		12	18
Distribution Requirements		15	22
Interdisciplinary Requirements		3	4
	Total Required Hours	76	133

Machine Drafting Technology (N)

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.
MDT 101	Mechanical Drafting Theory and Techniques I	3	60
MDT 102	Mechanical Drafting Theory and Techniques II	3	60
MDT 103	Mechanical Drafting Theory and Techniques III	3	60
MDT 111	Machine Detail and Assembly Drawing I	3	60
MDT 112	Machine Detail and Assembly Drawing II	3	60
MDT 113	Machine Detail and Assembly Drawing III	3	60
MDT 114	Machine Detail and Assembly Drawing IV	3	60
MDT 121	Introduction to Inking	3	60
MDT 122	Introduction to Sheet Metal Drawing	3	60

MDT	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
			60	1200
General Education Courses			12	180
		Total Required Hours	72	1380

Note: Additional courses are listed and described in the Course Description section of this catalog.

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 Machine Drafting Technology 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
General Education Courses		12	180
	Total Required Hours	72	1380

Machine Tool Technology (R)

Certificate

This program provides job entry skills for the machine tool field. Demonstration 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.

Required Major Courses

Course No.	Title	Credits	Ct. Hrs.
MTT 100	Shop Safety	3	60
MTT 105	Introduction to Machine Shop	2	40
MTT 106	Metrology	2	40
MTT 107	Blueprint Reading for Machine Shop	2	40
MTT 109	Machinist Hand Tools/Bench Work	1	20
MTT 110	Your Future as a Machinist	1	20
MTT 115	Lubrication and Maintenance	1	20
MTT 116	Bandsaw, Hacksaw and Drilling	1	20
MTT 117	Vertical Mill Setups and Operations I	4	80
MTT 118	Vertical Mill Setups and Operations II	4	80
MTT 119	Horizontal Mill Setups and Operations	4	80
MTT 120	Machine Shop Grinding	3	60
MTT 125	Shaper Setups and Operations	1	20
MTT 126	Engine Lathe Setups and Operations I	4	80
MTT 127	Engine Lathe Setups and Operations II	4	80
MTT 128	Engine Lathe Setups and Operations III	4	80
MTT 129	Job Shop Machining	2	40
MTT 297	Cooperative Education Machine - Operator	1-4	30-120
MAT 100	Industrial Mathematics	3	45
	Total Required Hours	47-50	935-1025

Continuing Education for Nurses (A,N,R)

Continuing Education will be offered, as indicated by community needs, to augment the knowledge and skills of nursing. These courses will enable the nurse 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.
NCE 200	Registered Nurse Refresher Course	13	240
NCE 201	Pre and Post Op Patient Teaching	1	15
NCE 202	Psychiatric Nursing Review	1	15
NCE 203	Medical-Surgical Nursing Review	2	30

NCE 204	Maternal Child Nursing Review	1	15
NCE 205	The Ups and Downs of Depression	1	15
NCE 206	Applied Physiology for Nurses	4	60
NCE 207	Acute Care of the Med. Surg. Patient	3	45
NCE 208	Basic EKG Interpretation	2	30
NCE 209	Clinical Interpretation of Lab Test	2	30
NCE 210	Physical Assessment of Adult	3	45
NCE 211	Auscultation of Breath and Heart Sounds	1	15
NCE 212	Managing the Hypertension Patient	1	15
NCE 213	Primary Crisis Intervention	2	30
NCE 214	Spiritual Care of the Patient	1	15
NCE 215	Cardiopulmonary Resuscitation	1	15
NCE 216	Orthopedic and Neurological Nursing	2	30
NCE 217	Pharmacodynamics and Drug Interaction	3	45
NCE 218	Legal Aspects of Charting	1	15
NCE 219	Nursing Leadership and Management	2	30
NCE 220	Legal Aspects of Nursing	2	30
NCE 221	Wellness	1	15
NCE 222	Auscultation of Heart Sounds	1	15
NCE 223	Auscultation of Breath Sounds	1	15
NCE 224	The Faces of Drug Abuse: Caring and Coping	1	15
NCE 225	Body Mechanics for Nurses	1	15
NCE 226	I.V. Therapy	1	15
NCE 227	Communication Skills for Nurses	1	15
NCE 228	Hyperalimentation	1	15
NCE 229	Fluid and Electrolytes	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 233	Career Planning Seminar for Nurses	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 242	Therapeutic Touch	1	15
NCE 243	Understanding IV Solutions	1	15
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
NCE 255	Problem Oriented Medical Records	1	15
NCE 256	Interpretation of Vital Signs	1	15
NCE 257	Selected Emergency Care	1	15
NCE 259	Aging Process	1	15
NCE 260	Pediatric Emergency Care	2	30
NCE 265	Emergency Care	4	75
NCE 266	Mgmt. in Long Term Care	1	15
NCE 267	Care of Patient with Open Heart Surgery	1	15
NCE 268	Quality Assurance in Long Term Care	1	15
NCE 269	Nutrition	1	15
NCE 270	Emergency Drugs	1	15
NCE 276	Drugs and the Elderly	1	15
NCE 277	Cardiovascular Nursing Care	2	30
NCE 278	Rehabilitation Nursing	2	30
NCE 279	Immunization Laws and Child Care	1	15
NCE 280	Nursing Skills	1	15
NCE 285	Advanced Communication Skills	1	15
NCE 295	Psych. Aspects of Patient Care	2	30
NCE 296	Common Childhood Illnesses	2	30
NCE 297	Stress Management for Nurses	1	15
NCE 298	Vital Issues in Nursing	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	2	30
NMT 203	Nuclear Medicine Practicum Orientation	1	15
* NMT 205	Statistics of Radioactive Counting	1	
* NMT 206	Radiation Physics for Nuclear Medicine	3	45
* NMT 207	Nuclear Medicine Instrumentation	4	68
* NMT 208	Clinical Practicum I	8	360
*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	3	45
General Education Courses		12	180
	Total Required Hours	98	2569

* 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

Additional Required Courses

*BIO 111	Hum. Anat. and Phys. I	4	90
*BIO 112	Hum. Anat. and Phys. II	4	90
BIO 115	Intro. to Microbiology	3	75
BIO 211	Adv. Phys. and Pathogenesis	3	45
*PSY 235 **	Psych. of Hum. Growth and Development	3	45
*ENG 111 **	English Composition	3	45
**General Education Computation Course		3	45
**General Education Critical Thinking Course		3	45
	Total Required Hours	86	1580

* Required for Certificate in Practical Nursing

** Meets General Education Requirement

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 related courses plus NUR 120 and 126 before entry level 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	Hum. Anat. and Phys. I	4	90
BIO 112	Hum. Anat. and Phys. II	4	90
NUR 120	Psychosocial Concepts in Nursing	2	30
NUR 126	Nursing Process: Concepts and Skills	4	68

**ENG 111	English Composition	3	45
**PSY 235	Psych. of Hum. Growth and Development	3	45
**General Education Computation Course		3	45
**General Education Critical Thinking Course		3	45

Note
Additional courses are listed and described in the Course Description section of this catalog.

** Meets General Education Requirement

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
		59	1121

Additional Required Courses

*BIO 111	Human Anatomy and Physiology I	4	90
*BIO 112	Human Anatomy and Physiology II	4	90
* DIT 115	Nutrition	1	15
BIO 115	Intro. to Microbiology	3	75
BIO 211	Advanced Physiology	3	45
PSY 235	Psychology of Human Growth and Development	3	45
		18	360
General Education Courses		12	180
	Total Required Hours	89	1661

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 visual care offices or clinics.

Required Major Courses

Course No.	Title	Credits	Ct. Hrs.
OPA 100	Ocular Anatomy, Physiology, Pathology	2	30
OPA 105	Visual Science, Optics and Frame Mechanics	4	75
OPA 107	Optometric Office Management	1	15
OPA 108	Frame Selection and Adjustment	2	38
OPA 109	Contact Lenses	1	15
OPA 115	Clinical Practicum	4	180
OPA 116	Clinical Seminar	1	15
		15	368

Additional Required Courses

*SEC 101	Typewriting I or	4	75
*BSI 126	Refresher Typewriting	1	15
*SEC 148	Communications in the Office	1	15
		2 or 5	30 or 105
	Total Required Hours	17 or 20	398 or 473

*Typing skill and work experience may be substituted for these courses.

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	45
PAR 106	Contracts	3	45
PAR 107	Legal Research	3	45
PAR 108	Civil Procedures	3	45
PAR 109	Property	3	45
PAR 110	Business Organizations	3	45
PAR 115	Domestic Relations	3	45
PAR 116	Commercial Law	3	45
PAR 117	Constitutional Law	3	45
PAR 118	Criminal Law and Procedures	3	45
PAR 119	Probate	3	45
PAR 129	Administrative Law	3	45
	or		
PAR 130	Real Estate and Land Use Law	3	45
	or		
PAR 207	Legal Research Seminar I	3	45
	or		
PAR 208	Legal Research Seminar II	3	45
PAR 210	Paralegal Workshop	6	90
PAR 219	Paralegal Seminar	3	45
General Education Courses		12	180
	Total Required Hours	60	1035

* 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	45
PET 105	Geological (map) Drafting I	6	120
PET 107	Petroleum Exploration Lab I	6	120
PET 108	Geophysical Concepts	3	45
PET 205	Geological Drafting II	6	120
PET 206	Land & Legal Aspects	3	45
PET 207	Petroleum Exploration Lab II	6	120
PET 208	Hydrocarbon Accumulation	3	45
PET 209	Exploration Case Studies	3	45
PET 218	Petroleum Economics	3	45
		42	750

Additional Required Courses

EAS 111	Physical Geology	4	90
Computer Science course*		3	75
Mathematics*		6	90
Science electives*		9	135
General Education Courses		12	180
	Total Required Hours	76	1320

* Approved by advisor

Note
Additional courses are listed and described in the Course Description section of the catalog.

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.
PET 105	Petroleum Industry	3	45
PET 106	Geological (map) Drafting I	6	120
PET 107	Petroleum Exploration Lab I	6	120
PET 108	Geophysical Concepts	3	45
PET 215	Petroleum Production I	6	105
PET 216	Petroleum Production II	6	105
PET 217	Petroleum Production III	6	105
PET 218	Petroleum Economics	3	45
		39	690

Additional Required Courses

EAS 111	Physical Geology	4	90
Computer Science courses*		3	75
Mathematics*		12	180
Science electives*		6	90
General Education Courses		12	180
	Total Required Hours	76	1305

* Approved by adviser

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 100L	Fundamentals of Photo Lab	1	20
* PHO 105	Advanced Photography	4	80
* PHO 105L	Advanced Lab	1	20
* PHO 106	Fundamentals of Color	4	80
* PHO 106L	Fundamentals of Color Lab	1	20
* PHO 107	History of Photography	4	80
* PHO 200	Advanced Color	4	80
* PHO 200L	Advanced Color Lab	1	20

Students are required to take 3 of the following 5-200 level photography classes:

PHO 205	Documentary Photograpy	4	80
PHO 205L	Documentary Photo Lab	1	20
PHO 206	Portrait Photography	4	80
PHO 206L	Portrait Photo Lab	1	20
PHO 207	Commercial Photography	4	80
PHO 207L	Commercial Photo Lab	1	20
PHO 208	Environmental Photography	4	80
PHO 208L	Environmental Photo Lab	1	80
PHO 209	Art of Photography	4	80
PHO 209L	Art of Photo Lab	1	20
General Education Courses		12	180
ART 101	Basic Design I	3	90

Students are required to take 3 of the following required electives to fulfill degree requirements in Photography:

ART 102	Basic Design II	3	90
ART 271	Printmaking	3	90
COA 105	Typography and Layout	5	100
GRA 120	Process Camera and Halftones	6	120
TEI 201	Air Brush I for Non-Majors	3	60
MAN 105	Introduction to Business	3	45
MAN 205	Small Business Management	3	45
	Total Required Hours	63-68	1200-1360

*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 f an Associate of Science Degree with an emphasis Physics. A student interested in obtaining a ba calaureate degree should consult a CCD adviser, th Transfer Guide, and the current catalog of the receivin institution.

Course No.	Title	Credits	Ct. Hrs
PHY 161	Physics for Sci./Eng.	4	6
PHY 163	Experimental Phys. for Sci/Eng. I	1	4
PHY 162	Physics for Sci./Eng.	4	6
PHY 164	Experimental Phys. for Sci./Eng. II	1	4
MAT 201	Calculus I	5	7
MAT 202	Calculus II	5	7
MAT 203	Calculus III	4	6
CSC 111	Intro. to Computers	4	9
CSC 150	Fortran IV	4	9
	or		
CSC 155	PASCAL	4	9
	Electives		
CHE 111	General Coll. Chem. I	5	10
CHE 112	Gen. Coll. Chem. II	5	10
		32-42	600-81
General Education Core Courses		12	18
Distribution Requirements		15	22
Interdisciplinary Requirements		3	4
	Total Required Hours	62-72	1050-126

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 fo job upgrading in special areas and for preparation of plumbers for city or State journeyman tests.

Required Major Courses

Course No.	Title	Credits	Ct. Hrs.
*PLU 100	Orientation of Tools, Basic Plumbing Drawings	3	60
*PLU 106	Basic Waste and Vent Layout and Code Requirements	6	120
*PLU 107	Water Piping Methods	3	60
*PLU 108	Gas Pipe, Code and Sizing, and Flue Vents	3	60
*PLU 109	Residential Plumbing	6	120
*PLU 110	Finish and Installation of Plumbing Fixtures	3	60
*PLU 116	Plumbing Repair	3	60
*WEF 120	Welding for Construction and Mechanical Trades	3	60
PLU 205	Blueprint Reading and Layout	3	60
PLU 206	Hot Water Heating — Installation and Maintenance	3	60
PLU 207	Basic Solar Engery	3	60
PLU 208	Advanced Solar Energy	3	60
PLU 210	Commercial Layout and Code Multistory Projects	3	60

PLU 215	Colorado State Code Requirements	3	45
PLU 216	Uniform Plumbing Code	3	45
PLU 220	City of Denver Code	3	45
PLU 225	Technical Project	6	120
		60	1155
General Education Courses		15	225
	Total Required Hours	75	1380

*Certificate Requirements

Note

Additional courses are listed and described in the Course Description section of this catalog.

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	45
POS 121	American National Government	3	45
POS 122	American State and Local Government	3	45
POS 201	Comparative Politics	3	45
POS 205	International Relations	3	45
POS 215	Current Political Issues	2	30
POS 210	U.S. Constitution	2	30
POS 247	Colorado Politics	3	45
POS Electives		8	120
		30	450
General Education Core Courses		12	180
Interdisciplinary Requirements		3	45
Distribution Requirements		15	225
	Total Required Hours	60	900

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 Computers	4	60
MAN 105	Introduction to Business	3	45
MAN 215	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

Additional Required Courses

POS 111	Introduction to Political Science	3	45
POS 121	American National Government	3	45
POS 122	American State and Local Government	3	45
Electives*		3	45
		12	180
General Education Courses		12	180
	Total Required Hours	61	915

* Advisor Approval

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

Additional Required Courses

BIO 109	Human Biology for Health Sciences	4	75
PHY 105	Topics in the Physical Sciences	3	75
General Education 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	45
REE 210	Real Estate Tax Factors	3	45
REE 216	Real Estate Listings & Selling Techniques	4	60
REE 217	Real Estate Contracts	3	45
		34	510

Additional Required Courses

ACC 103	Bookkeeping	3	45
BUS 115	Business Mathematics by Machines	4	60
DPR 127	Building Inspection for Construction Trades	4	80
MAN 105	Intro. to Business	3	45
MAN 215	Principles of Management	3	45
		17	275
General Education Courses		12	180
	Total Required Hours	63	965

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	45
REL 111	Field Work	3	45
REL 112	Field Work	3	45
REL 113	Field Work	3	45
REL 121	Sports Officiating	5	98
REL 125	Dance Activities	5	98
REL 126	Tumbling and Gymnastics	2	30
REL 145	Arts and Crafts	2	30
REL 201	Team Sports	2	30
REL 205	Group Leadership	3	45
REL 207	Elementary Games & Activities	5	98
REL 208	Programming Aquatic Activities	2	30
REL 209	Creative Dramatics	5	98
REL 211	Individual Lifetime Sports	2	30
REL 215	Recreational Equipment & Facilities	3	45
REL 216	Recreation in Special Settings	2	30
REL 217	Techniques in Program Planning & Org.	3	45
REL 218	Outdoor Recreation & Camping	2	30
		55	902

Additional Required Courses

General Education Courses		12	180
	Total Required Hours	67	1082

Note
Additional courses are listed and described in the Course Description section of this catalog.

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 100	Respiratory Technology I	4	90
RIT 205	Intro to Critical Care	3	45
RIT 211	Clinical Practicum I	9	375
RIT 208	Respiratory Pathophysiology	3	45
RIT 209	Pharmacology for Respiratory Therapy	2	30
RIT 200	Respiratory Technology II	5	90
RIT 212	Clinical Practicum II	9	375
RIT 217	Pediatric Respiratory Therapy	3	45
RIT 213	Clinical Practicum III	9	375
		48	1485

Additional Required Courses

BIO 111	Anatomy and Physiology I	4	90
BIO 138	Anatomy and Physiology for Respiratory Theraphy	4	90
CHE 101	Fundamentals of Chemistry I	4	90
PHY 101	Fundamentals of Physics I	3	75
MAT 111	Introductory Algebra	3	45
BIO 115	Microbiology	3	75
		21	365
General Education Courses		12	180
	Total Required Hours	81	2130

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

Additional Required Courses

BIO 111	Anatomy and Physiology I	4	90
BIO 112	Anatomy and Physiology II	4	90
MAT 121	College Algebra	4	60
PHY 115	Introduction to Medical Physics	4	45
CHE 101	Fundamentals of Chemistry	4	90
General Education Courses		12	180
		32	600
	Total Required Hours	97	2805

* Certificate Requirements

Sport Crafts and Specialty Area Mechanics (N)

Certificate or Associate of Applied Science Degree

This program provides you with job entry skills for small engines and the specialty area mechanics field. The 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.
SCS100	Basic Engines, Tools, and Safety	3	60
SCS 105	Carburetor and Fuel Systems	3	60
SCS 106	Ignition Systems	3	60
SCS 107	Engine Rebuild and Special Tools	3	60
SCS 108	Engine Control Systems	3	60
SCS 109	Basic Electrical Theory and Test Equipment	3	60
SCS 110	Charging and Starting Systems	3	60
SCS 115	Engine Troubleshooting and Tune-Up	3	60
SCS 116	General Service I	3	60
SCS 117	General Service II	3	60
SCS 200	Clutches, Transmissions, and Drive Systems	3	60
SCS 205	Basic Hydraulics, Service, and Repair	3	60
SCS 206	Brake Systems, Front Axles, and Steering Systems	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	Customer Service I	3	60
SCS 217	Customer Service II	3	60
		60	1200
General Education Courses		12	180
	Total Required Hours	72	1380

Note

Additional courses are listed and described in the Course Description section of the catalog.

*** 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 H.P.	3	60
SCS 247	Power Heads 20 H.P. 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

*** 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

*** Rental Equipment Service and Repair**
(9 Week Certificate)

Course No.	Title	Credits	Ct. Hrs.
SCS 102	Introduction to Rental Equipment	3	60
SCS 103	Customer Service Operations	3	60
SCS 104	Rental Equipment Troubleshooting and Safety	3	60
SCS 297	Cooperative Work Experience	3	60

*** Basic Engines, Electrical and Carburetion Systems**
(30 Week Certificate)

Course No.	Title	Credits	Ct. Hrs.
SCS 100	Basic Engines, Tools, and Safety	3	60
SCS 105	Carburetor and Fuel Systems	3	60
SCS 106	Ignition Systems	3	60
SCS 107	Engine Rebuild and Special Tools	3	60
SCS 108	Engine Control Systems	3	60
SCS 109	Basic Electrical Theory and Test Equipment	3	60
SCS 110	Charging and Starting Systems	3	60
SCS 115	Engine Troubleshooting and Tune-Up	3	60
SCS 116	General Service I	3	60
SCS 117	General Service 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, Service, and Repair	3	60
SCS 206	Brake Systems, Front Axles, and Steering Systems	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	Customer Service I	3	60
SCS 217	Customer Service II	3	60

*** Motorcycle Service and Repair**
(24 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	Single Cylinder Four-Cycle Engines	3	60
SCS 229	Multi-Cylinder Four-Cycle Engines	3	60
SCS 230	Two-Cycle Engines	3	60
SCS 235	Motorcycle Service and Repair	3	60

*Students will be admitted to these programs with documented evidence of prior learning and with instructor's consent.

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 I. . . .	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	4	68
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 120	Bricklaying for Construction Trades	3	60
DPR 125	Blueprint Reading for Construction Trades	4	68
CAR 120	Carpentry for Construction Trades.	3	60
SOM 100	Basic Sheet Metal for Solar Energy.	3	60
		67	1292
	Additional Required Courses		
General Education Courses	. . . . .	12	180
	Total Required Hours	79	1472

Note
A minimum of 30 credit hours is required for a Certificate.

Passive Solar Energy Drafting and Design (R)

Certificate
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. Hrs.
SOM 220	Basic Solar Systems	3	60
SOM 237	Passive Solar Systems I. . . .	3	60
SOM 240	Passive Solar Systems II . . .	3	60
SOM 241	Passive Solar Systems III.	3	60
SOM 245	Solar Greenhouse Design.	4	68
SOM 247	Site Built Solar Systems	3	60
SOM 248	Solar Greenhouse Construction	3	60
SOM 260	Computer and Calculator Techniques for Solar Energy	2	30
BRI 120	Bricklaying for Construction Trades	3	60
BRI 126	Solar Walls and Fireplaces	3	60
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
		61	1186
	Additional Required Courses		
General Education Courses	. . . . .	12	180
Elective	. . . . .	3	45
		15	225
	Total Required Hours	76	1411

Additional Courses*

*Please see Drafting Section for DRI / DRS Course Descriptions.

Social Science (A)

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 adviser, the Transfer Guide, and the current catalog of the receiving institution.

Course No.	Title	Credits	Ct. Hrs.
PSY 111	General Psych. I	3	45
	or		
SOC 111	Intro. to Sociol. I		
PSY 112	General Psych II	3	45
	or		
SOC 112	Intro. to Sociol. II		
PSY 115	Psych. of Pers. Devel.	3	45
	or		
SOC 215	Current Social Prob.		
SOC or PSY electives		12	180
SOC or PSY Ethnic Studies course		3	45
Related subject area electives		6	90
		30	450
General Education Core Courses	. . . .	12	180
Distribution Requirements	. . . . .	15	225
Interdisciplinary Requirements	. . . . .	3	45
	Total Required Hours	60	900

Surgical Technology (A)

Certificate Program

This program begins in the summer term and continues through the fall and spring semesters. It is twelve months in duration.

Upon completion of this program, the graduate will be eligible to write the surgical technician national certifying examinations 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
		38	885

Additional Required 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 111	English Comp. — Essay Writing	3	45
		14	270
	Total Required Hours	52	1155

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
		56	1021

Additional Required Courses

MAT 121	College Algebra	4	60
MAT 122	Trig. and Functions	3	45
General Education Courses		12	180
	Total Required Hours	75	1306

Note
Additional courses are listed and described in the Course Description section of this catalog.

Consumer Electronics Technology (N)

Certificate or Associate of Applied Science Degree

This program provides you with job entry skills in 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	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 and Power Supplies	3	60
TCE 110	Troubleshoot and Repair VT Radios	3	60
TCE 115	Troubleshoot and Repair Solid State AM Radios	3	60
TCE 116	Troubleshoot and Repair FM Radios	3	60
TCE 117	Troubleshoot and Repair Stereo Audio Amplifiers	3	60
TCE 200	Symptom Diagnose Monochrome TV	3	60

TCE 205	Troubleshoot and Repair Monochrome TV and Principles of Color TV	3	60
TCE 206	Troubleshoot and Repair Color TV	3	60
TCE 207	Peak and Sweep Alignment	3	60
TCE 208	Troubleshoot and Repair Picture Tube Circuits, Video and AGC	3	60
TCE 209	Troubleshoot and Repair Chroma Circuits	3	60
TCE 210	Troubleshoot and Repair VIF, Tuner and Sound	3	60
TCE 228	Analyze Digital Logic Circuits or elective	3	60
TCE 229	Troubleshoot and Repair Consumer Digital Logic Circuits or elective	3	60
TCE 230	Basic Operation of Home Video Cassette Recorder (HVCR) or elective	3	60
TCE 235	Diagnose, Troubleshoot and Repair Home Video Cassette Recorders or elective	3	60
		63	1260
General Education Courses		12	180
	Total Required Hours	75	1440

Note
Additional courses are listed and described in the Course Description section of the catalog.

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, and Power Supplies	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, and Power Supplies	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, and Power Supplies	3	60
	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	90
TET 109	Traffic Engineering Psychology	3	45
TET 110	Traffic Laws, Ordinances and Regulations	3	45
TET 201	Geometric Design I	5	90
TET 202	Geometric Design II	6	105
TET 205	Traffic Accident Reporting and Analysis	3	45
TET 211	Urban Transportation Planning I	3	45
TET 212	Urban Transportation Planning II	3	45
TET 219	Traffic Engineering Problems	3	45
		46	735

Additional Required Courses

Math electives	9	135
General Education Courses	12	180
	21	315
Total Required Hours	67	1050

Note
Additional courses are listed and described in the Course Description section of this catalog.

Traffic and Transportation Management (A)

Associate of Applied Science Degree

This program is designed to prepare students for careers in the transportation of merchandise at the entry level position. It also prepares students 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 151	Freight Rates I	2	30
TTM 152	Freight Rates II	2	30
TTM 211	Economics of Transporation I	2	30
TTM 212	Economics of Transportation II	2	30
TTM 221	Transporation Regulations I	3	45
TTM 222	Transporation Regulations II	3	45
TTM 231	Transportation Management I	3	45
TTM 232	Transportation Management II	3	45
	Transportation Electives	6-9	90-135
		29-32	435-480

Additional Required Courses

ACC 111	Accounting Principles I	5	75
BUS 136	Bus. Communications Applications	3	45
ECO 118	Labor Relations	3	45
MAN 105	Introduction to Business	3	45
MAN 206	Business Law	4	60
MAR 107	Principles of Marketing	3	45
General Education Courses		12	180
		33	495
	Total Required Hours	62-65	930-975

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 105	Computer Reservations Systems	3	45-60
TTO 297	Coop Education	6	270
		25	555-570

Additional Required Courses

ACC 103	Bookkeeping	3	45
SEC 115	Business Machines	1	25
SEC 101	Typewriting I	4	75
	English Elective	3	45
		11	190
	Total Required Hours	36	745-760

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

Additional Required Courses

Math elective		9	135
General Education Courses		12	180
	Total Required Hours	67	1095

Note
Additional courses are listed and described in the Course Description section of this catalog.

Urban Horticulture (N)

Certificate or Associate of Applied Science Degree

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

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.

There are 5 options within the Urban Horticulture program. To meet special needs, the student may select any course from another specialty area.

A total of thirty URH credit hours are required for the certificate and sixty URH credit hours plus 12 credit hours in General Education are required for the AAS Degree.

Required Major Courses (All Options)

Course No.	Title	Credits	Ct. Hrs.
URH 101	Plant Science I	4	68
URH 125	Soils and Fertilizers	4	75

Greenhouse and Garden Center Management Option (N)

Course No.	Title	Credits	Ct. Hrs.
URH 100	Rocky Mountain Horticulture	2	30
URH 102	Plant Science II	4	75
URH 106	Landscape Plant Materials	4	75
URH 107	Plants in the Landscape	2	30
URH 115	Plant Usage	4	75
URH 135	Plant Propagation	4	75
URH 155	Arboriculture	3	53
*URH 200	Greenhouse and Field Experience	3	60
URH 204	Garden Center Operations	2	30
*URH 206	Interior Landscape Design	3	53
URH 210	Landscape Management	3	45
URH 212	Garden Management	3	45
URH 215	Greenhouse Management	3	45
URH 226	Horticulture Business Operations	3	53
*URH 235	Diseases and Pests	4	68
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

* Certificate Requirements

Landscape Construction Option (N)

Course No.	Title	Credits	Ct. Hrs.
URH 100	Rocky Mountain Horticulture	2	60
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 126	Small Engine and Carburetor Repair for URH	3	60
URH 145	Sprinkler System Design	3	53
*URH 146	Sprinkler System Installation	3	60
URH 210	Landscape Management	3	45
URH 212	Garden Management	3	45
URH 216	Landscape Grading	3	60
*URH 225	Horticulture Equipment	4	75
URH 226	Horticulture Business Operations	3	53
*URH 235	Diseases and Pests	4	68
*URH 236	Basic Landscape Construction	4	68
*URH 237	Bidding and 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

* Certificate Requirements

Landscape Design Option (N)

Course No.	Title	Credits	Ct. Hrs.
URH 100	Rocky Mountain Horticulture	2	30
*URH 105	Intro. to Landscape Construction Drafting	3	60
*URH 106	Landscape Plant Materials	4	75
URH 107	Plants in the Landscape	2	30
URH 115	Plant Usage	4	75
*URH 116	Landscape Planning	4	75
*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 and Pests	4	68
URH 236	Basic Landscape Construction	4	68
URH 237	Bidding and Estimating	2	30
*URH 246	Advanced Landscape Planning	4	75
URH 256	Landscape Perspective Drawing	3	53
URH 297	Cooperative Work Experience	4	150

* Certificate Requirements

Nursery Management Option (N)

Course No.	Title	Credits	Ct. Hrs
URH 100	Rocky Mountain Horticulture	2	30
URH 102	Plant Science II	4	68
*URH 106	Landscape Plant Materials	4	75
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 146	Sprinkler System Installation	3	60
*URH 155	Arboriculture	3	53
URH 200	Greenhouse and Field Experience	3	60
URH 204	Garden Center Operations	2	30
*URH 205	Nursery Management	4	75
URH 210	Landscape Management	3	45
*URH 225	Horticulture Equipment	4	75
*URH 235	Diseases and Pests	4	68
URH 236	Basic Landscape Construction	4	68
URH 240	Preparation for Commercial Appl. Certification	3	45
URH 297	Cooperative Work Experience	4	150

*Certificate Requirements

Turf and Landscape Management Option (N)

Course No.	Title	Credits	Ct. Hrs.
URH 100	Rocky Mountain Horticulture	2	30
URH 102	Plant Science II	4	68
URH 106	Landscape Plant Materials	4	75
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 146	Sprinkler System Installation	3	53
*URH 147	Sprinkler Service and Repair	2	30
URH 155	Arboriculture	3	53
*URH 210	Landscape Management	3	45
URH 212	Garden Management	3	45
URH 216	Landscape Grading	3	60
*URH 225	Horticulture Equipment	4	75
URH 226	Horticulture Business Operations	3	53
*URH 235	Diseases and Pests	4	68
URH 236	Basic Landscape Construction	4	68
URH 237	Bidding and Estimating	2	30
*URH 245	Turf Production and Management	4	75

*Certificate Requirements

Welding and Fabrication (A,N,R)

Certificate or Associate of Applied Science Degree

This program provides job entry skills in the welding ade and upgrading for those in the field who need to cquire more skill.

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

ourse No.	Title	Credits A	N	R	Ct. Hrs.
VEF 100	Oxy-acetylene Safety, Cutting & Welding . . .	3	3	3	60
VEF 106	Brazing & Special Applications . .	3	3	-	60
VEF 107	Blueprint Reading & Estimating . . .	3	3	3	45
VEF 108	SMAW Safe Electrode ID & Surface Padding	3	3	3	60
VEF 109	SMAW Surface Padding	3	-	3	60
VEF 110	SMAW Joints, in Three Positions	3	3	3	60
VEF 115	Plate Code Test E7018 w/Backing Strip/Plate . . .	3	3	3	60
VEF 116	Plate Code Test E6010 wo/Backing . .	3	3	3	60
VEF 117	Plate Code Test E6010/6011, E7018 w/o Backing	3	-	3	60
VEF 118	Special Applications in Arc Welding	3	3	3	60
'EF 119	Metallurgy for Welders	-	3	-	45
'EF 130	GMAW AWS Pipe & Plate . .	-	3	-	60
'EF 200	Pipe Joint Design & Fab Pipe Testing 2G	3	-	3	60
'EF 201	Pipe Prep & Test A.S.M.E., Sec IX, E6010	-	-	3	60
VEF 203	Pipe Code Testing 2G & 5G Position . .	-	3	-	60
WEF 205	Pipe Code Testing 5G Position	3	-	-	60
WEF 206	Pipe Code Testing 6G Position	3	3	0	60
WEF 207	GTAW Safety & Welding . . .	3	-	3	60
WEF 208	GTAW Welding Alloys & Joining Varied Shapes	3	-	-	60
WEF 209	GMAW Pipe & Plate Code Testing.	3	-	3	60
WEF 210	Structural Shapes & Joint Design-Proj Develop	3	3	3	60
WEF 215	Structural Project Layout & Fab	3	3	0	60
WEF 216	Structural Fabrication.	3	-	3	60
WEF 217	Maintenance Welding & Repair	3	3	0	60
WEF 221	Ornamental Iron I	-	3	-	60
WEF 222	Ornamental Iron II	-	3	-	60
WEF 226	GTAW Welding Alloys	-	3	-	60
WEF 227	GTAW Safety & Welding . . .	-	3	-	60
WEF 228	GTAW & SMAW Pipe Testing.	-	3	3	60
WEF 235	Pipe Test ASME, Sec. IX, E6010, E7018.	-	-	3	60
WEF 236	Pipe Joint Design	-	-	3	60
WEF 237	GTAW Plate & Pipe Test	-	-	3	60
WEF 238	GMAW Plate & Pipe ASME, Section IX . . .	-	-	3	60
		60	60	60	
		1185	1170	1185	
General Education Courses		12	12	12	
Total Required Hours		72	72	72	
Total Contact Hours		1365	1350	1365	

Note

Additional courses are listed and described in the Course Description section of the catalog.

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	45
WWT 105	Specific Calculations for W/W	4	60
WWT 119	Basic Water Analysis	5	83
WWT 120	W/W Equipment Maintenance	5	83
WWT 200	Hydraulics for Water-Wastewater	5	83
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 Education	4	180
WWT W/W Electives		10	150
		54	978

Additional Required Courses

General Education Courses	12	180
Total Required Hours	66	1165

* 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.

Note
Additional courses are listed and described in the Course Description section of this catalog.

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
	Total Required Hours	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
	Total Required Hours	21	315

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	83
WWT 226	T.V. Surveillance of Collection Systems	3	45
WWT 236	Safety Practices for W/W	1	15
	Total Required Hours	20	263

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
	Total Required Hours	18	270

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
MAT 110	The Metric System	1	15
ENG 219	Technical Communications Intro to Technical Writing	3	45
	Total Required Hours	22	368

Water/Wastewater

Administration & Finance (R)

Certificate Program

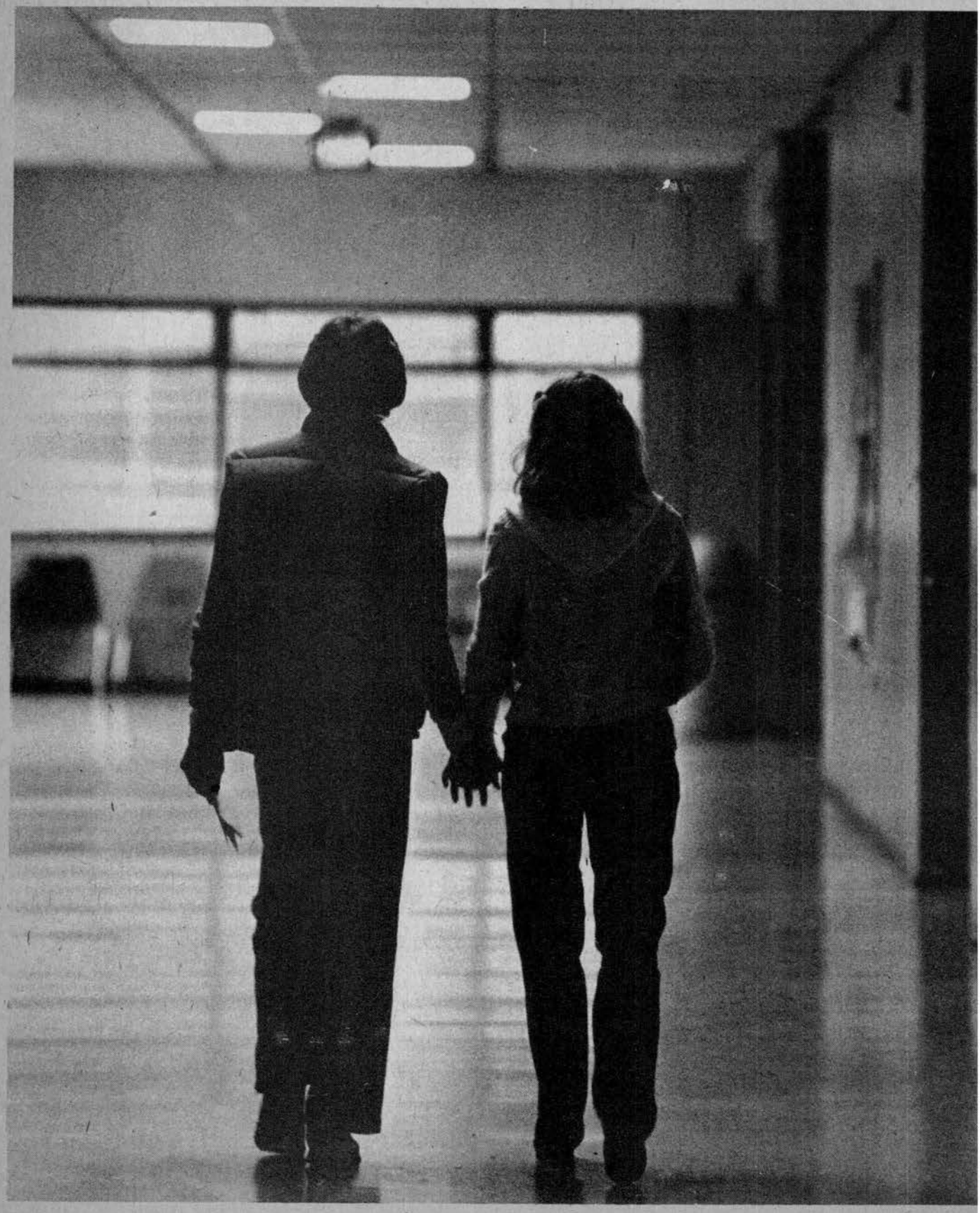
This certificate program is designed to provide the student with a broadly based exposure to the general functions of the administration & finance areas of the water/wastewater industry. Students currently employed in the water/wastewater field should acquire background and refresher training suitable 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
	Total Required Hours	22	330

Note
Additional courses are listed and described in the Course Description section in this catalog.

Course Descriptions



Course Descriptions

Course Modifications

The courses listed in the following pages are an indication of Community College of Denver course offerings. Courses and programs are subject to modification at any time. Not all courses are offered every semester. The instructor may alter the content of a course or program to meet particular class needs.

Campus Locations

Campus locations are shown in parentheses following the course title as follows:

A — Auraria
N — North
R — Red Rocks

Aurora Education Center Courses

Courses offered at the Aurora Education Center are designated, in parentheses following the course title, by the initials AEC.

Prerequisite

A prerequisite is a course which must be satisfactorily completed before taking the next higher level course or the prerequisite for a course may be "permission of instructor."

Auto Body Painting

Upon satisfactory completion of the module, the student should be able to:

ABP 100 ORIENTATION ON SHOP POLICY, AUTO PAINTING SAFETY, AND SANDING (N)
3 Credit Hours
Demonstrate a knowledge of school policy on safety, shop clean-up, grading procedures, list tools and equipment, perform safe handling of solvents, featheredge, block sand, hand sand, power sand, and prepare a surface for paint. The knowledge will be evidenced through demonstration and by scoring 90 percent on the unit test.
60 Contact Hours

ABP 102 PRIMING (N)
3 Credit Hours
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.
60 Contact Hours

ABP 103 PAINTING WITH ACRYLIC LACQUER (N)
3 Credit Hours
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.
60 Contact Hours

ABP 104 SPOT PAINTING WITH ACRYLIC LACQUER (N)
3 Credit Hours
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.
60 Contact Hours

ABP 105 PAINTING WITH ACRYLIC ENAMEL AND ENAMEL (N)
3 Credit Hours
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.
60 Contact Hours

ABP 111-114 GENERAL REFINISHING I, II, III, AND IV (N)
3 Credit Hours each course
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.
60 Contact Hours

ABP 115 GENERAL AUTO REFINISHING V (N)
3 Credit Hours
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.
60 Contact Hours

Auto Body Service

Upon satisfactory completion of the module, the student should be able to:

ABS 100 ORIENTATION, REMOVE AND REPLACE FRONT SHEET METAL, AND BOLT-ON PARTS (N)

3 Credit Hours

Demonstrate knowledge of shop policies, safety, grading procedures, identification and use of hand and power tools, and complete nomenclature of body parts. Be able to disassemble and reassemble bumpers, radiators, fenders, hoods, grills, doors, locks, regulators, trunk lids, and hinges within factory specifications and required flat rate time. The knowledge will be evidenced by demonstration and scoring 90 percent on the unit test.

60 Contact Hours

ABS 107 REMOVE AND REPLACE HARDWARE, TRIM, AND GLASS (N)

3 Credit Hours

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.

60 Contact Hours

ABS 108 METAL REPAIR (N)

3 Credit Hours

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.

60 Contact Hours

ABS 109 HEAT DISTORTION AND SHRINKING AND GAS WELDING (N)

3 Credit Hours

Demonstrate 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.

60 Contact Hours

ABS 115 PATCH WELD REPAIRS OXYACETYLENE TIG AND MIG WELDING (N)

3 Credit Hours

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.

60 Contact Hours

ABS 116 USE OF PLASTIC FILLER (N)

3 Credit Hours

Prepare a damaged surface to be filled and mix the ma terial to manufacturer's specification, apply and finis filler. The knowledge will be evidenced by demonstratio and scoring 90 percent on the unit test.

60 Contact Hours

ABS 117 PULL ROD AND PRY BAR REPAIRS (N)

3 Credit Hours

Demonstrate use of dent pullers, pry bars, and pull roc to repair small dents and creases on double panels an hard-to-get areas, and metal finish or fill with body fille The knowledge will be evidenced by demonstration an scoring 90 percent on the unit test.

60 Contact Hours

ABS 118 MINOR DENT REPAIR (N)

3 Credit Hours

Repair a small area of damage by using hammer an dolly, pry bars, pull rods, dent pullers, using shrinkin procedures and either metal finish or use of body fille The knowledge will be evidenced by demonstration an scoring 90 percent on the unit test.

60 Contact Hours

ABS 119 MINOR DENT REPAIR (N)

3 Credit Hours

Repair damaged areas by cutting out and patch weldin in new metal, bumping out dents with hammer and dolly using pry bars, pull rods, dent pullers and the use of a shrinking procedures and finish area with a body fille The knowledge will be evidenced by demonstration an scoring 90 percent on the unit test.

60 Contact Hours

ABS 120 BODY ALIGNMENT (N)

3 Credit Hours

Identify damaged area and align body using hydraul jacks, tram gauge, alignment equipment, read and us measuring devices. The knowledge will be evidenced b demonstration and scoring 90 percent on the unit test.

60 Contact Hours

ABS 130 FIBERGLASS REPAIR (N)

3 Credit Hours

Identify types of material and equipment used for fibe glass repair and also demonstrate such repairs on fibe glass panels. The knowledge will be evidenced by den onstration and scoring 90 percent on the unit test.

60 Contact Hours

ABS 135 FIBERGLASS PANEL REPLACEMENT (N)

3 Credit Hours

Identify different panels or sections that are used an demonstrate how to reinforce spliced areas for strengt and safety, select the tools and material to replace a section a panel. The knowledge will be evidenced b demonstration and scoring 90 percent on the unit test.

60 Contact Hours

ABS 136 CLEANING, LEAK TESTING, SOLDERING RADIATORS (N)
3 Credit Hours
Demonstrate 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.
60 Contact Hours

ABS 137 REPAIR, RECORE (RADIATOR) (N)
3 Credit Hours
Select tools and straighten fins of a radiator, repair leaks, recore a radiator, 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.
60 Contact Hours

ABS 201 FRAME REPAIR (N)
3 Credit Hours
Prerequisites: 100, 109, 120
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.
60 Contact Hours

ABS 202-205 MAJOR DAMAGE REPAIRS I, II, III, IV (N)
3 Credit Hours each unit
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.
60 Contact Hours

ABS 211-215 GENERAL AUTO BODY REPAIR I, II, III, IV, V (N)
3 Credit Hours each unit
Identify and 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.
60 Contact Hours

Accounting

ACC 103 BOOKKEEPING (A,N,R,AEC)
3 Credit Hours
A study of the basic elements of the accounting cycle through statement preparation. 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 Contact Hours

ACC 104 ADVANCED BOOKKEEPING (A,N,R,AEC)
3 Credit Hours
Prerequisite: ACC 103 or permission of instructor
A study of the use of special journals; cash systems; accounting for sales taxes, bad debts, and depreciation; accounting for notes, accrued revenues and expenses; an introduction to partnership and corporation accounting. Emphasis on practice.
45 Contact Hours

ACC 105 PAYROLL PROCEDURES (A,N,R,AEC)
3 Credit Hours
Prerequisites: ACC 103 or ACC 111
Includes a study of various payroll systems and related laws. Practice in preparation of payrolls, review and reinforcement of payables and receivables, and an introduction to one-write systems.
45 Contact Hours

ACC 111 ACCOUNTING PRINCIPLES I (A,N,R,AEC)
5 Credit Hours
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. Emphasis on theory.
75 Contact Hours

ACC 112 ACCOUNTING PRINCIPLES II (A,N,R,AEC)
5 Credit Hours
Prerequisite: ACC 111
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 Contact Hours

ACC 116 CORPORATE ACCOUNTING (N)
2 Credit Hours
Prerequisite: ACC 111
A continuation of Accounting Principles I with emphasis on selected aspects of corporation accounting, funds, preparation of worksheets, manufacturing statements, and special analysis.
30 Contact Hours

ACC 130 INCOME TAX SEMINAR (A,N,R,AEC)
1 Credit Hour
An introduction to preparation of individual income tax reports as required by the Internal Revenue Service and the Income Tax Division of the Colorado Revenue Department.
15 Contact Hours

ACC 131 INDIVIDUAL INCOME TAX (A,N,R,AEC)
3 Credit Hours
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 Contact Hours

ACC 132 INDIVIDUAL INCOME TAX II (R)
2 Credit Hours
Co-requisite: ACC 131 at R
A continuation of ACC 131; includes in-depth study of gains and losses emphasizing business and investment property, depreciation, income averaging, mini and maxi tax.
30 Contact Hours

ACC 133 INCOME TAX SERVICE (R)
3 Credit Hours
Prerequisites: ACC 131 and ACC 132
This course offers the student the opportunity to prepare state and federal returns. This is a hands-on experience.
45 Contact Hours

ACC 170 ACCOUNTING SEMINAR (A,N,R,AEC)
1 Credit Hour
Prerequisite: Instructor approval
Designed to examine contemporary accounting practices and procedures.
15 Contact Hours

ACC 196 ACCOUNTING PRACTICUM (A,N,R,AEC).
1 Credit Hour
Prerequisite: Enrollment in Analytical Accounting Block Program
Designed specifically for students in the Analytical Accounting Certificate program. The course purpose is to increase mathematical proficiency compatible to the course work required in the program.
Variable Contact Hours

ACC 211 INTERMEDIATE ACCOUNTING I (A,N,R,AEC)
3 Credit Hours
Prerequisites: ACC 112 or ACC 116 and ACC 221
A review of the accounting cycle. A detailed study of the conceptual framework of accounting as it relates to the corporate structure.
45 Contact Hours

ACC 212 INTERMEDIATE ACCOUNTING II (A,N,R,AEC)
3 Credit Hours
Prerequisite: ACC 211
A continuation of the study of the framework of accounting as begun in Intermediate Accounting I.
45 Contact Hours

ACC 215 ACCOUNTING SYSTEMS (A,N,R,AEC)
3 Credit Hours
Prerequisites: ACC 112 and CPB 100
A study of the principles, concepts and tools used in the design, implementation, and integration of accounting systems, controls, and procedures. Practical application projects are used to illustrate manual and computerized systems.
45 Contact Hours

ACC 216 GOVERNMENTAL ACCOUNTING (A,N,R,AEC)
3 Credit Hours
Prerequisite: ACC 111 or consent of instructor
A study of the budgeting and fund control at the local, state, and federal levels. Includes the forecast or 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 Contact Hours

ACC 221 COST ACCOUNTING (A,N,R,AEC)
3 Credit Hours
Prerequisite: ACC112 or ACC 116
A study of the cost accumulation methods and management reports. The concepts and principles or order, process, standard and direct cost system; budgeting; planning and control of costs are included.
45 Contact Hours

ACC 235 BUSINESS TAXATION (A,N,R,AEC)
3 Credit Hours
Prerequisite: ACC 131
Designed to familiarize the student with most frequently used tax forms, current Internal Revenue Code and the State of Colorado Revenue Code as they apply to most businesses. The course will include state and federal payroll taxes, sales tax reporting, and the following income tax returns: Subchapter S, corporations, partnerships.
45 Contact Hours

ACC 255 COMPUTERIZED ACCOUNTING (A,N,R,AEC)
4 Credit Hours
Prerequisites: CPB 108 and 10 credits of accounting theory
A study of the theory and mechanics of a hypothetical corporation requiring the completion of a business project using computerized accounting techniques. Computer lab (CPB 095) is required.
60 Contact Hours

ACC 295 COOPERATIVE EDUCATION SEMINAR (A,N,R)
1 Credit Hour
Prerequisite: Advisor approval
A prerequisite course of study for ACC 297 Cooperative Work Experience in accounting. Completion of (a) two-semester Accounting/Business Certificate or (b) one-semester Bookkeeping/General Office Certificate or (c) two semesters of course work in the Accounting Degree program. Effective job hunting techniques, resume writing, job application forms and employer/employee relations will be presented and discussed.
15 Contact Hours

ACC 296 ACCOUNTING PRACTICUM (A,N,R,AEC)
Credit Hour
Corequisite: Enrollment in Analytical Accounting Block Program
Designed specifically for students in the Analytical Accounting Certificate program. The course purpose is to increase mathematical proficiency compatible to the course work required in the program.
Variable Contact Hours

ACC 297 COOPERATIVE EDUCATION — ACCOUNTING (A,N,R,AEC)
Credit Hours
Prerequisite: ACC 295 or permission of instructor
The student will begin work in an accounting or accounting-related position resulting from ACC 295 placement activities. The student works under the immediate supervision of experienced personnel at the business, industry, or agency involved, with a college instructor providing general coordination. The program is to be completed in one semester with a minimum of 6 credit hours of course work to be taken concurrently.
270 Contact Hours

Anthropology

ANT 105 ETHNOGRAPHY OF THE DEAF COMMUNITY (N)
Credit Hours
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)
Credit Hours
Introduces the study of culture as an instrument of adaptation.
45 Contact Hours

ANT 112 PRINCIPLES OF ANTHROPOLOGY (N,R,AEC)
Credit Hours
An introductory study of culture including language, technology, social structure, arts and values.
45 Contact Hours

ANT 119 ANTHROPOLOGY OF RELIGION (A,N,R,AEC)
Credit Hours
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,N,R,AEC)
Credit Hours
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
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
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
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
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
A view of cultural dynamics.
45 Contact Hours

ANT 207 CULTURE IN THE WORLD TODAY: THE MIDDLE EAST (R)
3 Credit Hours
A view of cultural dynamics.
45 Contact Hours

ANT 208 CULTURE IN THE WORLD TODAY: AFRICA (R)
3 Credit Hours
A view of cultural dynamics.
45 Contact Hours

ANT 209 PRINCIPLES OF ARCHEOLOGY (N,R)
3 Credit Hours
An introductory study of methods, techniques and theories of archeological investigation.
45 Contact Hours

ANT 215 THE NATURE OF LANGUAGE (N,R)
3 Credit Hours
A survey of the basic structure, origin and development of language.
45 Contact Hours

ANT 225 CURRENT TOPICS IN ANTHROPOLOGY (N,R)
3 Credit Hours
Prerequisites: 6 Hours of Anthropology
An analysis of topics of anthropological interest varying from term to term.
45 Contact Hours

Environmental and Refrigeration Technology (Major Appliance Repair)

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.
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.
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.
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.
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.
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.
60 Contact Hours

APT 228 CLOTHES DRYERS II (A)
3 Credit Hours
Prerequisites: RAC 100 series or equivalent exper ences
Presents a study of circuits, control devices, diagnosti and repair procedures on various makes of automatic ga clothes dryers.
60 Contact Hours

APT 229 KITCHEN EQUIPMENT II (A)
3 Credit Hours
Prerequisites: RAC 100 series or equivalent exper ences
Presents the study and repair of gas and electric range and microwave ovens, and trash compactors.
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 an models of upright refrigerator/freezers and ches freezers.
60 Contact Hours

APT 235 AUTOMATIC WASHERS III (A)
3 Credit Hours
Prerequisites: RAC 100 series or equivalent experi ences
Presents troubleshooting and the methods and proce dures to adjust, repair or replace the components o Norge, Whirlpool, Speed Queen, Frigidaire and Frankli machines.
60 Contact Hours

Art

ART 101 BASIC DESIGN (A,N,R,AEC)
3 Credit Hours
Fundamentals of form, color, visual perception, principle of composition, organization and structure introduce with experimentation in both two and three dimensiona 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 (A,N,R,AEC)
3 Credit Hours
Freehand drawing covering a selection of subjects, pro portion perspective, line, texture, value and composition Media includes pencil, conte crayon, charcoal, and ink.
90 Contact Hours

ART 112 BASIC DRAWING (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 WATERCOLOR (A,N,R)
3 Credit Hours
Transparent and opaque water color painting.
90 Contact Hours

ART 132 BASIC WATERCOLOR (A,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
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 (N,R)
3 Credit Hours
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 (N,R)
3 Credit Hours
Continuation of ART 151.
90 Contact Hours

ART 161 POTTERY (N,R)
3 Credit Hours
Design and construction of pottery using various hand-building methods.
90 Contact Hours

ART 162 POTTERY (N,R)
3 Credit Hours
Introduction to throwing techniques using potter's wheel.
90 Contact Hours

ART 163 POTTERY (N,R)
3 Credit Hours
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
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
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
A study of the world's art masterpieces.
45 Contact Hours

ART 191 A SURVEY OF ART MASTERPIECES (A,N,R,AEC)
3 Credit Hours
Art appreciation and history of the masterpieces of the world from pre-history through the Renaissance.
45 Contact Hours

ART 192 A SURVEY OF ART MASTERPIECES (A,N,R,AEC)
3 Credit Hours
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
A critical examination of the art of Africa and its relationship to the artistic development of the United States.
45 Contact Hours

ART 201 SECOND-YEAR BASIC DESIGN (N,R,AEC)
3 Credit Hours
Applied techniques of layout and design.
90 Contact Hours

ART 202 SECOND-YEAR BASIC DESIGN (N,R,AEC)
3 Credit Hours
Continuation of ART 201.
90 Contact Hours.

ART 211 SECOND-YEAR DRAWING (A,N,R,AEC)
3 Credit Hours
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 221 FIGURE DRAWING (A,N,R,AEC)
3 Credit Hours
Beginning drawing of the human figure.
90 Contact Hours

ART 222 FIGURE DRAWING (A,N,R,AEC)
3 Credit Hours
Continuation of ART 221.
90 Contact Hours

ART 231 SECOND-YEAR WATER COLOR (A,N,R)
3 Credit Hours
Emphasis on solutions in water media on a more individualized basis.
90 Contact Hours

ART 232 SECOND-YEAR WATER COLOR (A,N,R)
3 Credit Hours
Continuation of ART 231.
90 Contact Hours

ART 241 SECOND-YEAR OIL AND ACRYLIC PAINTING (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 (A,N,R)
3 Credit Hours
Continuation of ART 241.
90 Contact Hours

ART 251 BASIC SCULPTURE (N,R)
3 Credit Hours
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 (N,R)
3 Credit Hours
Continuation of ART 251.
90 Contact Hours

ART 261 SECOND-YEAR POTTERY (N,R)
3 Credit Hours
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
Continuation of ART 261. More advanced throwir problems in one of three areas: (1) tableware, (2) oth functional forms, (3) art forms.
90 Contact Hours

ART 263 CERAMICS DESIGN (N,R)
3 Credit Hours
Advanced study in throwing.
90 Contact Hours

ART 266 PRIMITIVE POTTERY (R)
3 Credit Hours
Hand building and use of primitive firing methods.
90 Contact Hours

ART 267 ADVANCED HAND BUILDING TECHNIQUES (R)
3 Credit Hours
Advanced study in hand building. Building and firing larg forms, including mold-making techniques.
90 Contact Hours

ART 268 RAKU POTTERY (R)
3 Credit Hours
Raku as an art form with various hand building an throwing techniques.
90 Contact Hours

ART 269 GLAZE FORMULATION (R)
3 Credit Hours
The study of glaze materials and various firin techniques. Loading and firing of kilns, formulatin glazes.
90 Contact Hours

ART 271 PRINTMAKING (A,N,R)
3 Credit Hours
Prerequisites: Basic Drawing and/or Basic Design
A study of hand printing techniques: silkscreen printin and intaglio. Emphasis in this class is on silkscreen t include glue, films and photographic with an introductio to intaglio to include etching and collographs. (Entry-leve skills: drawing and/or design skills.)
90 Contact Hours

ART 272 PRINTMAKING (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 wit woodcuts, etchings and seriography with special atter tion on design and craftsmanship.
90 Contact Hours

ART 273 SECOND YEAR TEXTILE DESIGN AND WEAVING (R)
3 Credit Hours
Prerequisite: ART 171 and 172 or permission of the in structor.
Looms, weaving and textile design techniques, studio ex perience in weaving, batik and other textile design.
90 Contact Hours

ART 274 SECOND YEAR TEXTILE DESIGN AND WEAVING (R)
3 Credit Hours
Prerequisite: ART 273 or permission of the instructor.
Continuation of ART 273.
90 Contact Hours

ART 281 SECOND-YEAR METALSMITHING (R)
3 Credit Hours
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
Continuation of ART 281. Emphasis on advanced design and experimentation of advanced techniques.
90 Contact Hours

ART 291 HISTORY OF AMERICAN ART (N,R)
3 Credit Hours
Major artists and movements in America to 1865.
45 Contact Hours

ART 292 HISTORY OF AMERICAN ART (N,R)
3 Credit Hours
Continuation of ART 291. American artists and movements from 1865 to the present.
45 Contact Hours

ART 295 ART IN THE COMMUNITY (A,N,R)
3 Credit Hours
Prerequisites: ART 111 or ART 101 and 102 or permission of instructor.
Studies art for public spaces. Areas of application inlcude 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: Permission 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 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 Contact Hours

ASL 102 BASIC AMERICAN SIGN LANGUAGE (N)
3 Credit Hours
Prerequisite: ASL 101
Continuation of ASL 101.
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.)
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.
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 Contact Hours

ASL 202 STRUCTURE OF ASL II (N)
3 Credit Hours
Prerequisite: ASL 201
The study of grammatical categories (continued from Structure of ASL I) and an introduction to the study of grammatical relations in ASL sentences.
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 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 Contact Hours

Architectural Technology

ATE 100 BASIC ARCHITECTURAL TECHNIQUES (N)
3 Credit Hours
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.
60 Contact Hours

ATE 106 CONSTRUCTION DRAWING FUNDAMENTALS (N)
3 Credit Hours
Prerequisites: ATE 100 or permission of instructor.
With concept sketches and resource references furnished, the student should be able to draw, reproduce, and assemble a professional set of construction working drawings of a small wood frame structure.
60 Contact Hours

ATE 107 RESIDENTIAL CONSTRUCTION DRAWINGS (N)
6 Credit Hours
Prerequisites: ATE 106 or permission 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.
120 Contact Hours

ATE 108 RESIDENTIAL CONSTRUCTION DETAILS (N)
3 Credit Hours
Prerequisites: ATE 107 or permission of instructor
Continuing with the same references as ATE 107, the student should be able to draw selected assigned details for the residence started in ATE 107, arrange the total project in proper sequence, reproduce and bind same into a comprehensive set of prints.
60 Contact Hours

ATE 109 LIGHT COMMERCIAL CONSTRUCTION DRAWINGS (N)
6 Credit Hours
Prerequisites: ATE 108 or permission 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.
120 Contact Hours

ATE 110 LIGHT COMMERCIAL CONSTRUCTION DETAILS (N)
6 Credit Hours
Prerequisites: ATE 109 or permission 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.
120 Contact Hours

ATE 115 THREE-DIMENSIONAL DRAWING METHODS (N)
3 Credit Hours
Prerequisites: ATE 110 or permission 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.
60 Contact Hours

ATE 200 PRELIMINARY WORKING DRAWINGS DEVELOPMENT (N)
6 Credit Hours
Prerequisites: ATE 115 and math elective or permission 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.
120 Contact Hours

ATE 205 STRUCTURAL MATERIALS (N)
3 Credit Hours
Prerequisites: ATE 200 or permission 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.
60 Contact Hours

ATE 206 STRUCTURAL FRAMING SYSTEMS (N)
3 Credit Hours
Prerequisites: ATE 205 or permission 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.
60 Contact Hours

ATE 207 HEATING, VENTILATING, AIR CONDITIONING SYSTEMS (HVAC) (N)
3 Credit Hours
Prerequisites: ATE 206 or permission of instructor.
Using the assigned text as a guide, the student should be able to draw basic heating, ventilating, and air conditioning systems.
60 Contact Hours

ATE 208 ELECTRICAL SYSTEMS (N)
3 Credit Hours
Prerequisites: ATE 207 or permission of instructor.
Code requirements applied, the student should be able to circuit the distribution system of a commercial building.
60 Contact Hours

ATE 209 PLUMBING SYSTEMS (N)
3 Credit Hours
Prerequisites: ATE 208 or permission of instructor.
Assigned a building plan, the student should be able to layout waste and water lines according to codes.
60 Contact Hours

ATE 210 BUILDING SPECIALTIES (N)
Credit Hours
Prerequisites: ATE 209 or permission of instructor.
Examples provided, the student should be able to produce detailed drawings of assigned special equipment in buildings.
20 Contact Hours

ATE 215 PLANNED BUILDING GROUPS (N)
Credit Hours
Prerequisites: ATE 210 or permission of instructor.
Conforming to regulatory agencies' requirements, the student should be able to produce a detailed site plan of an assigned building group.
60 Contact Hours

Automotive Mechanics

Upon satisfactory completion of the module, the student should be able to:

AUM 100 PRINCIPLES OF ENGINE OPERATION, BASIC ELECTRICITY, AND IGNITION SYSTEMS (N,R)
3 Credit Hours
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.
120 Contact Hours

AUM 106 CHARGING AND STARTING SYSTEMS (N,R)
3 Credit Hours
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.
60 Contact Hours

AUM 107 FUEL SYSTEMS (N,R)
3 Credit Hours
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.
60 Contact Hours

AUM 110 ELECTRONICS TESTING AND EMISSION CONTROLS (N,R)
3 Credit Hours
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.
60 Contact Hours

AUM 115 DRUM BRAKE SYSTEMS (N,R)
3 Credit Hours
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.
60 Contact Hours

AUM 116 DISC BRAKE SYSTEMS (N,R)
3 Credit Hours
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.
60 Contact Hours

AUM 117 WHEEL ALIGNMENT (N,R)
3 Credit Hours
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.
60 Contact Hours

AUM 118 WHEEL BALANCE AND SUSPENSION (N,R)
3 Credit Hours
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.
60 Contact Hours

AUM 119 MANUAL AND POWER STEERING GEARS (N,R)
3 Credit Hours
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.
60 Contact Hours

AUM 120 AUTO MECHANICS FOR MECHANICAL TRADES (R)
3 Credit Hours
Orientation to the field of auto mechanics. General principles, initial techniques and skill development, and how auto mechanics relates to the various trades.
60 Contact Hours

AUM 205 CLUTCHES AND MANUAL TRANSMISSION (N,R)
3 Credit Hours
Describe the construction and operation of the clutch assembly. The student should demonstrate the ability to remove, inspect and correctly replace a clutch assembly. This knowledge will be evidenced through demonstration and unit tests.
60 Contact Hours

AUM 206 DRIVE LINES AND DIFFERENTIALS (N,R)
3 Credit Hours
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 as 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.
60 Contact Hours

AUM 207 AUTOMATIC TRANSMISSION, THEORY AND MAINTENANCE (N,R)
3 Credit Hours
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.
60 Contact Hours

AUM 208 AUTOMATIC TRANSMISSION REBUILD (N,R)
6 Credit Hours
Perform the checks, tests and adjustments associated with 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 twice the flat rate time.
120 Contact Hours

AUM 210 AUTOMOTIVE DIESEL SERVICE (R)
3 Credit Hours
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.
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.
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.
60 Contact Hours

AUM 217 AIR CONDITIONING, THEORY, SERVICE AND SAFETY (N,R)
3 Credit Hours
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.
60 Contact Hours

AUM 218 GENERAL SERVICE REPAIR (N,R)
3 Credit Hours
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.
60 Contact Hours

AUM 219 CUSTOMER SERVICE (N,R)
7 Credit Hours
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.
140 Contact Hours

AUM 225 ADVANCED AUTOMATIC TRANSMISSION (R)
7 Credit Hours
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.
140 Contact Hours

AUM 226 ADVANCED EMISSION CONTROL SERVICE (N,R)
7 Credit Hours
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.
140 Contact Hours

AUM 297 COOPERATIVE EDUCATION (N,R)
1-3 Credit Hours (Arranged)
This is a program of study developed with coordinated college course work and industry work experience.
105 Contact Hours

AUM 299 INDEPENDENT STUDY (N,R)
1-3 Credit Hours (Arranged)
Prerequisite: Permission of instructor.
Individual study on a special project which is related to the Automotive Mechanics Program and is outside the program offering.
90 Contact Hours

Audio Visual Technology

AVT 100 INTRODUCTION TO EDUCATIONAL MEDIA (R)
2 Credit Hours
This is an introductory course covering the aims, goals, and philosophy of the educational media field. Field trips will be made to observe educational media systems.
30 Contact Hours

AVT 105 AUDIOVISUAL EQUIPMENT UTILIZATION (R)
3 Credit Hours
This course covers 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.
53 Contact Hours

AVT 108 INTRODUCTION TO AUDIOVISUAL PHOTOGRAPHY (R)
5 Credit Hours
This course introduces 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.
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.
83 Contact Hours

AVT 113 SCRIPT VISUALIZATION (R)
1 Credit Hour
A workshop focusing on the visualization of written scripts for media presentations. This class will present techniques and concepts used in selecting and sequencing appropriate pictures to support and reinforce a written script. Storyboard techniqes and script formats will also be covered.
15 Contact Hours

AVT 115 BASIC VIDEO PRODUCTION (R)
1 Credit Hour
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 Contact Hours

AVT 118 DARKROOM PROCEDURES (R)
1 Credit Hour
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.
18 Contact Hours

AVT 125 AV PROJECTION EQUIPMENT MAINTENANCE (R)
1-5 Credit Hours (Variable)
Basics of electricity, safety, optical systems, troubleshooting, and basic maintenance of projectors will be covered.
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.
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.
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.
90 Contact Hours

AVT 211 AV TELEVISION PRODUCTION I (R)
6 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.
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.
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.
68 Contact Hours

AVT 219 SLIDE DUPLICATION PROCEDURES (R)
1 Credit Hour
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.
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.
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 Contact Hours

AVT 231 AUDIOVISUAL DESIGN I (R)
4 Credit Hours
Prerequisite: Permission of instructor.
A seminar/workshop on several aspects of media pr duction. The student will be assigned to a "client" ar will budget, plan and produce a media presentation to th client's specifications. A weekly meeting of all studen will cover the problems students are experiencin
83 Contact Hours

AVT 232 AUDIOVISUAL DESIGN II (R)
4 Credit Hours
Prerequisite: Permission of instructor
A continuation of AVT 231.
83 Contact Hours

AVT 297 COOPERATIVE EDUCATION/ PRACTICAL EXPERIENCE (R)
2-6 Credit Hours
Prerequisite: Permission of instructor
The student is assigned to a local audiovisual departmer and is given duties related to the Audiovisual Technolog degree program. This practical training program is supe vised and coordinated by a College instructor. The stu dent works with an experienced pre-selected supervisc on the job who will grade his performance according t College standards. Regular school class attendance i required by all students participating in this course.
90-270 Contact Hours

AVT 299 INDEPENDENT STUDY (R)
2-6 Credit Hours
Prerequisite: Permission of instructor
This course provides opportunity for a student to stud intensively a topic of interest under the direction of faculty member.
45-135 Contact Hours

Building and Grounds Management

BGM 100 INSTITUTIONAL BUDGETING (A)
2 Credit Hours
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
Introduces department organization, job allocations, classifications and descriptions. Work scheduling, controls and simplication are also presented.
45 Contact Hours

BGM 110 MAINTENANCE EQUIPMENT FOR BUILDING AND GROUNDS (A)
3 Credit Hours
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
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
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
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
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 EDUCATION (A)
6 Credit Hours
Prerequisite: Permission 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.
270 Contact Hours

BGM 299 INDEPENDENT STUDY (A)
3 Credit Hours
Prerequisite: Permission 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
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.
75 Contact Hours

BIO 105 MICROBIOLOGY FOR DENTAL ASSISTANTS (N)
1 Credit Hour
A mini-course emphasizing microorganisms of importance to dentistry and methods of controlling bacteria.
30 Contact Hours

BIO 106 FUNDAMENTAL CONCEPTS OF BIOLOGY (A,N,R,AEC)
3 Credit Hours
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 Contact Hours

BIO 107 VD AND YOU (A,N,R)
1 Credit Hour
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 Contact Hours

BIO 108 INTRODUCTION TO HUMAN BIOLOGY (A,N,R)
3 Credit Hours
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).
45 Contact Hours

BIO 109 HUMAN BIOLOGY FOR HEALTH SCIENCES (A)

4 Credit Hours

Prerequisite: Permission 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.

75 Contact Hours

BIO 110 DIMENSIONS OF HUMAN LIVING (A,N,R)

3 Credit Hours

This course is designed to assist individuals in developing a better understanding of themselves, their values, needs, capabilities and relationships with others. Topics include emotional health, coping with stress, drugs, alcohol, tobacco, sexuality, love, marriage, parenthood, middle age, aging, death, nutrition, physical fitness, community health and human ecology.

45 Contact Hours

BIO 111 HUMAN ANATOMY AND PHYSIOLOGY I (A,N,R,AEC)

4 Credit Hours

Prerequisite: None although BIO 108 may be helpful.

The first of 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.

90 Contact Hours

BIO 112 HUMAN ANATOMY AND PHYSIOLOGY II (A,N,R,AEC)

4 Credit Hours

Prerequisite: BIO 111

A continuation of BIO 111 and includes the physiology of reproduction with emphasis on human development, the urinary, cardiovascular, lymphatic, respiratory, and digestive systems. Consideration is given to maintenance of homeostasis by integrated activity of all systems.

90 Contact Hours

BIO 115 INTRODUCTION TO MICROBIOLOGY (A,N,R)

3 Credit Hours

Prerequisite: BIO 112 or permission 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.

75 Contact Hours

BIO 121 INTRODUCTION TO THE ENVIRONMENT (A,N,R,AEC)

3 Credit Hours

Contains a study of the basic principles of ecology, popu lation dynamics, human impact upon natural ecosystem and possible solutions to the problems posed to and b man in his environment.

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 ecologica principles and comparing natural and urban ecosystems Both physical aspects (geology, energy, water and a treatment, transportation and housing) and biologica aspects (vegetation and animal characteristics) of urba areas will be included.

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 suc cessions in the front range with an introduction to plar and animal identification and quantitative ecology. Thi course may also consist of field studies in ecosystem outside Colorado; for example, desert ecology, shor ecology, involving a week or more study during semester break.

60 Contact Hours

BIO 127 MICROBES AND MAN (N,R)

2 Credit Hours

Designed as an introductory microbiology course fo nonscience majors, discussion will emphasize th biological activities and influences of major microorga nisms on humans and their environment.

30 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 th environmental, evolutionary and behavioral points c view. Topics will include ecology, population dynamics adaptation, microscopy and biological diversity and indiv dual and social behaviors.

90 Contact Hours

IO 132 GENERAL COLLEGE BIOLOGY II (A,N,R,AEC)
Credit Hours
rerequisite: None although BIO 106 may be helpful.
eals with living systems from a functional and develop-ental point of view. Topics include cellular function and tructure, major biochemical concepts, reproduction, eredity and evolutionary mechanisms.
0 Contact Hours

IO 137 HUMAN SEXUALITY (A,N,R,AEC)
Credit Hours
eals with various physiological aspects of human repro-uction as an introductory course. Topics include over-opulation, human sexual response (physical), preg-ancy, birth, contraception and venereal diseases.
5 Contact Hours

IO 147 HUMAN HEREDITY (A,N,R,AEC)
Credit Hours
onsiders the biological aspects of race and human eredity and includes genetic foundations, ranges of uman variability, racial mixtures and the usefulness of iological factors in understanding racial differences.
5 Contact Hours

IO 157 DRUGS: THEIR USE AND ABUSE (A,N,R,AEC)
Credit Hours
Examines some of the drugs commonly used in society oday and details the effects of these drugs on the uman body. Drugs covered include alcohols, ampheta-nines, barbiturates, opiates, hallucinogens, marijuana, icotine and street drugs.
5 Contact Hours

IO 167 BIOLOGY OF WOMEN (A,N,R)
Credit Hours
eals with all biological aspects of a woman's life from he basis of female roles through anatomy and hysiology, sexuality, childbearing, basic health and diet, nd finally to suggested solutions to improve function and ffectiveness of the female.
5 Contact Hours

IO 177 INTRODUCTION TO BIOLOGY OF THE SEA (A,N,R)
Credit Hours
tudies the various aspects of life in the oceans, ncluding some of the different kinds of marine rganisms, marine habitats, resources, pollution and the mportance of the seas to human continued existence.
5 Contact Hours

IO 205 GENERAL MICROBIOLOGY (N,R)
Credit Hours
Prerequisite: BIO 111, 131 or 132 or permission of instructor
survey of major microbial groups with special emphasis n bacteria. Emphasis is on basic principles and tech-niques of microbiology as well as identification, structure, unction and role in nature and disease.
0 Contact Hours

BIO 206 ENVIRONMENTAL BIOLOGY (A,N,R,AEC)
4 Credit Hours
Prerequisite: BIO 131 or BIO 132 or permission 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.
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 Contact Hours

BIO 216 CELL BIOLOGY (A,N,R)
4 Credit Hours
Prerequisite: BIO 132 or permission 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.
90 Contact Hours

BIO 226 DEVELOPMENTAL BIOLOGY (A,N,R)
4 Credit Hours
Prerequisite: BIO 112 or BIO 132 or permission of instructor
Introduces the changes occurring during organismic development and differentiation. Gene action, biochemical regulation and environmental factors will be stressed.
90 Contact Hours

BIO 246 GENETICS (A,N,R)
3 Credit Hours
Prerequisite: BIO 112 or BIO 132 or permission 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 Contact Hours

BIO 299 INDEPENDENT STUDY (A,N,R)
1-3 Credit Hours
Prerequisite: Permission of instructor
Please refer to the general description of Independent Study in this catalog.
45-135 Contact Hours

Business Machine Technology

BMT 105 IBM TYPEBAR TYPEWRITER (A)
9 Credit Hours
Provides the student with proper classroom/lab safety and operational procedures; electrical and mechanical principles, troubleshooting, adjustments, and specific location of all internal mechanisms of the IBM C and D Models.
180 Contact Hours

BMT 107 ADLER AND ROYAL "970" TYPEWRITER (A)
6 Credit Hours
Provides the student with electrical and mechanical principles, troubleshooting, adjustments, and specific location of all internal mechanisms of the Adler and Royal "970," and relevant working knowledge of metric system of distance measurement.
120 Contact Hours

BMT 110 IBM "SELECTRIC" TYPEWRITER (A)
9 Credit Hours
This course will provide the student with the operation of element machine, electrical and troubleshooting, adjustments, and specific locations of all internal mechanisms of the IBM "Selectric."
180 Contact Hours

BMT 116 BASIC ELECTRONIC THEORY (A)
6 Credit Hours
This course will provide the student with basic electronic theory and familiarizes the student with field effect transistors as it pertains to the office machine field.
120 Contact Hours

Bricklaying

BRI 100 SAFETY, HISTORY, GLOSSARY, USE OF MASON TOOLS AND RELATED EQUIPMENT USED BY A BRICKMASON (R)
6 Credit Hours
In this class, the student is taught safety practices, history of masonry in Colorado, terms used by the brickmason, proper use and care of bricklaying tools, operation of the masonry saw, mortar mixer and scaffolds.
120 Contact Hours

BRI 105 SAFETY CODES USED IN MASONRY, STATE OF COLORADO (R)
1 Credit Hour
This class presents the Safety Codes used in the masonry field as required by the State of Colorado.
20 Contact Hours

BRI 106 SPREADING MORTAR, LAYING TO LINE, USE OF MASONRY TOOLS, BASIC LEADS, MASONRY WALLS (R)
6 Credit Hours
Prerequisites: BRI 100
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.
120 Contact Hours

BRI 107 BONDED BRICK LEADS, JOINTS, STRIKING AND BRUSHING (R)
2 Credit Hours
Prerequisites: BRI 106
This class presents layout and construction of bonded brickleads, different mortar joints, and methods used in tooling masonry walls.
40 Contact Hours

BRI 109 MASONRY PIERS, PILASTERS, SOLID AND HOLLOW MASONRY, BONDS, FLOORS, AND MASONARY WALLS (R)
6 Credit Hours
Prerequisites: BRI 107
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.
120 Contact Hours

BRI 110 LAYING TO THE LINE, HEADERS, SOLDIERS, SAILORS, ROLLOCK, MITER CORNERS (R)
6 Credit Hours
Prerequisites: BRI 110
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.
120 Contact Hours

BRI 115 THROUGH-THE-WALL UNITS, LAYING TO THE LINE (R)
2 Credit Hours
Prerequisites: BRI 110
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.
40 Contact Hours

BRI 116 MASONRY CODES (R)
1 Credit Hour
Prerequisites: BRI 115
Codes for cover brick veneer, solid masonry, fireplaces, and block laying with inspections on job sites, will be presented in this class.
20 Contact Hours

BRI 120 BRICKLAYING FOR CONSTRUCTION TRADES (R)
3 Credit Hours
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.
60 Contact Hours

BRI 126 SOLAR WALLS AND FIREPLACES (R)
3 Credit Hours
Prerequisites: BRI 120
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 heatilators and heat exchangers.
60 Contact Hours

BRI 200 MORTAR TYPES, MASONRY CEMENT AND FIREPLACE BASICS (R)
6 Credit Hours
Prerequisites: BRI 116
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 in constructing fireplaces are presented.
120 Contact Hours

BRI 206 FIREPLACE CONSTRUCTION AND HEATILATOR CONSTRUCTION (R)
3 Credit Hours
Prerequisites: BRI 200
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 a heatilator fireplace using precast fireboxes.
120 Contact Hours

BRI 207 CHIMNEY CONSTRUCTION, FLASHING AND COOPING (R)
2 Credit Hours
Prerequisites: BRI 206
The layout and construction of masonry stack and the installation of flashing are presented in this class.
40 Contact Hours

BRI 208 MASONRY MATERIALS (R)
1 Credit Hour
Masonry materials for all types of masonry will be covered in this class.
20 Contact Hours

BRI 210 FIREPLACE CODES, FLAGSTONE AND MOSS ROCK (R)
3 Credit Hours
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.
120 Contact Hours

BRI 211 FIREPLACE TECHNOLOGY FOR SOLAR (R)
0 Credit Hours
This course will cover fireplace codes and construction of new energy fireplaces.
00 Contact Hours

BRI 215 REINFORCED MASONRY AND OVER-THE-WALL CONSTRUCTION (R)
5 Credit Hours
Prerequisites: BRI 116
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.
100 Contact Hours

BRI 217 MASON TENDER (R)
3 Credit Hours
Scaffolding construction, stocking scaffolding and type of masonry units are taught in this class.
60 Contact Hours

BRI 218 BUILDING CODES (R)
1 Credit Hour
This class will cover the Building Codes in the masonry field.
20 Contact Hours

BRI 297 COOPERATIVE EDUCATION (R)
2-9 Credit Hours
This program of study is developed with coordinated college course work and industry work experience.
60-270 Contact Hours

BRI 299 INDEPENDENT STUDY (R)
3 Credit Hours
Prerequisites: Permission of instructor
The student participates in individual study on a special project which is related to the Bricklaying Program outside of the program offerings.
90 Contact Hours

Business

BUS 095 BUSINESS LABORATORY (A,N,R)
1 Credit Hour
Prerequisites: Enrollment in any accounting, secretarial or business course.
Provides facilities, equipment, and supplementary materials for students to use in completing assignments. Assistance is given on a one-to-one basis. Grading is on a pass/fail basis.
Variable Contact Hours

BUS 110 MATHEMATICS OF BUSINESS/PERSONAL FINANCE (A,N,R,AEC)
3 Credit Hours
This course emphasizes the development and understanding of concepts regarding various business applications. Students learn the mathematical problem solving in the areas of merchandising, financial accounting, and general business and personal finance.
45 Contact Hours

BUS 110A MATHEMATICS OF BUSINESS/PERSONAL FINANCE (A,N,R,AEC)
1 Credit Hour
Primarily directed to the needs of students in accounting/business programs. In this module the student is rebuilding math fundamentals with business applications.
15 Contact Hours

BUS 110B MATHEMATICS OF BUSINESS/PERSONAL FINANCE (A,R,N,AEC)
1 Credit Hour
Prerequisite: BUS 110A
Primarily directed to the needs of students in accounting/business programs. In this module the student learns mathematical problem-solving techniques with percentages and applications to business and merchandising.
15 Contact Hours

BUS 110C MATHEMATICS OF BUSINESS/PERSONAL FINANCE (A,N,R,AEC)
1 Credit Hour
Prerequisite: BUS 110B
Primarily directed to the needs of students in accounting/business programs. In this module the student works primarily with math of accounting and the measurement of business performance.
15 Contact Hours

BUS 111 MATH ANALYSIS FOR BUSINESS (A)
3 Credit Hours
Prerequisites: Permission of instructor.
This course is a review of basic numbers and expressions, exponents, quadratic equations, and graphs. Annuities, amortization, interest and depreciation are covered as applications.
45 Contact Hours

BUS 115 BUSINESS MATHEMATICS BY MACHINES (A,N,R,AEC)
4 Credit Hours
Prerequisites: MAT 106 or permission of instructor.
This course is designed to provide basic understanding of business mathematics and to develop the skills necessary to operate calculating machines efficiently.
60 Contact Hours

BUS 134 BUSINESS ENGLISH (A)
3 Credit Hours
Prerequisites: Concurrent enrollment in CPB 101
Concentrates on developing basic grammar, business vocabulary, punctuation and business style (capitalization, abbreviations, and numbers). Also teaches principles and understanding of the theory, style, and patterns of basic business letters. Oral reporting and visual methods are studies as well as writing techniques. Special attention is placed on writing letters of application and resumes.
45 Contact Hours

BUS 136 BUSINESS COMMUNICATION APPLICATIONS (A,N,R,AEC)
3 Credit Hours
Prerequisite: Course in Communication or English
Applied business technique of communications that require problem solving and understanding of human relations in business situations. Students compose and evaluate various types of correspondence; prepare and analyze business reports, memos, etc. Emphasis will be placed on good writing principles. Course also develops proper dictation techniques.
45 Contact Hours

BUS 137 LISTENING SKILLS (A,N,R,AEC)
2 Credit Hours
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.
30 Contact Hours

BUS 296 OFFICE OCCUPATIONS SEMINAR (A,N,R)
1 Credit Hour
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 Contact Hours

BUS 297 COOPERATIVE EDUCATION (A,N,R,AEC)
1-6 Credit Hours
Prerequisites: Permission of instructor and approval of the division director.
In some program areas, cooperative education 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 — 270 Contact Hours

BUS 299 INDEPENDENT STUDY (A,N,R,AEC)
1 to 5 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.
15-75 Contact Hours

Carpentry

CAR 100 ORIENTATION, SAFETY AND CONSTRUCTION MATERIALS (R)
3 Credit Hours
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.
60 Contact Hours

CAR 105 HAND AND POWER TOOLS (R)
3 Credit Hours
Prerequisites: Permission of Instructor
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.
60 Contact Hours

CAR 106 PLANS, SPECIFICATIONS AND UNIFORM BUILDING CODE (R)
3 Credit Hours
Prerequisites: Permission of Instructor
The terminology associated with blueprint reading, drawing symbols, measure scaled drawings, and the Uniform Building Code are taught.
60 Contact Hours

CAR 107 SITE LAYOUT AND CONCRETE FORMS FOR FOOTING (R)
3 Credit Hours
Prerequisites: Permission of Instructor
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.
60 Contact Hours

CAR 108 CONCRETE FORMS FOR FOUNDATION WALLS (R)
3 Credit Hours
Prerequisites: Permission of Instructor
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.
60 Contact Hours

CAR 109 SILL AND FLOOR FRAMING (R)
4 Credit Hours
Prerequisites: Permission of Instructor
Floor and sill framing terminology, framing members, styles of framing, and installation of floor joist and subflooring are taught.
80 Contact Hours

CAR 110 WALL AND PARTITION FRAMING (R)
5 Credit Hours
Prerequisites: Permission of Instructor
Wall and partition members, framing terminology, layout, cutting and assembly are taught.
100 Contact Hours

CAR 115 STAIR AND ROOF FRAMING (R)
6 Credit Hours
Prerequisites: Permission of Instructor
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.
120 Contact Hours

CAR 120 CARPENTRY FOR CONSTRUCTION TRADES (R)
3 Credit Hours
Structural design, rafter layout, wall and floor layout, basic framing and solar panel installation are taught.
60 Contact Hours

CAR 200 EXTERIOR TRIM (R)
3 Credit Hours
Prerequisites: Permission of Instructor
Study materials that are used in exterior trim, and proper installation of soffet, facia, freeze, brick mold and other exterior trim items are taught.
60 Contact Hours

CAR 205 EXTERIOR DOORS AND WINDOWS (R)
4 Credit Hours
Prerequisites: Permission of Instructor
The study of existing and new exterior doors and windows on the market and proper installation of same are taught.
80 Contact Hours

CAR 206 EXTERIOR WALL COVERINGS (R)
4 Credit Hours
Prerequisites: Permission of Instructor
This course covers terminology associated with exterior wall coverings, common and new materials used and proper installation of same.
80 Contact Hours

CAR 207 ROOF COVERINGS (R)
4 Credit Hours
Prerequisites: Permission of Instructor
The study of roofing materials, estimating of materials and proper application of various roofing systems are taught in this class.
80 Contact Hours

CAR 208 INTERIOR TRIM WORK (R)
4 Credit Hours
Prerequisities: Permission of Instructor
The study of interior trim materials, paneling, base, moldings, casings, door, shelves, and proper installation of doors and all trim items are taught.
80 Contact Hours

CAR 209 CABINETMAKING (R)
4 Credit Hours
Prerequisites: Permission of Instructor
Components of a cabinet, types of materials used, constructions, installation of hardware and proper use of power tools are taught.
80 Contact Hours

CAR 210 PLASTIC LAMINATES (R)
3 Credit Hours
Prerequisites: Permission of Instructor
This course covers terminology and types of plastic laminates available, proper handling, installation of laminated materials and installation of prefabricated counter tops.
60 Contact Hours

CAR 215 CABINET INSTALLATION (R)
4 Credit Hours
Prerequisites: Permission of Instructor
The proper installation of factory-built cabinets and a study of various cabinets on the market/ arrangement are taught.
80 Contact Hours

CAR 216 DRYWALL CONSTRUCTION AND INTERIOR TRIM (R)
6 Credit Hours
Prerequisites: Permission of Instructor
The terminology associated with drywall construction, estimating the materials needed, concealing joints and fasteners and interior trim are taught in this class.
80 Contact Hours

CAR 217 ADVANCED CABINETMAKING (R)
8 Credit Hours
Prerequisites: Permission of Instructor
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.
160 Contact Hours

CAR 219 ADVANCED STAIR AND ROOF FRAMING (R)
8 Credit Hours
Prerequisites: Permission of Instructor
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.
160 Contact Hours

CAR 297 COOPERATIVE EDUCATION (R)
2-9 Credit Hours
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.
60-270 Contact Hours

CAR 299 INDEPENDENT STUDY (R)
3 Credit Hours
Prerequisites: Permission of Instructor
The student participates in individual study on a special project which is related to the Carpentry Program outside of the program offerings.
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.
53 Contact Hours

CET 105 CONTRACTS AND SPECIFICATIONS (R)
3 Credit Hours
The Law of Contracts and its application to construction and engineering activities. The drafting of specifications for labor, material, processes, and construction performance.
45 Contact Hours

CET 107 CIVIL ENGINEERING TECHNOLOGY LABORATORY (R)
3 Credit Hours
Investigation of concrete, soils and bituminous materials, classification, strength and deformation characteristics, sampling and testing these materials for engineering purposes.
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.
53 Contact Hours

CET 297 COOPERATIVE EDUCATION (R)
2-9 Credit Hours
A program of study developed with coordinated college course work and industry work experience.
60-375 Contact Hours

CET 299 INDEPENDENT STUDY (R)
3 Credit Hours
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 I (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.
90 Contact Hours

CHE 102 FUNDAMENTALS OF CHEMISTRY II (A,N,R)
4 Credit Hours
Prerequisites: CHE 101
A continuation of CHE 101
90 Contact Hours

CHE 107 CHEMISTRY FOR THE CONSUMER (R)
1 Credit Hour
A study of basic chemical principles in a series of topics of consumer interest, including food and additives, health care products, fuels and energy alternatives.
15 Contact Hours

CHE 109 PREPARATION FOR COLLEGE CHEMISTRY (A)
4 Credit Hours
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.
75 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.
105 Contact Hours

CHE 112 GENERAL COLLEGE CHEMISTRY II (A,N,R)
5 Credit Hours
Prerequisite: CHE 111
A continuation of CHE 111.
105 Contact Hours

CHE 121 CHEMISTRY FOR A CHANGING SOCIETY I (R)
1-3 Credit Hours
A study of basic chemical principles in a series of topics of consumer interest, including: food and additives, fabrics, plastics, metals, cleaning agents, and health care products. No previous chemistry background is required. (3 hours per week, no laboratory.)
15-45 Contact Hours

CHE 122 CHEMISTRY FOR A CHANGING SOCIETY II (R)
1-3 Credit Hours
A study of basic chemical principles in a series of environmental topics, including: composition of the atmosphere and natural waters, and their pollution; recycling; thermodynamics, fuels, and energy alternatives. No previous chemistry background is required. (3 hours per week, no laboratory.)
15-45 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, premedical and predental 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.
135 Contact Hours

CHE 202 ORGANIC CHEMISTRY II (A,N,R)
5 Credit Hours
Prerequisites: CHE 201
Continuation of CHE 201.
135 Contact Hours

CHE 299 INDEPENDENT STUDY (A,N,R)
1-3 Credit Hours
Prerequisite: Permission of instructor
Please refer to the general description of Independent Study in this catalog.
45-135 Contact Hours

Commercial Art

COA 100 LETTERING/TYPOGRAPHIC DESIGN AND CAREER SURVEY (A)

5 Credit Hours

Should be taken with COA 106 Descriptive Drawing and Rendering

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. Career possibilities will be explored with tours, guest speakers and printed materials.

100 Contact Hours

COA 105 ADVERTISING TYPOGRAPHY AND LAYOUT (A)

5 Credit Hours

Prerequisite: COA 100: Should be taken with COA 107 Rendering for Advertising Design

Exercises in creating letter forms, indicating photography and illustration and basic copy fitting methods. Stress given to creative solutions of graphic advertising skills. (Entry level skills: tenth grade reading level and visualizing aptitude.)

100 Contact Hours

COA 106 DESCRIPTIVE DRAWING AND RENDERING (A)

5 Credit Hours

Should be taken with COA 100 Lettering/Typographic Design and Career Survey

Introduction to methods of accurate drawing. Included are exercises in measuring, ruling, scaling, shading in ink and precise drawing of objects in two and three dimensions. Ink line renderings will be covered. (Entry level skills: good eye-hand coordination.)

100 Contact Hours

COA 107 RENDERING FOR ADVERTISING DESIGN (A)

5 Credit Hours

Prerequisite: COA 106: Should be taken with COA 105 Advertising Typography and Layout

Introduction to product rendering in pen and ink, cut films, wash and opaque water media for print reproduction. Both free hand and mechanical methods are explored.

100 Contact Hours

COA 200 ADVERTISING DESIGN AND PORTFOLIO PREPARATION (A)

5 Credit Hours

Prerequisites: COA 100, 105, 106 and 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 concept through to final presentations. Student projects will be prepared for portfolio presentation and consideration will be given to the final portfolio in practice and theory. (Entry level skills: minimum tenth grade reading skills.)

100 Contact Hours

COA 205 CREATIVE GRAPHIC DESIGN AND PORTFOLIO PREPARATION (A)

5 Credit Hours

Prerequisites: 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.

100 Contact Hours

COA 206 ART PREPARATION FOR REPRODUCTION (A)

5 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.)

100 Contact Hours

COA 207 ADVANCED ART PREPARATION FOR REPRODUCTION (A)

5 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.)

100 Contact Hours

COA 208 ILLUSTRATION (A)

5 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.)

100 Contact Hours

COA 209 THREE DIMENSIONAL ADVERTISING (A)

5 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 wants training in designing three dimensional advertising. The student will design point of purchase displays, corporate or trade show exhibits and be introduced to visual merchandising. (Entry level skills: Knowledge of layout and basic design.)

100 Contact Hours

Communications

COM 100 COMMUNICATION AND STRESS MANAGEMENT FOR HEALTH OCCUPATIONS (N,AEC)
3 Credit Hours
Communication theory and practice, oral and written, with emphasis on stress situations in health occupations.
45 Contact Hours

COM 109 BARRIOLOGY COMMUNICATIONS (A)
3 Credit Hours
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,R,AEC)
3 Credit Hours
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,N,R)
3 Credit Hours
Develops skills in communication especially speaking, writing, and listening. Focus on instruction giving, discussion and teamwork, interviewing skills, writing resumes, critical reading skills, and vocabulary development. Practical application to career fields.
45 Contact Hours

COM 121 INTERPERSONAL COMMUNICATION (A,R,AEC)
3 Credit Hours
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 130 TOPICS IN COMMUNICATION (A,N,R)
3 Credit Hours
Prerequisites: Reading level of 10th grade or above and level 4 on assessment.
This course is designed to sharpen competence in reading, writing, speaking, and listening as applied to the needs of students in career programs as well as in general and transfer studies.
45 Contact Hours

COM 131 INTRODUCTION TO SEMANTICS (A,R,AEC)
3 Credit Hours
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 INTRODUCTION TO SIGN LANGUAGE (A,N,R,AEC)
3 Credit Hours
A beginning course in the use of the basic signs and finger spelling used by the deaf.
45 Contact Hours

COM 142 ADVANCED SIGN LANGUAGE (A,N,R,AEC)
3 Credit Hours
Prerequisite: COM 141
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,R)
3 Credit Hours
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,R)
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,R,AEC)
3 Credit Hours
Prerequisite: COM 111 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,R,AEC)
3 Credit Hours
Prerequisite: COM 111 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,R,AEC)
3 Credit Hours
Prerequisite: COM 111 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,R,AEC)
3 Credit Hours
Prerequisite: COM 111 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,R,AEC)
3 Credit Hours
Prerequisite: COM 111 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,R)
3 Credit Hours
Prerequisite: COM 111 or permission of instructor
Investigates the impact of print, movies, radio, and television on a consumer and develops skills of evaluative thinking relating to these media. Offered as need and interest arise.
45 Contact Hours

COM 257 THEMES AND GENRES IN FILM (A,R)
3 Credit Hours
Prerequisite: COM 111 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,R,AEC)
3 Credit Hours
Prerequisite: COM 111 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: Permission 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)
3 Credit Hours
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.
45 Contact Hours

CPA 102 CHIROPRACTIC MODALITIES II (A)
3 Credit Hours
Prerequisites: CPA 101
A continuation of CPA 101.
45 Contact Hours

Computer Programming for Business

CPB 095 COMPUTER PROGRAMMING LAB (A,N,R,AEC)
1 Credit Hour (Per programming course per semester)
Co-requisite: 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 Credit basis for each programming course taken during a semester.

CPB 100 INTRODUCTION TO COMPUTERS (A,N,R,AEC)
4 Credit Hours
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.
60 Contact Hours

CPB 101 PRINCIPLES OF INFORMATION SYSTEMS (A)
3 Credit Hours
An introduction to business data processing including computer hardware, computer programming, system analysis and design, data processing management, management science, management information systems, block diagramming, flowcharting, and decision logic tables and the computer in society. "BASIC" programming exercises are used to acquaint students with the programming language.
45 Contact Hours

CPB 103 DATA ENTRY SYSTEMS (A)
5 Credit Hours
Prerequisites: CPB 101, ACC 103, BUS 134, CSC 221 or permission of instructor
Introduces the student to the basic concepts of data entry systems, while building accuracy and speed in operating data entry devices. Provides real job applications, hands-on instructions in computer laboratory using forms and verifying programs of input, output and network operations.
75 Contact Hours

CPB 104 FLOWCHARTING AND STRUCTURED DESIGN (A,N,R,AEC)
3 Credit Hours
Co-requisite: CPB 100 Introduction to Computers, CPB 101 Principles of Info System (A)
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 Contact Hours

CPB 105 ASSEMBLER LANGUAGE (A,N)
3 Credit Hours
Prerequisites: CPB 100 Introduction to Computers, CPB 101 Principles of Info Systems (A), 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 Contact Hours

CPB 106 COBOL (A,N,R,AEC)
4 Credit Hours
Prerequisite: CPB 104 Flowcharting and Structured Design
CPB 100 Introduction to Computers
CPB 101 Principles of Info Systems (A)
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 Contact Hours

CPB 108 BASIC (A,N,R,AEC)
3 Credit Hours
Prerequisite: CPB 104 Flowcharting and Structured Design
CPB 100 Introduction to Computers
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 Contact Hours

CPB 206 ADVANCED COBOL (A,N,R)
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 Contact Hours

CPB 207 PL/1 (N)
3 Credit Hours
Prerequisites: CPB 100 Introduction to Computers
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 Contact Hours

CPB 208 REPORT PROGRAM GENERATOR (N)
3 Credit Hours
Prerequisite: CPB 100 Introduction to Computers
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 Contact Hours

CPB 209 FORTRAN (N)
3 Credit Hours
Prerequisites: CPB 100 Introduction to Computers
CPB 104 Flowcharting and Structured 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 Contact Hours

CPB 215 OPERATING SYSTEMS AND JCL (A,N)
3 Credit Hours
Prerequisite: CPB 100 Introduction to Computers
CPB 101 Principles of Information Systems (A)
and at least one course in 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 Contact Hours

CPB 220 SYSTEMS ANALYSIS AND DESIGN (A,N)
5 Credit Hours
Prerequisites: CPB 101 Principles of Information Systems 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, file design, file organization, various charting techniques, system processing and controls, system presentation techniques, system audits and controls, project management, and implementation and evaluation.
75 Contact Hours

Criminal Justice

CRJ 110 INTRODUCTION TO CRIMINAL JUSTICE (R,AEC)
4 Credit Hours
An introduction to the components and procedures followed in the criminal justice system. Required of all criminal justice majors.
60 Contact Hours

CRJ 115 CRIMINAL LAW (R,AEC)
3 Credit Hours
An examination of the development, terms and concepts embodied in criminal law.
45 Contact Hours

CRJ 116 CONSTITUTIONAL LAW (R,AEC)
3 Credit Hours
Provides an overview of constitutional considerations affecting the criminal justice enterprise. Landmark Supreme Court cases will be examined in detail.
45 Contact Hours

CRJ 117 CIVIL LAW (R,AEC)
3 Credit Hours
The concepts of torts is developed as it may effect the criminal justice practitioner. Personal liability while acting in an official capacity is explored.
45 Contact Hours

CRJ 118 RULES OF EVIDENCE (R,AEC)
3 Credit Hours
Different types of evidence and legal requirements for admission in court are presented. Court decisions regarding proper use and introduction are examined in detail.
45 Contact Hours

CRJ 119 THE JUVENILE IN THE CRIMINAL JUSTICE SYSTEM (R,AEC)
3 Credit Hours
A course designed to prepare criminal justice practitioners for the complexity of laws and procedures involved in dealing with Children's Code is extensively examined.
45 Contact Hours

CRJ 120 CORRECTIONS (R,AEC)
3 Credit Hours
An examination of the corrections components of the development of corrections and special programs. Treatment approaches and problems associated with certain offenses are presented.
45 Contact Hours

CRJ 125 INTRODUCTION TO INDUSTRIAL SECURITY (R,AEC)
3 Credit Hours
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.
45 Contact Hours

CRJ 126 PATROL PROCEDURES (R,AEC)
4 Credit Hours
The daily duties of a patrol officer are presented as well as techniques and tactics involved in conducting a patrol.
75 Contact Hours

CRJ 127 PROBATION, PARDON AND PAROLE (R)
3 Credit Hours
Probation as a judicial process, parole as an executive function and the use of pardons are examined and reviewed.
53 Contact Hours

CRJ 128 CORRECTIONAL SERVICES IN THE COMMUNITY (R)
3 Credit Hours
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.
53 Contact Hours

CRJ 129 THE COURT SYSTEM (R,AEC)
3 Credit Hours
An examination of the U.S. court system at all levels. Emphasis is placed on procedures and jurisdictions of various courts.
45 Contact Hours

CRJ 135 POLICE ARMAMENT (R)
4 Credit Hours
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.
75 Contact Hours

CRJ 136 PUBLIC SERVICE DISPATCH PROCEDURES (R)
3 Credit Hours
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.
53 Contact Hours

CRJ 137 POLICE PHOTOGRAPHY (R)
4 Credit Hours
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.
75 Contact Hours

CRJ 139 TERRORISM (R)
3 Credit Hours
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 Contact Hours

CRJ 146 CURRENT POLICE PRACTICES (R)
1-3 Credit Hours
Discussion, role playing and other techniques to illustrate and offer possible solutions to problems found by police officers.
15-68 Contact Hours

CRJ 149 CRIMINAL JUSTICE RECORDS AND REPORTS (R)
3 Credit Hours
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 Contact Hours

CRJ 155 PHYSICAL SECURITY (R)
3 Credit Hours
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.
53 Contact Hours

CRJ 156 LOSS PREVENTION (R)
3 Credit Hours
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.
53 Contact Hours

CRJ 201 INTRODUCTION TO INVESTIGATION (R)
4 Credit Hours
Preliminary investigative techniques to include crime scene preservation, interview of witnesses and collection of evidence are covered.
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.
75 Contact Hours

CRJ 205 INTERVIEW, INTERROGATION AND CONFESSION (R,AEC)
3 Credit Hours
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 Contact Hours

CRJ 206 ORGANIZED CRIME: CONCEPTS AND CONTROL (R,AEC)
3 Credit Hours
An examination of the known characteristics of organized crime is presented, along with some considerations appropriate for decrease or elimination.
45 Contact Hours

CRJ 207 POLICE ADMINISTRATION (R,AEC)
3 Credit Hours
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 Contact Hours

CRJ 208 CRIMINAL JUSTICE PERSONNEL ADMINISTRATION (R,AEC)
3 Credit Hours
The personnel function of a police administrator is examined. Recruitment, training pay, retirement, benefit plans and collective bargaining will be presented.
45 Contact Hours

CRJ 209 POLICE SUPERVISION (R,AEC)
3 Credit Hours
Line and mid-level supervision will be examined. Principles of management will be explored and modified as necessary to fit criminal justice situation.
45 Contact Hours

CRJ 210 COMMUNITY RELATIONS (R,AEC)
3 Credit Hours
Presentation of the role of the individual officer in achieving and maintaining public support. Public information programs and relationships with complainants is discussed.
45 Contact Hours

CRJ 215 COMMUNITY CRIME PREVENTION (R,AEC)
3 Credit Hours
An examination of alternatives to existing reactive police practices. Through examination of such concepts as citizen involvement, comprehensive prevention, planning and environmental crime deterrance, working models will be developed.
45 Contact Hours

CRJ 216 RIGHTS AND RESPONSIBILITIES IN PUBLIC SAFETY MANAGEMENT (R,AEC)
3 Credit Hours
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 Contact Hours

CRJ 217 NARCOTICS AND DRUGS (R)
3 Credit Hours
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.
53 Contact Hours

CRJ 220 TRAFFIC ENFORCEMENT (R,AEC)
3 Credit Hours
Includes definition of the traffic problem, patrol procedures, accident investigation, traffic direction and other aspects of the traffic control function of a police department.
53 Contact Hours

CRJ 225 BREATH EXAMINER SPECIALIST (R,AEC)
4 Credit Hours
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.
75 Contact Hours

CRJ 226 CHILD ABUSE — ETIOLOGY AND RESPONSE (R)
3 Credit Hours
A multi-disciplinary examination including legal, emotional, 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 resources. Designed for criminal justice personnel as well as others whose professions may include contact with children.
45 Contact Hours

CRJ 227 EMERGENCY TECHNIQUES FOR POLICE OFFICERS (R,AEC)
3 Credit Hours
Presentation of medical skills often needed by police officers including first aid and emergency childbirth.
45 Contact Hours

CRJ 235 HAZARDOUS POLICE TACTICS (R)
4 Credit Hours
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.
68 Contact Hours

CRJ 236 FRAUD INVESTIGATION (R)
3 Credit Hours
Detection, investigation, and prosecution of fraud forgery, deceptive practices, computer crime, confidence games and other scams.
53 Contact Hours

CRJ 237 ACCIDENT INVESTIGATION (R)
3 Credit Hours
Principles of automobile accident investigation to include vector analysis to determine speed, skid mark measurement to determine reaction time and reporting procedures.
53 Contact Hours

CRJ 238 SELF DEFENSE FOR POLICE (R)
3 Credit Hours
Techniques of prisoner handling, crowd control and personnel protection. A pragmatic approach to options short of deadly physical force.
45 Contact Hours

CRJ 297 COOPERATIVE EDUCATION PRACTICAL TRAINING (R,AEC)
1-4 Credit Hours
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
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 Operations

CRM 111 FINANCIAL INSTITUTIONS (A,AEC)
2 Credit Hours
A study of the functions and roles of various financial institutions as they interact with the commercial, consumer and economic environment.
30 Contact Hours

CRM 112 CREDIT FUNDAMENTALS (A,AEC)
3 Credit Hours
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 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 Contact Hours

Computer Science

CSC 105 COMPUTERS AND YOU (A,R,AEC)
3 Credit Hours
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.
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.
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 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.
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.
90 Contact Hours

CSC 200 INTRODUCTION TO COMPUTER SCIENCE (A,R,AEC)
3 Credit Hours
Prerequisites: CSC 112 or CSC 150 or CSC 155
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 Contact Hours

CSC 210 PROGRAMMING IN ASSEMBLER LANGUAGE (A,R)
4 Credit Hours
Prerequisites: CSC 112 or CSC 150 or CSC 155
An introduction to assembly level programming for simple problems using the MACRO-11 Assembler on the PDP-11/34A.
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 processor unit, and finally the components that form a complete computer system.
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 will also be covered.
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 single user system for micro-processors to a complex multi-user system on a multipurpose computer system.
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, floating point mathematical packages, interpreters and compilers. The remaining two thirds of the course will be dedicated to applications of computers in the real world.
45 Contact Hours

CSC 221 INTRODUCTION TO COMPUTER OPERATION (A,R)
1-3 Credit Hours
Prerequisites: CSC 111 and permission of the Computer Center Coordinator
A 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.
45-135 Contact Hours

CSC 222 COMPUTER OPERATIONS (A,R)
1-3 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 11-34/A computer system and how they may be used to customize the operating system to satisfy specific needs.
45-135 Contact Hours

CSC 299 INDEPENDENT STUDY (A,R,AEC)
1-3 Credit Hours
Prerequisite: Permission of instructor
Please refer to the general description of Independent Study in this catalog.
45-135 Contact Hours

Dental Assisting

DEA 100 ORIENTATION TO DENTAL ASSISTING (N)
2 Credit Hours
An overview of dentistry with emphasis on the role of the dental assistant on the dental health team.
30 Contact Hours

DEA 105 INTRODUCTION TO DENTAL OPERATORY PROCEDURES (N)
3 Credit Hours
An introduction to the responsibilities of the chairside dental assistant including care of operatory equipment, instrument identification, sterilization and patient handling. Preventive and four-handed dentistry are introduced.
45 Contact Hours

DEA 106 DENTAL MATERIALS (N)
3 Credit Hours
Chemical properties and uses of dental materials and solutions. Manipulation of materials included.
38 Contact Hours

DEA 107 DENTAL SCIENCE (N)
4 Credit Hours
Prerequisite: BIO 108 or 110, DEA 100
An introduction to microbiology and the study of the anatomy and physiology of the head and neck.
60 Contact Hours

DEA 108 DENTAL CHAIRSIDE PROCEDURES (N)
3 Credit Hours
Prerequisites: DEA 105, 110, 111
The identification and use of dental instruments in specialty practice. Pharmacologic agents common to dental practice are also included.
45 Contact Hours

DEA 110 DENTAL OFFICE PROCEDURES (N)
3 Credit Hours
Prerequisite: DEA 100
Corequisite: DEA 111
Appointment control; basic bookkeeping procedure including payroll, taxes, insurance records, recall and inventory. Also includes considerations of common emergencies.
45 Contact Hours

DEA 111 CLINIC I(N)
2 Credit Hours
The application of patient management principles, sterilization and preparation of instrument trays, and introductory general practice assisting. The practice of various exposure techniques of intra oral radiograph is included.
45 Contact Hours

DEA 112 CLINIC II (N)
2 Credit Hours
Prerequisite: DEA 111
Further experience in chairside assisting in general dentistry. A continuation of front desk duties and radiography.
45 Contact Hours

DEA 121 DENTAL RADIOLOGY I (N)
2 Credit Hours
Prerequisite: DEA 106
Corequisite: DEA 111
Instruction and practice in making intra oral x-ray exposures. Safety measures for patient and operator are stressed.
38 Contact Hours

DEA 122 DENTAL RADIOLOGY II (N)
2 Credit Hours
Prerequisite: DEA 121, 107
Corequisite: DEA 112
Continuation of DEA 121 including advanced radiographic techniques.
30 Contact Hours

DEA 125 DENTAL LABORATORY PROCEDURES (N)
4 Credit Hours
A continuation of DEA 106 and the addition of the construction of orthodontic space maintainers, temporary crowns and bridges and impressions.
68 Contact Hours

DEA 126 CLINICAL PRACTICUM (N)
5 Credit Hours
Clinical practice in general and specialty offices and clinics.
225 Contact Hours

Dietetic Technology

DIT 100 DIETETICS ORIENTATION (N)

1 Credit Hour
An introduction and orientation to the field of dietetic supportive personnel. Course activities include speaker presentations and self-concept development activities.
15 Contact Hours

DIT 102 WEIGHT REDUCTION (N)
2 Credit Hours
For those individuals who desire guidance on weight loss following good nutrition principles, exercise and establishing life-long eating patterns.
30 Contact Hours

DIT 104 FOOD CONSUMERISM (N)
2 Credit Hours
Exploring and practicing various activities in food consumerism such as nutrition, planning, purchasing, storing, energy use, and recycling.
30 Contact Hours

DIT 105 INTRO. TO FOOD SERVICE (N)

3 Credit Hours
A 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.
60 Contact Hours

DIT 106 NUTRITIONAL ECOLOGY OF MAN (N)
3 Credit Hours
If you are interested in how the environment affects your nutritional requirements, this course is for you.
45 Contact Hours

DIT 107 APPLIED DIETETIC TERMINOLOGY (N)
2 Credit Hours
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 Contact Hours

DIT 108 NUTRITION FOR HEALTH (N)

3 Credit Hours
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 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.
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.
68 Contact Hours

DIT 115 NUTRITION (N)
1 Credit Hour
Basic elements of nutrition as required for nursing.
15 Contact Hours

DIT 120 PRE CLINICAL (N)
4 Credit Hours
Exploration of dietetic field for student with limited background. Observations at clinical facilities.
105 Contact Hours

DIT 121 CLINICAL EXPERIENCE (N)
4-12 Credit Hours
Prerequisites: DIT 100, DIT 108, concurrent DIT 110 or permission of instructor.
Special needs groups in the community are considered from the viewpoint of the nutritionist working with them.
150-450 Contact Hours

DIT 135 QUANTITY FOOD PURCHASING (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 Contact Hours

DIT 150 INFANT NUTRITION (N)
1 Credit Hour
Nutritional considerations in the development of the healthy infant toddler, birth to 30 months will be considered.
15 Contact Hours

DIT 155 BASIC NUTRITION (N)
2 Credit Hours
Required for Early Childhood Education and Management, and Dental Assisting. A survey of basic nutrition of general interest. Open to all students.
30 Contact Hours

DIT 212 NUTRITIONAL CARE SEMINAR (N)
3 Credit Hours
Prerequisites: DIT 107, DIT 110, BIO 108 or 111.
A case study application of normal diet modifications to therapeutic nutrition.
45 Contact Hours

DIT 215 PERSONNEL, SUPERVISION (N)
3 Credit Hours
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 Contact Hours

DIT 220 MANAGEMENT BY MENU (N)
3 Credit Hours
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 Contact Hours

DIT 221 FOOD AND DRUG INTERACTIONS (N)
1 Credit Hour
Drugs in common use, both prescription and over-the-counter, are considered in relation to the side effects. Nutritional means of overcoming these side effects are studied.
15 Contact Hours

DIT 240 FOOD MANAGEMENT (N)
3 Credit Hours
Layout, purchasing of food supplies and equipment specifically for health care food service.
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 Contact Hours

DIT 256 SPECIFICS OF FOOD MANAGEMENT (N)
3 Credit Hours
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 in the better methods of accomplishing their task.
45 Contact Hours

DIT 260 DIETETIC REVIEW AND UPDATE (N)
3 Credit Hours
This course is designed for the dietetic technician graduate or advanced student who wishes to keep abreast of continuous changes in the field.
45 Contact Hours

DIT 297 CLINICAL WORK EXPERIENCE (N)
2 Credit Hours
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.
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
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 of special tools.
60 Contact Hours

DPE 105 FOUR-CYCLE ENGINE OVERHAUL (R)
6 Credit Hours
Prerequisites: DPE 100
An introduction of the fundamentals of four-cycle engines 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.
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.
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-lines and universal joints. They are also taught theory of designs, gears and gear ratios; disassembly, inspection, and replacement of parts and reassembly of same.
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.
120 Contact Hours

DPE 200 DIFFERENTIALS (R)
3 Credit Hours
Prerequisites: DPE 100 or permission of 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.
60 Contact Hours

DPE 201 CHASSIS COMPONENTS AND SUSPENSION SYSTEMS (R)
6 Credit Hours
Prerequisites: DPE 100 or permission of instructor.
The student is taught the purpose, types, principle parts, care and maintenance, removal and installation of the same.
120 Contact Hours

DPE 202 STEERING SYSTEMS (R)
6 Credit Hours
Prerequisites: DPE 100 or permission of instructor.
The student is taught theory of operation, types and methods used, troubleshooting, repair and adjustment procedures.
120 Contact Hours

DPE 205 BRAKE SYSTEMS (AIR HYDRAULIC) (R)
3 Credit Hours
Prerequisites: DPE 100 or permission of instructor.
Terminology, components, types of systems, principles of operation, disassembly, rebuilding and assembly of various systems are taught.
60 Contact Hours

DPE 208 ELECTRICAL TROUBLESHOOTING (R)
3 Credit Hours
Prerequisites: DPE 100 or permission of 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.
60 Contact Hours

DPE 210 PRACTICAL SHOP EXPERIENCE (R)
9 Credit Hours
Prerequisites: DPE 100 or permission of 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.
180 Contact Hours

DPE 211 INTRODUCTION TO ENGINE AND FUEL SYSTEM DESIGN RELATIONSHIPS (R)
1 Credit Hour
This class studies engine design, timing, and principles of injection and factors directly relating to fuel injection.
20 Contact Hours

DPE 215 ADVANCED ENGINE STUDY — CATERPILLAR (R)
3 Credit Hours
Prerequisites: DPE 211 or permission of instructor.
This class is the study and tune-up of Caterpillar engines, dealing with the systems and subassemblies unique to the manufacturer's design.
60 Contact Hours

DPE 216 ADVANCED ENGINE STUDY — CUMMINS (R)
3 Credit Hours
Prerequisites: DPE 211 or permission of instructor.
This class is the study and tune-up of Cummins engines, dealing with the systems and subassemblies unique to the manufacturer's design.
60 Contact Hours

DPE 217 ADVANCED ENGINE STUDY — DETROIT DIESEL (R)
4 Credit Hours
Prerequisites: DPE 211 or permission of 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.
80 Contact Hours

DPE 218 ADVANCED ENGINE STUDY — ALLIS CHALMERS (R)
3 Credit Hours
Prerequisites: DPE 211 or permission of 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.
60 Contact Hours

DPE 219 ADVANCED FUEL SYSTEMS — CUMMINS (R)
3 Credit Hours
Prerequisites: DPE 211 or permission of instructor.
Cummins fuel pumps and injectors, theory, disassembly, reassembly and calibration are taught.
60 Contact Hours

DPE 220 ADVANCED FUEL SYSTEMS — ROOSAMASTER (R)
3 Credit Hours
Prerequisites: DPE 211 or permission of instructor.
Roosamaster pump and pencil nozzles theory, disassembly, reassembly and calibration are taught.
60 Contact Hours

DPE 225 ADVANCED FUEL SYSTEMS — CATERPILLAR (R)
3 Credit Hours
Prerequisites: DPE 211 or permission of instructor.
Caterpillar pumps, nozzles and precombustion chambers, theory, disassembly, reassembly and calibration are taught.
60 Contact Hours

DPE 226 ADVANCED FUEL SYSTEMS — AMERICAN BOSCH (R)
3 Credit Hours
Prerequisites: DPE 211 or permission of instructor.
American Bosch pumps and nozzles, theory, disassembly, reassembly and calibration are taught.
60 Contact Hours

DPE 227 ADVANCED FUEL SYSTEMS — ROBERT BOSCH (R)
2 Credit Hours
Prerequisites: DPE 211 or permission of instructor.
Robert Bosch pumps, theory, disassembly, reassembly and calibration are taught.
40 Contact Hours

DPE 228 ADVANCED FUEL SYSTEMS — DETROIT (R)
3 Credit Hours
Prerequisites: DPE 211 or permission of instructor.
Detroit Diesel pump and injectors, theory, disassembly and reassembly, testing and calibrating injectors on stand are taught.
60 Contact Hours

DPE 229 ADVANCED TROUBLESHOOTING AND TUNE-UP (R)
7 Credit Hours
Prerequisites: DPE 211 or permission of instructor.
Advanced troubleshooting techniques used in industry on diesel-powered equipment are taught.
140 Contact Hours

DPE 235 AIR-CONDITIONING SYSTEMS (R)
3 Credit Hours
Prerequisites: DPE 211 or permission of instructor.
Automotive air-conditioning used in the diesel industry, and truck refrigeration systems are taught.
60 Contact Hours

Drama

DRA 111 INTRODUCTION TO THEATRE ARTS (A,N,R,AEC)
3 Credit Hours
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 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
Trains students to select, cut, cast, produce and direct small scale production. Offered normally Fall term.
45 Contact Hours

DRA 211 SURVEY OF THEATRE I (A,N,R,AEC)
3 Credit Hours
Surveys great plays, writers, performers, and critiques through play reading, acting and production.
45 Contact Hours

DRA 212 SURVEY OF THEATRE II (A,N,R,AEC)
3 Credit Hours
Continues survey of drama.
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: Permission 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
Principles of interpreting blueprints and trade specifications common to the residential building trades.
68 Contact Hours

DPR 127 BUILDING INSPECTION FOR CONSTRUCTION TRADES (R)
4 Credit Hours
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
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
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
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
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 115
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 and perspectives.
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: DRI 206
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 207
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 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
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) an introduction to inking.
120 Contact Hours

DRI 106 BASIC DESCRIPTIVE GEOMETRY AND AUXILIARY VIEW PROJECTION (A,R)
3 Credit Hours
Prerequisites: DRI 105
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) Intersecting lines; lines, and planes, and planes.
60 Contact Hours

DRI 107 DRAFTING AND DIMENSIONING PRACTICES (A,R)
6 Credit Hours
Prerequisite: DRI 106
This module expands the principles of orthographic projection, isometric drawing, sections and conventions and introduces basic dimensioning practices for cost and machined parts and the drawing, specifying and applications of threaded fasteners. Cumulative, aligned, fractional and undirectional, coordinate, decimal dimensioning systems will be used.
120 Contact Hours

DRI 109 INTERSECTIONS AND DEVELOPMENTS (A,R)
3 Credit Hours
Prerequisites: DRI 107
Introduces the principles of flat and curved surface intersections and their resulting developments in terms of thin 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 109
Introduces assembly and detail drawings by the use of a 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 110
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)
6 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.
120 Contact Hours

DRI 205 INTRODUCTION TO ARCHITECTURAL-STRUCTURAL PLANS AND DETAILS (A,R)
6 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.
120 Contact Hours

DRI 206 INDUSTRIAL PIPING AND UTILITY CONSIDERATIONS (A,R)
3 Credit Hours
Prerequisites: DRI 205
Requires industry-related drawings based on details for industrial piping and/or electrical, hydraulic or pneumatic systems; plumbing, heating and air conditioning considerations.
60 Contact Hours

DRI 207 LARGE MECHANICAL EQUIPMENT (A,R)
6 Credit Hours
Prerequisites: DRI 206
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.
120 Contact Hours

DRI 208 MATERIAL HANDLING AND CONVEYING METHODS (A,R)
6 Credit Hours
Prerequisites: DRI 207
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 EDUCATION (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 115
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, plot 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: DRM 116
Studies the following areas and materials as used in base map construction: land and geological symbols, pressure sensitive transfer type and pattern screens, independent and dependent survey, planimetric measurements, route curves, easements and spirals, survey plats, topographics sheets, aerial photos and survey notes.
180 Contact Hours

DRM 205 ADVANCED MAP CONSTRUCTION TECHNIQUES (A,R)
5 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 (solar)

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
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 Contact Hours

EAS 111 PHYSICAL GEOLOGY (R)

4 Credit Hours
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.
90 Contact Hours

EAS 112 HISTORICAL GEOLOGY (R)

4 Credit Hours
Prerequisites: EAS 111 or permission 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 a framework of shifting crustal plates. Laboratories include studies of Rocky Mountain geology through field investigation, field trips, and museum tours. EAS 111 and EAS 112 constitute a one-year course in geology.
90 Contact Hours

EAS 115 MINERAL RESOURCES AND THE FUTURE (R)

1 Credit Hour
Coming 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.
15 Contact Hours

EAS 116 ENVIRONMENTAL GEOLOGY OF COLORADO (R)

4 Credit Hours
Prerequisites: EAS 111
A study of the environment from a geologic perspective. Many examples taken from Colorado and elsewhere will 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.
90 Contact Hours

EAS 117 GEOLOGY OF THE NATIONAL PARKS

1 Credit Hour
A study of the national parks grouped according to their geologic origin. Illustrated lectures.
15 Contact Hours

EAS 118 MINERAL AND ROCK IDENTIFICATION (R)

1 Credit Hour
Training and practice in identifying and classifying minerals and rocks using physical properties. For beginners and those who have completed physical geology.
15 Contact Hours

EAS 119 THE GREAT ICE AGE (R)

1 Credit Hour
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.
15 Contact Hours

EAS 120 WEATHER AT ITS WORST (R)

1 Credit Hour
This course will analyze the causes of tornadoes, hurricanes, thunderstorms, and drought.
15 Contact Hours

EAS 125 CONTINENTAL DRIFT (R)

1 Credit Hour
The history of continental movement and its relationship to earthquakes and volcanoes and the history of life.
15 Contact Hours

EAS 126 VOLCANOES AND EARTHQUAKES (R)

1 Credit Hour
Great natural disasters: their causes, results, prediction, and impact on society.
15 Contact Hours

EAS 128 WEATHER AND CLIMATE (R)

4 Credit Hours
The behavior of the atmosphere and its influence on man's activities. Topics include weather observation, solar radiation, pressure and wind, precipitation, the climates of the earth, and theories of climate change.
90 Contact Hours

EAS 130 AVALANCHE STUDY (R)
2 Credit Hours
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.
60 Contact Hours

EAS 201 INTRODUCTION TO MINERALOGY (R)
4 Credit Hours
Prerequisites: EAS 111 or permission 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 or minerals, crystallography, origin and occurrence of mineral deposits. Includes mineral identification with spectographic analyzer and simple chemical techniques as well as hand specimen identification. Field trips will be taken to local mineral collecting areas.
90 Contact Hours

EAS 202 INTRODUCTION TO PETROLOGY (R)
4 Credit Hours
Prerequisites: EAS 111 or permission 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.
90 Contact Hours

EAS 203 MAP AND AIRPHOTO INTERPRETATION (R)
3 Credit Hours
Prerequisites: EAS 111
An introduction to our environment using airphotos, maps, and remote sensing data. Emphasis is on the development of skills and reasoning ability required for the interpretation of geologic features. Aspects of forestry, agriculture, land use, engineering, urban planning, and industrial problems, are reviewed. Laboratory work includes practical use of the stereoscope, simple photogrammetric instruments, maps, photomaps, and air photographs.
60 Contact Hours

EAS 205 GEOLOGY OF COLORADO (R)
2 Credit Hours
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.
60 Contact Hours

EAS 206 GEOLOGY FIELD EXPERIENCES (R)
2 Credit Hours
Prerequisite: Permission 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.
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.
90 Contact Hours

EAS 208 ECONOMIC GEOLOGY (R)
3 Credit Hours
Prerequisites: EAS 111
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 Contact Hours

EAS 299 INDEPENDENT STUDY (R)
1-3 Credit Hours
Prerequisite: Permission 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
Through the observation and recording of children and educators in various settings, students will develop an understanding of the field of early childhood.
45 Contact Hours

ECE 101 CHILD STUDY AND DEVELOPMENT (A,N,R,AEC)
6 Credit Hours
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 Contact Hours

ECE 102 APPLIED CHILD GROWTH AND DEVELOPMENT (A,N,R,AEC)

3 Credit Hours

Provides fundamental knowledge of the child's physical, intellectual, social, emotional growth and development individually and in groups.

45 Contact Hours

ECE 105 SUPERVISED LAB EXPERIENCE AND SEMINAR (A,N,R)

8 Credit Hours

Prerequisites: ECE 100 and 101 or permission of instructor.

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.

165 Contact Hours

ECE 109 HOME CENTER COORDINATION (A,N,R)

1-3 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.

15-45 Contact Hours

ECE 110 SUPERVISED EDUCATIONAL INTERNSHIP AND SEMINAR (A,N,R,AEC)

6 Credit Hours

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.

120 Contact Hours

ECE 115 CLASSROOM CURRICULUM DEVELOPMENT (A,N,R,AEC)

5 Credit Hours

Develops competencies in planning and designing learning experiences and settings for children to meet their individual and group needs.

75 Contact Hours

ECE 116 CREATIVE ACTIVITIES (A,N,R,AEC)

3 Credit Hours

Explores the design of appropriate experiences and creative activities for developing the young child's mastery of his or her world.

45 Contact Hours

ECE 117 SPECIAL STUDIES — MOTOR DEVELOPMENT AND EXPLORATION (A,N,R,AEC)

3 Credit Hours

Provides a participatory approach to motor developme for the young child. Content will include sensory-mot experiences, movement education, use of diagnosti tools, movement teaching strategies and classroom util zation.

45 Contact Hours

ECE 118 COMMUNITY RESOURCES FOR PARENTS I (A,N,R,AEC)

2 Credit Hours

This is a seminar for parents and others interested i young children. Child growth and development, parentin skills and personal concerns will be explored.

30 Contact Hours

ECE 119 COMMUNITY RESOURCES FOR PARENTS II (A,N,R,AEC)

2 Credit Hours

This course considers and explores issues relevant t parents and others interested in parenting and youn children, with a focus on identifying resources in the community.

30 Contact Hours

ECE 125 CLASSROOM APPLICATION TO LANGUAGE AND COGNITION (A,N,R,AEC)

3 Credit Hours

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 Contact Hours

ECE 126 CLASSROOM APPLICATION TO MUSIC AND MOVEMENT (A,N,R,AEC)

3 Credit Hours

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 Contact Hours

ECE 127 CLASSROOM APPLICATION TO SCIENCE AND MATH (A,N,R,AEC)

3 Credit Hours

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 Contact Hours

ECE 130 DEVELOPMENTAL ISSUES AND ACTIVITIES (A,N,R,AEC)

3 Credit Hours

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.

45 Contact Hours

ECE 132 SUPERVISED LAB EXPERIENCE: INFANT /TODDLER (A,N)

8 Credit Hours
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.
165 Contact Hours

ECE 133 SUPERVISED EDUCATION INTERNSHIP AND SEMINAR (A,N,R,AEC)

8 Credit Hours
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.
165 Contact Hours

ECE 134 HOME-CENTER COORDINATION II (A,N,R,AEC)

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.
45 Contact Hours

ECE 136 INFANT / TODDLER SEMINAR FOR PARENTS I (A,N,R,AEC)

2 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).
30 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.)
30 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 Contact Hours

ECE 150 NUTRITION FOR YOUNG CHILDREN (A,N,R,AEC)

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 Contact Hours

ECE 165 INITIAL ASSESSMENT FOR CHILD DEVELOPMENT ASSOCIATE (N)

3 Credit Hours
Prerequisite: Permission of instructor
Initial assessment is designed to establish a base line of performance and knowledge in six competency areas to enable prescriptive training.
45 Contact Hours

ECE 175 CREATIVE LEARNING ENVIRONMENTS (N)

6 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.
98 Contact Hours

ECE 176 PHYSICAL AND INTELLECTUAL DEVELOPMENT OF THE CHILD (N)

6 Credit Hours
Introduction to methods and theories of teaching the young child while developing skills in the physical, cognitive, creative and language areas.
98 Contact Hours

ECE 177 SELF CONCEPT AND INDIVIDUAL STRENGTH OF THE CHILD (N)

6 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.
98 Contact Hours

ECE 178 CHILDREN AND ADULTS — GROUP MANAGEMENT (N)

6 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.
98 Contact Hours

ECE 179 ADMINISTRATION I HOME-CENTER/PARENT INVOLVEMENT (N)

6 Credit Hours
Techniques for bringing about optimal coordination of home and center. Child rearing practices and expectations are included in program planning.
98 Contact Hours

ECE 180 ADMINISTRATION II STAFF DEVELOPMENT (N)
6 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.
98 Contact Hours

ECE 185 CHILD ABUSE AND NEGLECT (N)
6 Credit Hours
This course will help parents, child care workers and community persons to understand and to take action in a constructive way against child neglect and abuse.
98 Contact Hours

ECE 190 FINAL ASSESSMENT FOR THE CHILD DEVELOPMENT ASSOCIATE (N)
3 Credit Hours
Final assessment is designed to establish exiting competence in six CDA competency areas for recommendation for national CDA assessment and credentialing.
38 Contact Hours

ECE 194 INTRODUCTION TO EARLY CHILDHOOD EDUCATION FOR THE DAY CARE HOME PROVIDER (A,N,R,AEC)
2 Credit Hours
Explores various aspects of meeting the needs of young children and parents in the home setting.
30 Contact Hours

ECE 195 INFANT SIMULATION (A,N,R,AEC)
3 Credit Hours
A course designed to enable students to appropriately encourage development of very young children.
53 Contact Hours

ECE 196 CLASSROOM MANAGEMENT TECHNIQUES (A,N,R,AEC)
3 Credit Hours
Explores various techniques and theories for understanding and coping with children individually and in group settings.
45 Contact Hours

ECE 197 COOPERATIVE EDUCATION (A,N,R,AEC)
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 Contact Hours

ECE 198 SPECIALIZED LEARNING ENVIRONMENTS — OUTDOORS (A,AEC)
3 Credit Hours
Explores the design of appropriate environments to maximize development of the young child in the outdoors.
45 Contact Hours

ECE 199 INDEPENDENT STUDY (A,N,R,AEC)
2-6 Credit Hours
Prerequisite: Permission of instructor or divisio director.
Provides opportunity for the early childhood student t engage in intensive study and/or research on a specifi topic under the direction of a qualified faculty member.
30-90 Contact Hours

ECE 201 WORKSHOP OF IDEAS (A,N,R,AEC)
1-3 Credit Hours
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.
15-45 Contact Hours

ECE 202 WORKSHOP OF THINGS (A,N,R,AEC)
1-3 Credit Hours
Examination of commercial and teacher-made materials related to current learning models. Teachers design and create teaching materials for their own classroom.
15-45 Contact Hours

ECE 206 CHILD STUDY AND OBSERVATION II (N,R,AEC)
3 Credit Hours
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 Contact Hours

ECE 210 SUPERVISED EDUCATION INTERNSHIP AND SEMINAR II (A,N,R,AEC)
8 Credit Hours
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.
165 Contact Hours

ECE 212 ADMINISTRATION I — WORKSHOP 3 (R)
1 Credit Hour
In this experiential workshop, techniques and procedures for promoting parent involvement are developed. Communication and group-process skills will be introduced and practiced in relation to planning effective home visits, meetings and workshops for parents and parent-teacher conferences.
15 Contact Hours

ECE 213 ADMINISTRATION I — WORKSHOP 2 (R)
1 Credit Hour
This experiential workshop focuses on staff development techniques and practices. Topics covered include: communication and group process skills; decision-making and priority-setting; and planning, presenting and evaluation in-service training workshops.
15 Contact Hours

ECE 214 ADMINISTRATION I — WORKSHOP I (R)
1 Credit Hour
In this experiential workshop students will learn and practice techniques for promoting effective communication and decision-making, and for combatting "burn-out." Discussion will focus on application of these basic group-process skills in staff development and parent involvement activities.
15 Contact Hours

ECE 215 ADMINISTRATION I PARENT INVOLVEMENT AND STAFF DEVELOPMENT (A,N,R,AEC)
3 Credit Hours
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 Contact Hours

ECE 216 CHILD CARE BUSINESS OPERATIONS (A,N,R,AEC)
3 Credit Hours
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 Contact Hours

ECE 228 CLASSROOM APPLICATIONS OF LANGUAGE AND COGNITION II (A,N,R,AEC)
3 Credit Hours
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 Contact Hours

ECE 230 CLASSROOM APPLICATIONS OF SCIENCE AND MATH II (N,R,AEC)
3 Credit Hours
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 Contact Hours

ECE 235 SPECIALIZED LEARNING ENVIRONMENTS — SPECIAL NEEDS (N,R,AEC)
3 Credit Hours
This course covers the design of appropriate materials and learning environment for children with special needs.
45 Contact Hours

ECE 297 COOPERATIVE EDUCATION I (A,N,R,AEC)
1-6 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 (1-6) will be determined by the instructor based upon student needs.
15-120 Contact Hours

ECE 299 INDEPENDENT STUDY (A,N,R,AEC)
1-6 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 (1-6) will be determined by the instructor based upon student needs.
15-90 Contact Hours

Economics

ECO 117 INTRODUCTION TO ECONOMICS (A,N,R,AEC)
3 Credit Hours
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
An indepth 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
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
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
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
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 175 GOVERNMENT AND THE U.S. ECONOMY (A,R,AEC)
3 Credit Hours
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
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
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
Focuses upon a topical approach to contemporary economic issues.
45 Contact Hours

Electronic Digital Technology

EDT 110 FUNDAMENTALS OF AC/DC CIRCUITS FOR ELECTRONICS (R)
9 Credit Hours
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.
180 Contact Hours

EDT 118 BASIC OF AC AND DC ELECTRONICS (R)
3 Credit Hours
Resistance, current, voltage, and power in AC and DC circuits. Measurements, and computations of eries and parallel circuits. Circuit analysis and troubleshooting with basic test equipment.
60 Contact Hours

EDT 120 SOLID STATE DEVICES & CIRCUITS FOR ELECTRONICS (R)
6 Credit Hours
Prerequisites: EDT 110 or permission of instructor.
Analysis and interpretation of various circuits, using solid state devices with emphasis on SCR's, Triacs, and the firing circuits and common base configurations. Introduction to digital logic soldering, and layout techniques. Emphasis will be on electronic applications.
120 Contact Hours

EDT 130 DIGITAL LOGIC DEVICES FOR ELECTRONICS (R)
9 Credit Hours
Prerequisites: EDT 120 or permission 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.
180 Contact Hours

EDT 140 OPERATIONAL AMPLIFIERS AND A TO D CONVERTERS FOR ELECTRONICS (R)
6 Credit Hours
Prerequisites: EDT 130 or permission 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.
120 Contact Hours

EDT 210 INTRODUCTION TO COMPUTERS (R)
7 Credit Hours
Prerequisites: EDT 140 or permission of instructor.
Machine language programming for maintenance; schematics, test specifications, operational procedures and circuits of a minicomputer.
140 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.
60 Contact Hours

EDT 215 MICRO-PROCESSORS PROGRAMMING (R)
3 Credit Hours
Prerequisite: EDT 214
Advance programming on Motorola 6800, Intel 8080, and Ziog Z280 computer techniques. Industrial orientated.
60 Contact Hours

EDT 219 FOCAL PROGRAMMING (SELF PACED) (R)
3 Credit Hours
Flow charting and programming using "FOCAL" to solve electronic problems.
60 Contact Hours

EDT 220 COMPUTER TROUBLESHOOTING (R)
7 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.
140 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 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 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 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 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 Contact Hours

EDT 230 INTERFACING/COMPUTER PERIPHERAL (R)
7 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.
140 Contact Hours

EDT 235 PDP-11 COMPUTER (SELF PACED) (R)
3 Credit Hours
Prerequisites: Instructor's permission.
Self paced adaptation of EDT 207.
60 Contact Hours

EDT 240 MICROPROCESSORS (R)
7 Credit Hours
Hardware and programming of microprocessors with application related to industrial systems. Practical experience in troubleshooting microprocessors.
140 Contact Hours

EDT 250 COMPUTER TERMINAL (R)
7 Credit Hours
Prerequisite: Permission of instructor.
Principles of operation and hardware of various types of terminals; ie. teletype, video, DEC writer, and TV interfacing. Introductory course in theory and application of word processing terminals.
140 Contact Hours

EDT 299 INDEPENDENT STUDY (R)
2 Credit Hours
Individual study on a special project which is related to the Electronic Program, and outside the program offerings.
40 Contact Hours

Electricity Industrial/Commercial

EIC 105 ELECTRICAL BLUEPRINT READING (R)
3 Credit Hours
This class introduces the student to blueprint reading for commercial and industrial electrical applications.
45 Contact Hours

EIC 111 SOLID STATE DEVICES FOR ELECTRICIANS I (R)
3 Credit Hours
Prerequisites: ELF 100 or permission of 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.
60 Contact Hours

EIC 112 SOLID STATE DEVICES FOR ELECTRICIANS II (R)
3 Credit Hours
Prerequisites: EIC 111 or permission of instructor.
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 contactors and starters, proximity sensors, temperature probes, liquid level sensors and opto-electric devices.
60 Contact Hours

EIC 115 ELECTRICAL PLANNING (R)
3 Credit Hours
Prerequisites: EIC 105 or permission of instructor.
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 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.
60 Contact Hours

EIC 120 ELECTRICITY FOR CONSTRUCTION TRADES (R)
3 Credit Hours
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.
60 Contact Hours

EIC 121 ELECTRICAL INSTALLATIONS I (R)
3 Credit Hours
This class teaches residential and commercial building wiring in conformance with the current National Electric Code and local codes, using non-metallic cable and electric metallic tubing. Proper use of tools and safety is emphasized.
60 Contact Hours

EIC 122 ELECTRICAL INSTALLATIONS II (R)
3 Credit Hours
Prerequisite: EIC 121 or permission of instructor.
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. Proper use of tools and safety are emphasized.
60 Contact Hours

EIC 131 NATIONAL ELECTRIC CODE I (R)
3 Credit Hours
The National Electric Code and local code requirements for electrical installation are taught in this class.
45 Contact Hours

EIC 132 NATIONAL ELECTRIC CODE II (R)
3 Credit Hours
Prerequisites: EIC 131 or permission of instructor.
This class is a continuation of EIC 131.
45 Contact Hours

EIC 141 ELECTRICITY FOR AUTOMOTIVE STUDENTS I (R)
3 Credit Hours
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. The student will learn the use of common electrical instruments and oscilloscopes for measurements.
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.
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.
60 Contact Hours

EIC 200 ELECTRICAL CALCULATIONS (R)
4 Credit Hours
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 Contact Hours

EIC 201 TRANSFORMER INSTALLATION AND THEORY (R)
3 Credit Hours
Prerequisites: ELF 100 or permission of 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.
60 Contact Hours

EIC 202 AC AND DC MACHINES, INSTALLATION AND THEORY (R)
3 Credit Hours
Prerequisites: ELF 100 or permission of instructor.
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.
60 Contact Hours

EIC 203 POLYPHASE ROTATING MACHINES AND TRANSFORMERS (R)
3 Credit Hours
Prerequisites: ELF 100 or permission of instructor.
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.
60 Contact Hours

EIC 205 BASIC ELECTRICAL HOUSE WIRING (R)
3 Credit Hours
This class is an introduction course of wiring methods, using non-metallic cable (romex) with emphasis on installation techniques.
60 Contact Hours

EIC 207 ELECTRICAL CONTROL WIRING FOR PLUMBING, HEATING & AIR-CONDITIONING (R)
3 Credit Hours
Prerequisites: ELF 100 or permission of instructor.
This class is an introduction to electrical controls for valves, limits, relays, pressure, temperature, wiring and installation techniques with emphasis on schematic and control diagrams.
60 Contact Hours

EIC 208 ADVANCED NATIONAL ELECTRICAL CODE (R)
3 Credit Hours
Prerequisites: Journeyman's license or permission of instructor.
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 Contact Hours

EIC 209 ADVANCED CODE CALCULATIONS (R)
4 Credit Hours
Prerequisites: Journeyman's license or permission of instructor
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 Contact Hours

EIC 211 INSTALLATION AND OPERATION OF DISTRIBUTION SYSTEMS I (R)
3 Credit Hours
Prerequisites: EIC 201 or permission of instructor.
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.
60 Contact Hours

EIC 212 INSTALLATION AND OPERATION OF DISTRIBUTION SYSTEMS II (R)
3 Credit Hours
Prerequisites: EIC 201 or permission of instructor.
This class teaches the installation and operation of electrical primary distribution systems, switch gear, system protection, and related metering of demand and power factor.
60 Contact Hours

EIC 215 ADVANCED ELECTRICAL INSTALLATION (R)
3 Credit Hours
Prerequisite: EIC 122 or permission of instructor.
Techniques of large commercial and industrial installation, relating to Code, safety and OSHA are taught.
60 Contact Hours

EIC 216 ADVANCED ELECTRICAL PLANNING (R)
3 Credit Hours
Prerequisite: EIC 115 or permission of instructor.
In this class, the student will learn the planning and layout of large commercial and industrial installations.
45 Contact Hours

EIC 217 ELECTRICAL ESTIMATING AND COSTING (R)
3 Credit Hours
Fundamentals of electrical estimating. Material take offs from prints. Labor hours required for various types of installations. Material loss allowances. Scheduling to insure orderly progress of work.
45 Contact Hours

EIC 218 ELECTRICAL INSTRUMENTS AND MEASUREMENTS (R)
3 Credit Hours
Prerequisite: Permission of instructor.
Proper techniques for the use of electrical instruments including oscilloscopes, potentiometers, thermo couples, and recording meters. Instrument transformers for journeyman and in-plant electricians.
60 Contact Hours

EIC 219 ELECTRICAL MACHINE AND CONTROL CIRCUITS (R)
3 Credit Hours
Prerequisite: Permission of instructor.
Characteristics of across the line and reduced voltage starters. Reversing starters. Over-current devices. Local and remote control stations.
60 Contact Hours

EIC 297 COOPERATIVE EDUCATION (R)
2-9 Credit Hours
This class is a program of study developed with coordinated college course work and industry work experience.
60- 270 Contact Hours

EIC 299 INDEPENDENT STUDY (R)
3 Credit Hours
Prerequisites: 30 hours in major and permission of instructor.
This is the individual study on a special project which is related to the Electricity Program and is outside the program offering.
90 Contact Hours

Electricity Fundamentals

ELF 100 FUNDAMENTALS OF AC / DC ELECTRICITY (R)
9 Credit Hours
Prerequisites: MAT 111 or equivalent.
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.
180 Contact Hours

ELF 105 SOLID STATE DEVICES AND CIRCUITS (R)
6 Credit Hours
Prerequisite: ELF 100 or permission of 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 transistor circuits.
120 Contact Hours

ELF 106 DIGITAL LOGIC DEVICES AND CIRCUITS (R)
9 Credit Hours
Prerequisite: ELF 105 or permission 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.
180 Contact Hours

ELF 107 OPERATIONAL AMPLIFIERS AND A TO D CONVERTERS (R)
6 Credit Hours
Prerequisite: ELF 105 or permission 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.
120 Contact Hours

Electronics Technology

ELT 100 DC FUNDAMENTALS (A,N)
3 Credit Hours
Construct and evaluate series and parallel circuits; to show the relationships of voltage, current, resistance, and power emphasizing standard safety practices.
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.
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.
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.
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.
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.
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.
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.
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.
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.
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.
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 incoding and decoding techniques.
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.
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.
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.
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.
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.
120 Contact Hours

ELT 216 INTRODUCTION TO ELECTRO-MECHANICAL 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.
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.
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 Contact Hours

ELT 297 COOPERATIVE EDUCATION (A,N)
3 Credit Hours
Coordinates college course work and industry work experience.
105 Contact Hours

ELT 299 INDEPENDENT STUDY (A,N)
3 Credit Hours
Individual study on a special project which is related to the Electronics Technology Program, and is outside the program offering.
90 Contact Hours

English

English assessment is required for new students before or during registration. Results will be used to advise students into courses in which they are prepared to succeed.

ENG 090 ENGLISH AS A SECOND LANGUAGE I (A,R,AEC)
2-5 Credit Hours
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.
1-2 Lab Hours (required per week)
30-75 Contact Hours

ENG 091 ENGLISH AS A SECOND LANGUAGE II (A,R,AEC)
2-5 Credit Hours
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.)
30-75 Contact Hours

ENG 092 ENGLISH AS A SECOND LANGUAGE III (A,R,AEC)
2-5 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.
1-2 Lab Hours (required per week)
30-75 Contact Hours

ENG 099 SOUND AND SPELLING (A,N,R,AEC)
1-3 Credit Hours
This course is designed for the student who needs a refresher course in spelling and pronunciation. It emphasizes understanding dictionary pronunciation keys, spelling rules, vocabulary, and spelling problems common to college level writing. It will provide for oral and written approaches to improve spelling ability.
14-45 Contact Hours

ENG 103 WORKSHOP IN READING, WRITING, AND SPEAKING (A)
1-3 Credit Hours
The course integrates the three basic communication areas — reading, writing, and speaking by emphasizing skills common to each area and facilitating transfer of skills from one area to another. The course surveys small group communication skills and basic research skills; the student studies logical structure and its implementation in reading, writing, and speaking. NOTE: This course may be taken for ENG or REA credit (see REA 103) and as a preparation for the General Education Core Communication course.
45 Contact Hours

ENG 105 STUDY SKILLS (A,N,R,AEC)
1-3 Credit Hours
NOTE: This course may be taken for either English or Reading Credit, depending on the students needs (see REA 105).
Particularly helpful for the student who has been away from school for several years, this course is designed for the student whose reading skills are adequate but who needs a review of methods to improve study skills. Methods used include the following: making better use of time, improving reading rate, notetaking, outlining, skimming and scanning, test taking techniques, library use, critical reading, and vocabulary building.
15-45 Contact Hours

ENG 107 LANGUAGE FUNDAMENTALS I (A,N,R,AEC)
3 Credit Hours
This course is designed for the student who needs a review of basic grammar and formal/informal use of the English language. It introduces sentence structure, organization patterns and word use. Utilizing an individual approach, it will help prepare students for higher level English courses.
45 Contact Hours

ENG 108 LANGUAGE FUNDAMENTALS II, (A,N,R,AEC)
3 Credit Hours
A quick review of grammar, in addition to a general review of basic writing skills, this course teaches sentence structure, punctuation, basic paragraph style and organization. It will help prepare students for higher level English courses.
45 Contact Hours

ENG 110 ELEMENTS OF COMPOSITION, STYLE, AND TECHNIQUE (A,N,R,AEC)
3 Credit Hours
This refresher course prepares the student to enter freshman composition and technical writing courses. The student reviews sentence structure, punctuation, effective diction, and learns organization of the basic paragraph and essay. Sentence exercises and tests are included, as well as analysis and writing of basic explanation compositions.
45 Contact Hours

ENG 111G, B&H ENGLISH COMPOSITION: ESSAY WRITING (A,N,R,AEC)
3 Credit Hours
The course begins with a brief review of sentence structure, punctuation, and basic paragraphing skills; it then teaches organization and evaluation of essay forms and strategies of style. Students write a variety of essays designed to provide appropriate writing practice in their field of specialization: (G) general studies, (B) business, and (H) health occupations. The course is required for graduation with the AA or AS degrees and provides transfer credit.
45 Contact Hours

ENG 112 ENGLISH COMPOSITION: THE COLLEGE RESEARCH PAPER (A,N,R,AEC)
3 Credit Hours
Prerequisite: ENG 111 or permission of instructor.
The second semester of expository writing continues with instruction in diction, style, logical thinking, and introduces techniques for documentation and organization of well-developed reports and research papers. Students demonstrate research techniques — uses of library and community resources — in appropriate format for one or more research papers.
45 Contact Hours

ENG 115 CREATIVE WRITING (A,N,R,AEC)
3 Credit Hours
This course explores imaginative uses of language, appreciation and creation of various forms, such as short stories, short plays, poetry, and creative nonfiction.
45 Contact hours

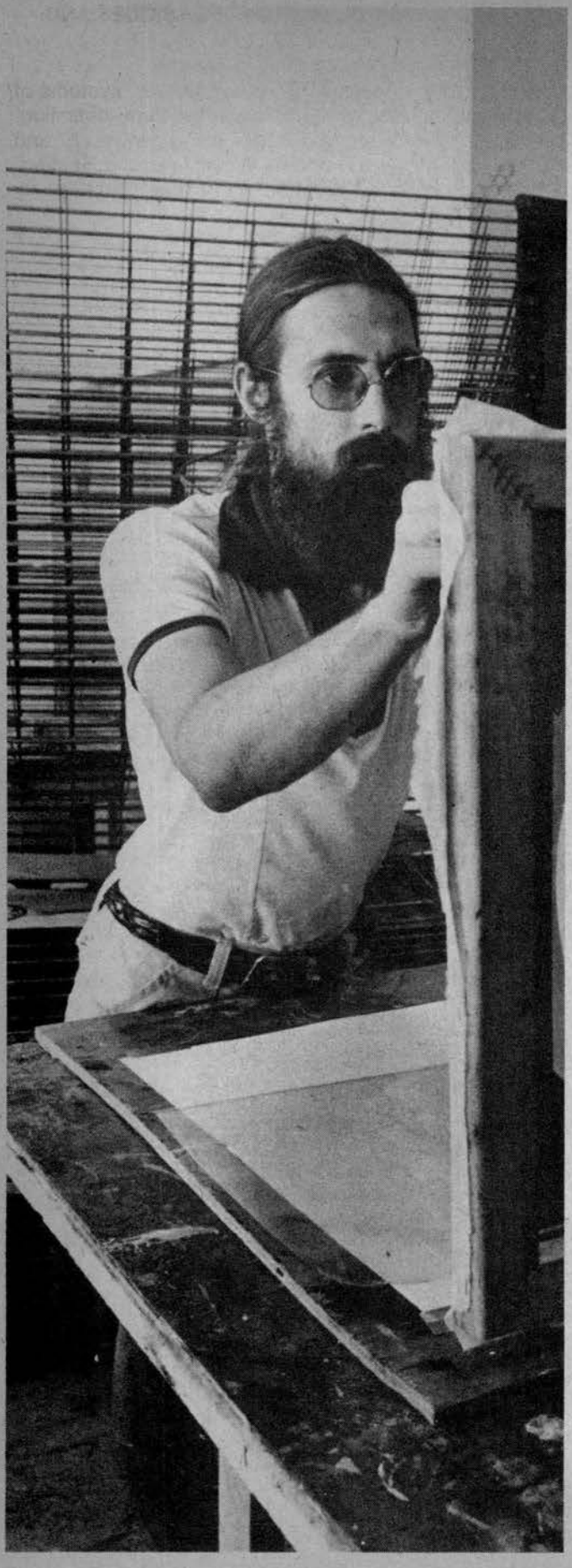
ENG 125 POETRY WRITING (A,R,AEC)
3 Credit Hours
This course teaches techniques for creating poems, including study of the language, forms and sound patterns of poetry.
45 Contact Hours

ENG 211 COMPOSITION II: ARTICLE WRITING (A,N,R,AEC)
3 Credit Hours
Prerequisite: ENG 112 or permission of instructor
The student's essay-writing ability will be further developed through emphasis on nonfiction writing for magazines.
45 Contact Hours

ENG 215 ADVANCED CREATIVE WRITING (A,N,R,AEC)
3 Credit Hours
Prerequisite: ENG 115 or permission of instructor
This course provides individualized instruction in such forms as poetry, fiction, nonfiction and script writing. It advances the student's writing abilities, emphasizing techniques for developing and controlling narrative and dramatic ideas.
45 Contact Hours

ENG 231 TECHNICAL WRITING (A,N,R,AEC)
3 Credit Hours
Prerequisite: Eng 111G or ENG 111B or permission of instructor.
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 229 INDEPENDENT STUDY (A,N,R,AEC)
1-3 Credit Hours
Prerequisite: Permission 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
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 Contact Hours

EVT 105 ENVIRONMENTAL PROBLEMS (R)
3 Credit Hours
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 Contact Hours

EVT 106 NOISE POLLUTION (R)
3 Credit Hours
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 Contact Hours

EVT 107 INTRODUCTION TO OSHA-COSH (R)
3 Credit Hours
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 Contact Hours

EVT 108 SOLID WASTE POLLUTION (R)
3 Credit Hours
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 Contact Hours

EVT 109 WATER POLLUTION (R)
3 Credit Hours
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 Contact Hours

EVT 200 ENVIRONMENTAL DECISION MAKING (R)
4 Credit Hours
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 Contact Hours

EVT 205 LAND USE AND THE QUALITY OF LIFE (R)
5 Credit Hours
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.
83 Contact Hours

EVT 206 INDUSTRIAL HYGIENE (R)
3 Credit Hours
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 Contact Hours

EVT 207 ATMOSPHERIC POLLUTION (R)
5 Credit Hours
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.
83 Contact Hours

EVT 208 POLLUTION CONTROL SYSTEMS (R)
4 Credit Hours
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 Contact Hours

EVT 209 DATA COLLECTION TECHNIQUES AND EVALUATION (R)
3 Credit Hours
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 Contact Hours

EVT 210 DATA PROCESSING FOR ENVIRONMENTAL TECH (R)
3 Credit Hours
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 Contact Hours

EVT 215 PICTORIAL DRAFTING (R)
3 Credit Hours
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 Contact Hours

EVT 216 ENVIRONMENTAL LAW (R)
3 Credit Hours
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 Contact Hours

EVT 217 MAP READING AND PHOTO INTERPRETATION (R)
3 Credit Hours
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 Contact Hours

EVT 218 PESTS AND PESTICIDES (R)
3 Credit Hours
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 Contact Hours

EVT 297 COOPERATIVE EDUCATION/PRACTICAL TRAINING (R)
1-4 Credit Hours
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 Contact Hours

EVT 299 INDEPENDENT STUDY (R)
1-4 Credit Hours
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 Contact Hours

Foreign Automotive Mechanics

FAM 100 ORIENTATION, SAFETY, BASIC ELECTRICAL AND IGNITION SYSTEMS (A)
3 Credit Hours
Introduces the automotive program, general shop safety, basic engine operations, electrical theory, conventional and solid state ignition systems and metric systems.
60 Contact Hours

FAM 105 STARTING AND CHARGING SYSTEMS (A)
3 Credit Hours
Examines operation of charging and starting systems and how to diagnose and repair the systems.
60 Contact Hours

FAM 106 CARBURETOR SERVICE (A)
3 Credit Hours
Presents the theory of operation and how to rebuild and adjust, one, two and four-barrel carburetors.
60 Contact Hours

FAM 107 OSCILLOSCOPES AND ELECTRONIC TESTING (A)
3 Credit Hours
Introduces the reading of oscilloscope patterns and use of electronic testing instruments.
60 Contact Hours

FAM 108 EMISSION CONTROL (A)
3 Credit Hours
Presents the theory of operation and the repair of emission control components.
60 Contact Hours

FAM 109 DRUM BRAKE SYSTEMS (A)
3 Credit Hours
Examines hydraulic principles, theory, and service as applied to the automotive brake systems.
60 Contact Hours

FAM 110 DISC BRAKE SYSTEMS (A)
3 Credit Hours
Introduces theory, operation, and service on automotive disc brakes.
60 Contact Hours

FAM 115 WHEEL ALIGNMENT (A)
3 Credit Hours
Presents theory, operation, and service of wheel alignment.
60 Contact Hours

FAM 116 WHEEL BALANCE AND SUSPENSION (A)
3 Credit Hours
Presents theory and service of wheel balance and suspension.
60 Contact Hours

FAM 117 STEERING GEARS AND SYSTEMS (A)
3 Credit Hours
Examines theory and service of steering gears and systems.
60 Contact Hours

FAM 200 CLUTCHES AND MANUAL TRANSMISSIONS (A)
3 Credit Hours
Includes construction, operation, and service techniques for standard transmission clutches.
60 Contact Hours

FAM 205 DRIVE LINES AND DIFFERENTIALS (A)
3 Credit Hours
Presents service procedures and construction of universal joints, drive lines, and differential assemblies.
60 Contact Hours

FAM 206 AUTOMATIC TRANSMISSIONS THEORY AND MAINTENANCE (A)
3 Credit Hours
Examines the theory and service of automatic transmissions.
60 Contact Hours

FAM 207 AUTOMATIC TRANSMISSION REBUILDING (A)
6 Credit Hours
Requires diagnosing malfunctions and rebuilding automatic transmissions.
120 Contact Hours

FAM 208 ENGINE OPERATION, DIAGNOSIS, DISASSEMBLY AND MEASUREMENT (A)
6 Credit Hours
Presents engine overhaul procedures, disassembly and measurement with micrometers and special tools.
120 Contact Hours

FAM 209 ENGINE RECONDITIONING AND ASSEMBLY (A)
3 Credit Hours
Presents assembly procedures and reconditioning of the complete engine.
60 Contact Hours

FAM 210 AIR CONDITIONING THEORY SERVICE AND SAFETY (A)
3 Credit Hours
Examines the service, theory and safety procedures on automotive air conditioning.
60 Contact Hours

FAM 215 GENERAL SERVICE REPAIR (A)
3 Credit Hours
Includes work on customer cars and any work the student needs to complete the program, with the advisor's permission.
60 Contact Hours

FAM 216 CUSTOMER PARTS SERVICE (A)
3 Credit Hours
Analyzes how to read the parts catalog, compare parts, stock an inventory of parts.
60 Contact Hours

Fluid Power

FLP 100 SAFETY — INTRODUCTION AND ORIENTATION (R)
3 Credit Hours
The student is taught the identification and the use of basic hand tools and is given an orientation to the fluid power field.
60 Contact Hours

FLP 105 BASIC PRINCIPLES OF HYDRAULICS (R)
3 Credit Hours
Fundamentals of hydraulic systems and the principles of hydraulics are taught. The students will perform shop laboratory experiments, using shop trainers.
60 Contact Hours

FLP 106 FLUIDS FOR HYDRAULICS, SEALING DEVICES (R)
3 Credit Hours
The student studies petroleum-base fluids, viscosity, fire resistant fluids, water glycol, water-in-oil emulsions, and neutralization number of oils.
60 Contact Hours

FLP 107 SOURCE OF HYDRAULIC POWER (R)
3 Credit Hours
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.
60 Contact Hours

FLP 108 CONTROL OF HYDRAULIC POWER (R)
3 Credit Hours
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.
60 Contact Hours

FLP 109 HYDRAULIC ACTUATORS — MOTORS — CYLINDERS (R)
3 Credit Hours
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.
60 Contact Hours

FLP 110 DISTRIBUTION OF HYDRAULIC POWER (R)
3 Credit Hours
The student is taught the proper hoses, tubing or pipe for any given volume or pressure setting, using charts and graphs, and manufactured and test flex hose and rigid tubing in sizes and lengths.
60 Contact Hours

FLP 115 CONDITIONING POWER FLUIDS (R)
3 Credit Hours
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 Mil Pore "A" pressure readings across filter elements.
60 Contact Hours

FLP 116 PUMP, OVERHAUL AND TESTING (R)
3 Credit Hours
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 rapid R.P.M. using the manufacturer's test charts.
60 Contact Hours

FLP 117 COMPONENTS, OVERHAUL AND TESTING (R)
3 Credit Hours
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.
60 Contact Hours

FLP 120 FLUID POWER FOR MECHANICAL TRADES I (R)
3 Credit Hours
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.
60 Contact Hours

FLP 121 FLUID POWER FOR MECHANICAL TRADES II (R)
3 Credit Hours
This class covers power steering for automobiles and construction equipment, trucks, etc., including pumps, cylinders, and valves, and hydrostatic transmissions.
60 Contact Hours

FLP 125 ANALYZING HYDRAULIC CIRCUITS (R)
3 Credit Hours
The students will learn how to analyze hydraulic systems, drawings and determine the how and why of the system and the hydraulic components required.
60 Contact Hours

FLP 126 HYDRAULIC SCHEMATICS (R)
3 Credit Hours
Students will plan and draw hydraulic circuits using ASIA symbols and diagrams for various hydraulic systems as designated by the instructor.
60 Contact Hours

FLP 127 HYDROSTATIC DRIVES (R)
3 Credit Hours
The student will learn troubleshooting, adjusting and testing of hydrostatic drives.
60 Contact Hours

FLP 200 BASIC PNEUMATICS — SAFETY (R)
3 Credit Hours
Application of basic physical laws of fluids and mechanics pertaining to fluid power are presented.
60 Contact Hours

FLP 205 COMPRESSORS (R)
3 Credit Hours
Operation and physical characteristics of most positive and nonpositive displacement compressors, and procedures for dismantling, inspecting and adjusting compressors are taught.
60 Contact Hours

FLP 206 PRIMARY, SECONDARY AIR TREATMENT (R)
3 Credit Hours
Operation and application of primary and secondary air treatment units are taught.
60 Contact Hours

FLP 207 DIRECTIONAL CONTROL VALVES (R)
3 Credit Hours
Opeation, adjustments and repair of directional control valves are taught.
60 Contact Hours

FLP 208 CYLINDERS, MOTORS, PNEUMATICS (R)
3 Credit Hours
Maintaining pneumatic cylinder motors and principles of operation and construction are taught.
60 Contact Hours

FLP 209 PIPING, HOSE, FITTING, PNEUMATIC SYSTEMS (R)
3 Credit Hours
The student will fabricate, inspect, install and test air system piping hoses.
60 Contact Hours

FLP 210 PRESSURE CONTROL VALVES, PNEUMATIC SYSTEMS (R)
3 Credit Hours
The student will disassemble, inspect, repair, assemble and test pressure control valves.
60 Contact Hours

FLP 215 PNEUMATIC LOGIC CONTROLS (R)
3 Credit Hours
Methods whereby control answers can be attained are taught.
60 Contact Hours

FLP 216 TROUBLESHOOTING, PRINT READING (R)
3 Credit Hours
Troubleshooting basic pneumatic circuits, using manuals and prints, is taught.
60 Contact Hours

FLP 217 BASIC FLUIDICS (R)
3 Credit Hours
Operation of fluidic (nonmoving part), logic devices and their application in problem solving are taught.
60 Contact Hours

FLP 218 ADVANCED SYSTEM COMPONENTS AND CIRCUITS (R)
3 Credit Hours
JIC standards, graphic symbol, schematic diagrams, hydrostatic drives, and servo controls for the advanced hydraulic mechanic are taught.
60 Contact Hours

FLP 219 ADVANCED TROUBLESHOOTING — SAFETY (R)
3 Credit Hours
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.
60 Contact Hours

FLP 220 ADVANCED FLUID POWER, HYDRAULIC AND PNEUMATIC MAINTENANCE (R)
3 Credit Hours
In this class, the student will learn hydraulic and pneumatic shop procedures, manufacturer's specifications of hydraulic and pneumatic components and will participate in local shop visits for the advanced mechanic.
60 Contact Hours

FLP 221 FLUID POWER INSTRUMENTATION (R)
3 Credit Hours
Students are taught the individual instruments or hardware that measure the variables in a fluid power system.
60 Contact Hours

FLP 225 AIR BRAKE AND ANTI-SKID SYSTEMS (R)
3 Credit Hours
Students will learn fundamentals of the air brake and anti-skid systems and principles of operation.
60 Contact Hours

FLP 230 COMPRESSOR OVERHAUL (R)
3 Credit Hours
Students will learn overhaul procedures using manufacturer's manuals and specifications.
60 Contact Hours

FLP 297 COOPERATIVE EDUCATION (R)
2-9 Credit Hours
This is a program of study developed with coordinated college course work and industry work experience.
60-270 Contact Hours

FLP 299 INDEPENDENT STUDY (R)
3 Credit Hours
This is a class of individual study on a special project that is related to the fluid power program and is outside the program offerings.
90 Contact Hours

French

FRE 101 BASIC APPLIED FRENCH I (A,R)
3 Credit Hours
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.
45 Contact Hours

FRE 102 BASIC APPLIED FRENCH II (A,R)
3 Credit Hours
Prerequisites: FRE 101 or permission of instructor
Continues emphasis on conversational French with more practice in basic conversational patterns, grammar and syntax.
45 Contact Hours

Fire Science Technology

FST 100 FIRE PROTECTION (R,AEC)
3 Credit Hours
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 Contact Hours

FST 105 FIRE APPARATUS AND EQUIPMENT (R,AEC)
3 Credit Hours
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 Contact Hours

FST 106 FIRE PREVENTION (R,AEC)
3 Credit Hours
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.
45 Contact Hours

FST 107 RELATED CODES AND ORDINANCES (R,AEC)
3 Credit Hours
This course is designed to acquaint the student with the requirements of the Uniform Fire Code and Life Safety Code. The fire code will cover the requirements for operations and functions that go on within the building.
45 Contact Hours

FST 108 FIRE HYDRAULICS (R,AEC)
4 Credit Hours
Prerequisite: Applied Math
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.
68 Contact Hours

FST 109 BUILDING PLANS AND CONSTRUCTION (R,AEC)
3 Credit Hours
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 figher means the types of buildings and building materials, the structural stability of them in the fire situation.
45 Contact Hours

FST 111 FIRE SERVICE FORENSIC PHOTOGRAPHY I (R)
4 Credit Hours
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.
68 Contact Hours

FST 112 FIRE SERVICE FORENSIC PHOTOGRAPHY II (R)
4 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 photgraphic skills to take and prepare photographic evidence for judicial proceedings.
68 Contact Hours

FST 115 PHOTOGRAPHY FOR FIRE EVIDENCE (R)
1 Credit Hour
A photography course to acquaint the student with practices and techniques to use photography as evidence for arson investigation and judicial procedures.
15 Contact Hours

FST 116 WALKTHRU REVIEW OF UNIFORM BUILDING CODE (R)
2 Credit Hours
A 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.
30 Contact Hours

FST 117 FIREFIGHTER AND FIRE DEPARTMENT LIABILITY (R)
1 Credit Hour
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.
15 Contact Hours

FST 118 FIREGROUND TACTICS (R)
1 Credit Hour
Basic methods of fire attack, solving problems with use of fire simulator and communications simulator.
15 Contact Hours

FST 121 HAZARDOUS MATERIALS (R)
4 Credit Hours
A study into the physical and chemical properties of different compounds which render fire fighting abnormally dangerous and hazardous. 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.
68 Contact Hours

FST 141 AUTOMATIC EXTINGUISHING SYSTEMS (R,AEC)
1 Credit Hour
Sprinkler systems, types, installation and maintenance for various hazards.
15 Contact Hours

FST 142 SPECIAL AUTOMATIC PROTECTION SYSTEMS (R)
1 Credit Hour
A study of special systems including standpipes, CO^2 foam, halogenated and dry chemical systems.
15 Contact Hours

FST 143 PORTABLE FIRE EXTINGUISHERS (R)
1 Credit Hour
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 Contact Hours

FST 144 AUTOMATIC FIRE DETECTION SYSTEMS (R)
1 Credit Hour
A study of various devices and methods of automatically detecting fire or other emergency situations.
15 Contact Hours

FST 145 FIREFIGHTERS RESPIRATORY PROTECTION (R)
1 Credit Hour
A study of respiratory hazards encountered by firefighters and the equipment necessary for protection from those hazardous atmospheres.
15 Contact Hours

FST 146 PESTICIDE FIRE AND SPILL CONTROL (R)
1 Credit Hour
Proper control of situations involving toxic substances in fire and/or spill incidents.
15 Contact Hours

FST 205 FIRE SAFETY EDUCATION (R,AEC)
3 Credit Hours
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 Contact Hours

FST 206 FIRE INVESTIGATION (R,AEC)
3 Credit Hours
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 Contact Hours

FST 207 COMPREHENSIVE PLANNING FOR FIRE PROTECTION (R,AEC)
3 Credit Hours
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 Contact Hours

FST 208 BUILDING INSPECTIONS FOR FIRE PROTECTION (R,AEC)
3 Credit Hours
Emphasis is on inspection techniques, plumbing inspections, electrical inspections, and mechanical inspections relative to the fire protection field.
45 Contact Hours

FST 215 STRATEGY AND TACTICS (R,AEC)
3 Credit Hours
Basic fire fighting tactics and strategy, methods of attack, preplanning fire problems.
45 Contact Hours

FST 216 RESCUE PROCEDURES (R,AEC)
3 Credit Hours
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 Contact Hours

FST 217 OPERATING AND DRIVING PROCEDURES (R)
4 Credit Hours
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.
68 Contact Hours

FST 218 FIRE SERVICE MANAGEMENT (R,AEC)
3 Credit Hours
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 Contact Hours

FST 220 STRUCTURAL PREPLANNING FOR THE FIRE SERVICE (R)
3 Credit Hours
A course teaching accurate pre-plan drawings, using universal symbols, for uniform fire service pre-plans.
45 Contact Hours

FST 226 FIRE COMMAND OFFICER SCHOOL (R)
1 Credit Hour
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 Contact Hours

FST 227 EMERGENCY MEDICAL TECHNICIAN (R)
4 Credit Hours
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 Contact Hours

FST 228 UNDERWATER RECOVERY (R)
3 Credit Hours
Study of methods used in underwater search and recovery; psychological and physiological aspects of diving are studied.
45 Contact Hours

FST 229 HAZARDOUS MATERIALS SEMINAR (R)
3 Credit Hours
Seminar on transportation accidents and methods of fire suppression/ safety precautions used at the scene.
45 Contact Hours

FST 230 AIRCRAFT FIRE / RESCUE (R)
3 Credit Hours
Emergency procedures used at the scene of commercial/ military aircraft accidents. Use of special firefighting suppression agents.
45 Contact Hours

FST 242 SUPERVISION FOR FIRE SERVICES (R)
1 Credit Hour
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 Contact Hours

FST 243 STRESS MANAGEMENT (R)
1 Credit Hour
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 Contact Hours

FST 244 PERSONNEL MANAGEMENT (R)
1 Credit Hour
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 Contact Hours

FST 285 WILDLAND FIRES (R)
3 Credit Hours
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 Contact Hours

FST 286 FIREFIGHTER SAFETY (R)
3 Credit Hours
Personal safety for the firefighter under emergency and nonemergency conditions will be studied.
45 Contact Hours

FST 287 AUTOMATIC EXTINGUISHING SYSTEMS DESIGN (R)
3 Credit Hours
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 Contact Hours

FST 297 COOPERATIVE EDUCATION/PRACTICAL TRAINING (R)
4 Credit Hours
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 preselected 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 Contact Hours

FST 299 INDEPENDENT STUDY (R,AEC)
1-6 Credit Hours
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.
23-138 Contact Hours

General Education Development

GED 090 GED PREPARATION: READING AND WRITING (A,N,R)
1-5 Credit Hours
This course is designed for the student who needs to prepare for the GED tests: Writing skills, Social Studies, Science, and Reading Skills. Diagnostic testing is included to determine skill level. Practice tests in GED materials, simulated GED testing and scheduling for the actual GED test is provided in this program.
15-75 Contact Hours

GED 011 GED PREPARATION: MATHEMATICS (A,N,R)
1-5 Credit Hours
This course is designed for the student who needs to prepare for the GED Mathematics Test. After diagnostic testing to determine skill level, the student begins instruction in math operations. Test taking techniques, practice test taking, simulated GED testing and scheduling for the actual GED test are included in the program.
15-75 Contact Hours

Geography

GEO 105 FUNDAMENTAL PLACE-NAME GEOGRAPHY (A,R,AEC)
1 Credit Hour
Designed for persons wanting to know where places are located.
15 Contact Hours

GEO 106 VISUAL LITERACY (R,AEC)
1 Credit Hour
Designed to acquaint students with techniques for increasing their visual awareness and understanding.
15 Contact Hours

GEO 107 APPLIED GEOGRAPHY (R,AEC)
1 Credit Hour
Designed for the student who wants to know how informed locational decisions related to residential location, marketing geography and manpower geography are made.
15 Contact Hours

GEO 108 MAPS AND COMPASS USE (A,R,AEC)
1 Credit Hour
Designed to improve the student's ability to make and use maps.
15 Contact Hours

GEO 111 PHYSICAL GEOGRAPHY (LANDFORMS) (A,N,R,AEC)
4 Credit Hours
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.
90 Contact Hours

GEO 112 PHYSICAL GEOGRAPHY (WEATHER AND CLIMATE) (A,N,R,AEC)
4 Credit Hours
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.
90 Contact Hours

GEO 121 GEOGRAPHY OF MAN (A,R,AEC)
3 Credit Hours
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 Contact Hours

GEO 150 WORLD REGIONAL GEOGRAPHY (A,R,AEC)
4 Credit Hours
Details the major regions of the world and introduces the concepts of cultural geography and how they apply to these regions.
60 Contact Hours

GEO 165 GEOGRAPHY OF LATIN AMERICA (A,R)
3 Credit Hours
An in-depth analysis of geographical patterns of Latin America.
45 Contact Hours

GEO 200 HUMAN ECOLOGY (A,N,R,AEC)
3 Credit Hours
A survey of world resources, the nature of resources, attitudes toward resources, environmental principles and the impact of populations on resource bases.
45 Contact Hours

GEO 210 THE GEOGRAPHY OF ECONOMIC ACTIVITY (A,R,AEC)
3 Credit Hours
An examination of man's economic activities and their location.
45 Contact Hours

GEO 220 THE MANY COLORADOS (A,R,AEC)
3 Credit Hours
Examines such things as the landforms, vegetation, climate, peoples, economy, and culture which gives various areas of Colorado their character.
45 Contact Hours

GEO 230 URBAN GEOGRAPHY (A,N,R,AEC)
3 Credit Hours
The study of sociological, psychological and economic forces at work in urban places from a spatial, geographic perspective.
45 Contact Hours

GEO 235 RURAL GEOGRAPHY (R,AEC)
3 Credit Hours
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 Contact Hours

GEO 289 GEOGRAPHY PRACTICUM (A,R,AEC)
1-9 Credit Hours
Field experience related to the student's interests. Arrangement with instructor required.

GEO 299 INDEPENDENT STUDY (A,N,R)
1-4 Credit Hours
Prerequisite: Permission of instructor.
Please refer to the general description of Independent Study in this catalog.
45-180 Contact Hours

German

GER 101 BASIC APPLIED GERMAN (R)
3 Credit Hours
Basic conversational patterns for enjoyment and/or for practical use.
45 Contact Hours

GER 102 BASIC APPLIED GERMAN (R)
3 Credit Hours
Continuation of GER 101.
45 Contact Hours

GER 111 FIRST YEAR GERMAN (R)
5 Credit Hours
Basic principles of grammar, reading and writing skills, correct pronunciation, and basic conversation.
75 Contact Hours

GER 112 FIRST YEAR GERMAN (R)
5 Credit Hours
Prerequisite: GER 111 or permission of instructor.
Continuation and expansion of GER 111.
75 Contact Hours

GER 211 INTERMEDIATE GERMAN (R)
3 Credit Hours
Prerequisite: GER 112 or equivalent.
Further skills in linguistic structure and vocabulary through readings in literature, advanced conversation, and writing.
45 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: Permission of instructor.
Please refer to the general description of Independent Study in this catalog.
15-45 Contact Hours

Graphic Arts

GRA 100 INTRODUCTION TO GRAPHIC ARTS (A)
3 Credit Hours
Introduces the student to the history of printing, illegal printing, pica pole, grid sheets, border tape, thumbnails, 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.
60 Contact Hours

GRA 105 BEGINNING PROCESS CAMERA (A)
3 Credit Hours
Prerequisite: GRA 100 or Instructor Permission
Teaches theory, use, parts plus types of process camera, films, papers, chemicals, proportions, tint-screens, filters, gray scales for process camera and two color card paste-up which includes a window and picture for halftones.
60 Contact Hours

GRA 106 HALFTONES ON PROCESS CAMERA (A)
3 Credit Hours
Prerequisite: GRA 105 or Instructor Permission
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 and camera with weak copy, percentage plus f-stop changes and filter factors.
60 Contact Hours

GRA 107 COMPOSITION (A)
3 Credit Hours
Prerequisite: GRA 106 or Instructor Permission
Emphasizes business cards, transfer type, ad helpers, design, paste-up with picture, three panel brochure, shooting of brochure, forms, index cards with two sided ruling-pen, border tape and scribe. (A continuation of GRA 100, 105 and 106.)
60 Contact Hours

GRA 108 PROCESS CAMERA II AND COMPOSITION II (A)
3 Credit Hours
Prerequisite: GRA 107 or Instructor Permission
Reviews line shots, halftones, design, paste-up two color cards and shooting of cards. (A continuation of GRA 105, 106 and 107.)
60 Contact Hours

GRA 109 BEGINNING OFFSET PRESSES (A)
3 Credit Hours
Prerequisite: GRA 100-108 series or Instructor Permission
Introduces offset press set-up for: paper feeder, register board, delivery and printing head.
60 Contact Hours

GRA 110 STRIPPING AND SMALL BINDERY (A)
3 Credit Hours
Prerequisite: GRA 109 or Instructor Permission
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, scoring and slitting. Continuation of offset processes.
60 Contact Hours

GRA 115 INTERMEDIATE OFFSET PRESSES (A)
3 Credit Hours
Prerequisite: GRA 110 or Instructor Permission
Coninutes the work on beginning offset presses, including quick copy, pressure settings and adjustments, register techniques, 25" press, multi-color registering and running. Continuation of offset processes.
60 Contact Hours

GRA 116 PAPER MANAGEMENT AND PRODUCTION (A)
3 Credit Hours
Prerequisite: GRA 115 or Instructor Permission
Teaches buying, estimating, pricing, job pricing, job planning and scheduling, work flow and plant layout.
60 Contact Hours

GRA 117 INKS, PLATES AND INTRODUCTION TO LARGE BINDERY (A)
3 Credit Hours
Prerequisite: GRA 116 or Instructor Permission
Works with kinds of ink, manufacture and characteristics, ink color mixing and additives, types, brands, characteristics, and processing of offset plates and basics of air fed folder techniques. Continues offset processes.
60 Contact Hours

GRA 120 PROCESS CAMERA AND HALFTONES (A)
6 Credit Hours
Teaches theory, use, parts of and types of process camera; films, papers, chemical proportions, tint screen filters, gray scales, theory of halftones, calibrate screens, compute flash chart and shooting halftones.
120 Contact Hours

GRA 130 INTERMEDIATE LITHOGRAPHIC EQUIPMENT MAINTENANCE AND REPAIR (A)
3 Credit Hours
Teaches machine settings, adjustments and repair of offset equipment; including Multiliths, A.B. Dicks, Chief 15, 25" press, process camera, and other related equipment.
60 Contact Hours

GRA 200 PROCESS COLOR SEPARATION (A)
3 Credit Hours
Prerequisite: GRA 100 series or Instructor Permission
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. Continues offset processes.
60 Contact Hours

GRA 205 PROCESS COLOR PRINTING (A)
3 Credit Hours
Prerequisite: GRA 200 or Instructor Permission
Works with set-up, register and printing of process color separation, techniques and features of 25" presses, changing and setting of molleton covers. Continues offset process.
60 Contact Hours

GRA 206 COMPUTERIZED TYPESETTING (A)
3 Credit Hours
Prerequisite: GRA 205
Teaches the theory, function and use of a computerized photo typesetter. Continues offset processes.
60 Contact Hours

GRA 207 RAISED PRINTING (A)
3 Credit Hours
Prerequisite: GRA 206
Teaches the theory and use of raised printing functions and set up of three section air fed folder and set-up of four pocket Rosback signature collator. Continues offset processes.
60 Contact Hours

GRA 208 BASIC MACHINE MAINTENANCE (A)
3 Credit Hours
Prerequisite: GRA 200 series or Instructor Permission.
Teaches basic settings lubrication, adjustments and minor repair of offset equipment, including presses, cameras, vacuum pumps, etc. Continues offset processes.
60 Contact Hours

GRA 299 INDEPENDENT STUDY
1-5 Credit Hours
Prerequisites: Consent of instructor and/or 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
Safety, orientation to the earth-moving field, inspection, reading gauges, and starting and shutting off engines are taught in this class.
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.
60 Contact Hours

HEO 106 OPERATING EQUIPMENT (R)
3 Credit Hours
Prerequisite: HEO 105
The student will be introduced to manipulating and coordinating controls used to operate heavy equipment.
60 Contact Hours

HEO 107 FIELD TASKS — INITIAL GRADING (R)
3 Credit Hours
Prerequisite: HEO 106
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.
60 Contact Hours

HEO 108 FIELD TASKS — SUBGRADING (R)
3 Credit Hours
Prerequisite: HEO 107
The field work in this class is designed to give experience in stake reading, rolling, packing, burying and piling earth to establish final grades.
60 Contact Hours

HEO 109 FIELD TASKS — INITIAL FINISH WORK (R)
3 Credit Hours
Prerequisite: HEO 108
Additional field work is given and it is designed to develop skill in initial finish work.
60 Contact Hours

HEO 110 FIELD TASKS — DOZER EQUIPMENT (R)
3 Credit Hours
Prerequisite: HEO 109
In this class, the student will have field work experience in operating a cable or hydraulic dozer.
60 Contact Hours

HEO 115 FIELD TASKS — SCRAPER EQUIPMENT (R)
3 Credit Hours
Prerequisite: HEO 110
In this class, the student will have field work experience in operating a self-loading or push scraper.
60 Contact Hours

HEO 116 FIELD TASKS — GRADER EQUIPMENT (R)
3 Credit Hours
Prerequisite: HEO 115
Students in this class will have field work experience in operating a grader.
60 Contact Hours

HEO 117 FIELD TASKS — LOADER AND BACKHOE EQUIPMENT (R)
3 Credit Hours
Prerequisite: HEO 116
Students in this class will have field work experience in operating a loader and backhoe.
60 Contact Hours

HEO 118 ADVANCED MAINTENANCE (R)
3 Credit Hours
Prerequisite: HEO 117
Advanced continuation of HEO 105 dealing with the fine points of heavy equipment maintenance which is performed by the operator is offered in this class.
60 Contact Hours

HEO 119 ADVANCED FIELD TASKS — FINISH GRADE (R)
3 Credit Hours
Prerequisite: HEO 118
In this class, the student will have field work experience in building finish grade.
60 Contact Hours

HEO 120 ADVANCED FIELD TASKS — SPECIAL PROJECTS (R)
3 Credit Hours
Prerequisite: HEO 119
Additional field work experience on building finish grade and on equipment where more experience is needed is offered in this class.
60 Contact Hours

HEO 297 COOPERATIVE EDUCATION (R)
2-9 Credit Hours
Prerequisite: Permission of instructor.
This is a program of study developed with coordinated college course work and industry work experience.
60-270 Contact Hours

HEO 299 INDEPENDENT STUDY (R)
3 Credit Hours
Prerequisite: Permission of instructor.
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 Contact Hours

History

HIS 111 WORLD CIVILIZATION (A,R,AEC)
4 Credit Hours
Explores the historical development and cultural contributions of peoples in various areas of the world from prehistoric times to the early modern period.
60 Contact Hours

HIS 112 WORLD CIVILIZATION (A,R,AEC)
4 Credit Hours
Explores the historical development and cultural contributions of peoples in various areas of the world from the early modern period to the present.
60 Contact Hours

HIS 115 PERSONALITIES AND ISSUES (A,R)
3 Credit Hours
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,N,R)
3 Credit Hours
An introduction to American Indians' historical and sociocultural 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
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
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,N,R)
3 Credit Hours
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
Provides an introduction to the land, people and politics from a historical perspective and Third World approach.
45 Contact Hours

HIS 150 CONTEMPORARY WORLD HISTORY (A,N,R,AEC)
3 Credit Hours
Analyzes the historical and cultural development of modern man since 1900.
45 Contact Hours

HIS 205 WOMEN IN HISTORY (A,R,AEC)
3 Credit Hours
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
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
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
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
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
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
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
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 235 THE AMERICAN WEST (A,N,R)
3 Credit Hours
Focuses upon Indians, fur traders, explorations, gold rushes, cattlemen, sodbusters, closing of the frontier, and developments in the 20th century.
45 Contact Hours

HIS 240 HISTORY OF ROME (R)
3 Credit Hours
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 (A)
3 Credit Hours
Traces the history of Spanish and Indian Pueblo Land Grants of the Southwest from 1689-1848.
45 Contact Hours

HIS 246 MEXICO: COLONIAL PERIOD — PRESENT (A)
3 Credit Hours
Traces the historical and cultural development of Mexico from 1521 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
Study of individual and social freedom as a value and concern, with emphasis on Jeffersonian thought. May be self-paced.
45 Contact Hours

HIS 261 ENGLAND I (R)
3 Credit Hours
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
Continuation of 261 and Restoration to modern Britain.
45 Contact Hours

HIS 271 MESOAMERICA: MIDDLE AMERICA (A)
3 Credit Hours
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, Totonaca, Mixteca and Azteca.
45 Contact Hours

Health Occupations

HOC 100 MEDICAL TERMINOLOGY I (A,R,AEC)
1 Credit Hour
Teaches the origin and structure of medical terms; helps the student interpret and pronounce medical terms used in various medically related areas.
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 Contact Hours

HOC 106 BASIC PATIENT CARE (A)
2 Credit Hours
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.
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
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 Contact Hours

HOC 110 MEDICAL TERMINOLOGY II (R)
1 Credit Hour
Continuation of Medical Terminology I.
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 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 Contact Hours

HOC 117 HOLISTIC HEALTH PERSPECTIVES (A)
3 Credit Hours
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 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 Contact Hours

Hospitality and Restaurant Administration

HRA 110 INTRODUCTION TO THE HOSPITALITY INDUSTRY (A)
3 Credit Hours
An overview of the hospitality and service industry emphasizing theories, practices and principles necessary for successful operation. The course is also designed to assist the student in career exploration within the industry.
45 Contact Hours

HRA 115 FOOD AND BEVERAGE MANAGEMENT SERVICE (A)
3 Credit Hours
Provides a basic knowledge of the principles of menu planning and the merchandising for food and beverages within the various setting of the hospitality industry.
45 Contact Hours

HRA 120 BARTENDING (A)
3 Credit Hours
Provides a working knowledge to the variety of alcoholic beverages service domestically and internationally. Practical hints on equipment and its uses within bar, restaurant, and lounge settings. Measurement procedures for serving alcoholic beverages is included.
45 Contact Hours

HRA 125 MAINTENANCE AND ENGINEERING FUNCTIONS FOR HOSPITALITY (A)
3 Credit Hours
Examines the maintenance and engineering functions and provides the technical information necessary to establish effective prevention programs, and maintenance procedures.
45 Contact Hours

HRA 130 FRONT OFFICE OPERATIONS (A)
3 Credit Hours
Covers organization, guest relations, salesmanship, rooming procedure, equipment, cash and credit, accounting, transcripts, office machines, data register, and the changing face of hotelkeeping.
60 Contact Hours

HRA 200 SANITATION POLICIES AND PROCEDURES (A)
3 Credit Hours
Prerequisites: HRA 110 and HRA 115
Details the fundamentals of sanitation for the hospitality industry employees; covers practical guidance in food and beverage handling and provides practical knowledge needed to implement a sanitation program in any food service facility.
45 Contact Hours

HRA 204 CATERING OPERATION (A)
3 Credit Hours
Practical instruction for catering operation on and off the premises to include staffing techniques for profitable catering.
45 Contact Hours

HRA 205 DINING SERVICE MANAGEMENT (A)
3 Credit Hours
A presentation of efficient dining room service management to include proper staffing analysis, facility arrangements, service policies. The course also explores domestic and international menu terminology in both beverage and food service.
45 Contact Hours

HRA 207 FOOD AND BEVERAGE CONTROLS (A)
3 Credit Hours
Prerequisites: HRA 110, HRA 115
Outlines the essential principles and procedures of effective food and beverage control and emphasizes calculation of food costs, standards and planning.
45 Contact Hours

HRA 220 AUDITING (A)
3 Credit Hours
Prerequisites: HRA 110, HRA 130
The process of verifying the accuracy of guest account balances, posting of transactions and completion of financial statements.
60 Contact Hours

HRA 221 ACCOUNTING PRACTICE FOR THE HOSPITALITY INDUSTRY (A)
5 Credit Hours
Prerequisites: HRA 110, HRA 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 Contact Hours

HRA 242 HOTEL MOTEL PROPERTY MANAGEMENT (A)
3 Credit Hours
Prerequisite: HRA 110, MAN 115
Covers all phases of property management, emphasizing the first impression, staffing, training, capital investments, cost analysis, rentals and renovation.
45 Contact Hours

HRA 297 COOPERATIVE EDUCATION (A)
6 Credit Hours
Prerequisites: All 100 level courses in HRA
The student is placed at an approved work station related to his educational and occupational goals.
270 Lab Hours

HRA 298 HOTEL MOTEL MANAGEMENT SEMINAR (A)
1-5 Credit Hours
Designed to accommodate industry, by offering weekly seminars in any of the Hospitality and Restaurant Administration courses.
15-75 Contact Hours

HRA 299 INDEPENDENT STUDY (A)
1-3 Credit Hours
Prerequisite: Permission of instructor.
Provides opportunity for a student to study intensively a specific topic of interest under the direction of a qualified faculty.
15-45 Contact Hours

Human Services

HSE 105 INTRODUCTION TO SOCIAL WELFARE (A)
3 Credit Hours
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 Contact Hours

HSE 106 SURVEY OF HUMAN SERVICES (A)
3 Credit Hours
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 Contact Hours

HSE 107 INTERVIEWING PRINCIPLES AND PRACTICES (A)
3 Credit Hours
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.
45 Contact Hours

HSE 108 INTRODUCTION TO THERAPEUTIC SYSTEMS (A)
3 Credit Hours
Prerequisites: HSE 105, 106, 107
Introduces basic concepts of major therapeutic systems. Students will be exposed to the backgrounds, developmental theories and practices of specific systems.
45 Contact Hours

HSE 109 SOCIAL ISSUES IN HUMAN SERVICES (A)
3 Credit Hours
Prerequisites: HSE 105, 106, 107
Provides the student with an analytical overview of the social functions of Human Services. The welfare system will be examined from the liberal, conservative and radical perspectives. Present idealism and pragmatism of the present state of human services and trends for the future.
45 Contact Hours

HSE 115 HUMAN SERVICES PRACTICUM I (A)
4 Credit Hours
Prerequisites: HSE 105, 106, 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.
150 Contact Hours

HSE 205 HUMAN SERVICES FOR GROUPS (A)
3 Credit Hours
Prerequisite: HSE 115
Provides an introduction to the concepts, principles, goals and skills of group work as a method of providing human services. Emphasis is on the basic practice skills and intervention techniques.
45 Contact Hours

HSE 206 HUMAN SERVICES FOR FAMILIES (A)
3 Credit Hours
Prerequisite: HSE 115
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.
45 Contact Hours

HSE 207 COMMUNITY ORGANIZATION (A)
3 Credit Hours
Prerequisite: HSE 115
Introduces principles, concepts and methods of community development and organization.
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 relevent social welfare issues is a major focus.
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 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 theory 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.
150 Contact Hours

HSE 212 HUMAN SERVICES PRACTICUM III (A)
7 Credit Hours
Prerequisites: HSE 115, 211
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.
285 Contact Hours

Humanities

HUM 111 STUDIES IN THE HUMANITIES (A,N,R,AEC)
3 Credit Hours
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.
45 Contact Hours

HUM 112 STUDIES IN THE HUMANITIES (A,N,R,AEC)
3 Credit Hours
A continuation of HUM 111 with the emphasis on human creativity.
45 Contact Hours

HUM 115 INTRODUCTION TO CHICANO STUDIES (A)
3 Credit Hours
Examines the origin, culture, philosophy and present status of the Chicano.
45 Contact Hours

HUM 126 FOLKLORE OF MEXICO AND THE SOUTHWEST (A)
3 Credit Hours
A study of the folklore (myths, legends, music, medicine, riddles, games) of indigenous people and the Mestizo in Mexico and the Southwest.
45 Contact Hours

HUM 127 INDIGENISMO AND THE CHICANO (A)
3 Credit Hours
A study of 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,R,AEC)
1-5 Credit Hours
Prerequisite: ENG 111 or permission of 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.
15-75 Contact Hours

HUM 212 TRADITIONS AND INNOVATIONS IN THE ARTS II (A,R,AEC)
1-5 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.
15-75 Contact Hours

HUM 215 IDEAS IN A CHANGING SOCIETY (A,R,AEC)
3 Credit Hours
Prerequisite: ENG 111 or permission or 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
The historical Jesus, his environment and teachings.
45 Contact Hours

HUM 225 CONTEMPORARY CHICANO (A)
3 Credit Hours
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
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
A study of the history, philosophy and practicality of medicinal herbs of the Southwest.
45 Contact Hours

Industrial/ Electrical 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.
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.
180 Contact Hours

IMA 206 AUTOMATIC CONTROL LOOPS (R)
6 Credit Hours
Prerequisite: IMA 200 or permission of advisor.
The principles of operation and application of valves and actuators in an industrial control coop; 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.
120 Contact Hours

IMA 207 INDUSTRIAL PROCESS CONTROL LOOPS (R)
6 Credit Hours
Prerequisite: IMA 206 or permission 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.
120 Contact Hours

IMA 297 COOPERATIVE EDUCATION (R)
2-9 Credit Hours
This class is a program of study developed with coordinated college course work and industry work experience.
60-270 Contact Hours

IMA 299 INDEPENDENT STUDY (R)
3 Credit Hours
This class is an individual study on a special project which is related to the Electricity Program and is outside the program offering.
90 Contact Hours

Information Media Technology

IMT 101 INTRODUCTION TO LIBRARY RESOURCES (A)
1 Credit Hour
A directed study approach to libraries and their resources; how to use indexes, card catalogs and basic reference tools.
20 Contact Hours

IMT 103 BUSINESS MATERIALS USE (A)
1 Credit Hour
A directed study approach to business libraries and their resources; location and use of business data for class and work experience.
20 Contact Hours

IMT 107 INDUSTRIAL MATERIALS USE (A)
1 Credit Hour
A direct study approach to handbooks, catalogs, microforms and audio visual formats for industrial occupations students.
20 Contact Hours

IMT 109 SCIENCE MATERIALS USE (A)
1 Credit Hour
A directed study approach to science, information and sources to assist students in completing science and research projects.
20 Contact Hours

IMT 111 LIBRARY PUBLIC SERVICES (A)
3 Credit Hours
Introduction to library organization and services. Overview of library public relations. Explains circulation procedures and inter-library loan processing.
50 Contact Hours

IMT 113 LIBRARY TECHNICAL SERVICES (A)
3 Credit Hours
Practical exercise in search and verification, ordering and serials ordering and control. Practical experience in minor book repair and material preparation and processing.
50 Contact Hours

IMT 115 LIBRARY CATALOG SERVICES (A)
3 Credit Hours
Introduction to book and nonbook descriptive cataloging and preparation of catalog card sets. Study of subject heading, classification schemes, filing rules, and maintenance of shelf lists.
50 Contact Hours

IMT 117 AUDIO VISUAL SKILLS (A)
3 Credit Hours
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.
50 Contact Hours

IMT 119 LIBRARY REFERENCE AND SELECTION SKILLS (A)
4 Credit Hours
Study and practical experience with common reference materials. Preparing annotations and answering reference questions. Also, a study of the selection processes for obtaining library materials.
75 Contact Hours

IMT 201 LIBRARY SPECIAL OPERATIONS (A)
3 Credit Hours
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.
50 Contact Hours

IMT 203 LIBRARY COMMUNITY SERVICE SEMINAR (A)
3 Credit Hours
Students complete projects with disadvantaged, handicapped, geriatric, and bi-lingual groups under faculty supervision to meet community needs under supervised study.
50 Contact Hours

IMT 213 MICROMEDIA SEMINAR (A)
4 Credit Hours
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.
75 Contact Hours

IMT 297 COOPERATIVE EDUCATION (A)
6 Credit Hours
Actual work experience under professional supervision; students apply learned work skills on the job.
270 Contact Hours

IMT 299 INDEPENDENT STUDY (A)
3 Credit Hours
Special studies arranged between student and faculty advisor to give the student advanced or remedial learning opportunities.
45 Contact Hours

Industrial Management

INM 103 OCCUPATIONAL SAFETY (R)
2 Credit Hours
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 Contact Hours

INM 211 PRODUCTION MANAGEMENT I (R,AEC)
3 Credit Hours
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 Contact Hours

INM 212 PRODUCTION MANAGEMENT II (R,AEC)
3 Credit Hours
Prerequisite: 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 Contact Hours

INM 215 PRODUCTION MANAGEMENT CASE STUDY (R,AEC)
2 Credit Hours
Prerequisite: Permission 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 Contact Hours

Industrial Pipe Drafting

IPD 201 INDUSTRIAL PIPE DRAFTING I (N)
3 Credit Hours
Prerequisite: MDT 123 or permission 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.
60 Contact Hours

IPD 202 INDUSTRIAL PIPE DRAFTING II (N)
3 Credit Hours
Prerequisite: IPD 201 or permission 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.
60 Contact Hours

IPD 203 INDUSTRIAL PIPE DRAFTING III (N)
3 Credit Hours
Prerequisite: IPD 202 or permission 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.
60 Contact Hours

IPD 204 INDUSTRIAL PIPE DRAFTING IV (N)
3 Credit Hours
Prerequisite: IPD 203 or permission 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.
cent.
60 Contact Hours

IPD 205 INDUSTRIAL PIPE DRAFTING V (N)
3 Credit Hours
Prerequisite: IPD 204 or permission 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.
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 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.
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.
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.
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.
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.
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.
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 Contact Hours

ITP 207 TRANSLITERATING (N)
3 Credit Hours
Co-requisite: ITP 206
Developing skills in changing from spoken English into a visual system of English and vice versa.
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 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 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 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 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
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 299 INDEPENDENT STUDY (A,AEC)
1-3 Credit Hours
Prerequisite: Permission 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
Students read, discuss and write about selected works of recent and contemporary short fiction.
45 Contact Hours

LIT 106 INTRODUCTION TO LITERATURE: THE SHORT NOVEL (A,N,R,AEC)
3 Credit Hours
Students read, discuss and write about classic and contemporary short novels selected from the Western as well as the Oriental traditions.
45 Contact Hours

LIT 107 INTRODUCTION TO LITERATURE POETRY (A,R,AEC)
3 Credit Hours
Students read, discuss and write about selected poems of world literature.
45 Contact Hours

LIT 110 THEMES IN LITERATURE (A,R,AEC)
3 Credit Hours
Students read, discuss and write about works selected according to their thematic content; a given semester's theme is announced in the schedule when the course is offered.
45 Contact Hours

LIT 125 INTRODUCTION TO CHICANO LITERATURE (A)
3 Credit Hours
Students receive an overview of Chicano literature from its indigenous roots to the present.
45 Contact Hours

LIT 201 LITERATURE BY AND ABOUT WOMEN (A,AEC)
3 Credit Hours
Prerequisite: ENG 111 or permission of instructor.
Students study the role of women as characters and authors in selected works of literature.
45 Contact Hours

LIT 210 SCIENCE FICTION (A,AEC)
3 Credit Hours
Prerequisite: ENG 111 or permission of instructor.
Students study 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.
Students study a selection of classic and modern literature with aspects of the occult. Related themes will include religion, parapsychology and mysticism.
45 Contact Hours

LIT 216 FANTASY (A,R,AEC)
3 Credit Hours
Prerequisite: ENG 111 or permission of instructor.
Students read play, 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.
Students study 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 228 CONTEMPORARY CHICANO LITERATURE (A)
3 Credit Hours
Students analyze the various styles of contemporary Chicano literature and express themselves through their own literary works and research.
45 Contact Hours

LIT 229 CONTEMPORARY BLACK LITERATURE (A,R)
3 Credit Hours
Students perform an analytical and critical study of black literature and the contributions of the black writer in American society.
45 Contact Hours

LIT 230 LITERATURE OF THE AMERICAN WEST (N,AEC)
3 Credit Hours
Students read novels, short stories and essays about the American West and see films adapted from Western fiction and images in the West in Art.
45 Contact Hours

LIT 241 SURVEY OF AMERICAN LITERATURE (A,N,R,AEC)
3 Credit Hours
Students perform a comparative study of major American authors through the Civil War.
45 Contact Hours

LIT 242 SURVEY OF AMERICAN LITERATURE (A,N,R,AEC)
3 Credit Hours
Prerequisite: LIT 241 or permission of instructor.
Students continue LIT 241, covering the period from the Civil War to the present.
45 Contact Hours

LIT 251 ENGLISH LITERATURE (R)
3 Credit Hours
A survey of major works from the Anglo-Saxon period through the Elizabethan period.
45 Contact Hours

LIT 252 ENGLISH LITERATURE (R)
3 Credit Hours
A survey of major works from the 18th Century to the present.
45 Contact Hours

LIT 261 GREAT BOOKS I (A,R,AEC)
3 Credit Hours
Prerequisite: ENG 111 or permission of instructor
Students read, discuss and write about 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
Students read, discuss and write about 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
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 Contact Hours

MAN 116 PRINCIPLES OF SUPERVISION (A,N,R,AEC)
3 Credit Hours
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 Contact Hours

MAN 117 TIME MANAGEMENT (A,N,R,AEC)
1 Credit Hour
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.
15 Contact Hours

MAN 120 OFFICE MANAGEMENT (A,N,R,AEC)
2 Credit Hours
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 Contact Hours

MAN 200 HUMAN RESOURCES MANAGEMENT (A,N,R,AEC)
3 Credit Hours
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 Contact Hours

MAN 202 WOMEN IN MANAGEMENT (A,N,R)
2 Credit Hours
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 Contact Hours

MAN 205 SMALL BUSINESS MANAGEMENT (A,N,R,AEC)
3 Credit Hours
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 Contact Hours

MAN 206 BUSINESS LAW (A,N,R,AEC)
4 Credit Hours
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 Contact Hours

MAN 209 MANAGEMENT SEMINAR (A,N,R,AEC)
1-4 Credit Hours
Prerequisite: Permission 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 Contact Hours

MAN 215 PRINCIPLES OF MANAGEMENT (A,N,R,AEC)
3 Credit Hours
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 Contact Hours

MAN 225 MANAGERIAL FINANCE (A,N,R,AEC)
3 Credit Hours
Prerequisite: ACC 111/112, ECO 201
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 Contact Hours

MAN 239 BUSINESS POLICIES (A,N,R,AEC)
3 Credit Hours
Prerequisite: Permission of instructor.
A study of policy formulation and its usage for effective overall management control. Focuses on integrated managerial coordination of marketing, production, finance, accounting, administration, etc.
45 Contact Hours

MAN 240 MANAGEMENT INFORMATION SYSTEMS (A,N,R,AEC)
3 Credit Hours
Prerequisite: Permission of instructor.
A capstone course utilizing seminar and simulation techniques in management information systems. Management concepts and principles are applied to both situational and comprehensive case problems.
45 Contact Hours

Marketing

MAR 107 PRINCIPLES OF MARKETING (A,N,R,AEC)
3 Credit Hours
A 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.
45 Contact Hours

MAR 108 PRINCIPLES OF SALESMANSHIP (A,N,R,AEC)
3 Credit Hours
A 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.
45 Contact Hours

MAR 109 ADVERTISING AND PROMOTION (A,N,R,AEC)
3 Credit Hours
A 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 and application in campaign programming.
45 Contact Hours

MAR 115 VISUAL MERCHANDISING (A,N,R)
2 Credit Hours
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 Contact Hours

MAR 207 MARKETING SEMINAR (A,N,R)
2 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.
30 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 Contact Hours

MAR 211 WHOLESALING AND DISTRIBUTION (A,N,R)
3 Credit Hours
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 Contact Hours

MAR 215 RETAIL MANAGEMENT (A,N,R,AEC)
3 Credit Hours
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 Contact Hours

MAR 216 PRINCIPLES OF PURCHASING (A,N,R,AEC)
3 Credit Hours
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 Contact Hours

Machine Shop

Upon satisfactory completion of the module, the student should be able to:

MAS 100 INTRODUCTION TO MACHINE SHOP (N)
3 Credit Hours
Demonstrate 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.
60 Contact Hours

MAS 101 ENGINE LATHE SETUPS AND OPERATIONS I (N)
3 Credit Hours
Prerequisite: MAS 100
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.
60 Contact Hours.

MAS 102 ENGINE LATHE SETUP AND OPERATION II (N)
3 Credit Hours
Prerequisite: MAS 101
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.
60 Contact Hours

MAS 103 ENGINE LATHE SETUPS AND OPERATIONS III (N)
3 Credit Hours
Prerequisite: MAS 102
Form radius, single-point isometric threads, turn spherical radius, use a radius gauge, and work within .0005 tolerance externally.
60 Contact Hours

MAS 104 ENGINE LATHE SETUPS AND OPERATIONS IV (N)
3 Credit Hours
Prerequisite: MAS 103
Hold .0005 tolerance internally, use an arbor, a sine bar, and taper within one minute angular tolerance.
60 Contact Hours

MAS 105 BLUEPRINT READING (N)
3 Credit Hours
Read blueprints and interpret symbols, notes, dimensions, and tolerances. The knowledge will be evidenced by scoring 85 percent accuracy on an exam.
45 Contact Hours

MAS 111 VERTICAL MILL OPERATIONS AND SETUPS I (N)
3 Credit Hours
Prerequisite: MAS 100
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.
60 Contact Hours

MAS 112 VERTICAL MILL SETUPS AND OPERATIONS II (N)
3 Credit Hours
Prerequisite: MAS 111
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.
60 Contact Hours

MAS 115 HORIZONTAL MILL SETUPS AND OPERATIONS (N)
3 Credit Hours
Prerequisite: MAS 100
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.
60 Contact Hours

MAS 116 MILLING MACHINE SETUPS AND OPERATIONS (N)
3 Credit Hours
Prerequisite: MAS 105, 112 and 115
Indicate the head of a vertical mill, bore holes, drill holes at an angle, and work with tolerances of .0008 location and diameter.
60 Contact Hours

MAS 201 SURFACE GRINDER SETUPS AND OPERATIONS (N)
3 Credit Hours
Prerequisite: MAS 116
Identify major parts and accessories of the surface grinder, grind flat, vertical and angular surfaces to a tolerance of .0002 position and size.
60 Contact Hours

MAS 202 CYLINDRICAL AND TOOL AND CUTTER GRINDER (N)
3 Credit Hours
Prerequisite: MAS 104
Identify the major parts and accessories of the cylindrical and tool and cutter grinder, sharpen two and four flute end mills, and work within a tolerance of plus or minus .0005 on the cylindrical grinder.
60 Contact Hours

MAS 205 TRACING LATHE SETUPS AND OPERATION (N)
3 Credit Hours
Prerequisite: MAS 105 and 104
Set up a template, operate a tracing attachment on an engine lathe, and work within a plus or minus .002 tolerance.
60 Contact Hours

MAS 206 TURRET LATHE AND AUTOMATIC SCREW MACHINE (N)
3 Credit Hours
Prerequisite: MAS 104
Identify the simple parts of the screw machine and turret lathe, produce simple parts within plus or minus .002 tolerance.
60 Contact Hours

MAS 207 POINT-TO-POINT NUMERICAL CONTROL (N)
3 Credit Hours
Prerequisite: MAS 112
Write a program for the Moog NC, make a tape, and perform milling and drilling operations within plus or minus .001 tolerance.
60 Contact Hours

MAS 211-215 JOB SHOP MACHINING I, II, III, IV, V (N)
3 Credit Hours
Prerequisites: MAS 104, 105 and 116
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.)
60 Contact Hours (each unit)

MAS 216 GRINDING MACHINE SETUPS AND OPERATIONS (N)
3 Credit Hours
Prerequisite: MAS 201 and 202
Use the principles of grinding wheel selection, do form, cutter surface, and cylindrical grinding within a tolerance of .0001.
60 Contact Hours

MAS 217 INTRODUCTION TO STRUCTURE OF METALS (N)
3 Credit Hours
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 percent accuracy on exams.
45 Contact Hours

MAS 218 INTRODUCTION TO DIE-MAKING (N)
6 Credit Hours
Sketch, build, set, and operate a simple punch die in order to satisfactorily complete this module.
120 Contact Hours

MAS 219 MACHINE MAINTENANCE AND REPAIR (N)
6 Credit Hours
Identify different types of lubricants, oil machines, disassemble, repair, and reassemble machine slides and gear boxes to manufacturer's specifications.
120 Contact Hours

MAS 226 TURNING MACHINE THEORY (N)
3 Credit Hours
Relate the theory and principles of turning machines, their cutting tools and accessories. The knowledge will be evidenced by scoring 85 percent accuracy on examinations.
45 Contact Hours

MAS 227 MILLING MACHINE THEORY (N)
3 Credit Hours
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 Contact Hours

MAS 228 GRINDING MACHINE THEORY (N)
3 Credit Hours
Relate the theory and principles of grinding machines, grinding wheels, and grinding machine accessories. The knowledge will be evidenced by scoring 85 percent accuracy on examinations.
45 Contact Hours

MAS 229 USING MACHINE SHOP FORMULAS (N)
3 Credit Hours
Use machine shop formulas to solve problems in tapering, angle cutting, speeds and feeds, and hole locations.
45 Contact Hours

MAS 230 MACHINE SHOP MEASURING INSTRUMENTS THEORY (N)
3 Credit Hours
Relate the theory and principles of measurement and machine shop measuring instruments. The knowledge will be evidenced by scoring 85 percent accuracy on examinations.
45 Contact Hours

MAS 235 INTERPRETING ENGINEERING DRAWINGS (N)
3 Credit Hours
Demonstrate the ability to interpret machine shop drawings. The drawings will start simple and become very complex as the course progresses. All types of dimensioning, symbols, notes, and tolerances will be interpreted. To receive credit the student must score 85 percent or above on the final exam.
45 Contact Hours

Mathematics

MAT 090 BASIC OPERATIONS ON WHOLE NUMBERS (A)
3 Credit Hours
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.
45 Contact Hours

MAT 095 PROCESS AND PROCEDURES OF MATHEMATICS I (A)
1-3 Credit Hours
This course is designed to remediate common math problems of Learning Disabled Students. Special learning techniques, including retention of facts, organization of materials, and conceptualization of principles will be taught as well as alternative approaches to basic operations on whole numbers and fractions.
15-45 Contact Hours

MAT 096 PROCESS AND PROCEDURES OF MATHEMATICS II (A)
1-3 Credit Hours
Prerequisites: MAT 095 or permission of instructor
This course is a continuation of MAT 095 and will include concepts of decimals and percents, powered numbers, negatives integers and prealgebra skills.
15-45 Contact Hours

MAT 101 APPLIED MATHEMATICS I (A,N,R)
1-3 Credit Hours
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.
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)
15-45 Contact Hours

MAT 103 MATH ANXIETY (A)
1-3 Credit Hours
This course is designed to help the student cope with the effects of math anxiety which impede or interfere with learning. Causes of anxiety producing topics in math are discussed and the student is exposed to methods for coping with this anxiety. Included topics are work with tangrams, other manipulatives, geometry, fractions, percentages, and algebra.
15-45 Contact Hours

MAT 105 MATHEMATICS FOR THE PHYSICAL SCIENCES (A)
1-2 Credit Hours
Includes fractions, decimals, percentages, ratio and proportion, work problems, exponents, and dimensional analysis as these topics apply to certain areas of the physical sciences.
15-30 Contact Hours

MAT 106 INTRODUCTION TO MATHEMATICS (A,N,R)
3 Credit Hours
Designed for students who need a comprehensive review of arithmetic. Topics include the fun damental operations of whole numbers, fractions, decimals and percentages, proportion, operations with signed numbers and equations.
45 Contact Hours

MAT 107 MATHEMATICS FOR ELECTRONICS (A)
5 Credit Hours
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.
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 Contact Hours

MAT 110 THE METRIC SYSTEM (A,N,R)
1 Credit Hour
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.
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 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 Contact Hours

MAT 113 INTRODUCTION TO GEOMETRY (N,R,AEC)
3 Credit Hours
Prerequisite: MAT 111 or equivalent
Designed to extend the mathematical skills developed in MAT 111. Topics include logic, names and properties geometric figures; and basic trigonometry. Skills from MAT 111 will be applied.
45 Contact Hours

MAT 114 GENERAL MATHEMATICS FOR COLLEGE STUDENTS (A,N,R)
1-5 Credit Hours
This course provides the student with the basics of the mathematical areas of arithmetic review, calculators, measurement, algebra, geometry, and trigonometry.
15-75 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 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 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 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 Contact Hours

MAT 127 SURVEY OF CALCULUS (N,R)
4 Credit Hours
Prerequisite: MAT 121 or permission 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 Contact Hours

MAT 130 CONTEMPORARY COLLEGE MATHEMATICS (A,N,R)
3 Credit Hours
This course concentrates on mathematical concepts needed to function in contemporary society. The topics include electronic calculating devices (calculators and computers), problem solving skills (algebra and logic), consumer mathematics, elementary probability theory and descriptive statistics, measurement (metric system, areas and volumes), and graphs of elementary functions.
45 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 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 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 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 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 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 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 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 Contact Hours

MAT 299 INDEPENDENT STUDY (A,N,R,AEC)
1-3 Credit Hours
Prerequisite: Permission of instructor
Please refer to the general description of Independent Study in this catalog.
45-135 Contact Hours

Machine Drafting Technology

Upon satisfactory completion of the module, the student should be able to:

MDT 101 MECHANICAL DRAFTING, THEORY, AND TECHNIQUES I (N)
3 Credit Hours
Demonstrate the use of orthographic projection, geometric construction, sketching and reproduction equipment. Minimum performance of accuracy is eighty percent.
60 Contact Hours

MDT 102 MECHANICAL DRAFTING, THEORY, AND TECHNIQUES II (N)
3 Credit Hours
Construct the following types of drawings: sectional views; pictorial drawings (3-dimensional); auxiliary views; intersections and developments; and threads and fastening devices.
60 Contact Hours

MDT 103 MECHANICAL DRAFTING, THEORY, AND TECHNIQUES III (N)
3 Credit Hours
Prerequisite: MDT 102 or permission of instructor.
Demonstrate the ability to draw and apply dimensioning techniques; use of decimal dimensions and apply dimensional standards.
60 Contact Hours

MDT 111 MACHINE DETAIL AND ASSEMBLY DRAWING I (N)
3 Credit Hours
Prerequisite: MDT 103 or permission of instructor.
Demonstrate the ability to produce working drawings, dimension mating parts and develop more complex drawings with less information.
60 Contact Hours

MDT 112 MACHINE DETAIL AND ASSEMBLY DRAWING II (N)
3 Credit Hours
Prerequisite: MDT 111 or permission of instructor.
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.
60 Contact Hours

MDT 113 MACHINE DETAIL AND ASSEMBLY DRAWING III (N)
3 Credit Hours
Prerequisite: MDT 112 or permission of instructor.
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.
60 Contact Hours

MDT 114 MACHINE DETAIL AND ASSEMBLY DRAWING IV (N)
3 Credit Hours
Prerequisite: MDT 113 or permission of instructor.
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.
60 Contact Hours

MDT 121 INTRODUCTION TO INKING (N)
3 Credit Hours
Prerequisite: MDT 112 or permission of instructor.
Demonstrate the ability to identify inking equipment, show the use and care of inking equipment and produce drawings in ink (working drawings). Minimum performance of accuracy is eighty percent.
60 Contact Hours

MDT 122 INTRODUCTION TO SHEET METAL DRAWINGS (N)
3 Credit Hours
Prerequisite: MDT 112 or permission of instructor.
Demonstrate the ability to draw sheet metal parts, develop sheet metal patterns and compute bend allowances. Minimum performance of accuracy is eighty percent.
60 Contact Hours

MDT 123 INTRODUCTION TO ELECTRO-MECHANICAL DRAWING (N)
3 Credit Hours
Prerequisite: MDT 112 or permission of instructor.
Demonstrate the ability to identify components by symbol, draw block diagrams, draw schematics and generate printed circuit projects. Minimum performance of accuracy is eighty percent.
60 Contact Hours

MDT 200 INTRODUCTION TO CASTING DRAWINGS (N)
3 Credit Hours
Prerequisite: MDT 112 or permission of instructor.
Apply drafting techniques to the drawing and detailing of castings. Minimum performance of accuracy is eighty percent.
60 Contact Hours

MDT 201-205 MACHINE DRAFTING TECHNOLOGY I, II, IIII, IV & V
3 Credit Hours
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.
60 Contact Hours

MDT 206 INTRODUCTION TO TECHNICAL ILLUSTRATION (N)
3 Credit Hours
Prerequisite: MDT 103 or permission of instructor.
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.
60 Contact Hours

MDT 207 INTRODUCTION TO CAMS AND GEARS (N)
3 Credit Hours
Prerequisite: MDT 112 or permission of instructor.
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.
60 Contact Hours

MDT 208 INTRODUCTION TO PIPE DRAWING (N)
3 Credit Hours
Prerequisite: MDT 103 or permission of instructor.
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.
60 Contact Hours

MDT 209 INTRODUCTION TO WELDING DRAWING (N)
3 Credit Hours
Prerequisite: MDT 114 or permission of instructor.
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.
60 Contact Hours

Management Information Systems

MIS 110 INTRODUCTION TO RECORDS MANAGEMENT (A)
3 Credit Hours
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 Contact Hours

MIS 112 INDEXING AND CODING RECORDS (A)
2 Credit Hours
In depth technical level study of indexing methods of document input to micromedia.
40 Contact Hours

MIS 114 FORMS DESIGN AND CONTROL (A)
4 Credit Hours
Advanced course for development and management of forms, programs, productions, procurement, selection and training personnel. Studies basic principles of forms design and control to obtain maximum advantage of data at minimum cost. Also a study of the particular requirements related to microforms management.
45 Contact Hours

MIS 209 MICROGRAPHIC TECHNICIAN CERTIFICATION (A)
3 Credit Hours
Instruction in basic employment and job skills of microfilm. Also study in black and white film principles, photochemistry and quality control. Additional subject coverage in computer micrographics. This is the first of two courses required for certification as micrographic technician.
50 Contact Hours

MIS 211 ADVANCED MICRO-TECHNICIAN CERTIFICATION (A)
3 Credit Hours
Investigates color film chemistry, advanced optics, systems design, records management administration, storage and retrival method plus personnel requirements. Final course certification granted by the local Micrographic Association Chapter.
50 Contact Hours

MIS 215 RECORDS MANAGEMENT SEMINAR (A)
3 Credit Hours
Students prepare records management proposals and projects. This course prepares students for Certified Records Manager (CRM) examination give annually by the Association of Records Managers and Administrators (ARMA).
50 Contact Hours

Machine Tool Technology

MTT 100 SHOP SAFETY (R)
3 Credit Hours
In This unit, instruction will cover safety policies and practices in general and deal specifically with the engine lathe, vertical mill, horizontal mill, drill press, shaper, pedestal grinder, surface grander, bandsaw, hacksaw, heat treat furnace and hand tools.
60 Contact Hours

MTT 105 INTRODUCTION TO MACHINE SHOP (R)
2 Credit Hours
In this unit, information will cover the Machine Shop Program, lathe bit grinding, the pedestal grinder, use of heat treating and metallurgy and layout of a workpiece. The student will use this information to make machinist tools.
40 Contact Hours

MTT 106 METROLOGY (R)
2 Credit Hours
In this unit, the student will cover the use of the outside and inside micrometer, combination square, bend protractor, Vernier height gauges, Vernier calipers, surface plate-gauge blocks, optical profile projector, sine bar, and inspection techniques. The student will use this information to perform final inspection on finished parts.
40 Contact Hours

MTT 107 BLUEPRINT READING FOR MACHINE SHOP (R)
2 Credit Hours
In this unit, information will cover the principles of mechanical drawings and related technical information needed to make shop sketches and read industrial drawings of machine parts and tools. The student will demonstrate his or her ability to perform the task covered throughout the remainder of the course to the instructor's satisfaction.
40 Contact Hours

MTT 109 MACHINIST HAND TOOLS/BENCH WORK (R)
1 Credit Hour
In this unit, information will cover the names of bench tools and their proper use. The students will then make parts using this tool group.
20 Contact Hours

MTT 110 YOUR FUTURE AS A MACHINIST (R)
1 Credit Hour
In this unit, information will cover how to apply for a machinist job, wages and benefits, starting in the trade, shop management and organization and world of work and your place in it.
20 Contact Hours

MTT 115 LUBRICATION AND MAINTENANCE (R)
1 Credit Hour
In this unit, information will cover how to lubricate and oil all the machines in the shop. This includes lathes, milling machines, drill presses, grinders, saws, shapers and the different kinds of lubricants to use on each machine. The course will also cover how to clean and deburr the machines and minor machine repair. In addition, pumps/seals/packing, bearing use and types and rigging/safe lifting will be taught.
20 Contact Hours

MTT 116 BANDSAW, HACKSAW AND DRILLING (R)
1 Credit Hour
In this unit, the information will cover setup and operation of the bandsaw, hacksaw and drill press and the different types, the proper speeds and feeds as well as bit and blade selections. The student will demonstrate his knowledge of this information by making parts using this machine group.
20 Contact Hours

MTT 117 VERTICAL MILL SETUPS AND OPERATIONS I (R)
4 Credit Hours
In this unit, the student will gain skill and knowledge on the vertical mill, its parts and functions, in how to indicate a vise, edge locating, surface milling, dial adjustments, drilling and tapping, squaring of work piece, and speeds and feeds formulas.
80 Contact Hours

MTT 118 VERTICAL MILL SETUPS AND OPERATIONS II (R)
4 Credit Hours
The student in this unit will sweep in the head of the vertical mill, learn indexing, rotary table operation, figure how to coordinate locations for hole circles, slots and cut angles.
80 Contact Hours

MTT 119 HORIZONTAL MILL SETUPS AND OPERATIONS (R)
4 Credit Hours
In this unit, the student will be able to develop his skills and knowledge on the horizontal milling machine, parts and their functions, learn horizontal mill accessories, slab milling, slot milling, cutter selection, form milling, squaring of work piece, and speeds and feeds.
80 Contact Hours

MTT 120 MACHINE SHOP GRINDING (R)
3 Credit Hours
In this unit, the information will cover the principles of grinding wheel selection, sharpening, surface grinding theory, operations, and the student will apply this knowledge to grinding parts made on the milling machine.
60 Contact Hours

MTT 125 SHAPER SETUP AND OPERATION (R)
1 Credit Hour
In this unit, information will cover the shaper parts, functions, and proper operation and work holding methods not covered in the mill, and tool geometry common to single plan machines. Shaper, planer, slotting and broaching machines theory and limited use in today's machine shop will complete this course. The student will demonstrate his knowledge of this information by making parts using this machine group.
20 Contact Hours

MTT 126 ENGINE LATHE SETUPS AND OPERATIONS I (R)
4 Credit Hours
In this unit, the student will be able to find out how to use and mount the three-jaw chuck on the spindle of the lathe, how to set their lathe tools on center, check work piece in chuck, face it, turn O.D., center drill, drill, ream, knurl, tap and chamfer. The students will also be able to calculate the feeds and speeds on the lathe and hold tolerances of T-.015.
80 Contact Hours

MTT 127 ENGINE LATHE SETUPS AND OPERATIONS II (R)
4 Credit Hours
In this unit, the student will develop the knowledge and skill of how to single point external and internal threads holding tolerances of Class 2 and 3 thread, how to use the taper attachment, and to do "radius" forming.
80 Contact Hours

MTT 128 ENGINE LATHE SETUPS AND OPERATIONS III (R)
4 Credit Hours
In this unit, the student will center round and square parts in a four-jaw chuck, machine internal and external diameters holding tolerances of .0005. The student will be able to use previous experience, theories and operations in machining more difficult parts to develop more skill and knowledge.
80 Contact Hours

MTT 129 JOB SHOP MACHINING (R)
2 Credit Hours
In this unit, the information will cover the fabrication process. The student will produce machine parts and machinist tools from a shop blueprint, write process sheets and estimate machining time to the performance level expected in industry.
40 Contact Hours

MTT 297 COOPERATIVE EDUCATION (R)
1-4 Credit Hours
This course is actual work experience under professional supervision. Students will apply learned work skills on the job.
30-120 Contact Hours

Music

MUS 100 ENSEMBLE: CHORUS (A,N,R)
1 Credit Hour
Study of choral styles and literature from the classics to the contemporary including vocal techniques and diction. (May be repeated for up to six hours credit.)
30 Contact Hours

MUS 101 HISTORY OF AFRO-AMERICAN MUSIC (A)
3 Credit Hours
A study of Afro-American music and musical instruments of Africa through the Jazz Age to the present.
45 Contact Hours

MUS 105 BASIC MUSIC SKILLS (N)
1 Credit Hour
Study of the basic elements of music including pitch and rhythm notation, scales, intervals, chords, and terminology.
15 Contact Hours

MUS 106 ENSEMBLE: BAND (N)
1 Credit Hour
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
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 116 SONGWRITING (A)
3 Credit Hours
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 131 VOICE CLASS I (A,N,R)
1 Credit Hour
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 151 PIANO CLASS I (A,N,R)
1 Credit Hour
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
Principles and techniques of folk guitar.
30 Contact Hours

MUS 162 FOLK GUITAR II (R)
1 Credit Hour
Continuation of MUS 162.
30 Contact Hours

MUS 165 GUITAR CLASS I (A,N,R)
1 Credit Hour
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
Continuation of MUS 165.
30 Contact Hours

MUS 190 MUSIC APPRECIATION (A,N,R,AEC)
3 Credit Hours
Survey of music literature, style and form from inception to present day.
45 Contact Hours

MUS 200 CHORAL CONDUCTING (N)
2 Credit Hours
Introduction to conducting patterns and techniques with emphasis on choral compositions and problems.
30 Contact Hours

MUS 205 INSTRUMENTAL CONDUCTING (N)
2 Credit Hours
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
Continuation of MUS 211.
75 Contact Hours

MUS 235 AMERICAN POPULAR MUSIC (A,N)
3 Credit Hours
Survey of American Popular Music (jazz, country, rock) from 1900 to the present.
45 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: Permission 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
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.
240 Contact Hours

NCE 201 PRE AND POST OPERATIVE PATIENT TEACHING (A,N,R)
1 Credit Hour
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 Contact Hours

NCE 202 PSYCHIATRIC NURSING REVIEW (A,N,R)
1 credit hour
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 Contact Hours

NCE 203 MEDICAL SURGICAL NURSING REVIEW (A,N,R)
2 credit hours
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 Contact Hours

NCE 204 MATERNAL CHILD NURSING REVIEW (A,N,R)
1 Credit Hour
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 Contact Hours

NCE 205 THE UPS AND DOWNS OF DEPRESSION (A,N,R)
1 Credit Hour
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 Contact Hours

NCE 206 APPLIED PHYSIOLOGY FOR NURSES (A,N,R)
4 Credit Hours
Study of physiology and pathophysiology — an integrated approach to human disease with emphasis on nursing implications.
60 Contact Hours

NCE 207 ACUTE CARE OF THE MEDICAL SURGICAL PATIENT (A,N,R)
3 Credit Hours
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 Contact Hours

NCE 208 BASIC EKG INTERPRETATION (A,N,R)
2 Credit Hours
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 Contact Hours

NCE 209 CLINICAL INTERPRETATION OF LABORATORY TESTS (A,N,R)
2 Credit Hours
New developments in laboratory test and analysis. Emphasis on nurses' responsibilities in interpreting and evaluating laboratory tests to improve patient care.
30 Contact Hours

NCE 210 PHYSICAL ASSESSMENT OF THE ADULT (A,N,R)
3 Credit Hours
Study and practice of techniques that are necessary in history taking and physically examining an adult patient for nursing care assessments.
45 Contact Hours

NCE 211 AUSCULTATION OF BREATH AND HEART SOUNDS (A,N,R)
1 Credit Hour
Theory and practice of normal breath and heart sounds and recognition of abnormalities through audio-visual materials.
15 Contact Hours

NCE 212 MANAGING THE HYPERTENSION PATIENT (A,N,R)
1 Credit Hour
This course includes assessment of the hypertensive patient; pharmacological management of hypertension and techniques to provide and maintain an effective teaching-learning atmosphere.
15 Contact Hours

NCE 213 PRIMARY CRISIS INTERVENTION (A,N,R)
2 Credit Hours
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 Contact Hours

NCE 214 SPIRITUAL CARE OF THE PATIENT (A,N,R)
1 Credit Hour
Exploration of the spiritual dimension of patient care, making it a natural part of nursing practice that easily fits into the nursing process.
15 Contact Hours

NCE 215 CARDIOPULMONARY RESUSCITATION (A,N,R)
1 Credit Hour
Normal heart physiology and basic EKG followed by practice of cardiopulmonary resuscitation. Based on AMA and AHA standards.
15 Contact Hours

NCE 216 ORTHOPEDIC AND NEUROLOGICAL NURSING (A,N,R)
2 Credit Hours
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 Contact Hours

NCE 217 PHARMACODYNAMICS AND DRUG INTERACTION (A,N,R)
3 Credit Hours
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 Contact Hours

NCE 218 LEGAL ASPECTS OF CHARTING (A,N,R)
1 Credit Hour
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 Contact Hours

NCE 219 NURSING LEADERSHIP AND MANAGEMENT (A,N,R)
2 Credit Hours
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 Contact Hours

NCE 220 LEGAL ASPECTS OF NURSING (A,N,R)
2 Credit Hours
Introduction to the law and application to nursing practice.
30 Contact Hours

NCE 221 WELLNESS (A,N,R)
1 Credit Hour
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.
15 Contact Hours

NCE 222 AUSCULTATION OF HEART SOUNDS (A,N,R)
1 Credit Hour
In-depth theory and practice of normal heart sounds and recognition of abnormalities through audio-visual materials.
15 Contact Hours

NCE 223 AUSCULTATION OF BREATH SOUNDS (A,N,R)
1 Credit Hour
In-depth theory and practice of normal breath sounds and recognition of abnormalities through audio-visual materials.
15 Contact Hours

NCE 224 THE FACES OF DRUG ABUSE: CARING AND COPING (A,N,R)
1 Credit Hour
This course offers a comprehensive review of common drugs of abuse: narcotics, sedatives, hypnotics, analgesics, tranquilizers, hallucinogens, amphetamines, and alcohol. Included will be the effects of abused drugs; intervention, community services; critical observations; and "dos and don'ts" that we, as adults, nurses and/or parents need to know so that we can be alert and effective in handling drug problems as they touch our lives and feelings.
15 Contact Hours

NCE 225 BODY MECHANICS FOR NURSES (A,N,R)
1 Credit Hour
Fundamental principles, protection of the lowback, rules of body alignment in activity, specific motions and postures, specific application to hospital activities.
15 Contact Hours

NCE 226 I.V. THERAPY (A,N,R)
1 Credit Hour
Basic venipuncture techniques, factors involved in vein selection, psychological implications, complications and nursing measures.
15 Contact Hours

NCE 227 COMMUNICATION SKILLS FOR NURSES (A,N,R)
1 Credit Hour
Therapeutic listening, message-sending and problem solving techniques.
15 Contact Hours

NCE 228 HYPERALIMENTATION (A,N,R)
1 Credit Hour
Presents the facts of parenteral hyperalimentation as a therapeutic adjunct in the treatment or prevention of negative nitrogen balance. Emphasis on implications of nursing care to promote maximum therapeutic benefit to the patient.
15 Contact Hours

NCE 229 FLUID AND ELECTROLYTES (A,N,R)
1 Credit Hour
Identifies the principles of fluids and electrolytes and their application to patient care. To include causative factors of imbalances, recognition of signs and symptoms, laboratory tests, treatment and nurse's responsibilities.
15 Contact Hours

NCE 230 EMERGENCY NURSING ASSESSMENT (A,N,R)
1 Credit Hour
Basic patient assessment in any emergency situation.
15 Contact Hours

NCE 231 NURSE'S PERSONAL FINANCES (A,N,R)
1 Credit Hour
This course is specifically for nurses regarding tax deductions; retirement and estate planning; establishing credit ratings; record keeping; insurance; investments; budgeting money and laws which affect women's financial rights.
15 Contact Hours

NCE 232 PREVENTING THE BURNOUT SYNDROME (A,N,R)
1 Credit Hour
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 Contact Hours

NCE 233 CAREER PLANNING SEMINAR FOR NURSES (A,N.R)
1 Credit Hour
Seminar to examine the nursing profession as seen by self and consumers; to explore a "perfect career"; and to determine strategies to accomplish career goals: assertiveness, resolving conflicts, writing resumes, and negotiating salaries.
15 Contact Hours

NCE 235 EMERGENCY TRAUMA NURSING (A,N,R)
2 Credit Hours
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 Contact Hours

NCE 236 PHYSICAL ASSESSMENT OF THE CHILD (A,N,R)
2 Credit Hours
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 Contact Hours

NCE 237 BASIC SPANISH FOR NURSES (A,N,R)
3 Credit Hours
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 Contact Hours

NCE 238 INTERVIEWING TECHNIQUES FOR NURSES (A,N,R)
1 Credit Hour
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 Contact Hours

NCE 239 BLOOD GASES (A,N,R)
1 Credit Hour
Four primary acid-base balance problems, interpretation of blood gas test, signs, symptoms and measures to help the nurse plan effective patient care.
15 Contact Hours

NCE 240 ASSERTIVENESS FOR NURSES (A,N,R)
2 Credit Hours
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 Contact Hours

NCE 242 THERAPEUTIC TOUCH (A,N,R)
1 Credit Hour
Nurses will learn to develop and use touch as a means of assessing a client's/patient's state of wellness; and to enhance the client's wellness through the intentional use of touch. Classes will provide a historical overview of healing through touch. The relation of the art of healing touch and a variety of belief systems, the scientific method, holistic health, parapsychology and other healing modalities will be presented. The student will be given specific instructions in developing touch sensitivity and will practice the assessment and healing methods of therapeutic touch.
15 Contact Hours

NCE 243 UNDERSTANDING IV FLUIDS AND COMMON IV MEDICATIONS (A,N,R)
1 Credit Hour
In-depth presentation of IV solutions, blood products, and hyperalimentation with emphasis on nursing implications. Common emergency drugs, chemotherapy, antibiotics, and others used for IV administration will also be included.
15 Contact Hours

NCE 245 INTERMEDIATE EKG INTERPRETATION (A,N,R)
2 Credit Hours
Continuation of basic EKG interpretation. To include twelve (12) lead interpretations with focus on treatment modalities.
30 Contact Hours

NCE 247 INTRODUCTION TO CRITICAL CARE (A,N,R)
2 Credit Hours
An introduction to the care of the critically ill patient to include the technical, psychological and physical aspects of critical care nursing.
30 Contact Hours

NCE 248 PSYCHIATRIC NURSING UPDATE (A,N,R)
2 Credit Hours
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 Contact Hours

NCE 249 SEXUAL ASPECTS OF PATIENT CARE (A,N,R)
2 Credit Hours
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 Contact Hours

NCE 250 TUBES AND INTUBATION (A,N,R)
1 Credit Hour
Identification, insertion and maintenance of tubes used in every aspect of patient care. This course will *not* teach one how to do tracheal intubation.
15 Contact Hours

NCE 255 PROBLEM ORIENTED MEDICAL RECORDS (A,N,R)
1 Credit Hour
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 Contact Hours

NCE 256 INTERPRETATION OF VITAL SIGNS (A,N,R)
1 Credit Hour
An in-depth look at vital signs; what each means in relation to the other; and what the abnormals indicate in relation to different disease processes. This is more than basic TPR.
15 Contact Hours

NCE 257 SELECTED EMERGENCY CARE (A,N,R)
1 Credit Hour
First aid plus emergency care of patient with diabetes, epilepsy, fainting, burns, etc.
15 Contact Hours

NCE 259 AGING PROCESS (A,N,R)
1 Credit Hour
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 Contact Hours

NCE 260 PEDIATRIC EMERGENCY CARE (A,N,R)
2 Credit Hours
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 Contact Hours

NCE 265 EMERGENCY CARE (A,N,R)
4 Credit Hours
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.
75 Contact Hours

NCE 266 MANAGEMENT IN LONG TERM CARE (A,N,R)
1 Credit Hour
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 Contact Hours

NCE 267 PATIENT CARE — OPEN HEART SURGERY (A,N,R)
1 Credit Hour
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 Contact Hours

NCE 268 QUALITY ASSURANCE IN LONG TERM CARE (A,N,R)
1 Credit Hour
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 Contact Hours

NCE 269 THE NURSE AND NUTRITION (A,N,R)
1 Credit Hour
Current concepts of normal and therapeutic nutrition applicable to patient care and personal health.
15 Contact Hours

NCE 270 EMERGENCY DRUGS (A,N,R)
1 Credit Hour
Drugs frequently used in emergency situations — actions, indications and contraindications. Emphasis on application in patient care situations.
15 Contact Hours

NCE 276 DRUGS AND THE ELDERLY (A,N,R)
1 Credit Hour
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 Contact Hours

NCE 277 CARDIOVASCULAR NURSING (A,N,R)
2 Credit Hours
Study of the anatomy, physiology and pathophysiology of the cardiovascular system directed toward increased 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 Contact Hours

NCE 278 REHABILITATION NURSING (A,N,R)
2 Credit Hours
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 Contact Hours

NCE 279 IMMUNIZATION LAWS AND CHILD HEALTH (A,N,R)
1 Credit Hour
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 Contact Hours

NCE 280 NURSING SKILLS (A,N,R)
1 Credit Hour
Lecture and student practice of nursing skills; catheterizations, intravenous therapy, nasogastric intubation, injections and dressings.
15 Contact Hours

NCE 285 ADVANCED COMMUNICATION SKILLS (A,N,R)
1 Credit Hour
Improve your written communication skills for charting nurse's notes, writing memos, announcements, and incident reports. Learn how to write for publication. You will have an opportunity to publish locally what you have written. Also includes legal issues involved in written communications.
15 Contact Hours

NCE 295 PSYCHOLOGICAL ASPECTS OF PATIENT CARE (A,N,R)
2 Credit Hours
Psychological assessment and intervention of patient care. Includes how to cope with normal and abnormal stress and tension.
30 Contact Hours

NCE 296 COMMON CHILDHOOD ILLNESSES (A,N,R)
2 Credit Hours
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 Contact Hours

NCE 297 STRESS MANAGEMENT FOR NURSES (A,N,R)
1 Credit Hour
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 Contact Hours

NCE 298 VITAL ISSUES IN NURSING (A,N,R)
1 Credit Hour
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 Contact Hours

Nuclear Medicine Technology

NMT 200 CLINICAL APPLICATIONS I (A)
2 Credit Hours
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.
30 Contact Hours

NMT 203 NUCLEAR MEDICINE PRACTICUM ORIENTATION (A)
1 Credit Hour
Prerequisite: Admission to Certificate NMT Program
Designed to provide the student with an orientation to the program requirements and design of their nuclear medicine technology clinical education. Focuses on group interaction and the team approach to health care and delivery.
15 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 indeterminant and determinant errors precision, bias, accuracy, Gaussion and Poisson distributions, standard deviations, error analysis, and optimum distribution of counting times.
15 Contact Hours

NMT 206 RADIATION PHYSICS FOR NUCLEAR MEDICINE (A)
2 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.
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.
68 Contact Hours

NMT 208 CLINICAL PRACTICUM I (A)
8 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.
360 Contact Hours

NMT 209 CLINICAL APPLICATIONS II (A)
4 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 Contact Hours

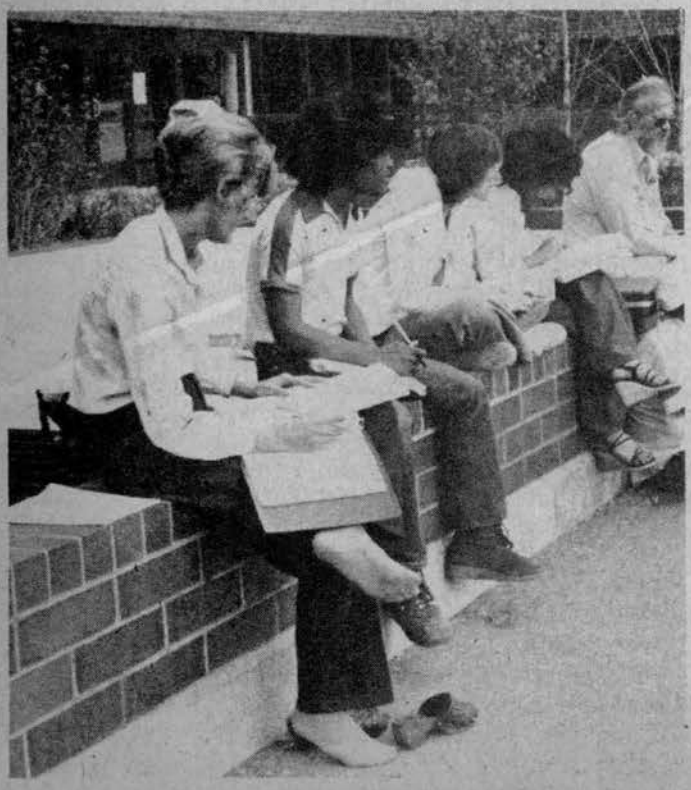
NMT 210 CLINICAL PRACTICUM II (A)
8 Credit Hours
Prerequisite: NMT 208
Provides the student with the opportunity to develop the skills associated with radiopharmaceutical preparation and quality control, dose distribution, radionuclide accountability, radioassay procedures and quality control, computers 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 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 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 Contact Hours

NMT 217 RADIOPHARMACEUTICAL PREPARATIONS (A)
4 Credit Hours
Prerequisites: CHE 101 of 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.
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.
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 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.
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 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.
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 occuring 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.
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 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 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.
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.
30-240 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 Contact Hours

NUR 209 REVIEW OF NURSING PRINCIPLES (A)
2 Credit Hours
Provides a review and synthesis of nursing theory to prepare the student for job readiness.
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.
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.
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.
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 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 Contact Hours

NUR 259 MEDICAL SURGICAL NURSING SEMINAR (A)
2-4 Credit Hours
Reviews and reinforces nursing theory related to care of the patient with medical or surgical problems.
30-60 Contact Hours

NUR 269 PEDIATRIC NURSING SEMINAR (A)
2-4 Credit Hours
Reviews and reinforces nursing theory related to the care of the pediatric patient. Growth and development are stressed.
30-60 Contact Hours

NUR 279 PSYCHIATRIC NURSING SEMINAR (A)
2-4 Credit Hours
Reviews and reinforces nursing theory related to the care of the patient with emotional and behavioral problems.
30-60 Contact Hours

NUR 289 OBSTETRICAL NURSING SEMINAR (A)
2-4 Credit Hours
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 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 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 Contact Hours

NUR 105 BASIC CONCEPTS OF NURSING (N)
6 Credit Hours
Co-requisites: NUR 101, NUR 116, 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.
120 Contact Hours

NUR 106 BASIC CONCEPTS IN FAMILY CENTERED MATERNAL-NEWBORN NURSING (N)
4 Credit Hours
Prerequisites: NUR 105 and successful completion of previous clinical course work.
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.
75 Contact Hours

NUR 107 BASIC CONCEPTS OF NURSING OF CHILDREN (N)
4 Credit Hours
Prerequisites: NUR 105 and successful completion of previous clinical course work.
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.
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,DIT 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.
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.
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 Contact Hours

NUR 116 MEDICAL TERMINOLOGY (N)
1 Credit Hour
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 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 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.
30-270 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 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 and successful completion of preceding clinical experience in concurrent nursing courses.
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.
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 and successful completion of preceding clinical experience in concurrent nursing courses.
This course is a co...prehensive 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.
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 heirarchy is applied in the clinical area.
120 Contact Hours

NUR 209 REVIEW OF NURSING PRINCIPLES (N)
2 Credit Hours
This course is a review and synthesis of nursing theory preparing the student for job readiness.
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.
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, cirsis 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.
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.
165 Contact 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 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 Contact Hours

NUR 259 MEDICAL SURGICAL NURSING SEMINAR (N)
2-4 Credit Hours
This course is designed to review and reinforce nursing theory related to care of the patient with medical or surgical problems.
30-60 Contact Hours

NUR 269 PEDIATRIC NURSING SEMINAR (N)
2-4 Credit Hours
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 Contact Hours

NUR 279 PSYCHIATRIC NURSING SEMINAR (N)
2-4 Credit Hours
This course is designed to review and reinforce nursing theory related to the care of the patient with emotional and behavioral problems.
30-60 Contact Hours

NUR 289 OBSTETRICAL NURSING SEMINAR (N)
2-4 Credit Hours
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.
30-60 Contact Hours

NUR 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)
2 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.
30 Contact Hours

OPA 105 VISUAL SCIENCE, OPTICS AND FUNDAMENTALS OF FRAME MECHANICS (N)
4 Credit Hours
Prerequisite: Concurrent enrollment in OPA 100
Properties of light, glass, plastic, single vision, multifocal, photochromic, tinted, absorptive, impact resistant and low vision lenses. Use of the lensometer, tonometer, geneva lens measure, calopers, interpupillary measurements, review of metric system will be included.
75 Contact Hours

OPA 107 OPTOMETRIC OFFICE MANAGEMENT (N)
1 Credit Hour
Prerequisites: SEC 101 or BSI 126 or equivalent.
Record-keeping procedures, patient control, appointment scheduling, mail and recall systems, fees, finance, credit procedures, insurance forms will be covered. Legal implications will be included.
15 Contact Hours

OPA 108 FRAME SELECTION AND ADJUSTMENT (N)
2 Credit Hours
Study of facial structures with subsequent frame selection and adjustment. Minor frame repair and use of related equipment included.
38 Contact Hours

OPA 109 CONTACT LENSES (N)
1 Credit Hour
Contact lens, care and handling procedures, auxiliary solutions, insertion, removal and centering techniques. Use of related equipment included.
15 Contact Hours

OPA 115 OPTOMETRIC CLINICAL PRACTICUM (N)
4 Credit Hours
Through placement in a visual care office or clinic, the student is provided the opportunity to perform the duties of an assistant.
180 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 Contact Hours

OPA 117 INTRODUCTION TO OPTOMETRICS (N)
1 Credit Hour
A course designed to introduce the student to optometric terminology and the characteristics of the visual care field today.
15 Contact Hours

Paralegal

PAR 100 INTRODUCTION TO PARALEGAL (A)
3 Credit Hours
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 Contact Hours

PAR 105 TORTS (A)
3 Credit Hours
Introduces basic area of law dealing with civil (as opposed to criminal) wrongs, with emphasis on the area of negligence law.
45 Contact Hours

PAR 106 CONTRACTS (A)
3 Credit Hours
Introduces the basic area of contracts, with special emphasis on the preparation of contracts.
45 Contact Hours

PAR 107 LEGAL RESEARCH (A)
3 Credit Hours
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.
45 Contact Hours

PAR 108 CIVIL PROCEDURES (A)
3 Credit Hours
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.
45 Contact Hours

PAR 109 PROPERTY (A)
3 Credit Hours
Emphasizes drafting of forms for partnership agreements, real estate transactions, procedures relevant to subdivision requirements and other requirements of real estate law practice.
45 Contact Hours

PAR 110 BUSINESS ORGANIZATIONS (A)
3 Credit Hours
Introduces the law of sole proprietorships, partnerships and corporations, with emphasis on drafting the numerous documents inherent in corporate law practice.
45 Contact Hours

PAR 115 DOMESTIC RELATIONS (A)
3 Credit Hours
Deals with standard legal problems of marriage including dissolution of marriage, dependent and neglected children, children in need of supervision, adoptions, etc.
45 Contact Hours

PAR 116 COMMERCIAL LAW (A)
3 Credit Hours
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.
45 Contact Hours

PAR 117 CONSTITUTIONAL LAW (A)
3 Credit Hours
Introduces state and federal constitutional law and principles and individual guarantees against governmental or private action. Individual rights are emphasized.
45 Contact Hours

PAR 118 CRIMINAL LAW AND PROCEDURE (A)
3 Credit Hours
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.
45 Contact Hours

PAR 119 PROBATE (A)
3 Credit Hours
Emphasizes drafting wills, settling estates, trusts, and tax considerations involved in each of these areas.
45 Contact Hours

PAR 120 OFFICE PROCEDURES (A)
3 Credit Hours
Teaches the paralegal such skills as timekeeping, management controls, client files, checklists, and other skills necessary to keep any law firm operating efficiently.
45 Contact Hours

PAR 125 TAX LAW
3 Credit Hours
Introduces Internal Revenue Code rules and regulations, its forms, and special tax problems relating to property and inheritance. Deals with mechanics, not theory, of tax law.
45 Contact Hours

PAR 126 CREDITOR / DEBTOR / BANKRUPTCY (A)
3 Credit Hours
Examines creditor's rights with emphasis on prejudgment and judgment remedies. Emphasis also on bankruptcy procedures.
45 Contact Hours

PAR 127 EVIDENCE (A)
3 Credit Hours
Introduces the Rules of Evidence and covers the methodology of interviewing witnesses, investigating and marshalling of evidence for trial of cases.
45 Contact Hours

PAR 128 ENVIRONMENTAL AND NATURAL RESOURCE LAW (A)
3 Credit Hours
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.
45 Contact Hours

PAR 129 ADMINISTRATIVE LAW (A)
3 Credit Hours
Introduces the Rule of Administrative Agencies and daily operating procedures of agencies, plus how the paralegal can work within these various agency structures.
45 Contact Hours

PAR 130 REAL ESTATE AND LAND USE LAW (A)
3 Credit Hours
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.
45 Contact Hours

PAR 207 LEGAL RESEARCH SEMINAR I (A)
3 Credit Hours
Prerequisite: PAR 107
Continued utilization of research techniques learned in PAR 109. Emphasis placed upon student's ability to brief cases and write legal memoranda.
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 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 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.
45 Contact Hours

Petroleum Technology — Exploration / Production

PET 105 PETROLEUM INDUSTRY (R)
3 Credit Hours
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 Contact Hours

PET 106 GEOLOGICAL (MAP) DRAFTING I (R)
6 Credit Hours
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.
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).
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 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.
120 Contact Hours

PET 206 LAND AND LEGAL ASPECTS (R)
3 Credit Hours
Prerequisite: Permission 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 Contact Hours

PET 207 PETROLEUM EXPLORATION LAB II (R)
6 Credit Hours
Prerequisite: PET 107
Data gathering, basic data evaluation, complete presentation of prospect.
120 Contact Hours

PET 208 HYDROCARBON ACCUMULATION (R)
3 Credit Hours
Source rock, subsurface geology, structural geology, petroleum traps.
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 Contact Hours

PET 215 PETROLEUM PRODUCTION I (R)
6 Credit Hours
Prerequisite: Permission of instructor
Desk procedures for the technician in: petroleum reservoir characteristics, porosity, permeability, gas behavior, phase relationships, reservoir management, properties of porous media.
105 Contact Hours

PET 216 PETROLEUM PRODUCTION II (R)
6 Credit Hours
Prerequisite: Permission of instructor
Desk procedures for the technician in: drilling, safety, mud logging, casing and tubing, cementing, perforating, drilling fluid behavior, well log analysis (basic).
105 Contact Hours

PET 217 PETROLEUM PRODUCTION III (R)
6 Credit Hours
Prerequisite: Permission 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.
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 Contact Hours

PET 219 PETROLEUM COMPANY PROCEDURES (R)
3 Credit Hours
Prerequisite: Permission of instructor
Terminology and abbreviations, taking and sending drilling reports, lease and rental procedures, plotting well and lease locations.
45 Contact Hours

PET 299 INDEPENDENT STUDY (R)
3 Credit Hours
Prerequisite: Permission of instructor
Petroleum related topics selected by student-instructor.
90 Contact Hours

Physical Education

PHE 100 GROUP ACTIVITIES (N,R)
1 Credit Hour
Coed participation in soccer, volleyball, softball, basketball, water activities and outdoor activities.

PHE 101 FIRST AID (N,R)
2 Credit Hours
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
Participation in activities designed to improve physical fitness and to improve skills in various team sports.

PHE 106 HORSEMANSHIP (N,R)
1 Credit Hour
Beginning instruction in western style riding and horsemanship.

PHE 107 CANOEING (N,R)
1 Credit Hour
Basic strokes of canoeing, principles of water safety and self-rescue.

PHE 111 BEGINNING ARCHERY (N,R)
1 Credit Hour
Basic skills and techniques including target competition field shooting, equipment and terminology.

PHE 112 INTERMEDIATE ARCHERY (N,R)
1 Credit Hour
Continuation of PHE 111 with emphasis on advanced skills in shooting.

PHE 121 BEGINNING BOWLING (N,R)
1 Credit Hour
Basic skills and techniques of bowling.

PHE 122 INTERMEDIATE BOWLING (N,R)
1 Credit Hour
Continuation of PHE 121.

PHE 131 BEGINNING GOLF (N,R)
1 Credit Hour
Introduction to golf, its origin and development, with emphasis on basic skills and techniques.

PHE 132 INTERMEDIATE GOLF (N,R)
1 Credit Hour
Prerequisites: PHE 131
Advanced skills in golf.

PHE 141 BEGINNING SWIMMING (N,R)
1 Credit Hour
Basic fundamentals of swimming, includes basic crawl, elementary backstroke and life support.

PHE 142 INTERMEDIATE SWIMMING (N,R)
1 Credit Hour
Side stroke, elementary backstroke, surface dives, underwater swimming and endurance of crawl.

PHE 143 ADVANCED SWIMMING (N,R)
1 Credit Hour
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
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
Techniques and skills along with rules and regulations of the game.

PHE 152 INTERMEDIATE TENNIS (N,R)
1 Credit Hour
Advanced skills, team play and game strategy.

PHE 153 ADVANCED TENNIS (N,R)
1 Credit Hour
Individual competition and team play.

PHE 160 SOCIAL DANCING (N)
1 Credit Hour
Introduction to social dancing and various dance formations and rhythms.

PHE 161 BEGINNING COLLEGIATE DANCE (N,R)
1 Credit Hour
Exercises fundamental to theatrical dancing.

PHE 162 BEGINNING COLLEGIATE DANCE (N,R)
1 Credit Hour
Theatrical dancing with level step combinations.

PHE 165 SQUARE AND FOLK DANCE (N,R)
1 Credit Hour
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
Basic instruction and skills of ice skating

PHE 170 CROSS-COUNTRY SKIING (N,R)
1 Credit Hour
Skills and techniques for cross-country skiing.

PHE 171 BEGINNING SKIING (N,R)
1 Credit Hour
Basic techniques and skills for beginning skiing.

PHE 172 INTERMEDIATE SKIING (N,R)
1 Credit Hour
Continuation of PHE 171.

PHE 173 ADVANCED SKIING (N,R)
1 Credit Hour
Biomechanics of skiing. Parallel, wedin, racing and free style introduction.

PHE 175 SKI INSTRUCTION CERTIFICATION (R)
3 Credit Hours
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 176 BICYCLE CAMPING (R)
2 Credit Hours
Fundamentals of using the bicycle for camping recreation.

PHE 177 GUIDE TO HIKING/CLIMBING (R)
1 Credit Hour
Places one can go to hike or camp and how to use guide books.

THE 180 BASIC MOUNTAINEERING (R)
3 Credit Hours
Mountain climbing techniques, including route finding and rope handling.

PHE 181 BEGINNING ROCK CLIMBING (R)
2 Credit Hours
Fundamentals of hand and foot holds. Top roped climbing.

PHE 182 INTERMEDIATE ROCK CLIMBING (R)
2 Credit Hours
Continuation of REL 181.

PHE 183 BASIC ICE CLIMBING (R)
1 Credit Hour
Fundamentals of climbing high angle ice.

PHE 185 SNOW AND GLACIER CLIMBING (R)
3 Credit Hours
Use of ice axe, crampons and rope, including route finding and crevasse rescue.

PHE 186 ORIENTEERING (R)
2 Credit Hours
Competitive cross country walking and running using map and compass.

PHE 187 MAP AND COMPASS FOR THE OUTDOORSMAN (R)
3 Credit Hours
Route-finding, map reading and navigational principles. Field trips.

PHE 188 BACKPACKING (R)
2 Credit Hours
The fundamentals of backpacking involving the factors of clothing and equipment.

PHE 189 CLIMBING/BACKPACKING EXPEDITION (R)
3 Credit Hours
Expedition covering seven to ten days hiking and climbing in remote North American regions.

PHE 190 SNOWSHOEING (R)
1 Credit Hour
Basic skills and techniques.

PHE 191 BEGINNING SELF DEFENSE (N,R)
1 Credit Hour
Basic skills and techniques on the art of self defense.

PHE 192 INTERMEDIATE SELF DEFENSE (N,R)
1 Credit Hour
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
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
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
Continuation of PHE 201.

PHE 203 ADVANCED MARTIAL ARTS (R)
1 Credit Hour
Continuation of PHE 202.

PHE 205 INTRODUCTION TO PHYSICAL EDUCATION (N,R)
1 Credit Hour
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
Instruction and teaching techniques of sports.

PHE 207 PHYSICAL FITNESS FOR WOMEN (N,R)
2 Credit Hours
Fitness program, emphasis on theory of exercise, fundamental movements, body mechanics and health.

PHE 208 PHYSICAL FITNESS FOR MEN (N,R)
2 Credit Hours
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
Study of rules and mechanics of officiating in group sports.

PHE 211 BEGINNING CONDITIONING (N,R)
1 Credit Hour
Basic program of body conditioning to meet individual needs.

PHE 212 INTERMEDIATE CONDITIONING (N,R)
1 Credit Hour
Continuation of PHE 211.

PHE 218 OUTDOOR RECREATION AND CAMPING (R)
2 Credit Hours
Includes study of the history, development and trends of outdoor recreation, conservation and organized camping. Emphasis is on laboratory work, field trips and the development of outdoor skills.

PHE 220 WILDERNESS EQUIPMENT AND FACILITIES (R)
3 Credit Hours
Designed to acquaint and familiarize the student with wilderness equipment and program facilities.

PHE 221 MOUNTAINEERING TEACHING CONCEPTS (R)
3 Credit Hours
Planning and methods required to teach mountaineering skills.

PHE 222 BASIC SEARCH AND RESCUE (R)
3 Credit Hours
The basic fundamentals required for search and rescue in a wilderness environment.

PHE 223 WILDERNESS NUTRITION (R)
1 Credit Hour
Menu planning and nutritional requirements for wilderness camping.

PHE 224 COLORADO'S FOURTEENERS (R)
1 Credit Hour
A historical look into the naming and climbing of Colorado's 14,000 foot mountain peaks.

PHE 225 ROUTEFINDING (R)
1 Credit Hour
Concepts of finding the optimum path in climbing a mountain.

PHE 226 WILDERNESS DANGERS (R)
1 Credit Hour
Familiarization of the objective and subjective dangers of the wilderness.

PHE 227 ADVANCED MOUNTAINEERING (R)
2 Credit Hours
Continuation of PHE 180 and PHE 185.

PHE 228 WILDERNESS ETHICS (R)
2 Credit Hours
The motivation, aesthetics, and ethics of mountaineering, including conservation principles.

PHE 229 WILDERNESS SURVIVAL (R)
3 Credit Hours
The physical, physiological and psychological principles of survival. Field Trip.

PHE 230 MOUNTAINEERING PHOTOGRAPHY (R)
3 Credit Hours
The fundamentals of mountaineering and mountain photography.

PHE 251 BEGINNING YOGA (N,R)
1 Credit Hour
Meditation techniques and proper breathing to relax mind and body.

PHE 252 INTERMEDIATE YOGA (N,R)
1 Credit Hour
Intermediate skills and techniques of meditation along with learning to relax the mind and body.

PHE 253 ADVANCED YOGA (N,R)
1 Credit Hour
Concepts of Eastern training of body, mind and spirit through physical culture.

PHE 260 TUMBLING (N,R)
1 Credit Hour
Skill progressions and teaching of stunts and tumbling.

PHE 261 BALLET (N,R)
1 Credit Hour
Emphasis on exercise fundamentals of ballet.

PHE 262 BALLET (N,R)
1 Credit Hour
Continuation of beginning ballet.

PHE 265 GYMNASTICS (R)
1 Credit Hour
Skills, teaching techniques and progression of gymnastics.

PHE 291 ADAPTIVE PHYSICAL EDUCATION (R)
2 Credit Hours
Conditioning involving vascular improvement, weight control, balance and body image.

PHE 292 TECHNIQUES OF ADAPTIVE PHYSICAL EDUCATION (R)
2 Credit Hours
Continuation of PHE 291.

Philosophy

PHI 111 INTRODUCTION TO PHILOSOPHY (A,N,R,AEC)
3 Credit Hours
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

PHI 115 SOCIAL AND POLITICAL PHILOSOPHY (A,AEC)
3 Credit Hours
Examines the arguments, values and ideas man uses to explain, criticize and change his society and culture.
45 Contact Hours

PHI 118 PERSONAL DECISION-MAKING (N,R)
3 Credit Hours
This course acquaints students with contemporary life/work/career planning theory and equips them with some basic tools of critical thinking and with the skills of an effective and tested decision-making process. Each student thoroughly considers a current and critical choice in his or her own life.
45 Contact Hours

PHI 121 EASTERN PHILOSOPHIES (A,R,AEC)
3 Credit Hours
An analysis of the great religions of the Far East, including Hinduism, Buddhism, Confucianism and Taoism.
45 Contact Hours

PHI 190 AMERICAN PHILOSOPHY (A)
3 Credit Hours
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
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 230 LOGIC (A,N,R,AEC)
3 Credit Hours
An investigation of the principles and tools of logic as applied to the problems encountered in the practical reals of life, with major consideration of inductive and deductive reasoning.
45 Contact Hours

Photography

PHO 095 PHOTO LAB (A)
1 Credit Hour
Each Photography course with the exception of PHO 107 has a required lab with each class. The Photo Lab is designed to provide additional time in lab in order to provide students with the necessary experience and skill to proficiently apply the photographic craft.
20 Contact Hours

PHO 100 FUNDAMENTALS OF PHOTOGRAPHY (A)
4 Credit Hours
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.
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.
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.
80 Contact Hours

PHO 107 HISTORY OF PHOTOGRAPHY (A)
4 Credit Hours
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.
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.
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.
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.
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.
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.
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.
80 Contact Hours

Physics

PHY 100 BASIC PHYSICS (N)
4 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.
60 Contact Hours

PHY 101 FUNDAMENTALS OF PHYSICS I (A,N,R)
4 Credit Hours
Prerequisite: MAT 106 or permission 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 and the atomic properties of matter.
90 Contact Hours

PHY 102 FUNDAMENTALS OF PHYSICS II (A,N,R)
4 Credit Hours
Prerequisite: MAT 106 or permission of instructor
Continues PHY 101, emphasizing topics in heat, sound, electromagnetism. Mechanics will be briefly reviewed so that students may take this as a first course in physics.
90 Contact Hours

PHY 103 FUNDAMENTALS OF PHYSICS III (A,N,R)
4 Credit Hours
Prerequisite: PHY 101 or PHY 102 or permission of instructor
Continues PHY 102, emphasizing topics in light, atomic and nuclear physics, astrophysics and relativity.
90 Contact Hours

PHY 105 PHYSICAL SCIENCE AND LIVING SYSTEMS (A)
3 Credit Hours
Prerequisite: MAT 106 or permission 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.
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 Contact Hours

PHY 116 SCIENCE AND SCIENCE FICTION: THE CHANGING VISION (A)
3 Credit Hours
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. (Revised SCI 116).
45 Contact Hours

PHY 125 ASTRONOMY FOR THE LAYMAN (R,AEC)
2 Credit Hours
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 Contact Hours

PHY 130 INTRODUCTION TO ASTRONOMY (A,N,AEC)
4 Credit Hours
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 Contact Hours

PHY 131 GENERAL ASTRONOMY I (A,N,R,AEC)
4 Credit Hours
Prerequisite: MAT 112 or permission 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 Contact Hours

PHY 132 GENERAL ASTRONOMY II (A,N,R,AEC)
4 Credit Hours
Prerequisite: PHY 131
Continuation of PHY 131.
60 Contact Hours

PHY 135 SPECIAL TOPICS IN ASTRONOMY (N)
4 Credit Hours
Prerequisite: Permission 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 Contact Hours

PHY 141 PHYSICS AND SOCIETY: A WHOLISTIC APPROACH I (A)
5 Credit Hours
Prerequisite: High school algebra or permission of instructor
Deals with topics in motion, energy, momentum, gravitation, and atomic theories of matter. 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.
105 Contact Hours

PHY 142 PHYSICS AND SOCIETY: A WHOLISTIC APPROACH II (A)
5 Credit Hours
Prerequisite: High school algebra or permission of instructor
After a brief review of the essentials of mechanics this course will cover heat, sound and music, and electromagnetism. 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.
105 Contact Hours

PHY 143 PHYSICS AND SOCIETY: A WHOLISTIC APPROACH III (A)
5 Credit Hours
Prerequisite: PHY 141 or PHY 142 or permission of instructor
This course will deal with topics in light, 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.
105 Contact Hours

PHY 151 GENERAL PHYSICS I (A,N,R)
5 Credit Hours
Prerequisite: MAT 121 or permission 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.
105 Contact Hours

PHY 152 GENERAL PHYSICS II (A,N,R)
5 Credit Hours
Prerequisite: PHY 151 or permission of instructor
A continuation of PHY 151. Topics will include heat, sound, electromagnetism.
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 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 Contact Hours

PHY 155 GENERAL PHYSICS III (A)
5 Credit Hours
Prerequisite: PHY 151 or PHY 152 or permission of the instructor
A continuation of PHY 152. Topics will include light, atomic and nuclear physics, relativity and astrophysics.
105 Contact Hours

PHY 161 PHYSICS FOR SCIENTISTS AND ENGINEERS I (A,N,R)
4 Credit Hours
Prerequisite: MAT 201 or concurrent enrollment in MAT 201
A calculus-based study of mechanics, heat, electricity and magnetism, optics and some topics in modern physics.
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 Contact Hours

PHY 163 EXPERIMENTAL PHYSICS FOR SCIENTISTS AND ENGINEERS I (A,N,R)
2 Credit Hours
Co-requisite: PHY 161
A laboratory course in physics based on the material covered in PHY 161.
45 Contact Hours

PHY 164 EXPERIMENTAL PHYSICS FOR SCIENTISTS AND ENGINEERS II (A,N,R)
2 Credit Hours
Co-requisite: PHY 162
A laboratory course in physics based on the material covered in PHY 162.
45 Contact Hours

PHY 201 HUMAN REALITIES: ART, SCIENCE, LITERATURE I (A)
3 Credit Hours
An interdisciplinary, team-taught course using a modular approach integrating studies in the humanities and the sciences to meet the diverse needs and interests of inner-city community college students. Students must also register for the humanities section of this course.
45 Contact Hours

PHY 202 HUMAN REALITIES: ART, SCIENCE, LITERATURE II (A)
3 Credit Hours
A continuation of PHY 201.
45 Contact Hours

PHY 205 MODERN PHYSICS (N,R,AEC)
4 Credit Hours
Prerequisites: PHY 161, 162 or 151, 152, 153, 154
The principles of quantum mechanics and relativity applied to solid state, radiation, molecules, atoms, nuclei, and elementary particles.
60 Contact Hours

PHY 299 INDEPENDENT STUDY (A,N,R)
1-3 Credit Hours
Prerequisite: Permission of instructor
Please refer to the general description of Independent Study in this catalog.
45-135 Contact Hours

Plumbing

PLU 100 ORIENTATION OF TOOLS, BASIC PLUMBING DRAWINGS (R)
3 Credit Hours
In this class, the student is introduced to plumbing techniques and skill development, plumbing drawings using 30/60 isometric three-dimensional system and material list from drawing.
60 Contact Hours

PLU 106 BASIC WASTE AND VENT LAYOUT AND CODE REQUIREMENTS (R)
6 Credit Hours
Prerequisites: PLU 100 or consent of Instructor
This class introduces the student to the installation of small plumbing jobs using soil pipe, plastic or copper tubing to meet code requirements, venting systems, making material lists and installation.
120 Contact Hours

PLU 107 WATER PIPING METHODS (R)
3 Credit Hours
This class is an introduction to drawing water piping systems, sizing and installation.
60 Contact Hours

PLU 108 GAS PIPE, CODE, AND SIZING FLUE VENTS (R)
3 Credit Hours
This class introduces the student to installation of gas pipe from a drawing to meet required code and safety regulations and flue venting.
60 Contact Hours

PLU 109 RESIDENTIAL PLUMBING (R)
6 Credit Hours
Prerequisites: PLU 100 and PLU 106
In this class, the student will draw complete soil, waist, vent, water, and gas systems which will meet codes and safety procedures and will develop skills in installations.
120 Contact Hours

PLU 110 FINISH AND INSTALLATION OF PLUMBING FIXTURES (R)
3 Credit Hours
The student is introduced to installing plumbing fixtures on existing rough-ins to meet all code and safety requirements.
60 Contact Hours

PLU 116 PLUMBING REPAIR (R)
3 Credit Hours
In this class, the student is introduced to repairing, servicing or replacing plumbing equipment.
60 Contact Hours

PLU 205 BLUEPRINT READING AND LAYOUT (R)
3 Credit Hours
In this class, the student will read and interpret blueprints and draw isometric drawings.
60 Contact Hours

PLU 206 HOT WATER HEATING — INSTALLATION AND MAINTENANCE (R)
3 Credit Hours
Prerequisite: PLU 107
This class presents the installation of hot water heating systems.
60 Contact Hours

PLU 207 BASIC SOLAR ENERGY (R)
3 Credit Hours
Prerequisites: PLU 107 and PLU 206
This class includes drawing and installing domestic solar water heating systems.
60 Contact Hours

PLU 208 ADVANCED SOLAR ENERGY (R)
3 Credit Hours
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.
60 Contact Hours

PLU 210 COMMERCIAL LAYOUT AND CODE MULTISTORY PROJECTS (R)
3 Credit Hours
Prerequisite: PLU 106
This class introduces the student to commercial and multistory projects, installations in commercial work and code applications for SOVENT Plumbing System.
60 Contact Hours

PLU 215 COLORADO STATE CODE REQUIREMENTS (R)
3 Credit Hours
Prerequisite: PLU 106 or permission of instructor
Plumbing code violations of State Code, endangerments to health and safety, and the State Plumbing Code Test are presented in this class.
45 Contact Hours

PLU 216 UNIFORM PLUMBING CODE (R)
3 Credit Hours
Prerequisites: PLU 106 or permission of instructor
The Uniform Plumbing Code, the proper installation of the Code and the need to enforce it are presented in this class.
45 Contact Hours

PLU 220 CITY OF DENVER CODE (R)
3 Credit Hours
Prerequisites: PLU 106 or permission of instructor
In this class, the student will learn the City of Denver Code, its use and enforcement.
45 Contact Hours

PLU 225 TECHNICAL PROJECT (R)
6 Credit Hours
Prerequisite: PLU 100 Series
The student participates in individual study on a special project which is related to the Plumbing Program. This technical project will consist of:
1. A written and approved proposal.
2. Scheduled progress reports
120 Contact Hours

Political Science

POS 111 INTRODUCTION TO POLITICAL SCIENCE (A,N,R,AEC)
3 Credit Hours
Studies man as a political animal; the nature and use of power; the role of ideology.
45 Contact Hours

POS 121 AMERICAN NATIONAL GOVERNMENT (A,N,R,AEC)
3 Credit Hours
Study of American government emphasis on the role of institutions, individuals, and groups of informing American political behavior. Recommended for students going through the naturalization process.
45 Contact Hours

POS 122 AMERICAN STATE AND LOCAL GOVERNMENT (A,N,R,AEC)
3 Credit Hours
Analysis of governmental structure and political behavior in states and municipalities; urban problems and the role of government in their solution.
45 Contact Hours

POS 161 POLITICAL LEADERSHIP (R,AEC)
3 Credit Hours
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
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
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
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
Studies local, state, national and international political events and developments.
45 Contact Hours

POS 246 WOMEN, POWER, AND POLITICS (A,R)
3 Credit Hours
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
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
A critical evaluation of leading issues affecting Chicanos in American society.
45 Contact Hours

POS 253 THIRD WORLD POLITICS AND THE CHICANO (A)
3 Credit Hours
Provides a realistic look at the Chicano in relationship to the developing nations 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: Permission 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 permission 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 percent.
60 Contact Hours

PPD 212 PROCESS PIPING DESIGN II (N)
3 Credit Hours
Prerequisite: PPD 211 or permission 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.
60 Contact Hours

PPD 213 PROCESS PIPING DESIGN III (N)
3 Credit Hours
Prerequisite: PPD 212 or permission 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.
60 Contact Hours

PPD 214 PROCESS PIPING DESIGN IV (N)
3 Credit Hours
Prerequisite: PPD 213 or permission 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.
60 Contact Hours

PPD 215 PROCESS PIPING DESIGN V (N)
3 Credit Hours
Prerequisite: PPD 214 or permission of instructor.
Upon satisfactory completion of this module, the student should be able to prepare drawings on fired heaters, compressors, instrumentations and process unit plot plans. Minimum performance of accuracy is eighty percent.
60 Contact Hours

Psychology

PSY 099 JOB SEARCH TECHNIQUE WORKSHOP (A)
3 Credit Hours
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
Emphasizes psychological principles as related to the working environment. Specific topics include motivation, interpersonal relationships, self-understanding, employee-employer relations and group behavior.
45 Contact Hours

PSY 105 SELF-EXPLORATION AND UNDERSTANDING (R,AEC)
1-3 Credit Hours
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 Contact Hours

PSY 106 HUMAN POTENTIAL SEMINAR (R,AEC)
3 Credit Hours
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 Contact Hours

PSY 108 VOCATIONAL EXPLORATION (A,R)
3 Credit Hours
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 110 ASSERTIVENESS TRAINING (R)
1-3 Credit Hours
This course teaches the overall philosophy of assertive self-growth as well as specific assertive communication skills. These serve to enhance and enrich the student's interpersonal relationships and self-esteem.
15-45 Contact Hours

PSY 111 GENERAL PSYCHOLOGY I (A,N,R,AEC)
3 Credit Hours
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 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 Contact Hours

PSY 115 PSYCHOLOGY OF PERSONAL DEVELOPMENT (A,N,R,AEC)
3 Credit Hours
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 Contact Hours

PSY 116 STRESS MANAGEMENT (R)
3 Credit Hours
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 Contact Hours

PSY 125 CHILD GUIDANCE TECHNIQUES (R,AEC)
3 Credit Hours
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 Contact Hours

PSY 126 PSYCHOLOGY OF LAW ENFORCEMENT (R)
3 Credit Hours
Deals with the psychological effects of police work on the officer and the public.
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 Contact Hours

PSY 205 PSYCHOLOGY OF WOMEN (A,R,AEC)
3 Credit Hours
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 Contact Hours

PSY 210 SOCIAL PSYCHOLOGY (A,R,AEC)
3 Credit Hours
Prerequisite: PSY 111 or PSY 112 or permission of instructor
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 Contact Hours

PSY 211 INTRODUCTION TO HUMAN RESOURCES DEVELOPMENT (N,R,AEC)
3 Credit Hours
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 Contact Hours

PSY 212 INTRODUCTION TO HUMAN RESOURCES DEVELOPMENT (R,AEC)
3 Credit Hours
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 Contact Hours

PSY 215 PSYCHOLOGY OF HUMAN SEXUALITY (A,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 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 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 Contact Hours

PSY 222 DEVELOPMENTAL PSYCHOLOGY (A,N,R,AEC)
3 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.
45 Contact Hours

PSY 225 PSYCHOLOGY OF DEATH AND DYING (A,R,AEC)
3 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.
45 Contact Hours

PSY 230 ABNORMAL PSYCHOLOGY (A,R,AEC)
3 Credit Hours
Prerequisite: PSY 111
Presents a general view of psychopathology and abnormal human interactions. Behavioral disorders, their causes and treatment are explored.
45 Contact Hours

PSY 235 PSYCHOLOGY OF HUMAN GROWTH AND DEVELOPMENT (A,N,R,AEC)
3 Credit Hours
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.
45 Contact Hours

PSY 239 INTRODUCTION TO BIOFEEDBACK (R)
3 Credit Hours
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.
45 Contact Hours

PSY 250 PSYCHOLOGY OF PREJUDICE (A,R,AEC)
3 Credit Hours
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.
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 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 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 Contact Hours

PSY 285 DYNAMICS OF PSYCHOLOGY (A,N,R)
1-3 Credit Hours
A study of patterns of human behavior in problem-solving and decision making.
15-45 Contact Hours

PSY 297 INTRODUCTION TO HUMAN SERVICES (R)
6 Credit Hours
Class will focus on crisis intervention, psychotherapeutic techniques, and related communication processes. Students will also work in a social service agency or institution.
90 Contact Hours

Commercial-Industrial Refrigeration, Heating and Air Conditioning

RAC 100 SAFETY, TOOLS, AND PIPING (A)
3 Credit Hours
Safety rules and procedures will be presented for shop and personal safety. Basic hand tools and tools of the trade will be introduced and their safe and proper use demonstrated. This course is also designed to present soldering, brazing, cutting, and welding safety procedures and techniques.
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.
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.
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.
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.
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.
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.
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.
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.
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.
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.
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.
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.
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.
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.
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.
60 Contact Hours

RAC 297 COOPERATIVE EDUCATION (A)
3 Credit Hours
Prerequisite: Registration for this course must be during the graduating semester only.
A program of study developed with coordinated college course work and industry work experience.
105 Contact Hours

RAC 299 INDEPENDENT STUDY (A)
3 Credit Hours
Prerequisite: Registration for this course must be during the graduating semester only.
Individual study on a special project, selected and agreed upon by the student and instructor, which is related to the program and which is outside of the program offering.
90 Contact Hours

Diagnostic Radiologic Technology

RAT 100 RADIOGRAPHIC TECHNIQUE I (A)
3 Credit Hours
Prerequisite: Admission to program
Corequisites: RAT 105, 106, BIO 109
Includes history of radiation opportunities and the role 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.
60 Contact Hours

RAT 105 RADIOGRAPHIC POSITIONING I (A)
3 Credit Hours
Prerequisite: 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.
60 Contact Hours

RAT 106 CLINICAL LABORATORY EXPERIENCE I (A)
5 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.
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, sacrum, lumbar, thoracic and cervical spine.
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 the 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 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 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.
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 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 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 Contact Hours

RAT 206 CLINICAL PRACTICUM III (A)
11 Credit Hours
Prerequisites: RAT 116, RAT 200 or permission of instructor
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 Contact Hours

RAT 207 RADIOGRAPHIC TECHNIQUES II (A)
3 Credit Hours
Prerequisites: RAT 115, RAT 116, RAT 200, permission of instructor
Co-requisites: RAT 109, RAT 206
Presents an exploration of advanced principles and techniques of radiographic exposure and qualities of a good radiograph.
45 Contact Hours

RAT 208 CLINICAL PRACTICUM IV (A)
12 Credit Hours
Prerequisites: RAT 109, 206, 207, permission of instructor
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 Contact Hours

RAT 210 CLINICAL PRACTICUM V (A)
12 Credit Hours
Prerequisites: RAT 206, permission of instructor
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 Contact Hours

Reading

REA 090 INTRODUCTION TO BASIC READING SKILLS (A,AEC)
1-3 Credit Hours
This course is designed for the student who needs an intensive review of basic reading concepts which include vocabulary building and basic reading comprehension. This course builds on students' strengths and is recommended for students who have extreme difficulty in reading. It requires individual work in the LDC. (Entry level skills: score of 0 to 1 on reading assessment).
15-45 Contact Hours

REA 091 INTRODUCTION TO READING AND STUDY SKILLS (A,AEC)
1-3 Credit Hours
Prerequisite: REA 090 or permission of instructor
This course is an extension of REA 090. The student will continue to receive instruction in vocabulary building and comprehension on an individual basis. (Entry level skills: score of 2 or 3 on reading assessment.)
15-45 Contact Hours

REA 100 BUILDING EVERYDAY READING SKILLS (A,AEC)
1-3 Credit Hours
Reading comprehension and vocabulary development will be emphasized utilizing the student's needs in the environment.
Individualized and small group projects will be assigned in order to make the class relevant to student needs. (Entry level skills: score of 2 on reading assessment.)
15-45 Contact Hours

REA 101 SKILLS FOR COLLEGE READING (A,N,R,AEC)
1-3 Credit Hours
Promotes reading efficiency, vocabulary development, and reading comprehension in the content areas. The students will be introduced to the various reading improvement techniques; literal comprehension improvement; and critical comprehension improvement. Class discussions are utilized extensively to improve students' oral language skills related to reading comprehension. (Entry level skills: score of 3 on the reading assessment.)
15-45 Contact Hours

REA 102 SKILLS FOR COLLEGE READING II (A,AEC)
1-3 Credit Hours
This course is an extension of reading comprehension processes which would include practical material in the content areas. Special reading strategies for reading math, sciences, accounting, literature, social science, humanities, etc. would be included. In addition, specific vocabulary strategies in the content areas will be utilized. (Entry level skills: successful completion of REA 101 or a score of 4 on reading assessment.)
15-45 Contact Hours

REA 103 WORKSHOP IN READING, WRITING AND SPEAKING (A,AEC)
1-3 Credit Hours
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)
1-3 Credit Hours
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.
15-45 Contact Hours

REA 105 STUDY SKILLS (A,AEC)
1-5 Credit Hours
This course teaches methods necessary to improve study skills. Methods include the following: making better use of time, improving reading rates, notetaking, outlining, skimming and scanning, test taking techniques, library use, memory techniques, listening skills, test anxiety techniques. Uses lecture and class discussion techniques. (Entry level skill score of 4 of reading assessment or grade of C or better in REA 101.)
15-75 Contact Hours

REA 106 VOCABULARY DEVELOPMENT (A,AEC)
1-3 Credit Hours
Develops vocabulary in several ways. Includes identifying words in context, learning affixes and foots, and developing a technical or specialized vocabulary.
15-45 Contact Hours

REA 109 READING EFFICIENCY (A,N,R,AEC)
1-3 Credit Hours
Emphasizes reading speed, perceptual skills development, development of a flexible reading rate, and the techniques of rapid reading. Also gives attention to increasing comprehension. 15 contact hours (entry level skills: score of 4 on reading assessment).
15-45 Contact Hours

REA 110 SPEED READING (A,N,R)
1-3 Credit Hours
Increased speed, a more flexible reading pace and better comprehension.
15-45 Contact Hours

REA 299 INDEPENDENT STUDY (A,AEC)
1-3 Credit Hours
Prerequisite: Permission of the director
Allows college credit for students in a Developmental Studies peer-tutor program; sharpens an individual's reading and critical thinking skills while helping other students.
15-45 Contact Hours

Real Estate

REE 100 REAL ESTATE FUNDAMENTALS (R,AEC)
3 Credit Hours
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 Contact Hours

REE 105 REAL ESTATE FINANCE (R,AEC)
3 Credit Hours
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 Contact Hours

REE 111 REAL ESTATE LAW (R,AEC)
3 Credit Hours
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 Contact Hours

REE 115 REAL ESTATE LICENSE PREPARATION (R,AEC)
3 Credit Hours
Prerequisite: Permission of instructor
This course is designed to prepare students for the Colroado Real Estate Examination.
45 Contact Hours

REE 118 THE REAL ESTATE BROKERAGE AND THE CONSUMER (R)
2 Credit Hours
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 Contact Hours

REE 200 PRINCIPLES OF INSURANCE (R,AEC)
2 Credit Hours
A general survey of all types of insurance with special emphasis on property, life and automobile insurance.
30 Contact Hours

REE 205 REAL ESTATE APPRAISAL (R,AEC)
4 Credit Hours
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 Contact Hours

REE 207 REAL ESTATE INVESTMENT (R,AEC)
3 Credit Hours
A study of the investment opportunities the single-family, multi-family residence, commercial, industrial, and development markets.
45 Contact Hours

REE 209 REAL ESTATE CLOSINGS (R,AEC)
3 Credit Hours
An in-depth study of documents related to closings. This includes the understanding of debit and credit items on the closing statement itself.
45 Contact Hours

REE 210 REAL ESTATE TAX FACTORS (R,AEC)
3 Credit Hours
This course covers capital and ordinary gains, basis, installment sales, depreciation, and postponement of income tax, including tax deferred exchanges.
45 Contact Hours

REE 216 REAL ESTATE LISTINGS AND SELLING TECHNIQUES (R,AEC)
4 Credit Hours
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 Contact Hours

REE 217 REAL ESTATE CONTRACTS (R,AEC)
3 Credit Hours
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 Contact Hours

REE 218 SEMINAR IN REAL ESTATE (R)
1-3 Credit Hours
In-depth study of selected areas, concepts and developments in or affecting the real estate industry.
15-45 Contact Hours

Recreational Leadership

REL 110 INTRODUCTION TO RECREATION SERVICES (R)
3 Credit Hours
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 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 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 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 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 and recreational sports of basketball and volleyball.
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 and recreational sports of baseball and softball.
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 and recreational sports of football and soccer.
98 Contact Hours

REL 125 DANCE ACTIVITIES (R)
5 Credit Hours
Introduces methods and materials for folk, square and social dance. Attention is given to terminology, skills, selection and presentation of dances. Emphasis is on knowledge and understanding of administration and promotion rather than on mastery of performance skills.
98 Contact Hours

REL 126 TUMBLING AND GYMNASTICS (R)
2 Credit Hours
Designed to acquaint the student with skills, teaching techniques and progression of tumbling, stunts and gymnastics for elementary and secondary school students.
30 Contact Hours

REL 145 ARTS AND CRAFTS (R)
2 Credit Hours
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 Contact Hours

REL 147 SOCIAL RECREATION (R)
3 Credit Hours
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.
45 Contact Hours

REL 201 TEAM SPORTS (R)
2 Credit Hours
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 Contact Hours

REL 202 TEAM SPORTS (R)
2 Credit Hours
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 Contact Hours

REL 203 TEAM SPORTS (R)
2 Credit Hours
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 Contact Hours

REL 205 GROUP LEADERSHIP (R)
3 Credit Hours
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 Contact Hours

REL 207 ELEMENTARY GAMES AND ACTIVITIES (R)
5 Credit Hours
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.
98 Contact Hours

REL 208 PROGRAMMING AQUATIC ACTIVITIES (R)
2 Credit Hours
Includes the basic terminology, skills and techniques of selected water related activities and their use in recreation programs.
30 Contact Hours

REL 209 CREATIVE DRAMATICS (R)
5 Credit Hours
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.
98 Contact Hours

REL 211 INDIVIDUAL LIFETIME SPORTS (R)
2 Credit Hours
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 Contact Hours

REL 212 INDIVIDUAL LIFETIME SPORTS (R)
2 Credit Hours
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 Contact Hours

REL 213 INDIVIDUAL LIFETIME SPORTS (R)
2 Credit Hours
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 Contact Hours

REL 215 RECREATIONAL EQUIPMENT AND FACILITIES (R)
3 Credit Hours
Designed to acquaint and familiarize the student with recreational equipment and program facilities.
45 Contact Hours

REL 216 RECREATION IN SPECIAL SETTINGS (R)
2 Credit Hours
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 Contact Hours

REL 217 TECHNIQUES IN PROGRAM PLANNING AND ORGANIZATION (R)
3 Credit Hours
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 Contact Hours

REL 299 INDEPENDENT STUDY (R)
2-6 Credit Hours
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 Contact Hours

Respiratory Therapy Technology

RIT 100 RESPIRATORY TECHNOLOGY I (N)
4 Credit Hours
Covers the basic respiratory therapy subjects as well as sterilization and maintenance of equipment. Basic patient care is included with oxygen therapy, aerosol and humidity therapy, chest physiotherapy, and basic life support (CPR).
90 Contact Hours

RIT 200 RESPIRATORY TECHNOLOGY II (N)
5 Credit Hours
Prerequisite: RIT 211, RIT 205
This course builds on RIT 205 and extends the respiratory therapy background into advanced techniques such as arterial blood gases, pulmonary functions, artificial airways and ventilator management, basic ECG interpretation, cardiovascular evaluation and testing, and monitoring techniques for intensive cardiopulmonary care.
90 Contact Hours

RIT 205 INTRODUCTION TO CRITICAL CARE (N)
3 Credit Hours
Prerequisite: Current enrollment in RIT 211
A preparation for intensive respiratory care and the role of the therapist in coronary, surgical, respiratory, and medical intensive care units. This course builds on the topics covered in RIT 100 and covers mechanical ventilation, chest x-rays, ethics, and types of surgical and medical procedures encountered in intensive care units.
45 Contact Hours

RIT 208 RESPIRATORY PATHOPHYSIOLOGY (N)
3 Credit Hours
Prerequisite: BIO 138, BIO 115, RIT 209
An in-depth study of cardiorespiratory disorders. Etiology, clinical course, and treatment are discussed.
45 Contact Hours

RIT 209 PHARMACOLOGY FOR RESPIRATORY THERAPY (N)
2 Credit Hours
Prerequisite: CHE 101, BIO 111
A study of biochemical and physiologic effects of pharmacologic agents commonly encountered in pulmonary medicine. Course begins with a review of airway mechanics.
30 Contact Hours

RIT 211 CLINICAL PRACTICUM I (N)
9 Credit Hours
Prerequisite: RIT 100, BIO 138, RIT 209
Clinical application to basic respiratory therapy procedures in the hospital. Emphasis is placed on basic skills.
375 Contact Hours

RIT 212 CLINICAL PRACTICUM II, RESPIRATORY CRITICAL CARE (N)
9 Credit Hours
Prerequisite: RIT 211
A practical application of the respiratory therapy used in critical care units. This course builds on RIT 206 and moves into a clinical setting for practice and evaluation of students respiratory therapy skills in such areas as mechanical ventilation and blood gas analysis and interpretation.
375 Contact Hours

RIT 213 CLINICAL PRACTICUM III, RESPIRATORY CRITICAL CARE (N)
9 Credit Hours
Prerequisite: RIT 208, RIT 200, RIT 216
Clinical application and orientation to advanced respiratory therapy procedures in the intensive care areas. Emphasis is placed on development of advanced skills.
375 Contact Hours

RIT 215 DEPARTMENTAL MANAGEMENT (N)
2 Credit Hours
Prerequisite: RIT 211 or permission of instructor
This course is an introduction to departmental management in the health care institution. Attention is directed to the organization and operation of a respiratory therapy department. Problem solving and personnel supervision are emphasized.
30 Contact Hours

RIT 217 PEDIATRIC RESPIRATORY THERAPY (N)
3 Credit Hours
Prerequisite: RIT 208, RIT 200
A study of respiratory diseases in the neonate, infant, and pediatric patients. Development of the foetal lung is studied. Practical pediatric respiratory therapy and infant ventilation are covered.
45 Contact Hours

RIT 220 REGISTRATION AND CERTIFICATION REVIEW (N)
3 Credit Hours
Prerequisite: Permission of instructor or be in final semester of program or be a graduate therapist.
This course is designed to help prepare those people taking the Registry (RRT) or Certification (CRTT) examination in Respiratory Therapy.
45 Contact Hours

RIT 227 ECG ANALYSIS (N)
2 Credit Hours
Prerequisite: BIO 138 or permission of instructor.
An introductory, self-paced analysis of electrocardiograph patterns with explanation of physiologic origins. Designed for cardio respiratory personnel with responsibilities in critical care areas.
30 Contact Hours

Radiation Therapy Technology

RTT 125 RADIATION THERAPY PRACTICUM I (A)
4 Credit Hours
Prerequisite: 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 Contact Hours

RTT 200 PHYSICS OF RADIATION THERAPY I (A)
2 Credit Hours
Prerequisite: Admission to the Radiation Therapy Program
Provides the student with the fundamentals of radiation physics, with emphasis on the structure of matter, the nature of radiation, and the interaction of radiation and matter.
30 Contact Hours

RTT 205 RADIATION THERAPY METHODOLOGY (A)
2 Credit Hours
Prerequisite: Admission to Radiation Therapy Program
Introduces the student to types of treatment machines, emphasizes principles of patient set-ups, geometrical considerations, patient immobilization devices and calculation of radiation dose. Corresponds closely with the radiation oncology courses, providing for discussion of primary cancer sites.
30 Contact Hours

RTT 206 RADIATION ONCOLOGY I (A)
3 Credit Hours
Prerequisite: Admission to Radiation Therapy Program
Includes presenting symptoms, diagnostic workup, staging, histologies, treatment portals, critical organs and their tissue tolerances, and survival statistics.
45 Contact Hours

RTT 207 RADIATION THERAPY PRACTICUM II (A)
11 Credit Hours
Prerequisite: 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 Contact Hours

RTT 208 PHYSICS OF RADIATION THERAPY II (A)
2 Credit Hours
Prerequisite: Successful completion of RTT 200
Emphasizes the physical principles of radiation therapy and use of related equipment.
30 Contact Hours

RTT 209 RADIATION DOSIMETRY (A)
2 Credit Hours
Prerequisite: 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 Contact Hours

RTT 210 RADIATION ONCOLOGY II (A)
1 Credit Hour
Prerequisite: 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 biology with respect to radiation therapy and nuclear medicine.
15 Contact Hours

RTT 215 RADIATION BIOLOGY AND PATHOLOGY (A)
2 Credit Hours
Provides students in Nuclear Medicine and those in Radiation Therapy with basic knowledge of the biological affects of radiation.
30 Contact Hours

RTT 216 RADIATION THERAPY PRACTICUM III (A)
11 Credit Hours
Prerequisite: Successful completion of RTT 207
Develops an increased level of responsibility in th overall operation of a radiation therapy departmen Includes rotation to other clinical education centers.
500 Contact Hours

RTT 217 SELECTED TOPICS IN RADIATION THERAPY (A)
3 Credit Hours
Prerequisite: Successful completion of spring courses
Reviews courses and clinical work in preparation for th Certificate examination given by the American Registry Radiologic Technologists.
45 Contact Hours

RTT 218 RADIATION THERAPY PRACTICUM IV (A)
14 Credit Hours
Prerequisite: Successful completion of spring courses
Prepares the student for job entry through performanc of skills typical of a staff radiation therapy technologist.
45 Contact Hours

Science

SCI 106 SCIENCE AND THE PRESCHOOL CHILD (A,N,R)
2 Credit Hours
A course for the teacher or parent who desires an insigh into the natural sciences and their meaning to the pre school child. It will provide the student with concepts an facts which will stimulate a child's interest in the natura sciences.
30 Contact Hours

SCI 111 SCIENCE FOR THE EARTH CITIZEN I (N)
4 Credit Hours
This course is a general introduction to the scientific vie of the world designed to help nonscience majors live an vote intelligently in a world shaped by science. Basi concepts in astronomy, biology, chemistry, geology physics and technology are studied in terms of word and pictures with no mathematics other than arithmeti being employed.
75 Contact Hours

SCI 112 SCIENCE FOR THE EARTH CITIZEN II (N)
4 Credit Hours
Continuation of SCI 111.
75 Contact Hours

SCI 115 THE ASCENT OF MAN (N,R)
2 Credit Hours
An overview of the many disciplines which have con tributed to the knowledge of human origins, based upo 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
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 130 CRITICAL THINKING AND PROBLEM SOLVING (A,N,R)
3 Credit Hours
This course teaches a process for problem solving and critical thinking skills necessary to carry out that process. It also presents a number of approaches and techniques that can be applied to each stage of the process. This develops the flexibility needed to deal with problem situations that arise in the course of living. Our ultimate purpose is to show how the problems that occur in our careers and in our personal lives can be approached as opportunities for growth.
45 Contact Hours

SCI 299 INDEPENDENT STUDY (A,N,R)
1-3 Credit Hours
Prerequisite: Permission of instructor.
Please refer to the general description of Independent Study in this catalog.
45-135 Contact Hours

Sport Crafts and Specialty Area Mechanics (N)

Upon satisfactory completion of the module, the student should be able to:

SCS 100 BASIC ENGINES, TOOLS, AND SAFETY (N)
3 Credit Hours
Identify and demonstrate the proper use of hand tools, demonstrate knowledge of two-stroke and four-stroke internal combustion engines, emphasizing standard safety practices.
60 Contact Hours

SCS 101 SMALL ENGINE AND CARBURETOR REPAIR (N)
3 Credit Hours
Troubleshoot and repair basic small engine problems including ignition and carburetion, using hand tools and shop manuals. (Support class for Urban Horticulture.)
60 Contact Hours

SCS 102 INTRODUCTION TO RENTAL EQUIPMENT (N)
3 Credit Hours
Identify rental equipment by the use of proper and common names.
45 Contact Hours

SCS 103 CUSTOMER SERVICE OPERATIONS (N)
3 Credit Hours
Prerequisites: SCS 102
Be able to write a service and sales contract, effective telephone communications, sales and marketing concepts using proper procedures.
45 Contact Hours

SCS 104 RENTAL EQUIPMENT TROUBLESHOOTING AND SAFETY (N)
3 Credit Hours
Prerequisites: SCS 102, SCS 103
Troubleshoot and identify problems in rental equipment and engines, emphasizing standard rental safety.
60 Contact Hours

SCS 105 CARBURETOR AND FUEL SYSTEMS (N)
3 Credit Hours
Prerequisites: SCS-100
Identify the different types of fuel systems, rebuild small engine carburetors using shop manuals.
60 Contact Hours

SCS 106 IGNITION SYSTEMS (N)
3 Credit Hours
Prerequisites: SCS 100
Identify, troubleshoot and repair battery, magneto, and electronics ignition systems, using available training aids.
60 Contact Hours

SCS 107 ENGINE REBUILD AND SPECIAL TOOLS (N)
3 Credit Hours
Prerequisites: SCS-100
Rebuild two-stroke and four-stroke internal combustion engines, demonstrate the ability to use special tools and shop manuals.
60 Contact Hours

SCS 108 ENGINE CONTROL SYSTEMS (N)
3 Credit Hours
Prerequisites: SCS-100
Identify, troubleshoot, adjust and repair engine governors and control systems, using special tools and shop manuals.
60 Contact Hours

SCS 109 BASIC ELECTRICAL THEORY AND TEST EQUIPMENT (N)
3 Credit Hours
Prerequisites: SCS-106
Identify schematic symbols, read schematic diagrams, demonstrate the ability to troubleshoot and service simple AC/DC electrical circuits.
60 Contact Hours

SCS 110 CHARGING AND STARTING SYSTEMS (N)
3 Credit Hours
Prerequisites: SCS-100, SCS-109
Identify, troubleshoot and service charging and starting systems, using test equipment and shop manuals.
60 Contact Hours

SCS 115 ENGINE TROUBLESHOOTING AND TUNE-UP (N)
3 Credit Hours
Prerequisites: SCS-100
Troubleshoot and tune up small engines, using knowledge, skills, special tools and shop manuals, emphasizing standard safety practices.
60 Contact Hours

SCS 116 GENERAL SERVICE I (N)
3 Credit Hours
Prerequisites: SCS-100, SCS-107
Repair small engines using special tools and equipment.
60 Contact Hours

SCS 117 GENERAL SERVICE II (N)
3 Credit Hours
Prerequisites: SCS-100, SCS-107
Demonstrate the ability to identify and repair small engine deficiencies.
60 Contact Hours

SCS 200 CLUTCHES, TRANSMISSIONS, AND DRIVE SYSTEMS (N)
3 Credit Hours
Prerequisites: SCS-100
Identify, service, and repair lawn and garden equipment clutches, transmissions, and drive systems.
60 Contact Hours

SCS 205 BASIC HYDRAULICS, SERVICE, AND REPAIR (N)
3 Credit Hours
Prerequisites: SCS-100
Identify, service, and repair hydraulic systems used on lawn and garden equipment.
60 Contact Hours

SCS 206 BRAKE SYSTEMS, FRONT AXLES, AND STEERING SYSTEMS (N)
3 Credit Hours
Prerequisites: SCS-100
Identify, service, and repair brake systems, front axles, and steering systems used on lawn and garden equipment.
60 Contact Hours

SCS 207 HYDROSTATIC DRIVE, SERVICE, AND REPAIR (N)
3 Credit Hours
Inspect, service, and repair hydrostatic drive systems used on lawn and garden equipment.
60 Contact Hours

SCS 208 ROTARY AND REEL MOWERS, SERVICE, AND REPAIR (N)
3 Credit Hours
Service and repair rotary and reel-type lawn mowers, using special tools, available equipment, and shop manuals.
60 Contact Hours

SCS 209 ROTO-TILLERS AND SNOW BLOWERS (N)
3 Credit Hours
Prerequisites: SCS-100
Identify, service, and repair roto-tillers and snow blowers, using available equipment, special tools and shop manuals.
60 Contact Hours

SCS 210 GARDEN TRACTORS AND RIDER MOWERS (N)
3 Credit Hours
Prerequisites: SCS-100
Service and repair garden tractors and rider mowers, using available equipment, special tools, and shop manuals.
60 Contact Hours

SCS 215 CHAINSAWS, EDGERS, AND POWER TRIMMERS (N)
3 Credit Hours
Prerequisites: SCS-100
Identify, service, and repair chainsaws, edgers, and power trimmers, using available equipment, special tools, and shop manuals.
60 Contact Hours

SCS 216 CUSTOMER SERVICE I (N)
3 Credit Hours
Prerequisites: SCS-100
Troubleshoot and demonstrate all types of lawn and garden equipment.
60 Contact Hours

SCS 217 CUSTOMER SERVICE II (N)
3 Credit Hours
Prerequisites: SCS-100
Demonstrate the ability to identify, service, and repair deficiencies on lawn and garden equipment.
60 Contact Hours

SCS 220 BRAKE AND SUSPENSION SYSTEMS (N)
3 Credit Hours
Prerequisites: SCS-100
Identify, service, and repair brakes and suspension systems, using special tools and shop manuals.
60 Contact Hours

SCS 225 MOTORCYCLE DRIVE SYSTEMS (N)
3 Credit Hours
Prerequisites: SCS-100
Identify, service, and repair clutches, transmissions, and drive systems, using available tools and shop manuals.
60 Contact Hours

SCS 226 ELECTRICAL SYSTEM TROUBLESHOOTING AND SERVICE (N)
3 Credit Hours
Prerequisites: SCS-100, SCS-109
Identify symbols and read schematics, troubleshoot, and repair motorcycle electrical systems, using test equipment and shop manuals.
60 Contact Hours

SCS 227 CARBURETOR SERVICE AND REPAIR (N)
3 Credit Hours
Prerequisites: SCS-100, SCS-105
Identify, service, and repair motorcyle carburetor systems using special tools, test equipment and shop manuals.
60 Contact Hours

SCS 228 SINGLE CYLINDER FOUR-CYCLE ENGINES (N)
3 Credit Hours
Prerequisites: SCS-100, SCS-107
Identify, service, and repair single-cylinder, four-cycle engines, using special tools and shop manuals.
60 Contact Hours

SCS 229 MULTI-CYLINDER FOUR-CYCLE ENGINES (N)
3 Credit Hours
Prerequisites: SCS-100, SCS-107
Identify, service, and repair multi-cylinder, four-cycle engines, using special tools and shop manuals.
60 Contact Hours

SCS 230 TWO-CYCLE ENGINES (N)
3 Credit Hours
Prerequisites: SCS-100, SCS-107
Identify and service two-cycle engines, using special tools and shop manuals.
60 Contact Hours

SCS 235 MOTORCYCLE SERVICE AND REPAIR (N)
3 Credit Hours
Prerequisites: SCS 100, SCS-107
Demonstrate the ability to service and repair all types of motorcycles, using test equipment, special tools and shop manuals.
60 Contact Hours

SCS 240 ELECTRICAL SYSTEMS (N)
3 Credit Hours
Prerequisites: SCS-100, SCS-109
Identify, service, and repair ignition, starting and charging systems on outboard motors, using special tools and shop manuals.
60 Contact Hours

SCS 245 CARBURETOR AND FUEL SYSTEM SERVICE AND REPAIR (N)
3 Credit Hours
Prerequisites: SCS-100, SCS-105
Identify, service, and repair outboard carburetors, fuel pumps and pressurized fuel systems, using hand tools and shop manuals.
60 Contact Hours

SCS 246 POWER HEADS THROUGH 18 H.P. (N)
3 Credit Hours
Prerequisites: SCS-100
Identify, service, and repair power heads, using available tools, test equipment and shop manuals.
60 Contact Hours

SCS 247 POWER HEADS 20 H.P. AND UP (N)
3 Credit Hours
Prerequisites: SCS-100, SCS-246
Identify, service, and repair power heads, using available tools, test equipment and shop manuals.
60 Contact Hours

SCS 248 LOWER DRIVE UNITS (N)
3 Credit Hours
Prerequisites: SCS-247
Inspect, service, and repair propellers, water pumps, shift linkage and gear systems, using special tools and shop manuals.
60 Contact Hours

SCS 249 STEERING AND REMOTE CONTROL SYSTEMS (N)
3 Credit Hours
Prerequisites: SCS 248
Inspect, service, and repair remote control steering and engine control systems, using available tools, equipment, and shop manuals.
60 Contact Hours

SCS 250 TROUBLESHOOTING AND REPAIR (N)
3 Credit Hours
Prerequisites: SCS 100, SCS 107
Troubleshoot, repair, and service outboard motors, using special tools, equipment, and shop manuals.
60 Contact Hours

SCS 251 GENERAL SERVICE AND REPAIR (N)
3 Credit Hours
Prerequisites: SCS 100, SCS 107
Demonstrate the ability to service and repair outboard motors, using available tools, equipment, and shop manuals.
60 Contact Hours

SCS 252 OUTBOARD CUSTOMER SERVICE AND REPAIR I (N)
3 Credit Hours
Prerequisites: SCS 251
Service and repair outboard motors using skills, equipment, and shop manuals.
60 Contact Hours

SCS 253 OUTBOARD CUSTOMER SERVICE AND REPAIR II (N)
3 Credit Hours
Prerequisites: SCS 251, SCS 252
Demonstrate, troubleshoot, and repair outboard motors using skills, and equipment.
60 Contact Hours

SCS 260 SNOWMOBILE SUSPENSION SYSTEMS (N)
3 Credit Hours
Prerequisites: SCS 100
Identify, service, and repair steering, brake, and suspension systems, using available tools, equipment, and service manuals.
60 Contact Hours

SCS 265 SNOWMOBILE DRIVE MECHANISMS (N)
3 Credit Hours
Prerequisites: SCS 100, SCS 260
Identify, service, and repair drive systems, clutches, and tracks, using available equipment, and service manuals.
60 Contact Hours

SCS 297 COOPERATIVE EDUCATION (N)
3 Credit Hours
Prerequisite: Permission of Instructor
An essential part of the rental equipment repair curriculum is deemed to be a cooperative work experience with the appropriate agencies. Towards that end, each student will be placed in a cooperative work situation at an area rental store where his/her work, attitudes, and performance will be evaluated and critiqued by his work supervisor and college coordinator.
60 Contact Hours

Secretarial

SEC 100 SPANISH TYPEWRITING (N)
4 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.
75 Contact Hours

SEC 101 TYPEWRITING I (A,N,R)
4 Credit Hours
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.
75 Contact Hours

SEC 101A INTRODUCTION TO THE TYPEWRITER KEYBOARD (A,N,R)
2 Credit Hours
This course is designed for students with no previous typewriting instruction. Introduces the basic keyboard, machine parts, and correct typing techniques.
30 Contact Hours

SEC 101B TYPING SKILL DEVELOPMENT (A,N,R)
2 Credit Hours
Prerequisite: SEC101A or equivalent
This course stresses application of the keyboard skills and places emphasis on centering, letters, tabulation, and manuscripts.
30 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.
75 Contact Hours

SEC 105 OFFICE SKILLS FOR NON-SECRETARIAL STUDENTS (A,N,R)
3 Credit Hours
Basic keyboard skills with emphasis on the electric typewriter and speed building. Based on assessment of existing skills students may be required to take 1 or 2 additional lab credits (BUS 095) concurrently.
Variable 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 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 Contact Hours

SEC 115 BUSINESS MACHINES (A,N,R,AEC)
1 Credit Hour
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.
25 Contact Hours

SEC 120 FILING AND RECORDS CONTROL (A,N,R)
2 Credit Hours
Develops the ability to file and retrieve documents using alphabetic, numeric, subject, and geographic systems, and provides the participant with records management skills.
30 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.
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 Contact Hours

SEC 124 SHORTHAND-GREGG SHORTHAND (N)
4 Credit Hours
Prerequisite: Spanish II, BOC 260
This course introduces the theory of Gregg Shorthand in Spanish. Students develop reading speeds from book plates and handwritten notes. Gregg principles are developed to achieve 60 wpm. Transcription techniques are taught. Students may take dictation in English and transcribe/translate to Spanish or English.
60 Contact Hours

SEC 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 Contact Hours

SEC 131 INTRODUCTION TO WORD PROCESSING (A,N,R)
3 Credit Hours
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 Contact Hours

SEC 135 MAGNETIC TYPEWRITING (MEMORY) (A,N)
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 Contact Hours

SEC 141 OFFICE ORIENTATION AND EXPLORATION I (R)
1 Credit Hour
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 Contact Hours

SEC 142 OFFICE ORIENTATION AND EXPLORATION II (R)
1 Credit Hour
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 Contact Hours

SEC 148 COMMUNICATIONS IN THE OFFICE (A,N,R)
1 Credit Hour
This course is designed to help students develop skills in verbal, telephone and mail communications.
15 Contact Hours

SEC 200 OFFICE PROCEDURES (A,N)
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 in the student's specialized areas.
45 Contact Hours

SEC 203 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 of problem typewriting with the student assuming the initiative for determing correct action and using appropriate business forms in completing the work.
75 Contact Hours

SEC 205 OFFICE SIMULATION (A,N,R)
3 Credit Hours
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 Contact Hours

SEC 206 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 Contact Hours

SEC 209 LEGAL TERMINOLOGY (A,N)
2 Credit Hours
Designed to familiarize the student with terms commonly used in the legal profession.
30 Contact Hours

SEC 217 CRT TYPING (A,N,R)
3 Credit Hours
Prerequisite: SEC 102 or SEC 131
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.
45 Contact Hours

SEC 223 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.
60 Contact Hours

SEC 230 MACHINE TRANSCRIPTION (A,N,R)
4 Credit Hours
Prerequisite: SEC 102 Typewriting II and BUS 136
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.
60 Contact Hours

SEC 256 SPANISH BUSINESS TERMINOLOGY AND TRANSLATION TECHNIQUES (N)
2 Credit Hours
This course will present vocabulary from various business areas; in addition, there will be an emphasis in translating techniques and oral interpreting. Business correspondence and documents will be presented in this class.
30 Contact Hours

SEC 260 SPANISH BUSINESS CORRESPONDENCE AND DOCUMENTATION (N)
3 Credits
Prerequisite: Spanish 111
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 Contact Hours

SEC 295 COOPERATIVE EDUCATION SEMINAR (A,N,R)
1 Credit Hour
Prerequisite: Advisor approval
A prerequisite course of study for BUS 297 Cooperative Work Experience designed to assist students in utilizing their acquired classroom skills towards a successful coop work program. Effective job hunting techniques, resume writing, job application forms and employer/employee relations will be presented and discussed.
15 Contact Hours

Sociology

SOC 111 INTRODUCTION TO SOCIOLOGY I (A,N,R,AEC)
3 Credit Hours
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
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
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
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,R,AEC)
3 Credit Hours
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 200 URBAN SOCIOLOGY (A,R,AEC)
3 Credit Hours
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
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
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
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
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,R,AEC)
3 Credit Hours
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
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
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
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
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
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
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 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
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
Studies the nature and causes of crime as a social phenomenon. Major criminological theories are considered; 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
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)
3-5 Credit Hours
Prerequisites: SOC 255 and 256 or permission of instructor.
Places students with community organizations, programs and 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 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
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 100 BASIC SHEET METAL FOR SOLAR ENERGY (R)
3 Credit Hours
This class is an introducation to the sheet metal field, safety, basic equipment and tools. Fabrication techniques and blueprint interpretation are also taught in this unit.
60 Contact Hours

SOM 220 BASIC SOLAR SYSTEMS (R,AEC)
3 Credit Hours
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.
60 Contact Hours

SOM 221 SOLAR ENGINEERING TECHNOLOGY I (R)
4 Credit Hours
Prerequisites: Som 220 — Math level I
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.
68 Contact Hours

SOM 222 SOLAR ENGINEERING TECHNOLOGY II (R)
4 Credit Hours
Prerequisites: SOM 221
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.
68 Contact Hours

SOM 223 SOLAR ENGINEERING TECHNOLOGY III (R)
4 Credit Hours
Prerequisites: SOM 222
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.
68 Contact Hours

SOM 225 SOLAR SYSTEM DESIGN AND LAYOUT (R)
3 Credit Hours
Prerequisites: SOM 220
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.
60 Contact Hours

SOM 226 SOLAR PANEL ARRAYS (R)
3 Credit Hours
Prerequisites: SOM 220, Math level I
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.
60 Contact Hours

SOM 227 DOMESTIC HOT WATER SYSTEMS (R)
3 Credit Hours
Prerequisites: SOM 220, PLU 100, PLU 107
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.
60 Contact Hours

SOM 228 SOLAR SYSTEM ESTIMATING AND MAINTENANCE TECHNIQUES (R)
3 Credit Hours
Prerequisites: SOM 220, 221, 225, 226, 227
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.
60 Contact Hours

SOM 229 SOLAR PANEL INSTALLATION (R)
3 Credit Hours
Prerequisites: SOM 220, 225, 226 — CAR 120 — PLU 100, 107
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.
60 Contact Hours

SOM 234 SOLAR CONTROL THEORY
3 Credit Hours
Prerequisite: Math Level I
This course will familiarize the student with basic electrical circuits and theory used in solar controls. Students will know components and the tools used in installing connecting and troubleshooting controls. Lab work will consist of soldering techniques and the use of instruments and tools of the trade.
60 Contact Hours

SOM 235 BASIC SOLAR CONTROLS (R)
3 Credit Hours
Prerequisites: SOM 234 — Math Level II
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.
60 Contact Hours

SOM 236 ADVANCED SOLAR CONTROLS (R)
3 Credit Hours
Prerequisite: SOM 235
This course will cover general concepts of controls for flat-plate collector heating systems. Control logic for complex systems will be covered and set up in the lab. Failures will be introduced into the system so the student may gain troubleshooting experience on the system level.
60 Contact Hours

SOM 237 PASSIVE SOLAR SYSTEMS I,(R)
3 Credit Hours
Prerequisites: SOM 220 — Math Level I
The student will be presented a state-of-the-art study on the design and installation techniques of passive/natural solar energy systems.
60 Contact Hours

SOM 238 ALTERNATIVE SUPPORT SYSTEMS FOR SOLAR ENERGY (R)
3 Credit Hours
Prerequisites: SOM 220
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.
60 Contact Hours

SOM 239 INTRODUCTION TO WIND ENERGY (R)
3 Credit Hours
Prerequisites: SOM 220, 234 — Math Level I
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.
60 Contact Hours

SOM 240 PASSIVE SOLAR SYSTEMS II (R)
3 Credit Hours
Prerequisites; SOM 237 — Math Level II
This class will present an advance study of passive design in buildings, advance calculation techniques, and material and cost efficiency analysis, and examine techniques of underground dwellings.
60 Contact Hours

SOM 241 PASSIVE SOLAR SYSTEMS III (R)
3 Credit Hours
This class is an in-depth examination of passive systems, parameters affecting the heating and cooling loads of passive systems. Advanced state of the art calculation techniques are applied.
60 Contact Hours

SOM 245 SOLAR GREENHOUSE DESIGN (R)
4 Credit Hours
Prerequisites: SOM 220 — Math Level II
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.
68 Contact Hours

SOM 246 AGRICULTURAL APPLICATIONS OF RENEWABLE ENERGY RESOURCES (R)
4 Credit Hours
Prerequisites: SOM 220, Math level I
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.
68 Contact Hours

SOM 247 SITE-BUILT SOLAR SYSTEMS (R)
3 Credit Hours
Prerequisites: SOM 237 — 24 Cr. in Solar Courses
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.
60 Contact Hours

SOM 248 SOLAR GREENHOUSE CONSTRUCTION (R)
3 Credit Hours
Prerequisites: SOM 245, CAR 125, BRI 120, OPR 125
Construction 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.
60 Contact Hours

SOM 249 EARTH SHELTER DWELLINGS (R)
4 Credit Hours
Prerequisites: SOM 237
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.
68 Contact Hours

SOM 250 RESIDENTIAL ENERGY AUDIT AND CONSERVATION (R)
3 Credit Hours
Prerequisites: SOM 220, SOM 237 or 221
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.
53 Contact Hours

SOM 255 SOLAR AUDIT I (R)
3 Credit Hours
This class teaches about the basic solar technology needed for making Residential Conservation Services (RCS) audits that became Law in 1981. The measures covered are: solar domestic hot water space heating, swimming pool heater replacement, and passive to include greenhouse, sunspace, direct and indirect gain.
60 Contact Hours

SOM 260 COMPUTER AND CALCULATOR TECHNIQUES FOR SOLAR ENERGY (R)
4 Credit Hours
Prerequisites: SOM 220, 222 & 24 Cr. in Solar Courses
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.
68 Contact Hours

SOM 265 INTRODUCTION TO PHOTOVOLTAICS (R)
3 Credit Hours
Prerequisites: SOM 220, 234 — Math Level I
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.
53 Contact Hours

SOM 297 COOPERATIVE EDUCATION (R)
1-15 Credit Hours
Prerequisites: SOM 220 & 24 Cr. in Solar Courses
This program of study is developed with coordinated college course work and industry work experience.
30-450 Contact Hours

SOM 298 SOLAR LAB (R)
3-12 Credit Hours
Prerequisites: Limited to 2nd Year Student, Instructor Permission.
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 Contact Hours

SOM 299 INDEPENDENT STUDY (R)
3-6 Credit Hours
Prerequisites: SOM 220, 221 & 24 Cr. hr in solar courses
This class is an individual study on a project which is related to the Solar Energy Program and outside the program offering.
90-180 Contact Hours

Social Science

SOS 101 FIELD EXPERIENCE IN COMMUNITY ORGANIZATIONS I (A,N,R,AEC)
3 Credit Hours
Students will perform human service work in community organizations, programs and agencies of their choice. Arrangement with instructor required.
105 Contact Hours

SOS 102 FIELD EXPERIENCE IN COMMUNITY ORGANIZATIONS II (A,N,R,AEC)
3 Credit Hours
Continuation of Field Experience I. Arrangement with instructor required.
105 Contact Hours

SOS 115 INTRODUCTION TO SOCIAL SCIENCE (A,N,R,AEC)
3 Credit Hours
Surveys each of the social science disciplines in terms of basic concepts and methodology.
45 Contact Hours

SOS 129 SEARCH FOR SIGNIFICANCE (A,N,R)
3 Credit Hours
This course is designed to assist individuals in the quest for personal growth, personal and social significance, and quality of life. Concepts from existential-humanistic psychology, psychological anthropology, social psychology, cultural anthropology and political sociology will be examined. The individual as a psychological, emotional, political, cultural and spiritual being interfacing with others in society is the focus of the course.
45 Contact Hours

SOS 130 DIMENSIONS OF HUMAN LIVING (A,N,R)
3 Credit Hours
This course is designed to assist individuals in developing a better understanding of themselves, their values, needs, capabilities and relationships with others. Topics include emotional health, coping with stress, drugs, alcohol, tobacco, sexuality, love, marriage, parenthood, middle age, aging, death, nutrition, physical fitness, community health and human ecology.
45 Contact Hours

SOS 216 THE URBAN SETTING: METRO DENVER (R,AEC)
3 Credit Hours
Metro Denver will be used as a comparative case study in American urban areas.
45 Contact Hours

SOS 260 RESEARCH METHODS IN THE SOCIAL SCIENCES (A,R,AEC)
3 Credit Hours
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 Contact Hours

Spanish

SPA 101 BASIC APPLIED SPANISH I (A,R,AEC)
3 Credit Hours
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
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
Prerequisites: Spanish III or permission of instructor
A continuation of SPA III. Designed to develop principles of grammar and syntax; reading and writing of simple Spanish, correct pronunciation and rudimentary conversation. Students will be prepared for a trip to any Spanish-speaking country. Simple and compound tenses will be learned.
75 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 will be used to train the students to better speak, read and write the language. The course will be taught in Spanish.
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.
A 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

SPE 107 OCCUPATIONAL COMMUNICATION (N,AEC)
1 to 3 Credit Hours
Basic communication skills with emphasis on speaking and listening and on-the-job communication.
15-45 Contact Hours

SPE 111 INTRODUCTION TO SPEECH (A,N,R,AEC)
3 Credit Hours
Develops skills in interpersonal communication and public speaking emphasizing student participation and practice in areas such as organization and natural expression. Normally offered every term.
45 Contact Hours

SPE 121 ORAL INTERPRETATION (A,AEC)
3 Credit Hours
Develops skills for selection, analysis and performance of a variety of literary forms. Normally offered spring term.
45 Contact Hours

SPE 141 FORENSICS I (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 (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 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: Permission 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 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, intraoperatively and postoperatively for the patient undergoing surgical intervention. Emphasis is on drug types, effects/side effects, principles of administration and appropriate personnel actions.
30 Contact Hours

STE 106 SURGICAL SKILLS (A)
6 Credit Hours
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.
120 Contact Hours

STE 107 SURGICAL INSTRUMENTATION (A)
3 Credit Hours
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.
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 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 Contact Hours

STE 110 SURGICAL TECHNOLOGY PRACTICUM (A)
7 Credit Hours
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

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, intraoperative 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 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 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 for instructional media for sign language teaching, selection and utilization of media and basic software production techniques.
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 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.
45 Contact Hours

STP 115 THEORIES AND METHODS FOR TEACHING SIGN LANGUAGE (N)
4 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 Contact Hours

STP 200 INSTRUCTIONAL DESIGN (N)
2 Credit Hours
Development of competence in utilizing a paradigm of instructional processes, identification of entering behavior writing of behavioral objectives and lesson planning, selection of learning activities and use of evaluation.
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 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 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 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 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 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

Surveying

SUR 100 SURVEYING FIELDWORK, ELEMENTARY (R)
11 Credit Hours
Prerequisite: Permission 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.
218 Contact Hours

SUR 101 SURVEYING CALCULATIONS I (R)
4 Credit Hours
Prerequisite: Permission of instructor
Hand solutions with and without calculators of applied mathematical surveying relationships.
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 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 Contact Hours

SUR 105 SURVEYING DRAFTING (R)
8 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.
160 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.
60 Contact Hours

SUR 200 SURVEYING — FIELD WORK, ADVANCED (R)
11 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.
218 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.
49 Contact Hours

SUR 204 SURVEYING COMPUTER APPLICATIONS (R)
4 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.
60 Contact Hours

SUR 205 PHOTOGRAMMETRY FOR SURVEYORS (R)
6 Credit Hours
Prerequisite: SUR 201
The interpretation and evaluation of aerial photographs with photogrammetric instruments from packet stereoscope to projection plotters.
109 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 Contact Hours

SUR 216 SURVEYING CALCULATION REFRESHER (R)
4 Credit Hours
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 Contact Hours

Consumer Electronics Technology

Upon satisfactory completion of the module, the student should be able to:

TCE 100 ANALYZE AND TROUBLESHOOT DC CIRCUITS (N)
3 Credit Hours
Prerequisite: Permission of instructor.
Diagnose, troubleshoot and repair a series, parallel and series-parallel circuits to the instructor's standards.
60 Contact Hours

TCE 105 ANALYZE AND TROUBLESHOOT AC CIRCUITS (N)
3 Credit Hours
Prerequisite: TCE 100
Diagnose and detect faults in capacitors, coils, transformers and other AC circuits to the instructor's standards.
60 Contact Hours

TCE 106 ANALYZE AND TROUBLESHOOT VACUUM TUBE CIRCUITS (N)
3 Credit Hours
Prerequisite: TCE 105
Diagnose, troubleshoot and repair faults in vacuum tube circuits to the instructor's standards.
60 Contact Hours

TCE 107 OPERATIONS OF TRANSISTOR CIRCUITS (N)
3 Credit Hours
Prerequisite: TCE 106
Describe the circuit action, on the given circuit formed by a PNP and NPN transistors, to the instructor's standards.
60 Contact Hours

TCE 108 TROUBLESHOOT SOLID STATE CIRCUITS (N)
3 Credit Hours
Prerequisite: TCE 107
Troubleshoot circuits and analyze a functional electronics system to the instructor's standards.
60 Contact Hours

TCE 109 TROUBLESHOOT OTHER SOLID STATE DEVICES, POWER SUPPLIES (N)
3 Credit Hours
Prerequisite: TCE 108
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.
60 Contact Hours

TCE 110 TROUBLESHOOT AND REPAIR VT RADIOS (N)
3 Credit Hours
Prerequisite: TCE 107
Troubleshoot and repair an AM vacuum tube radio receiver to the instructor's standards.
60 Contact Hours

TCE 115 TROUBLESHOOT AND REPAIR SOLID STATE AM RADIOS (N)
3 Credit Hours
Prerequisite: TCE 110
Troubleshoot and repair a solid state AM radio receiver to the instructor's standards.
60 Contact Hours

TCE 116 TROUBLESHOOT AND REPAIR FM RADIOS (N)
3 Credit Hours
Prerequisite: TCE 115
Troubleshoot and repair an FM radio to the instructor's standards.
60 Contact Hours

TCE 117 TROUBLESHOOT AND REPAIR STEREO AUDIO AMPLIFIERS (N)
3 Credit Hours
Prerequisite: TCE 116
Troubleshoot and repair stereo audio amplifiers to the instructor's standards.
60 Contact Hours

TCE 200 SYMPTOM DIAGNOSE MONOCHROME TV (N)
3 Credit Hours
Prerequisite: TCE 117
Diagnose logically B&W television receiver troubles to the instructor's standards.
60 Contact Hours

TCE 205 TROUBLESHOOT AND REPAIR MONOCHROME TV AND PRINCIPLES OF COLOR TV (N)
3 Credit Hours
Prerequisite: TCE 200
Field repair a B&W television receiver and describe the operation of a color television receiver to the instructor's standards.
60 Contact Hours

TCE 206 TROUBLESHOOT AND REPAIR COLOR TV (N)
3 Credit Hours
Prerequisite: TCE 205
Diagnose and field repair a color television. In addition, bench repair troubles in power supplies, timing and deflection circuits to the instructor's standards.
60 Contact Hours

TCE 207 PEAK AND SWEEP ALIGNMENT (N)
3 Credit Hours
Prerequisite: TCE 206
Peak and sweep align the chroma and VIF channels to the instructor's standards.
60 Contact Hours

TCE 208 TROUBLESHOOT AND REPAIR PICTURE TUBE CIRCUITS, VIDEO AND AGC (N)
3 Credit Hours
Prerequisite: TCE 207
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.
60 Contact Hours

TCE 209 TROUBLESHOOT AND REPAIR CHROMA CIRCUITS (N)
3 Credit Hours
Prerequisite: TCE 208
Bench troubleshoot and repair troubles in chroma, IF, AFPC and automatic color circuits of a color television receiver to meet the instructor's standards.
60 Contact Hours

TCE 210 TROUBLESHOOT AND REPAIR VIF, TUNER AND SOUND (N)
3 Credit Hours
Prerequisite: TCE 209
Bench troubleshoot and repair VIF, tuner and sound circuits of a color television receiver to the instructor's standards.
60 Contact Hours

TCE 215 TROUBLESHOOT AND REPAIR MPX STEREO RECEIVERS (N)
3 Credit Hours
Prerequisite: Permission of instructor
Diagnose, troubleshoot and repair MPX stereo receivers to the instructor's standards.
60 Contact Hours

TCE 216 TROUBLESHOOT AND REPAIR CB TRANSCEIVERS (N)
3 Credit Hours
Prerequisite: Permission of instructor
Troubleshoot and repair CB transceivers to the instructor's standards.
60 Contact Hours

TCE 217 TROUBLESHOOT AND REPAIR TAPE RECORDERS AND STEREOS (N)
3 Credit Hours
Prerequisite: Permission of instructor.
Troubleshoot and repair cassette tape recorders and players to the instructor's standards.
60 Contact Hours

TCE 218 TROUBLESHOOT AND REPAIR AUTOMATIC RECORD CHANGERS (N)
3 Credit Hours
Prerequisite: Permission of instructor
Troubleshoot and repair automatic record changers to the instructor's standards.

TCE 219 DESIGN AND INSTALL MATV (N)
3 Credit Hours
Prerequisite: Permission of instructor
Demonstrate his knowledge of an MATV distribution system.
60 Contact Hours

TCE 220 TRANSMISSION LINES AND ANTENNAS (N)
3 Credit Hours
Prerequisite: Permission of instructor
Demonstrate his knowledge of the principles of transmission lines and home antenna systems.
60 Contact Hours

TCE 225 INSTALL, TEST AND REPAIR SECURITY SYSTEMS (N)
3 Credit Hours
Prerequisite: TCE 229
Demonstrate a working knowledge of the various home and industrial security systems to meet the instructor's standards.
60 Contact Hours

TCE 226 TROUBLESHOOT AND REPAIR MICROWAVE OVEN (N)
3 Credit Hours
Prerequisite: TCE 229
Troubleshoot and repair a microwave oven to meet the instructor's standards.
60 Contact Hours

TCE 227 TROUBLESHOOT AND REPAIR TV REMOTE CONTROL (N)
3 Credit Hours
Prerequisite: TCE 210
Troubleshoot and repair television remote control systems to the instructor's standards.
60 Contact Hours

TCE 228 ANALYZE DIGITAL LOGIC CIRCUITS (N)
3 Credit Hours
Prerequisite: Permission of instructor
Demonstrate the operation of basic logic circuits to the instructor's standards.
60 Contact Hours

TCE 229 TROUBLESHOOT AND REPAIR CONSUMER DIGITAL LOGIC CIRCUITS (N)
3 Credit Hours
Prerequisite: TCE 228
Troubleshoot and repair digital circuits to the instructor's standards.
60 Contact Hours

TCE 230 BASIC OPERATION OF HOME VIDEO CASSETTE RECORDER (HVCR) (N)
3 Credit Hours
Prerequisite: Permission of instructor.
Demonstrate a working knowledge of home video cassette recorders (HVCR) to the instructor's standards.
60 Contact Hours

TCE 235 DIAGNOSE, TROUBLESHOOT AND REPAIR HOME VIDEO CASSETTE RECORDERS (N)
3 Credit Hours
Prerequisite: TCE 230
Troubleshoot and repair an HVCR to the instructor's standards.
60 Contact Hours

TCE 237 ASSOCIATED CERTIFIED ELECTRONICS TECHNICIAN (N)
3 Credit Hours
Prerequisite: Permission of instructor.
Pass an Associate Level Certified Electronics Technician Exam.
60 Contact Hours

TCE 238 JOURNEYMAN CERTIFIED ELECTRONICS TECHNICIAN (N)
3 Credit Hours
Prerequisite: TCE 237
Pass a Journeyman Certified Electronics Technician Exam.
60 Contact Hours

TCE 299 INDEPENDENT STUDY (N)
6 Credit Hours
Prerequisite: Permission of instructor.
Develop their program of study in consultation with the instructor and complete to the instructor's standards.
120 Contact Hours

Technical Illustration

TEI 200 RENDERING AND AIRBRUSH I (A)
6 Credit Hours
Provides fundamental training necessary to produce line and continuous tone drawings through the use of graphic pencil, various types of pens and inks, basic airbrush techniques.
120 Contact Hours

TEI 201 AIRBRUSH I (A)
3 Credit Hours
This course provides training in preparing art for technical manuals and diversified art. Airbrush techniques are used in shading techniques.
60 Contact Hours

NOTE: TEI 201 Airbrush I is offered for non-majors. This class also fulfills requirements for Photography, Commercial Art and Graphics majors.

TEI 205 AIRBRUSH II (A)
3 Credit Hours
Prerequisite: TEI 200 or 201
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: TEI 205
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
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 Contact Hours

TET 105 TRAFFIC ENGINEERING STUDIES I (R)
3 Credit Hours
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 Contact Hours

TET 106 TRAFFIC ENGINEERING STUDIES II (R)
3 Credit Hours
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 Contact Hours

TET 107 TRAFFIC ADMINISTRATION AND SAFETY (R)
3 Credit Hours
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 Contact Hours

TET 108 CONTROL DEVICES (R)
5 Credit Hours
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.
90 Contact Hours

TET 109 TRAFFIC ENGINEERING PSYCHOLOGY (R)
3 Credit Hours
Course objectives include behavioral theory, behavioral measurements and driver expectancy. Course will stress practical application and research techniques.
45 Contact Hours

TET 110 TRAFFIC LAWS, ORDINANCES AND REGULATIONS (R)
3 Credit Hours
Course covers the court system, legislative procedure, legislative language, judicial interpretation and their application to traffic control.
45 Contact Hours

TET 201 GEOMETRIC DESIGN I (R)
5 Credit Hours
Geometrics will be defined and geometric design will be applied to accident and traffic operations. Capacity will also be covered.
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.
105 Contact Hours

TET 205 TRAFFIC ACCIDENT REPORTING AND ANALYSIS (R)
3 Credit Hours
Course objectives include reporting an accident, determining violations and causes, analyzing mass accident data, determining causative elements, and proposing solutions to accident problems.
45 Contact Hours

TET 207 DATA COLLECTION TECHNIQUES AND EVALUATION (R)
3 Credit Hours
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 Contact Hours

TET 211 URBAN TRANSPORTATION PLANNING I (R)
3 Credit Hours
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 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 Contact Hours

TET 215 DATA PROCESSING FOR TRAFFIC ENGINEERS (R)
3 Credit Hours
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 intrafirm and agency coordination.
45 Contact Hours

TET 216 PICTORIAL DRAFTING (R)
3 Credit Hours
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 Contact Hours

TET 217 MAP READING AND PHOTO INTERPRETATION (R)
3 Credit Hours
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 Contact Hours

TET 218 LAND USE AND THE QUALITY OF LIFE (R)
6 Credit Hours
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.
105 Contact Hours

TET 219 TRAFFIC ENGINEERING PROBLEMS (R)
3 Credit Hours
Social, economic and psychological factors which influence traffic engineering, traffic engineering issues and problems of contemporary importance will be discussed.
45 Contact Hours

TET 225 CONSTRUCTION DEVICES FOR TRAFFIC CONTROL (R)
2 Credit Hours
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 Contact Hours

TET 226 ADVANCED CONSTRUCTION DEVICES FOR TRAFFIC CONTROL (R)
4 Credit Hours
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 Contact Hours

TET 297 COOPERATIVE EDUCATION PRACTICAL EXPERIENCE (R)
1-6 Credit Hours
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 Contact Hours

TET 299 INDEPENDENT STUDY (R)
2-6 Credit Hours
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 Contact Hours

Traffic and Transportation Management

TTM 101 FUNDAMENTALS OF COMMERCIAL TRANSPORTATION (A)
3 Credit Hours
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 Contact Hours

TTM 115 FREIGHT CLAIMS (A)
2 Credit Hours
Furthers student understanding of the processing and management of freight claims and claim prevention.
30 Contact Hours

TTM 116 BASICS IN AIR CARGO (A)
2 Credit Hours
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 Contact Hours

TTM 151 FREIGHT RATES I (A)
2 Credit Hours
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 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 Contact Hours

TTM 161 TECHNIQUES OF WAREHOUSING (A)
2 Credit Hours
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 Contact Hours

TTM 201 INTERNATIONAL TRADE — EXPORTS (A)
3 Credit Hours
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 Contact Hours

TTM 202 INTERNATIONAL TRADE — IMPORTS (A)
3 Credit Hours
Acquaints the student with transportation and related matters for international import freight movement.
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 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 Contact Hours

TTM 221 TRANSPORTATION REGULATIONS I (A)
3 Credit Hours
Prerequisites: TTM 101, 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 Contact Hours

TTM 222 TRANSPORTATION REGULATIONS II (A)
3 Credit Hours
Prerequisites: TTM 221 or instructor permision
Focuses on court decisions, the rules of practice before the Interstate Commerce Commission and the code of ethics.
45 Contact Hours

TTM 231 TRANSPORTATION MANAGEMENT I (A)
3 Credit Hours
Prerequisites: TTM 101
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 Contact Hours

TTM 232 TRANSPORTATION MANAGEMENT II (A)
3 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 Contact Hours

Travel and Tourism Occupations

TTO 101 GEOGRAPHY FOR TRAVEL AND TOURISM (A)
4 Credit Hours
Presents the location of countries and capital cities, as well as major tourist attractions, throughout the world.
60 Contact Hours

TTO 102 DOMESTIC TRAVEL AND TARIFFS (A)
4 Credit Hours
Examines airline ticketing, fares, tariffs, reservations and scheduling, as practiced in North America.
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.
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 Contact Hours

TTO 105 COMPUTER RESERVATION SYSTEMS (A)
3 Credit Hours
Prerequisite: Completion of TTO, 102, 103
This course is designed to give student practical experience in operating computerized terminals for the travel and tourism industry.
45 to 60 Contact Hours

TTO 297 COOPERATIVE EDUCATION (A)
6 Credit Hours
Prerequisite: Permission of instructor
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.
270 Contact Hours

Urban Planning Technology

UPT 100 INTRODUCTION TO PLANNING (R)
3 Credit Hours
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 Contact Hours

UPT 105 DATA COLLECTING TECHNIQUES AND EVALUATION I (R)
5 Credit Hours
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.
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.
90 Contact Hours

UPT 108 PROBLEMS IN URBAN PLANNING (R)
3 Credit Hours
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 Contact Hours

UPT 109 STATISTICS FOR PLANNERS (R)
3 Credit Hours
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 Contact Hours

UPT 115 DATA PROCESSING FOR PLANNERS (R)
5 Credit Hours
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.
90 Contact Hours

UPT 201 MAP READING AND PHOTO INTERPRETATION I (R)
5 Credit Hours
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.
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.
90 Contact Hours

UPT 205 DRAFTING FOR URBAN PLANNING (R)
6 Credit Hours
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.
105 Contact Hours

UPT 206 PLANNING LAW (R)
3 Credit Hours
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 Contact Hours

UPT 207 TRANSPORTATION PLANNING (R)
3 Credit Hours
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 Contact Hours

UPT 215 PLANNING FOR SOLID WASTE (R)
3 Credit Hours
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 Contact Hours

UPT 216 URBAN ENVIRONMENT DECISION MAKING (R)
3 Credit Hours
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 Contact Hours

UPT 217 LAND USE AND THE QUALITY OF LIFE (R)
6 Credit Hours
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.
105 Contact Hours

UPT 297 COOPERATIVE EDUCATION (R)
1-4 Credit Hours
Prerequisites: Permission of instructor and approval of Division Director.
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.

UPT 299 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 study intensively a specific topic of interest under the direction of a qualified faculty member.

Urban Horticulture

URH 100 ROCKY MOUNTAIN HORTICULTURE (N)
2 Credit Hours
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 Contact Hours.

URH 101 PLANT SCIENCE I (N)
4 Credit Hours
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.
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.
75 Contact Hours.

URH 105 INTRO TO LANDSCAPE CONSTRUCTION DRAFTING (N)
3 Credit Hours
This course introduces the student to the proper use of drafting equipment, printing techniques, scale drawings, and isometric drawings designing landscape structures.
60 Contact Hours

URH 106 LANDSCAPE PLANT MATERIALS (N)
4 Credit Hours
The identification of deciduous and evergreen plant materials.
75 Contact Hours

URH 107 PLANTS IN THE LANDSCAPE (N)
2 Credit Hours
A class offered for summer study of the woody plants in our area.
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.
75 Contact Hours

URH 116 LANDSCAPE PLANNING (N)
4 Credit Hours
Prerequisites: URH 105, URH 106 or permission of instructor
Prerequisites recommended: URH 115, URH 236
An intermediate course in landscape design and planning with emphasis placed on the drawing of residential and small area landscape plans.
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.
75 Contact Hours

URH 126 SMALL ENGINE AND CARBURETOR REPAIR FOR URBAN HORTICULTURE (N)
3 Credit Hours
The servicing, operation, troubleshooting of small engines (both two and four cycle) are studied, both in theory and practical application.
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.
75 Contact Hours

URH 145 SPRINKLER SYSTEM DESIGN (N)
3 Credit Hours
Functional components of a residential sprinkler system, design principles, and hydraulic analysis are studied in preparing a residential irrigation design.
53 Contact Hours

URH 146 SPRINKLER SYSTEM INSTALLATION (N)
3 Credit Hours
An automatic sprinkler system is installed from a design drawing following preparation of a parts list and cost estimating of the project.
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 Contact Hours

URH 155 ARBORICULTURE (N)
3 Credit Hours
Prerequisites: URH 101, URH 106, URH 125
A study of the field of public and private arboriculture. Emphasis is placed on the proper selection, planting, pruning and general care of medium to large shade and ornamental trees.
53 Contact Hours

URH 200 GREENHOUSE AND FIELD EXPERIENCE (N)
3 Credit Hours
Practical experience in mixing soil, planting, calculating and applying fertilizers. Greenhouse design, layout, and procedures are discussed.
60 Contact Hours

URH 204 GARDEN CENTER OPERATIONS (N)
2 Credit Hours
Methods employed in setting-up, operating and maintaining a garden center are studied.
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.
75 Contact Hours

URH 206 INTERIOR LANDSCAPE DESIGN (N)
3 Credit Hours
Design, use and maintenance of green plants in public and commercial interiors. Of interest to general public.
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 Contact Hours

URH 211 GARDEN MANAGEMENT (N)
2 Credit Hours
Abbreviated version of URH 212. Generally offered summers only.
30 Contact Hours

URH 212 GARDEN MANAGEMENT (N)
3 Credit Hours
Perennials, annuals, ground covers and roses are studied and worked with. Development of garden areas and alternatives to sod are discussed.
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 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.
60 Contact Hours

URH 225 HORTICULTURE EQUIPMENT (N)
4 Credit Hours
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.
75 Contact Hours

URH 226 HORTICULTURE BUSINESS OPERATIONS (N)
3 Credit Hours
A study of the methods and problems involved in operating a small business with emphasis on horticulture businesses.
53 Contact Hours

URH 234 FIELD STUDY OF DISEASE AND PESTS (N)
2 Credit Hours
A field study of local insect and disease problems. Generally offered summers only.
30 Contact Hours

URH 235 DISEASES AND PESTS (N)
4 Credit Hours
Identification, prevention and control of diseases and insect problems. Special consideration will be given to the use of insecticides and other chemicals.
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.
68 Contact Hours

URH 237 BIDDING AND ESTIMATING (N)
2 Credit Hours
The student will do take-offs and prepare bids for various landscape and sprinkler projects.
30 Contact Hours

URH 239 ADVANCED LANDSCAPE CONSTRUCTION (N)
4-8 Credit Hours
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.
60-120 Contact Hours

URH 240 PREPARATION FOR COMMERCIAL APPLICATION CERTIFICATION (N)
3 Credit Hours
Commercial and private applicator preparation for EPA Certification in the ornamental and turf grass pest control and general examinations.
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.
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.
75 Contact Hours

URH 255 HORTICULTURE MANAGEMENT (N)
2 Credit Hours
Problem-solving employer-employee relationships, motivations, morale building and goal orientation.
30 Contact Hours

URH 256 LANDSCAPE PERSPECTIVE DRAWING (N)
3 Credit Hours
Students will learn how to illustrate landscape plans in three-dimensional drawings.
53 Contact Hours

URH 297 COOPERATIVE EDUCATION (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.
150 Contact Hours

URH 299 INDEPENDENT STUDY (N)
1-4 Credit Hours
Prerequisite: Instructor and Division Director approval
In depth study in an area of students special interest
15-90 Contact Hours

Welding and Fabrication

Upon satisfactory completion of the module, the student should be able to:

WEF 100 OXY-ACETYLENE SAFETY CUTTING AND WELDING (A,N,R)
3 Credit Hours
Employ all shop safety rules and work in a safety conscious manner at all times, and demonstrate an ability to perform oxy-acetylene welding and fuel gas burning.
60 Contact Hours

WEF 106 BRAZING AND SPECIAL APPLICATIONS (A,N,R)
3 Credit Hours
Demonstrate in flat, horizontal, vertical and overhead the following joints in the brazing method: butt, lap, tee, and corner.
60 Contact Hours

WEF 107 BLUEPRINT READING AND ESTIMATING (A,N,R)
3 Credit Hours
Prerequisite: General Education — Computation — recommended
Demonstrate the ability to read welding shop drawing and identify various welding symbols; estimate the cost of materials and labor.
45 Contact hours

WEF 108 S.M.A.W. SAFETY, ELECTRODE IDENTIFICATION AND SURFACE PADDING (A,N,R)
3 Credit Hours
Apply safety rules applicable to S.M.A.W. power supplies; identify electrodes by the A.W.S. — A.S.T.M. numbering system; practice surface padding in designated positions.
60 Contact Hours

WEF 109 S.M.A.W. SURFACE PADDING (A,R)
3 Credit Hours
Demonstrate the ability to apply surface padding in designated positions.
60 Contact Hours

WEF 110 S.M.A.W. JOINTS IN THREE POSITIONS (A,N,R)
3 Credit Hours
Prerequisite: Permission of Instructor
Demonstrate the ability to properly set up and weld the lap, tee, butt, and corner joints in the 2G, 3G, and 4G positions using specified electrodes.
60 Contact hours

WEF 115 PLATE CODE TESTING E7018 WITH BACKING STRIP (A,N,R)
3 Credit Hours
Prerequisite: Permission of Instructor
Demonstrate the ability to weld beveled test plates using a backing strip in the 2G, 3G and 4G positions with E7018; according to applicable welding standards.
60 Contact Hours

WEF 116 PLATE CODE TESTING E6010 WITHOUT BACKING (A,N,R)
3 Credit Hours
Prerequisite: Permission of Instructor
Demonstrate the ability to weld beveled test plate without a backing strip in the 2G, 3G, and 4G positions with E6010; according to applicable welding standards.
60 Contact Hours

WEF 117 PLATE CODE TESTING E6010/E6011, E7018, WITHOUT BACKING (A,R)
3 Credit Hours
Prerequisite: WEF 108, WEF 109, WEF 110, WEF 115, WEF 116, or permission of instructor
Demonstrate the ability to weld beveled test plate without a backing in the 2G, 3G, and 4G positions using E6010/E6011 for the root and E7018 for all additional passes in accordance with applicable welding standards.
60 Contact Hours

WEF 118 SPECIAL APPLICATIONS IN ARC WELDING (A,N,R)
3 Credit Hours
Prerequisite: WEF 115 or permission of instructor
Demonstrate the operation of the air-arc process, welding with stainless steel electrodes; welding cast iron; using various diameter electrodes.
60 Contact Hours

WEF 119 METALLURGY FOR WELDERS (N)
3 Credit Hours
Identify the different types of ferrous and non-ferrous metals utilizing basic spark and chip techniques known to the trade, distinguish chemical and structural change of metal brought about when heating and welding, and demonstrate a working knowledge of destructive and non-destructive weld testing.
45 Contact Hours

WEF 120 WELDING FOR CONSTRUCTION AND MECHANICAL TRADES (R)
3 Credit Hours
Relate how welding skill development, initial techniques and principles apply to the various trades.
60 Contact Hours

WEF 130 G.M.A.W. — A.W.S. PIPE AND PLATE (N)
3 Credit Hours
Demonstrate an ability to "MIG" weld steel and aluminum in the 1G and 3G positions, and a 5G pipe test; and operate the flux core process according to A.W.S. standards.
60 Contact Hours

WEF 200 PIPE JOINT DESIGN, FABRICATION, AND TESTING 2G (A,R)
3 Credit Hours
Prerequisite: Permission of instructor.
Identify, fabricate, and set-up the standard open-butt designs; demonstrate an ability to weld open-butt joint designs and weld beveled open-butt pipe joints in the 2G position using E6010/11 electrode in accordance with applicable standards.
60 Contact Hours

WEF 201 PIPE PREPARATION AND TEST A.S.M.E., SECTION IX, E-6010 (R)
3 Credit Hours
Prerequisite: WEF 200
Prepare joints for welding using a handheld torch, automatic torch and beveling machine; demonstrate an ability to weld prepared pipe joints using E-6010 electrode in all positions.
60 Contact Hours

WEF 202 PIPE TEST A.S.M.E. SECTION IX, E-7018 (R)
3 Credit Hours
Prerequisite: WEF 200
Prepare and weld pipe joints using E-7018 in all positions in accordance with A.S.M.E. Section IX.
60 Contact Hours

WEF 203 A.W.S. PIPE TESTING 2G and 5G (N)
3 Credit Hours
Prerequisite: WEF 116
Properly identify the common sizes of pipe and their O.D.'s; demonstrate an ability to weld pipe joints using the beveled butt joint in the rolled and 2G position using E-6010 electrode to test in the 2G and 5G positions according to appropriate root gap and welding standards.
60 Contact Hours

WEF 205 PIPE TESTING A.S.M.E./A.W.S. — 5G POSITION (A)
3 Credit Hours
Prerequisite: Permission of instructor.
Demonstrate an ability to fabricate, set-up and weld standard open beveled butt pipe joints in the 5G position, using E-6010/E6011 electrodes in accordance with applicable standards.
60 Contact Hours

WEF 206 A.W.S. PIPE TESTING 6G (N)
3 Credit Hours
Prerequisite: WEF 203
Demonstrate the ability to set-up and weld a pipe joint in the 6G position using E6010 electrode for the root pass and E7018 for all additional passes.
60 Contact Hours

WEF 207 G.T.A.W. SAFETY AND WELDING JOINTS (A,R)
3 Credit Hours
Prerequisite: Permission of instructor
Apply the process of fusion welding of low carbon steel joints (lap, tee, open butt), using the appropriate power supply and accessories. Also use silicon bronze filler material to weld low carbon steel joints.
60 Contact Hours

WEF 208 G.T.A.W. WELDING ALLOYS AND JOINING VARIED SHAPES (A)
3 Credit Hours
Prerequisite: Permission of instructor
Demonstrate an ability to weld stainless and aluminum joints.
60 Contact Hours

WEF 209 G.M.A.W. — PIPE AND PLATE CODE TESTING (A,N,R)
3 Credit Hours
Prerequisite: Permission of instructor
Identify various types of power supplies and accessories needed for the "MIG" welding process; employ the short-circuit method of welding on low carbon sheet steel, plate and pipe; demonstrate an ability to weld a test specimen on the 3G vertical down plate and the 5G pipe joint positions; also demonstrate an ability to weld using the flux-core process.
60 Contact Hours

WEF 210 STRUCTURAL SHAPES AND JOINTS DESIGN-PROJECT DEVELOPMENT (A,N,R)
3 Credit Hours
Prerequisites: WEF 107, WEF 108, WEF, 207
Recognize and measure various structural shapes and joint designs; develop a shop drawing of a project (student's choice or selected by the instructor).
60 Contact Hours

WEF 215 STRUCTURAL PROJECT LAYOUT AND FABRICATION (A,N,R)
3 Credit Hours
Prerequisite: WEF 210
Complete the development (and maybe the fabrication) of the project begun in WEF 210.
60 Contact Hours

WEF 216 STRUCTURAL FABRICATION (A,R)
3 Credit Hours
Prerequisite: WEF 215
Develop, plan (estimate), and fabricate structural jobs.
60 Contact Hours

WEF 217 MAINTENANCE WELDING AND REPAIR (A,N,R)
3 Credit Hours
Prerequisite: Permission of instructor
Apply various welding techniques and mechanical aptitude in repairing and replacing broken parts on machinery and equipment.
60 Contact Hours

WEF 218 HEAVY EQUIPMENT WELDING REPAIR (R)
3 Credit Hours
Relate safety, to heavy equipment welding, electrode selection, and joint design and preparation; demonstrate the uses of primary, secondary, parallel weld joints, estimating cost of repairs, and outside field repair using field equipment and actual industrial applications.
60 Contact Hours

WEF 219 CERTIFICATION PROCEDURE AND PREPARATION (A)
3 Credit Hours
Prerequisite: Permission of instructor
Develop the ability to prepare and test all welding joints using applicable procedures.
60 Contact Hours

WEF 221 ORNAMENTAL IRON I (N)
3 Credit Hours
Prerequsities: WEF 118 or WEF 130
Demonstrate the ability to work in a safe manner, operate and maintain a metal bending machine and other metal forming cutting equipment; determine a bill of materials, estimate cost, and layout basic designs. (Selection of project needs instructor's approval).
60 Contact Hours

WEF 222 ORNAMENTAL IRON II (N)
3 Credit Hours
Prerequisite: WEF 221
Demonstrate an ability to fabricate a project(s) using either the S.M.A.W. or G.M.A.W. process.
60 Contact Hours

WEF 223 ORNAMENTAL IRON III (N)
3 Credit Hours
Prerequisite: WEF 222
Demonstrate an ability to fabricate larger and more difficult design projects such as rails, scopes, gates, furniture, patio covers.
60 Contact Hours

WEF 225 GENERAL FABRICATION AND DESIGN (R)
3 Credit Hours
Prerequisite: Permission of instructor
Demonstrate an ability to further develop skill in designing and fabricating a project using previously acquired welding techniques.
60 Contact Hours

WEF 226 G.T.A. WELDING ALLOYS (N)
3 Credit Hours
Identify the alloys and the filler rod for welding carbon steel and stainless steel; welding the butt, lap, tee, and edge joints in the 1G, 2G, 3G, and 4G positions; use a back purge for stainless steel; with all results meeting A.W.S standards.
60 Contact Hours

WEF 227 G.T.A.W. SAFETY AND WELDING, ALL JOINTS (N)
3 Credit Hours
Perform G.T.A.W. welding process techniques using the 1G, 2G, 3G, and 4G positions to weld aluminum butt, lap, tee, and edge joints selecting the proper filler rod according to A.W.S. standards.
60 Contact Hours

WEF 228 G.T.A.W. AND S.M.A.W. PIPE TEST (A,N,R)
3 Credit Hours
Prerequisites: WEF 203, WEF 206, WEF 226, WEF 227
Employ the G.T.A.W. process to weld the root pass on a beveled pipe joint and fill the remaining groove with E7018 electrode in the S.M.A.W. process in the 2G, 5G, and 6G position.
60 Contact Hours

WEF 235 PIPE TEST A.S.M.E. SECTION IX, E6010 AND E7018 (R)
3 Credit Hours
Prerequisites: WEF 200, WEF 201, WEF 202
Prepare and weld pipe in all positions using E6010 for root and E7018 for fill, according to A.S.M.E. Section IX.
60 Contact Hours

WEF 236 PIPE JOINT DESIGN (R)
3 Credit Hours
Prerequisites: WEF 200, WEF 201, WEF 202, and WEF 235
Demonstrate an ability to layout and fabricate pipe joints including three piece 90 degree turns, branch to header and reducers using E6010 electrode according to appropriate standards.
60 Contact Hours

WEF 237 G.T.A.W. PLATE AND PIPE TEST (R)
3 Credit Hours
Prerequisite: Permission of instructor
Demonstrate an ability to properly prepare and weld test plate in the 3G and 4G positions and pipe in the 2G, 5G, and 6G positions according to A.S.M.E. Section IX.
60 Contact Hours

WEF 238 G.M.A.W. PLATE AND PIPE A.S.M.E. SECTION IX (R)
3 Credit Hours
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.
60 Contact Hours

WEF 297 COOPERATIVE EDUCATION (A,N,R)
1-3 Credit Hours
Prerequisite: Permission of instructor
Coordinates college course work and industry work experience. A minimum of one hour of class per week is required.
Contact Hours Arranged

WEF 299 INDEPENDENT STUDY (A,N,R)
1-3 Credit Hours (Arranged)
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. 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.

Water-Wastewater Technology

WWT100 INTRODUCTION TO WATER-WASTEWATER (R)
3 Credit Hours
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 Contact Hours

WWT105 SPECIFIC CALCULATIONS FOR WW (R)
4 Credit Hours
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 Contact Hours

WWT106 MECHANICAL PHYSICAL TREATMENT (R)
2 Credit Hours
The course will include the principles of pre-treatment of wastewater, study of screens and racks, communution grit removal and grit chambers and pre-aeration. Also studied will be the technical processes of sedimentation and flocculation.
30 Contact Hours

WWT107 SLUDGE TREATMENT (R)
3 Credit Hours
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 Contact Hours

WWT108 ADVANCED TREATMENT (R)
3 Credit Hours
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 Contact Hours

WWT109 WATER DISTRIBUTION SYSTEMS (R)
3 Credit Hours
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 Contact Hours

WWT110 METER SHOP OPERATIONS (R)
3 Credit Hours
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 Contact Hours

WWT115 WATER SOURCES AND SUPPLY (R)
3 Credit Hours
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 Contact Hours

WWT116 WATER PRE-TREATMENT PROCESSES (R)
2 Credit Hours
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 Contact Hours

WWT117 FILTERS AND FILTRATION PRACTICES (R)
3 Credit Hours
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 Contact Hours

WWT118 WASTEWATER COLLECTION SYSTEMS (R)
3 Credit Hours
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 Contact Hours

WWT119 BASIC WATER ANALYSIS (R)
5 Credit Hours
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.
83 Contact Hours

WWT120 WATER-WASTEWATER EQUIPMENT MAINTENANCE (R)

5 Credit Hours

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.

83 Contact Hours

WWT121 PUBLIC RELATIONS FOR WATER-WASTEWATER (R)

3 Credit Hours

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 Contact Hours

WWT122 BASIC ELECTRICITY FOR WATER-WASTEWATER (R)

3 Credit Hours

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 Contact Hours

WWT125 WATER-WASTEWATER CERT. REV. C AND D (R)

3 Credit Hours

This course is designed to prepare students for the Colorado water-wastewater operator's certification tests, Level C and D. Materials covered will be 1) methods of study, 2) test taking, 3) general knowledge of water and wastewater treatment processes.

45 Contact Hours

WWT127 ADVANCED WASTEWATER TREATMENT II (R)

3 Credit Hours

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 Contact Hours

WWT128 WATER-WASTEWATER TERMINOLOGY (R)

1 Credit Hour

A course designed to help the student interpret and understand those terms regularly used or having special meaning in the water-wastewater industry.

15 Contact Hours

WWT129 RECORDS AND RECORDKEEPING FOR WATER-WASTEWATER (R)

2 Credit Hours

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 Contact Hours

WWT130 INDUSTRIAL WATER TREATMENT (R)

2 Credit Hours

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 Contact Hours

WWT200 HYDRAULICS FOR WATER-WASTEWATER (R)

5 Credit Hours

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.

83 Contact Hours

WWT 205 PRIME MOVERS/LIQUID TRANSFER (R)

3 Credit Hours

A course designed to familiarize the student with pumps, pump characteristics, and pump operation and maintenance.

45 Contact Hours

WWT206 DESIGN INTERPRETATION OF WATER-WASTEWATER SYSTEMS (R)

5 Credit Hours

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.

83 Contact Hours

WWT207 BIOLOGICAL TREATMENT (R)

3 Credit Hours

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 Contact Hours

WWT208 WATER-WASTEWATER ADMINISTRATION AND FINANCE (R)
3 Credit Hours
Sound practices in project service costs, rate structure, municipal finance, safety programs and personnel practices are to be taught.
45 Contact Hours

WWT209 CLARIFICATION PROCESSES FOR WATER
3 Credit Hours
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 Contact Hours

WWT210 ADVANCED WATER ANALYSIS (R)
5 Credit Hours
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.
83 Contact Hours

WWT216 BIOLOGICAL AND BACTERIOLOGICAL WATER ANALYSIS (R)
5 Credit Hours
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 colliform testing (MF and MTF), and control tests for aerobic and anaerobic digestion.
83 Contact Hours

WWT217 W / W DISINFECTION TECHNIQUES (R)
3 Credit Hours
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 Contact Hours

WWT226 T.V. SURVEILLANCE OF COLLECTION SYSTEMS (R)
3 Credit Hours
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 Contact Hours

WWT235 WATER SOFTENING PROCESSES (R)
1 Credit Hour
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 Contact Hours

WWT236 SAFETY PRACTICES FOR WATER / WASTEWATER (R)
1 Credit Hours
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 Contact Hours

WWT237 FLUORIDATION PRACTICES (R)
1 Credit Hour
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 Contact Hours

WWT250 WASTEWATER DISCHARGE STANDARDS (R)
1 Credit Hour
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 Contact Hours

WWT297 COOPERATIVE EDUCATION (R)
1-4 Credit Hours
Prerequisites: Permission of 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.
45-180 Contact Hours

WWT299 INDEPENDENT STUDY (R)
1-4 Credit Hours
Prerequisites: Permission of 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 Contact Hours

College Directory

Colorado State Board for Community Colleges and Occupational Education

Name	Term Expires
Ellin R. Mrachek, Chairman	1981
Angelo M. Daurio, Vice Chairman	1981
Stephen J. DeJong	1985
Martha Fair	1983
Ross Forney	1985
Thomas T. Grimshaw	1985
Gary A. Hurley	1983
Richard O. Jones	1981
Fred W. Valdez, Jr.	1983

(Date indicates when term of office expires.)

Denver Area Council for Community Colleges

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

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

Eddie L. Brandon
Chairperson
5/26/81-5/26/85
Arapahoe County

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

Linda Kay Turman
5/26/81-5/26/85
Boulder County

Faculty and Administration

Central Administration

President's Office
Lahti, Robert E. . . . . President
Groth, David A. . . . . Vice-President for Educational Services

Administrative Services
Lutes, Thomas R. . . . . Vice President, Administration
Horle, Garrison L. . . . . Manager, Business Services

Automated Data Processing
Sanders, Robert J. . . . . Director

Budget
Williams, Gary . . . . . Budget Director

College Relations
McCarty, Rick H. . . . . Director

Controller
Asher, Gary W. . . . . Controller
Vacant . . . . . 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

Program Research and Development
McLemore, Donald P. . . . . Director

Auraria Campus

General Administration
Titus, Myer L. . . . . Campus Vice President
Hall, Marlene . . . . . Dean of Instruction
Van deVisse, Martin . . . . . Dean, Student Services
Smith, Mary . . . . . Coordinator, Community Relations

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
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
Mojica, Humberto . . . . . Instructor/History
Padilla, Francisco . . . . . Instructor/Spanish
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
Blan, Santos . . . . . Instructor/Accounting
Cordova, Lucille . . . . . Instructor/Management
Curtis, Ivory T. . . Instructor/Economics, Political Science
Fekete, Anita . . . . . Instructor/Business

Gilmore, Marjorie . . . . . Instructor/Elec. Data Processing Management
Kleysteuber, Helen . . . . . Instructor/Secretarial
Krane, John . . . . . Instructor/Business
Norden, Robert . . . . . 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

Continuing Education

Duran, John . . . . . Associate Dean
Vacant . . . . . Coordinator, Community Services
Copeland, Shyrel. . . . . Coordinator, Women's Center, Evening Center

Developmental Studies

Richards, William . . . . . Coordinator
Fyre, Yvonne . . . . . Instructor
Griego, Orlando . . . . . Instructor
Loggins, Zenia . . . . . Instructor
Martinez, Cleopatria . . . . . Instructor
Richards, Charles . . . . . Instructor
Tam, Barbara . . . . . Instructor
Tjeerdma, Katrinus . . . . . Instructor
White, Janet . . . . . Supplemental Sys.

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
Fears, Gerri. . . . . Coordinator/Instructor/Nursing
Hamann, Loy W. . . . . Instructor/Nursing
Holliman, Juanita. . . . . Instructor/Nursing
Killeen, John. . . . . Instructor/Psychology
Kumagai, May . . . . . Instructor/Nursing
Miller, Marcella . . . . . Instructor/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

Program and Professional Development

Conway, Sally. . . . . Coordinator

Science and Technology

Raughton, Jim L. . . . . Division Director
Baade, Randy . . . . . Inst/Geography
Beisswanger, Carl . . . . . Inst/Appliance Refrigeration
Biagi, Jr., Paul E. . . . . Inst/Physics
Breslin, Edward . . . . . Inst/Electronics
Dallas, Keith . . . . . Inst/Math
Foreman, Maxine . . . . . Inst/Biology
Hall, Clem . . . . . Inst/Electronics
Holmes, Theodore . . . . . Inst/Drafting
Johnson, Jr., Sidney . . . . . Inst/Math
Jones, John D. . . . . Inst/Electronics
Kukura, Bob . . . . . Coor Computer I
Lambrecht, Steve. . . . . Inst/Chemistry
Lundgren, Mary . . . . . Inst/Biology
Pacheco, Nelson . . . . . Inst/Bus Mach R
Rogers, Guy E. . . . . Inst/Drafting
Ross, William . . . . . Inst/Foreign Auto Mechanics
Smith, Frederick. . . . . Inst/Foreign Auto Mechanics
Thomas, Jr., Arthur . . . . . Inst/Welding
Valezquez, Janet . . . . . Inst/Biology
Wood, Robert M. . . . . Inst/Welding

Admissions Information Center

Gallegos, George . . . . . Director
Loomis, Jan . . . . . Registrar
Martinez, Edward . . . . . Recruitment Advisor

Career Planning and Advising Center

Rickord, William . . . . . Director
Brooks, Larry . . . . . Vocational Guidance Specialist
Hamilton, Delmar . . . . . Student Advisor
Harris, Ottawa . . . . . Student Advisor
Kusey, William . . . . . Student Advisor
Perez, Louise. . . . . Student Advisor

Center for the Physically Disadvantaged

Hunsaker, Lil . . . . . Assistant Director
Avalos, Elizabeth . . . . . Vocational Evaluator
Ellinger, Jane . . . . . Health Specialist
King, Jackie. . . . . Interpreter/Manager
O'Cain, Barbara . . . . . Counselor

Educational Opportunity Center

Young, Ronald . . . . . Director
Taylor, Michael. . . . . Coordinator
Alire, Jay. . . . . Counselor
Brillon, Carol . . . . . Counselor
Brooks, Betty . . . . . Counselor
Jackson, Ruby . . . . . Counselor
Porter, Larry . . . . . Counselor
Tasher, Vickie. . . . . Counselor

Financial Aid

Vacant . . . . . Coordinator
Dominguez, Anna . . . . . Student Services Spec

Refugee Program

Cong, Chu . . . . . Coordinator

Student Activities
Vacant . . . . . Coordinator

Student Health Services
Jacquez, Rafael . . . . . Health Counselor

Veterans' Affairs
Pelter, Joseph . . . . . Coordinator

Hispanic Access Project
Cervantes, Cecilia . . . . . Director
Monge, Ermalinda . . . . . Coordinator/Counselor

North Campus
General Administration
Swenson, John H. . . . . Campus Vice President
Mankenberg, Donald R. . . . . Dean of Instruction
Trujillo, Orlando H. . . . . Dean, Student Services
Moore, William I. . . . . Director, Physical Plant
Richman, Nancy . . . . Coordinator, Community Relations

Arts and Humanities
Graves, Paul G. . . . . Director
Amick, David A. . . . . Instructor/Psychology
Bowman, Michele D. . . . . Instructor/Reading and English
Carpenter, Garrett . . . . . Instructor/Philosophy
Cattell, Judith . . . . . Instructor/CDA
Davis, William A. . . . . Instructor/Political Science
Dudley, David A. . . . . Instructor/Geography
French, Treva . . . . . Instructor/English and Literature
Goodrich, Laurel . . . . . Instructor/Interpreter Tutor
Hinga, John A. . . . . Instructor/Sociology
Hudson, Julie . . . . . Instructor/Music
Kantor, Sherrie . . . . . Instructor/
Early Childhood Education
Lavroff, Ellen C. . . . . Instructor/Spanish
McLeran, Paul C. . . . . Instructor/
English, Speech and Drama
McNeilly, Julie . . . . . Instructor/Interpreter Tutor
Ott, Charles . . . . . Instructor/Art
Preskorn, Barbara . . . . . Instructor/Art
Robinson, John A. . . . . Instructor/History
Schwartz, Jackie . . . . . Instructor/
Early Childhood Education
Stuska, Sue . . . . . Instructor/
Early Childhood Education
Sweeney, Roger L. . . . . Instructor/English
Ulman, Florence A. . . . . Instructor/English and Speech
VanDyke, Louis J. . . . . Instructor/Psychology
Wagoner, James . . . . . Instructor/Psychology

Business
Archer, Donald W. . . . . Director
Bowe, Mary Ellen . . . . . Instructor/Secretarial Science
Brasselero, Mike . . . . . Instructor/Economics
Christensen, William R. . . . . Instructor/Management
Collins, Marian . . . . . Instructor/Accounting
Earle, William . . . . . Instructor/Secretarial
Espinosa, Jose . . . . . Instructor/Secretarial
Estrada, Paul . . . . . Instructor/Marketing
Freudenberg, Mary . . . . . Instructor/Accounting
Gomez, Joseph . . . . . Instructor/Data Processing
Harris, Connie . . . . . Instructor/Marketing
Mahrer, Albert . . . . . Instructor/Management
Moore, James . . . . . Instructor/Marketing
Napue, Norma . . . . . Instructor/Secretarial
Nickel, Barbara . . . . . Instructor/Secretarial
Roberts, Joan M. . . . . Instructor/Data Processing
Schupbach, Warren . . . . . Instructor/Economics
Terada, James . . . . . Instructor/Management
Weiss, Donald . . . . . Instructor/Accounting
Zamarripa, Alice . . . . . Instructor/Accounting

Industrial Applied Sciences
Duncan, Ralph . . . . . Director
Lewis, Edward . . . . . Associate Director
Brown, Edwin . . . . . Instructor/Welding
Daffin, Donald . . . . . Instructor/Auto Body
Doty, David . . . . . Instructor/Auto Mechanics
Etter, Cecil . . . . . Instructor/Electronics
Fedro, William . . . . . Instructor/Architectural Drafting
Jarrel, James . . . . . Instructor/Auto Body
Maybury, Paul . . . . . Instructor/Architectural Drafting
Minamoto, Mitsua . . . . . Instructor/Consumer Electronics
Payne, William . . . . . Instructor/Industrial 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
Thompson, Ole . . . . . Instructor/Electronics
Vigil, Paul . . . . . Instructor/Sportscraft
West, Jack . . . . . Instructor/Machine Shop
Wheeler, Charles . . . . . Instructor/Electronics
Winterhalder, Roy . . . . . Instructor/
Auto Body Service

Science and Health
Brown, Robert E. . . . . Director
Jones, Audrey A. . . . . Associate Director
Boersema, Raymond . . . . . Instructor/Mathematics
Bouse, Edward F. . . . . Instructor/Mathematics
Bradford, M. Sue . . . . . Instructor/Nursing
Burton, Gwendolyn . . . . . Instructor/Biology
Crenshaw, Barbara . . . . . Instructor/Nursing
Doran, Edward . . . . . Instructor/Mathematics
Dotson, Gerald R. . . . . Instructor/Biology
Edwards, Carol M. . . . . Instructor/Dental Assistant
Elrod, Rachel . . . . . Instructor/Nursing
Hale, Beverly B. . . . . Instructor/Respiratory Therapy
Hannaford, Carla . . . . . Instructor/Biology
Hannaford, James . . . . . Instructor/Biology
Harris, Sendia . . . . . Instructor/Nursing
I, Jesse . . . . . Instructor/Chemistry
James, Evelyn . . . . . Instructor/Nursing
Jones, Karen . . . . . Instructional Associate/
Nursing

Kindle, Glenn . . . . . Instructor/Mathematics
Law, Helen . . . . . Instructional Associate/ Food Service
O'Shea, James . . . . . Instructor/ Urban Horticulture
Owen, Aubrey . . . . . Instructor/Mathematics
Palmer, David . . . . . Instructor/Physics
Pinar, Elizabeth . . . . . Instructor/ Dietetics Technology
Pirolo, Dorothy . . . . . Instructor/Nursing
Roffers-Payne, Sharon . . . . . Instructor/Mathematics
Sabus, John . . . . . Instructor/ Physical Education
Smith, Janice . . . . . Instructor/Nursing
Sukle, Daniel . . . . . Instructor/Physics
Sullivan, Francis . . . . . Instructor/Biology
Trujillo, Julie . . . . . Instructor/Dental Assisting
Vaden, James . . . . . Instructor/Food Service
VanDyke, Martin . . . . . Instructor/Chemistry
Wecal, Robert . . . . . Instructor/ Urban Horticulture
White, Judith . . . . . Instructor/ Optometric Assisting
Younger, Paul . . . . . Instructor/Mathematics

Community Services/Continuing Education

Braman, David . . . . . Director
Bebensee, Barbara . . . . . Assistant Director/ Orginizational Out-reach
Bennett, Marianne . . . . . Assistant Director/ Program Development

Admission Information Center

Albright, Morris G. . . . . Director
Boyko, Mark M. . . . . Registrar
Carson, Alexander A. . . . . Counselor

Financial Aid

Thornton, Ronald D. . . . . Coordinator

Veterans Affairs

Amanna, Vincent J. . . . . Coordinator

Career Planning and Advising Center

Vacant . . . . . Director
Casper, Mary L. . . . . Vocational Guidance Specialist
Lang, Jr., Edward M. . . . . Counselor

Job Development and Placement

Epperson, Charles . . . . . Coordinator

Student Health Services

Green, Nancy L. . . . . Health Counselor

Student Activities

Romero, Ben . . . . . Officer
Mehlin, Jan . . . . . Student Activities Adviser

Child Care Center

Latronica, Toni M. . . . . Director
Cornelsen, Connie S. . . . . Instructional Associate

Center for the Physically Disadvantaged

Bosch, Kenneth L. . . . . Director
Avalos, Elizabeth Riley . . . . . Coordinator of Vocational Evaluation Services
Bassett, Tonya. . . . . Lab Coordinator
Beyeler, Tom . . . . . Counselor for the Disabled
Carfrae, Cal . . . . . Counselor for the Disabled
Cochrane, Donna . . . . . Vocational Evaluator
Custer, Carole . . . . . Coordinator of Job Placement
Ensenat, Darlene. . . . . Interpreter Coordinator
Manuele, Magdalene . . . . . Counselor for the Disabled
Roybal, Barbara . . . . . Health Specialist

Instructional Resources

Vacant . . . . . Director

Learning Materials Center

Hall, Josephine . . . . . Coordinator
Bond, Dorothy. . . . . Library Assistant
Brito, Rodney. . . . . Graphic Designer
Cain-Seiler, Kathi . . . . . Library Assistant
Crawford, Betsy . . . . . Library Assistant
David, Janet . . . . . Library Technician
Jones, Ronald . . . . . Instructional Media Specialist
Murphy, Suzanne . . . . . Library Assistant
Robinson, Betty. . . . . Librarian
Sacher, David . . . . . Audiovisual Production Assistant
Shoemaker, Karen . . . . . Library Assistant
Widner, Vicki . . . . . Audiovisual Technician

Learning Development Center

Shipley, Sandra J. . . . . Coordinator
Boast, Mary C. . . . . Instructor/ Communications Lab.
Benevidez, Vera . . . . . Instructional Associate/ English and Language Lab.
Zeches, Hubert E. . . . . Instructor/Communications Lab.

Supplemental Services

Vacant . . . . . Coordinator

Women's Resource Center

Darr, Dixie L. . . . . Coordinator

Red Rocks Campus

General Administration

Smith, G. Owen . . . . . Campus Vice President
Noonan, Barry . . . . . Dean of Instruction
Adlfinger, Annette . . . . . Dean, Student Services
Sittner, George . . . . . Superintendent, Buildings and Grounds
Bell, Anne . . . . . Coordinator, Community Relations

Building and Machine Trades

Brown, Jim W. . . . . Director
Vacant . . . . . Assoc. Director
Bailey, Kent . . . . . Instructor/Welding
Ballard, Wade . . . . . Instructor/Diesel Mechanics
Busnardo, Ernest . . . . . Instructor/Heavy Equipment
Earl, Johnnie . . . . . Instructor/Diesel Mechanics
Gale, Harold. . . . . Instructor/Bricklaying
Hilton, Craig . . . . . Instructor/Solar Energy
Hilton, Robert . . . . . Instructor/Solar Energy
Hinz, Timothy . . . . . Instructor/Carpentry
Holland, Truby . . . . . Instructor/Fluid Power
Hood, Robert . . . . . Instructor/Welding and Fabrication
Hulla, Edward . . . . . Instructor/Electricity
Klima, Jon. . . . . Instructor/Solar Energy
Marquez, Rudy. . . . . Instructor/Fluid Power
Montano, Edwardo . . . Instructor/Automotive Mechanics
Plumb, Donald. . . . . Instructor/Automotive Mechanics
Rudden, Michael. . . . . Instructor/Welding and Fabrication
Rudden, Richard . . . . . Instructor/Bricklaying
Smith, Richard. . . . . Instructor/Electricity
Terhorst, W. James. . . . . Instructor/Carpentry
Vick, Robert . . . . . Instructor/Solar Energy
Ward, John. . . . . Instructor/Plumbing

Communications and Business

Davis, Howard . . . . . Director
Arnsparger, Jack. . . . . Instructor/Accounting
Braswell, Michael . . . . . Instructor/Management
Collins, Charlene . . . . . Instructor/Secretarial Science
Davis, Mary . . . . . Instructor/Computer Science
Ely, Beverly. . . . . Instructor/English
Fellows, Dave . . . . . Instructor/Accounting
Haddad, Don . . . . . Instructor/Management
Hobkirk, Macie . . . . . Instructor/Secretarial Science
Howell, Bob . . . . . Instructor/Secretarial Science
Huston, Harlan. . . . . Instructor, Management
Johnson, Cheryl . . . . . Instructor/Mgmt. and Sec. Science
Klinger, Denise . . . . . Instructor/Sec. Science and Accounting
Kohler, Hertha . . . . . Instructor/German
Levine, Kent . . . . . Instructor/Real Estate
Maxwell, Tom . . . . . Instructor/English and Literature
Mulay, Ray . . . . . Instructor/Marketing
Nelson, Walt . . . . . Instructor/English
Oleski, Ray . . . . . Instructor/Accounting
Pigford, Clementine . . . . . Instructor/English and Speech
Sabell, Haruko . . . . . Instructor/Mgmt. and Sec. Science
Sapienza, Leonard . . . . . Instructor/English and Literature
Scheib, Jim . . . . . Instructor/Economics
Sindt, Gloria . . . . . Instructor/Speech
Sweet, Ben. . . . . Instructor/Drama
Wiebe, Vern . . . . . Instructor/Data Processing and Math

Continuing Education/Community Services

Tangney,Sandra. . . . . Director
Waldo, Deborah . . . . . Associate Director
Forney, Joyce. . . . . Coordinator, Women's Resource Center

Human Resources and Services

Yohe, Ben . . . . . Acting Director
Arndt, Susan . . . . . Instructor/Art
Boringer, Fred . . . . . Instructor/Criminal Justice
Coen, Don . . . . . Instructor/Art
Copley, Walt. . . . . Instructor/Criminal Justice
Courson, Ron. . . . . Instructor/Psychology
Culpin, Alan . . . . . Instructor/History
Feeley, Tom . . . . . Instructor/Water WasteWater
Grant, Zepha. . . . . Instructor/Sociology
Healey, John. . . . . Instructor/Fire Science
Joy, Carla . . . . . Instructor/History/Philosophy
Lewand, Joe. . . . . Coordinator/Fire Service
Lucero, Frank . . . . . Instructor/Recreational Leadership
Nelson, David . . . . . Instructor/Political Science/Geography
Nielsen, Thomas L. . . . . Instructor/Art and Ceramics
Prince, Bob . . . . . Instructor/Anthropology
Redifer, Don . . . . . Instructor/Audio Visual Tech.
Roth, Harry . . . . . Instructor/Fire Science
Schreibman, Walt . . . . . Instructor/Psychology
Sweet, Benjamin C. . . . . Instructor/Humanities
Totten-Sais, Diane . . . . . Instructor/Art
Valvatne, Laura. . . . . Instructor/Psychology
Waite, Herb . . . . . Instructor/Water Wastewater
Wanzeck, Bill . . . . . Instructor/Criminal Justice
Wellisch, William . . . . . Instructor/Sociology
Wheatley, Anne . . . . . Instructor/Early Childhood Education
Wieder, Regina. . . . . Instructor/Early Childhood Education

Science and Technology

Allen, Jim . . . . . Instructor/Physics
Alderman, Harry . . . . . Instructor/Mathematics
Baden, Carol . . . . . Instructor/RN Refresher
Bell, William. . . . . Instructor/Chemistry
Crabbe, George . . . . . Instructor/Electronics (Digital)
Deaver, Larry . . . . . Instructor/Drafting
Edmondson, Bob . . . . . Instructor/Chemistry

Feister, Clarence	Instructor/Drafting
Intrery, Linda	Instructor/Mathematics
Lederer, Eric	Instructor/Mathematics
Medina, Julius	Instructor/Drafting
Melcher, Chuck	Instructor/Electronics (Digital)
Patterson, Chuck	Instructor/Earth Science
Perkins, P.E.	Director
Salzman, John	Instructor/Chemistry
Smith, Mike	Instructor/Surveying
Stanesco, Jack	Instructor/Earth Science
Stephens, Carl	Instructor/Drafting
Tomkinson, Chuck	Instructor/Mathematics
Townrow, John	Instructor/Biology
Tuggle, Dorothy	Instructor/Mathematics
White, Robert	Instructor/Earth Science
Williams, Roy	Instructor/Electronics (Digital)

Admissions Information Center

Sullivan, James	Director
Dries, Cyndee	Registrar
Carillo, Virginia	Coordinator High School/ College Relations

Career Planning and Advising Center

Riley, Russell	Director
Anderson, Daniel	Career Development Specialist
Blackman, Robert	Career Development Specialist
Harris, Roy	Career Development Specialist
Swain, Barbara	Career Development Specialist
Ortega, Judy	Student Advisor

Financial Aid

Zamarripa, Robert	Coordinator

Center for the Physically Disadvantaged

Wooster, Alice	Assistant Director
Applegate, Linda	Counselor
King, Jackie	Interpreter/Tutor
Powell, Darlene	Health Specialist

Job Development and 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.	Assistant Director
Connole, Thomas P.	Librarian
Moyer, Karen	Librarian

Student Activities

Corsentino, James	Coordinator

Student Health Services

Garcia, Jo Ann	Nurse

Veterans' Affairs

Freeland, Marie	Coordinator

Aurora Education Center

General Administration

Chang, Nai-Kwang	Executive Director
Bright, Betty	Senior Secretary
Douglass, Rella	Senior Secretary
Fielden, Billy	Lead Custodian
Brooks, Jo Carole	Coordinator, Student Services
Smolka, Catherine	Staff Assistant
Ulrich, Gerald	Administrator, Educational Support Services

General Education and Service Occupations

Baade, Randolph	Geography
Borringer, Fred	Criminal Justice
Bowman, Michele	Reading
Davis, William	Philosophy and Political Science
Demos, Epaminondas	Biology
Hekkers, James	Communication
Houlton, Marilyn	Communication
Hume, James	Economics and Mathematics
Kandel, Joseph	Psychology
Kantor, Sherrie	Early Childhood Education
Kitchell, Jan	English and Speech
Lomena, Philomena	Nutrition
McCarthy, Michael	History
Onart, Adnan	Mathematics
Onart, Ayla	Mathematics
Perkins, Everett	Biology
Ramsey, Joe	English
Stevens, Edgar	Mathematics
Wagoner, James	Psychology
White, Eugene	Geology

Business and Management

Behr, Joy Lynn	Accounting
Bigham, Harral	Business Law
Cunninghan, Ken	Management
Estrada, Paul	Management
Gallegos, Richard	Management
Gordon, Dee	Business
Holmes, David	Business Law
Lory, Joe	Business
McAndrew, Michael	Management
McCracken, Marline	Business
Marriott, Dale	Computer Programming
Meyer, Fred	Accounting
Mills, Roger	Accounting
Novak, Dan	Computer Programming
Oberbillig, Roger	Accounting
O'Connor, Daniel	Computer Programming
Rosenthal, Bob	Accounting
Schneller, Larry	Computer Programming
Schlegel, Walter	Computer Programming
Smith, John	Management
Terada, James	Management
Vermillion, Michael	Management
Walters, Ronald	Accounting

Index