Red Rocks Community College

Front Range Community College

Denver Auraria Community College

Aurora Education Center

1983 • 1984

CATALOG

Community College of Denver System

Red Rocks Community College

12600 West 6th Avenue
Colorado 80401

Front Range Community College

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

Denver Auraria Community College

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

Aurora Education Center

791 Chambers Road
Aurora, Colorado 80011
Phone: 344-1463

Community College of Denver System

College Addresses

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

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

Front Range Community College
3645 West 112th Avenue
Westminster, Colorado 80030
Phone: 466-8811

Red Rocks Community College
12600 West Sixth Avenue
Golden, Colorado 80401
Phone: 988-6160

Aurora Education Center
791 Chambers Road
Aurora, Colorado 80011
Phone: 344-1463

1983-84 College Catalog

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.

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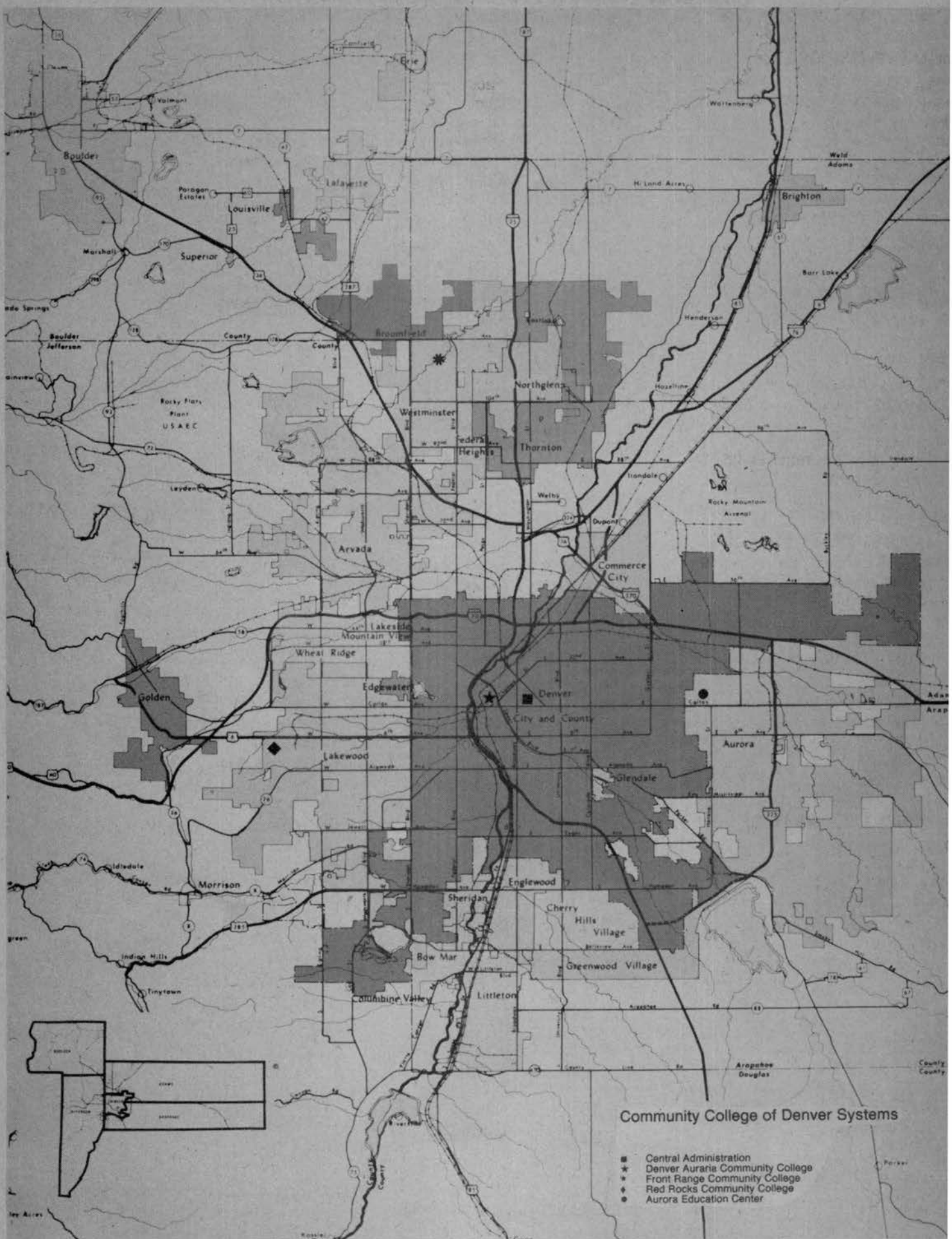
Boulder
Lafayette
Louisville
Superior
Broomfield
Westminster
Northglenn
Thornton
Arvada
Commerce City
Brighton
Wheat Ridge
Golden
Edgewater
Denver
City and County
Aurora
Lakewood
Glendale
Englewood
Sheridan
Cherry Hills Village
Greenwood Village
Bow Mar
Littleton
Columbine Valley
Morrison
Idledale
Indian Hills
Tinytown
Boulder County
Jefferson County
Adams County
Arapahoe County
Douglas County
Rocky Flats Plant USAEC
Rocky Mountain Arsenal
Community College of Denver Systems
Central Administration
Denver Auraria Community College
Front Range Community College
Red Rocks Community College
Aurora Education Center

Instructional Calendar

Summer 1983 (15 Week Term)

Monday, May 16	Faculty Report
Monday, May 16	Registration
Wednesday, May 18	Classes Begin
Monday, May 30	Memorial Day Holiday (no classes)
Monday, July 4	Independence Day Holiday (no classes)
Thursday, August 18	Classes End

Summer 1983 (10 Week Term)

Wednesday, June 1	Faculty Report
Wednesday, June 1	Registration
Monday, June 6	Classes Begin
Monday, July 4	Independence Day Holiday (no classes)
riday, August 12	Classes End

all Semester 1983

londay, August 22	Faculty Report
uesday-Wednesday, August 23-24	Registration
londay, August 29	Classes Begin
onday, September 5	Labor Day Holiday (no classes)
nursday-Friday, November 24-25	Thanksgiving Holiday (no classes)
ednesday, December 14	Classes End

pring Semester 1984

uesday, January 17	Faculty Report
ednesday-Thursday, January 18-19	Registration
onday, January 30	Classes Begin
onday-Friday, March 19-23	Spring Vacation
iday, May 18	Classes End

mmer 1984 (15 Week Term)

nday, May 21	Faculty Report
nday, May 21	Registration
ednesday, May 23	Classes Begin
nday, May 28	Memorial Day Holiday (no classes)
ednesday, July 4	Independence Day Holiday (no classes)
ursday, August 23	Classes End

mmer 1984 (10 Week Term)

ednesday, June 6	Faculty Report
ednesday, June 6	Registration
nday, June 11	Classes Begin
ednesday, July 4	Independence Day Holiday (no classes)
day, August 17	Classes End

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

Instructional Offerings

Locations: D - Denver Auraria Community College F - Front Range Community College R - Red Rocks Community College AEC - Aurora Education Center	Prefix	Associate of Arts or Associate of Science Degree Emphasis	Associate of Applied Science Degree*	Certificates*	Program Page (Location Offered)	Course Description Page
Accounting	ACC		D,F,R	D,F,R	45 (AEC)	82
Administrative Support Occupation Options:						
Administrative Assistant			D,F,R		46	#
Chiropractic Assisting				D	47	#
Clerical				D,F,R	47	#
Legal Secretarial			D,F		46	#
Medical Secretarial			D	D	46	#
Secretarial-Bilingual Office Careers			F		46	#
Secretarial			D,F,R		46	#
Stenographic				D,F,R	47	#
Word Processing			D,F,R	D,F,R	47	#
Airframe Power Plant			D,F		48	#
American Sign Language	ASL				(F)	86
Anthropology	ANT	D,F,R			48	83
Architectural Technology	ATE		F		48	86
Art	ART	D,F,R			48	84
Audiovisual Technology	AVT		R		48 (AEC)	88
Auto Body Painting	ABP			F	48	81
Auto Body Service	ABS		F	F	49	81
Automotive Mechanics	AUM		F,R	F,R	50	87
Biology	BIO	D,F,R			51 (AEC)	89
Black Studies		D			51	#
Bricklaying	BRI		R	R	51	91
Business	BUS	D,F,R			51 (AEC)	92
Business Machine Technology	BMT			D	51	90
Carpentry	CAR		R	R	51	92
Chemistry	CHE	D,F,R			51	93
Chicano Studies		D			52	#
Child Development Associate			F	F	57	105
Chiropractic Assisting	CPA			D	47	95
Civil Engineering Technology	CET		R	R	52	94
Clerical - General				D,F,R	47	#
Commercial Art	COA		D		52	94
Communications	COM	D,F,R			52 (AEC)	95
Computer Programming for Business	CPB		D,F,R	D,F,R	52 (AEC)	96
Computer Programming For The Severely Handicapped	CPB			D	53	#
Computer Science	CSC	D,R			53 (AEC)	98
Consumer Electronics Technology	TCE		F	F	53	163
Continuing Education for Nurses	NCE			D,F,R	68	133
Criminal Justice	CRJ		R	R	54 (AEC)	96
Dental Assisting	DEA		F	F	54	99
Diagnostic Radiologic Technology	RAT		D		54	149
Dietetic Technology	DIT		F	F	55	100
Diesel Power Mechanics	DPE		R	R	55	101
Drafting for Civil/Topographic Mapping	DRM		D,R		56	104
Drafting for Construction	DRC		R	R	56	102
Drafting for Industry	DRI		D,R	D,R	56	103
Drafting for Petro/Chemical Piping Processes	DRP		D	D	57	104
Drama	DRA	D,F,R			57 (AEC)	102

Note: Where a complete program is not available, the Program Page column indicates, in parenthesis, the location(s) where the courses are offered. The Aurora Education Center (AEC) does not offer complete instructional programs. Only courses are offered at Aurora.

This program is composed of courses from several different disciplines.

*For all Associate of Applied Science Degree (AAS) Programs and All Certificate Programs: These programs are not intended for transfer to a baccalaureate degree program; however, some of the courses may be accepted toward a bachelor's degree at some institutions. Please consult an advisor for further information.

Locations: D - Denver Auraria Community College F - Front Range Community College R - Red Rocks Community College AEC - Aurora Education Center	Prefix	Associate of Arts or Associate of Science Degree Emphasis	Associate of Applied Science Degree*	Certificates*	Program Page (Location Offered)	Course Description Page
Early Childhood Education and Management	ECE		D,F,R	D,F	57 (AEC)	105
Earth Science	EAS	R			58 (AEC)	104
Economics	ECO	D,F,R			58 (AEC)	108
Education	EDU	D			58 (AEC)	109
Electricity Industrial/Commercial	EIC		R	R	58 (AEC)	109
Electronic Digital Technology	EDT		R	R	58	108
Electronics Technology	ELT		D,F	D,F	59	111
Engineering	—	D,F,R			60	#
English	ENG	D,F,R			60 (AEC)	112
English As A Second Language	ESL				(D,F,R, AEC)	113
Environmental and Refrigeration Technology Options:			D	D		
Commercial-Industrial Refrigeration/Heating and Air Conditioning	RAC		D	D	60	148
Major Appliance Repair	APT		D	D	60	84
Environmental Technology	EVT		D		61	113
Fire Science Technology	FST		R	R	61 (AEC)	117
Flexible Automation - Robotics	FAR		R		62	116
Fluid Power	FLP		R	R	62	115
Foreign Automotive Mechanics	FAM		D	D	62	114
French	FRE	D,R			62	117
General Education Development	GED				(D,F,R)	119
Geography	GEO	D,F,R			63 (AEC)	119
German	GER	R			63	119
Graphic Arts	GRA		D	D	63	120
Health Occupations	HOC				(D,R, AEC)	122
Heavy Equipment Operations and Preventive Maintenance	HEO		R	R	63	121
History	HIS	D,F,R			63 (AEC)	121
Hospitality and Restaurant Administration	HRA		D	D	63	123
Human Services	HSE		D		64 (AEC)	124
Humanities	HUM	D,F,R			64 (AEC)	124
Industrial Electrical Maintenance Technology	IMA		R	R	64	125
Industrial Management	INM		R		64 (AEC)	125
Information Media Technology	IMT			D	65	125
Interpreter Training Program	ITP		F	F	65	126
Journalism	JOU	D,F,R			65 (AEC)	126
Literature	LIT	D,F,R			65 (AEC)	126
Machine Drafting Technology	MDT		F	F	65	131
Machine Shop	MAS		F	F	66	129
Management	MAN		D,F,R		66 (AEC)	127
Management Information Systems	MIS			D	65	132
Marketing	MAR		D,F,R		67 (AEC)	128
Mathematics	MAT	D,F,R			67 (AEC)	130
Music	MUS	D,F,R			67 (AEC)	132

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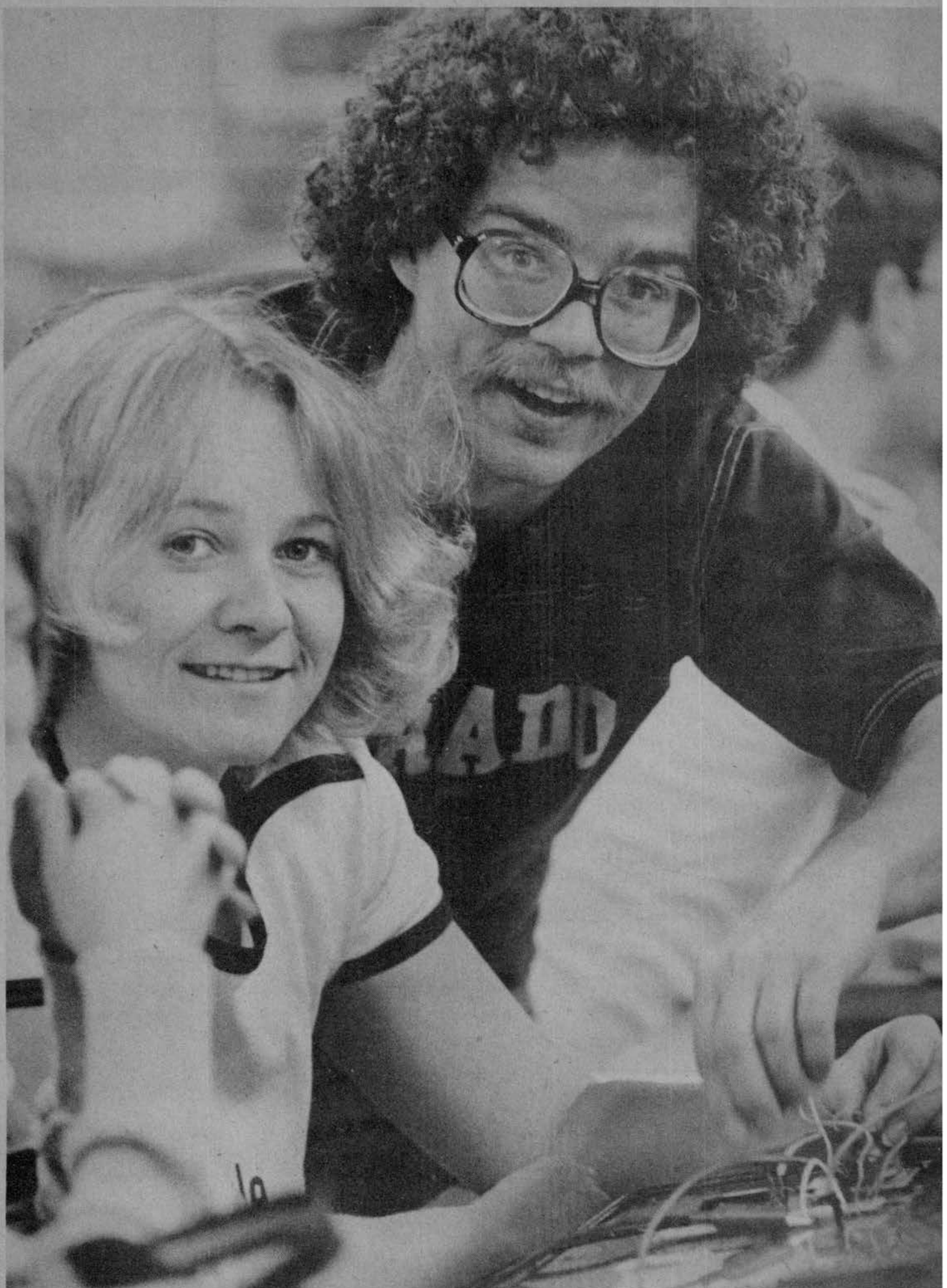
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Locations: D - Denver Auraria Community College F - Front Range Community College R - Red Rocks Community College AEC - Aurora Education Center	Prefix	Associate of Arts or Associate of Science Degree Emphasis	Associate of Applied Science Degree*	Certificates*	Program Page (Location Offered)	Course Description Page
Nuclear Medicine Technology	NMT		D	D	67	136
Nursing	NUR		D,F	D,F	67	137
Continuing Education for Nurses	NCE			D,F,R	68 (AEC)	133
Paralegal	PAR		D	D	69 (AEC)	140
Petroleum Technology	PET		R		69	141
Philosophy	PHI	D,F,R			70 (AEC)	143
Photography	PHO		D	D	70	144
Physical Education	PHE	D,F,R			70	141
Physics	PHY	D,F,R			70	144
Plumbing	PLU		R	R	70	145
Political Science	POS	D,F,R			70	146
Psychology	PSY	D,F,R			70 (AEC)	146
Public Administration	—		R		71	#
Radiation Therapy Technology	RTT		D	D	71	153
Reading	REA				(D,F,R, AEC)	150
Real Estate	REE		R		71 (AEC)	150
Recreational Leadership	REL		R	R	71	151
Respiratory Therapy Technology	RIT		F		72	152
Science	SCI	D,F,R			72	153
Secretarial	—		D,F,R		46 (AEC)	155
Secretarial/Bilingual Office Careers	—		F		46	#
Legal Secretarial	—		D,F		46	#
Medical Secretarial	—		D	D	46	#
Sign Teacher Program	STP				(F)	162
Social Science	SOS	D,F,R			72 (AEC)	160
Sociology	SOC	D,F,R			73 (AEC)	157
Solar Energy Technology					73	158
Active Solar-Installation and Maintenance	SOM		R	R	73	158
Passive Solar Design	SOM		R	R	73	158
Spanish	SPA	D,F,R			74 (AEC)	160
Speech	SPE	D,F,R			74	161
Sports Crafts and Specialty Area Mechanics	SCS		F	F	72	154
Stenographic	—			D,F,R	47	#
Surgical Technology	STE			D	74	161
Surveying	SUR		R		74	162
Technical Illustration	TEI		D		74	164
Traffic Engineering Technology	TET		D		75	165
Traffic and Transportation Management	TTM		D		75	166
Travel and Tourism Occupations	TTO			D	75	166
Urban Horticulture	URH		F	F	76	167
Urban Planning Technology	UPT		D		77	166
Water-Wastewater Technology	WWT		R	R	77	171
Welding and Fabrication	WEF		D,F,R	D,F,R	78	169
Word Processing	—		D,F,R	D,F,R	47	#

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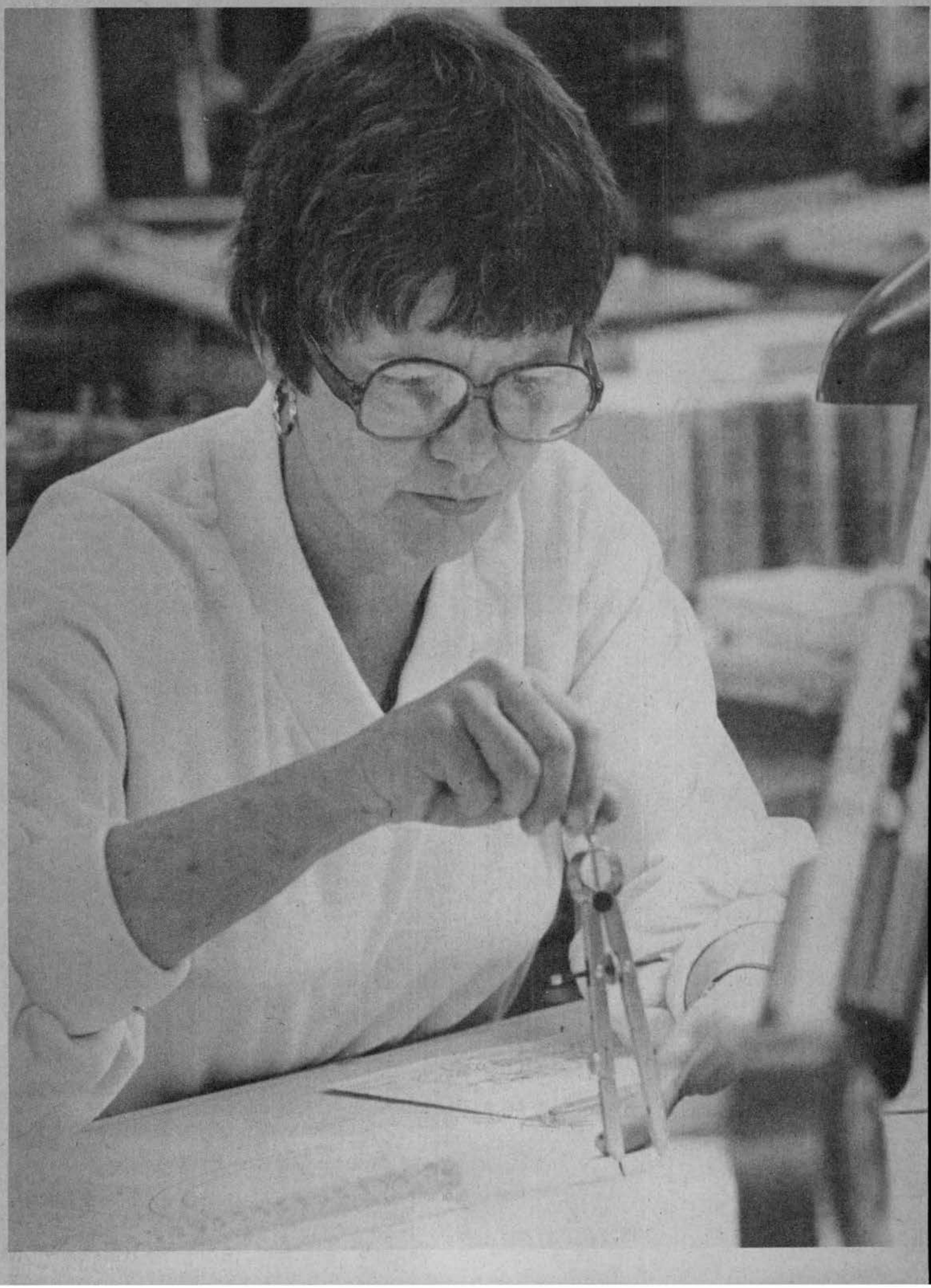
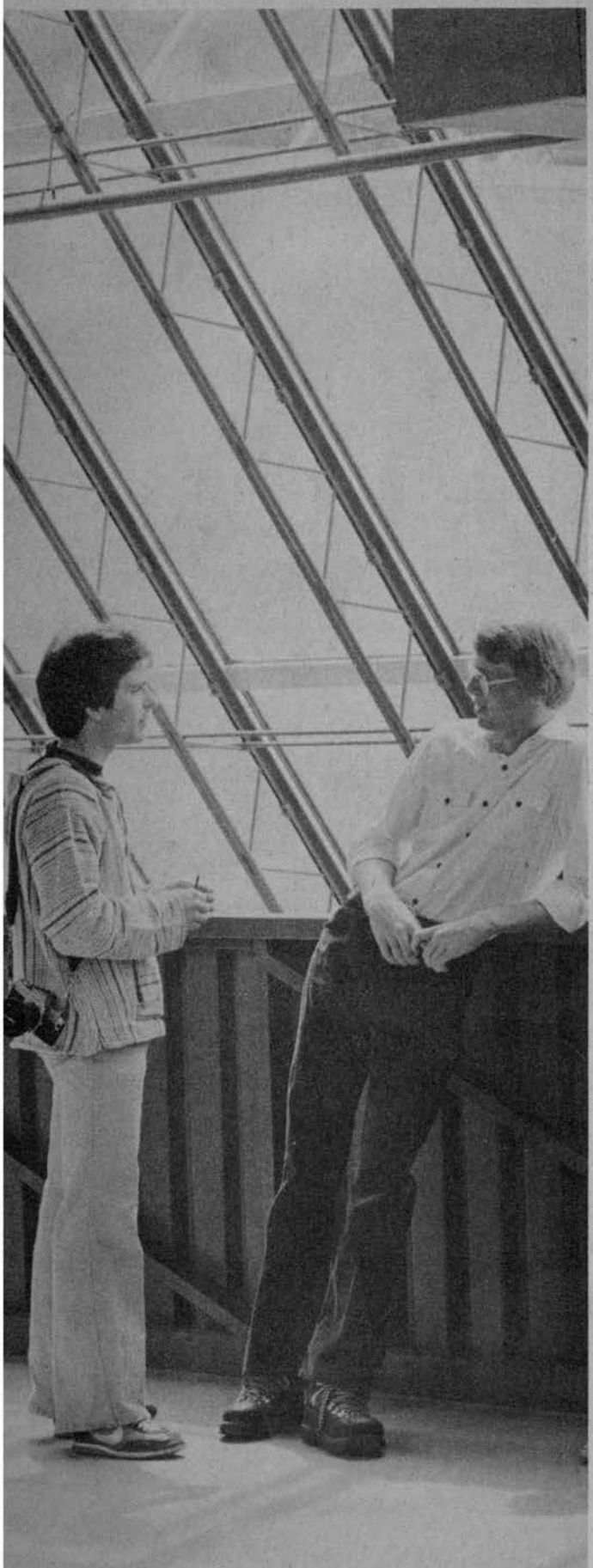


General Information



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.

In order to provide more community identity with each of the College campuses, the State Board for Community Colleges and Occupational Education, in January 1983, approved a change of name for each campus. The Auraria campus is now Denver Auraria Community College, North is Front Range Community College, and the Red Rocks campus becomes Red Rocks Community College.

Since CCD's early beginnings there have been more than 300,000 registrations in one or more courses within the multi-college system. 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-college 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 plans for the future, CCD remains dedicated to a high level of service to the community and to being a truly comprehensive community college.

Accreditation

The Community College of Denver operates under the jurisdiction of the Colorado State Board for Community Colleges and Occupational Education.

In October 1981, the College's accreditation and membership status in the North Central Association of Colleges and Schools was officially continued for six more years at the Associate Degree granting level. All courses and instructional programs are accredited by this Association.

CCD is a member of the American Association of Community and Junior Colleges.

Statement of College Philosophy

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

Implementation of this philosophy will include the following goals:

- To offer a high-quality, balanced general education program designed to provide students with essential college-level skills and competencies.
- To develop and maintain programs in continuing education, outreach education, and community services to meet the life-long learning needs of citizens of its service area.
- To provide high-quality, balanced occupational education programs for students which ensure upgrading and job-entry skill levels in current and developing occupations.
- To develop and maintain educational opportunities that enable students to transfer to baccalaureate degree-granting colleges and universities in the academic discipline or professional area of their choice.
- To provide students with personalized settings with opportunities to develop skill and knowledge at all levels.
- To recruit students actively 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.

These goals reflect the Community College of Denver's dedi tion to remaining a comprehensive, community college that sensitive and alert to the evolving nature of society and to changing needs of those served.

Affirmative Action Program and Statement

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

It is not sufficient to state a policy of nondiscrimination. The C lege has a legal and moral obligation to take positive action ensure the full realization of equal opportunity for all who are e ployed or seek employment at the Community College of Denv Special effort is made to identify promising minority persons a women for positions in all areas and at all levels in which th groups are unrepresented relative to their availability. Select must be based solely on the candidates' qualifications to carry the responsibilities that the positions require. Such actions can c result in raising the quality and competence of the College facu and staff.

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

Nondiscrimination on Basis of Handicap

As part of the Rehabilitation Act of 1973 (Public Law 93-1 Congress enacted Section 504 which provides that no physically mentally handicapped individual in the United States shall, solely reason of handicap, be excluded from the participation in, denied the benefits of, or be subjected to discrimination under a program or activity receiving Federal financial assistance. Subp B of the regulations, dealing with employment practices, bars d crimination by recipients of Federal assistance in recruitment hiri compensation, job assignment and classification, and fringe be fits. It also required employers to make reasonable accommodat to qualified handicapped applicants or employees.

It is the intention of the Community College of Denver to com fully with the guidelines of Section 504. Further information copies of the regulations are available from the Center for Physically Disadvantaged at any location of CCD.

Resource Development

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

1. Enable more students to attend the College and acco modate more student diversity.
2. Offer courses of instruction and provide services that co not ordinarily be provided from present operating funds.
3. Enrich present programs.
4. Support and enhance the philosophical commitment and m sion of the College.
5. Augment the financial and human resources of the College.

The programs vary according to schedules for funding and ag cy guidelines.

CD Foundation, Inc.

As a student and future alumnus of CCD you are encouraged to a contributing member of the CCD Foundation. The Foundation s created to benefit students and their colleges by seeking a ad base of private charitable support.

Your annual contributions will go to support scholarships and a iety of campus/community projects. Ask your employer if the mpany has a policy of matching individual employee contribu-ns.

Tax deductible gifts should be made payable to The Community llege of Denver Foundation, Inc. and mailed to 1600 Downing, nver, CO 80218. For more information contact the Foundation ice by calling 866-4527.

dvisory Committees

Each occupational program has an advisory committee represen-ive of that particular business, industry, or professional area. The mmittee assists the College in planning and development activi-s, such as, curriculum, equipment selection and employment portunities.

Each college has a General Advisory Committee to serve as a mmunication link between the college and the constituency to be ved. The General Advisory Committee also provides information program needs, as well as communication with secondary hools, the legislature and the public.

Continuing Education/Community Services

The Continuing Education/Community Services Divisions share in the College mission of meeting the communities' challenge to provide comprehensive educational opportunities. These Divisions administer non-credit programs, coordinate credit outreach courses, supervise women's programs and provide resources for community development. The type and emphasis of the programs offered by each college may vary according to the special conditions and population needs of the respective community areas served.

Denver Auraria Community College - Serving Denver County - Call 629-3386

Front Range Community College - Serving Adams and Boulder Counties - Call 466-8811, Ext. 513 or 468

Red Rocks Community College - Serving Jefferson, Clear Creek, Park and Gilpin Counties - Call 988-6160, Ext. 260 or 300

Non-Credit Programs

Non-credit programs are offered in dance, conditioning, investing, career planning, personal/social growth, energy, health, arts and crafts, home repair and more. Your program suggestions are welcome.

Sessions start: Denver Auraria Community College - September, January and June
Front Range Community College - September, January, March and June
Red Rocks Community College - September, January and June

The special summer COLLEGE FOR KIDS classes start in June at all three colleges.

Professional Development Programs

Professional development programs are offered on campus or organizational locations for credit or non-credit Continuing Educ tion Units (CEUs) certification. Courses are offered in supervis management, human relations, leadership development, commu cations, conflict resolution, goal setting, computer basics and mo Credit and non-credit programs can be developed at any time meet the specific needs of your organization.

Community Development Programs

Community development programs are designed to utilize colle resources and personnel to assist in community improvement a problem solving. Activities supporting this function include speci ized non-credit programs and administration of grant proje funded by outside sources. The Continuing Education/Commun Services Divisions welcome suggestions for community develc ment projects.

Women's Programs

The Women's Programs, offered at all three colleges, serve maximize the potential of women of all races, ages, economic a ethnic backgrounds. Short courses, special programs, films, wo shops, "brown bag" lunch programs as well as mini-courses, ra sessions and workshops for women "in transition" are some of t services which may be provided. Each campus has programs d signed to serve the unique needs of their particular college comm nity.

Denver Auraria Community College — 629-3302

Front Range Community College — 466-8811, ext. 466,549

Red Rocks Community College — 988-6160, ext. 213

ROTC Information

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

Students at all three colleges may participate, through cro enrollment procedures, in the ROTC program. For specific inform tion regarding your college please contact:

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

dmissions Information

dmissions Policy

dmission to the Community College of Denver is open to high hool graduates, to non-graduates who are 18 years of age or der, and to any other persons who can profit from instruction. Adssion to the College does not assure acceptance of a student in a rticular course or program. Students may enroll in any courses in ich there is a reasonable expectation for completion. However, dents may be requested to enroll in courses designed to correct rning deficiencies.

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

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

Occupational students must declare their program major at the e of registration. Any changes in program major must be rded in the Registrar's office.

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

Students are served more adequately when applications, tranripts, and other information that would be of assistance in making ucational decisions are assessed prior to registration in classes. r this reason, students may be assessed for the purpose of ading relative to their probability of success in particular courses. anscripts of previously earned credit should be submitted in adnce of student assessment, counseling, advising, and registration classes.

tudent Rights and Responsibilities

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

The Denver Area Council has approved a document which conns a Definition of Education, a Joint Statement on Rights, eedoms and Responsibilities of Students, and Rules of Procedure Student Disciplinary Matters. This document provides guidelines cessary to ensure the rights of all members of the College comunity, including the right to secure educational benefits and ser-es without regard to sex, race/national origin, handicap or age. ich campus has its specific "due process" procedures. These ocedures are available in Student Activities/S.G.A. offices.

A student enrolling in the College assumes an obligation to conict himself in a manner compatible with College objectives. egulations of the College are based upon respect for the rights of hers and observance of civil law and current moral standards. On mpus conduct for which students are subject to discipline falls to the following categories:

1. Dishonesty, such as cheating, plagiarism, or knowingly furnishing false information to the College.
2. Forgery, alteration, or misuse of College documents, records or identification.
3. Obstruction or disruption of teaching, administration, disciplinary procedures or other College activities, including its public service functions, or of other authorized activities on College premises.
4. Physical abuse of any person on College-owned or controlled property or at College-sponsored or supervised functions, or conduct which threatens or endangers the health or safety of any such person as expressly prohibited by law.
5. Theft of or damage to property of the College or of a member of the College community or campus visitor.
6. Unauthorized entry to or use of College facilities.
7. Violation of College policies concerning the registration of student organizations and the use of College facilities.
8. Use, possession or distribution of narcotic or dangerous drugs such as marijuana and lysergic acid diethylamine (LSD) except as expressly permitted by law.
9. Disorderly conduct or lewd, indecent, or obscene conduct on College-owned or controlled property or at a College-sponsored or supervised function.

Admissions Procedure

Submit an application for admission to the Community College of Denver, available from the Admissions Office.

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 an application 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.

Transfer of Credit

1. Students needing transcript evaluations for educational planning should contact the Admissions Center, and they will be directed to the proper office for transcript evaluation.
2. Due to staff limitations, transcripts will not be evaluated on registration days.
3. The Community College of Denver will not accept "D" grades. In order to graduate from Community College of Denver with a certificate or an Associate of Applied Science degree (AAS), some programs may require a student to earn at least a "C" in all program area coursework as well as a cumulative 2.0 GPA in all credit attempted.
   In the Associate of General Studies (AGS) and Associate of Arts (AA) and Associate of Science (AS) degrees, a cumulative GPA of 2.0 in all credit attempted is required for graduation.
   A student may repeat a course only once with less than a "C" grade. Courses for which the student has received a grade of "C" or better may not be repeated.
4. The Community College of Denver reserves the right to examine all credits to determine obsolescence of content. In the event that coursework is found to be obsolete, the student may be required to update the credit.
   The College does allow students to challenge courses by taking special exams and/or earning credit for prior learning.
5. CCD will accept transfer credit only from post-secondary institutions accredited by one of the six regional accrediting associations. Transfer credit may be accepted from other SBCCOE approved institutions as a result of special agreements between CCD and those institutions.

International Students

This school is authorized under federal law to enroll nonimmigrant, alien students.

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

1. An application 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 the test of English as a Foreign Language, minimum score, 475. Other validated evidence of English language proficiency may be accepted by individual campuses in lieu of the TOEFL. Students submitting other evidence of English proficiency must have their proficiency validated through CCD assessment.
4. Assessment shall be required for all international students, and students will be required to follow the placement recommendations indicated as a result of assessment.
5. International students shall be expected to comply with immigration requirements with respect to the number of credit hours taken at their home campus. U.S. Immigration and Naturalization Service regulations require that foreign students on F-1 visas carry and complete full course of study (minimum of twelve credit hours per semester) and that they complete their educational objectives within a reasonable period of time.
6. The Academic Standards Of Progress Policy shall apply to all students including international students.
7. All nonimmigrant students (F-2), etc., must take assessment and are subject to mandatory placement.
8. A statement of financial resources to provide for the students' stay in the United States shall continue to be a requirement, and in addition, students shall be required to make an advanced deposit of funds for two semesters of tuition and fees prior to being registered for classes; such funds to be held for the students.
9. All students are required to pay tuition and fees in full at t time of registration.

Form 1-20A will not be issued to an international student until the above documents are on file in the appropriate campus office admissions and records and a decision to admit the student made. International students should allow sufficient time to gath and submit all required documentation so that an admissions de sion might be made by the College prior to the beginning of t term for which admissions is sought.

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

Transferability of CCD Credit to Four-Year Institutions

Students whose primary interest in attending the Community C lege of Denver is to prepare for transfer to a four-year college university should familiarize themselves with the general educati requirements of that institution. Since graduation requirements va among institutions, it is important to obtain assistance from an a visor in planning a transferable program of study. *A Transfer Gui* to Colorado State colleges and universities is available in the Care Planning and Advising Center.

In addition, each major field of study at a particular institution h specific course requirements. Therefore, it is extremely importa for students to follow a well-planned course of study at CCD. St dents should follow a prescribed transfer program (recommende by an advisor) in order to make a smooth transition to the four-ye college or university.

Request for Transcripts

A student requesting that a transcript of this record be sent to a educational institution or to a prospective employer must comple the appropriate form which may be obtained from the Registrar Office. There is no charge for the first transcript requested. A fee $1 will be charged for all subsequent copies. No transcript will b provided for a student who has not fulfilled all financial obligatio to the college.

Change of Address

It is the responsibility of each student to notify the Registrar's O fice of any change of address.

Inter-College and Inter-Institutional Registration

Students who wish to register concurrently at one or more co leges of the Community College of Denver System, or at both th University of Colorado at Denver and Metropolitan State Colleg should make inquiry at the office of the Registrar. International st dents must meet host institution's English Proficiency requirement

Family Education Rights and Privacy Act of 1974

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

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

The student shall have the right to challenge the contents his/her educational records and also, an opportunity for the right t a hearing to challenge the content of his/her school records, to e sure that the records are not inaccurate, misleading, or otherwise

olation of the privacy or other rights of students, and to provide an pportunity for the correction or deletion of any such inaccurate, isleading, or otherwise inappropriate data contained therein.

Institutions may lose federal funds if institutional policy permits ie release of personally identifiable records or files (or personal in-rmation contained therein) of students without written consent of ie student, to any individual, agency, or organization, other than ie 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" include the following: the name nd address of the student, the name of the student's parent(s) or ther family member, the student's social security number, a list of ersonal characteristics which would make the student's identity asily traceable, or other information which would make the stu-ent's identity easily traceable.

Release of Student Information

The school may release "directory information" about students vithout the prior approval of the student unless the student re-uests in writing that the institution not release that information. Di-ectory Information consists of: the student's name, address, elephone number, date and place of birth, major field of study, articipation in officially recognized activities and sports, dates of ttendance, degrees and awards received, the most recent pre-ious educational agency or institution attended by the student, nd other similar information.

Any student at CCD not wishing any or all of the above informa-on to be released upon request to any interested party must notify he Registrar's Office in writing within the first twelve class days of he semester. Forms for such purpose are available in the Regis-rar's Office. Requests for non-disclosure will be honored by the in-titution for only one academic year. All requests for non-disclosure led in any academic year expire on the first day of class of the next cademic year and must be renewed if the student desires further on-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.

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.

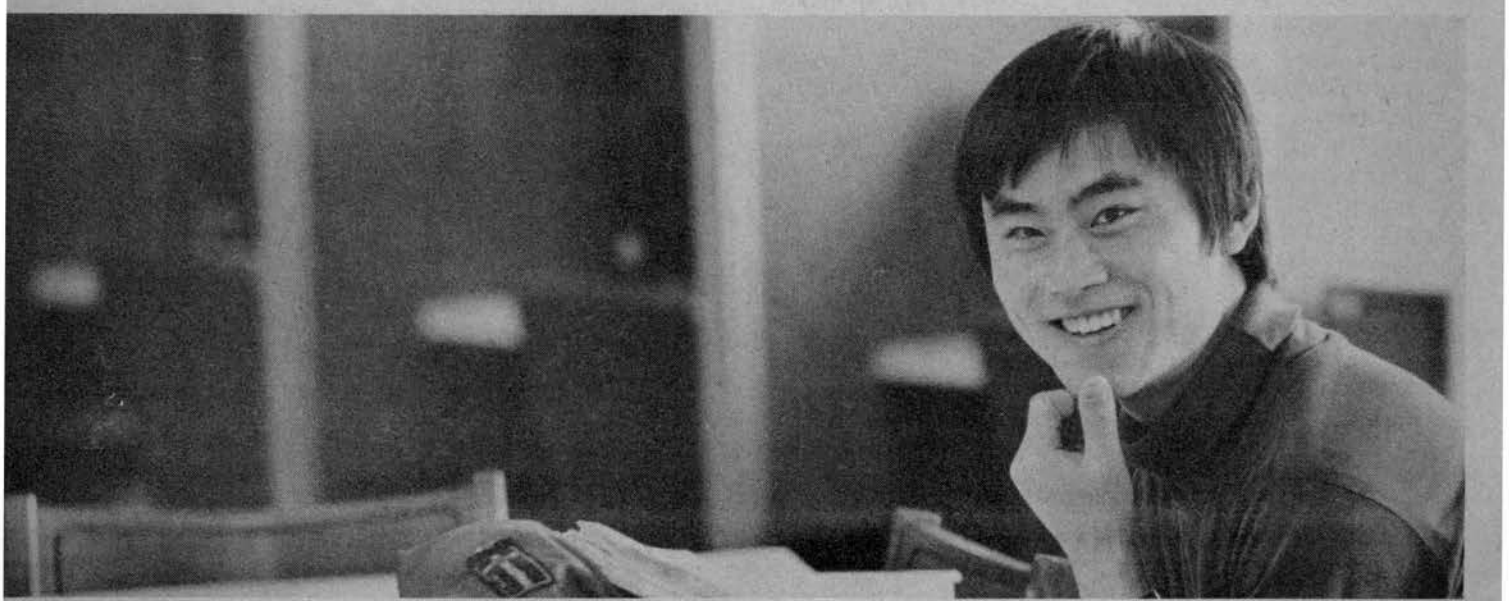
This notice supersedes all previous notices on the Family Educational Rights and Privacy Act of 1974 published by or for the Community College of Denver. Revisions and clarifications will be published as experience with the law and institutional policy warrants.

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 $1.30 to $2.95 per credit hour, depending upon the campus, up to a maximum of $35.40 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 Denver 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 attend classes under any circumstances. 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.

Residency 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 wh believes he can qualify as a resident may secure from the Registr a petition form for in-state status. A copy of the regulations gover ing residency classification is a part of the petition. Students shou be aware of the published deadline for petitions for each academ term. It is the student's responsibility to ensure that petitions and supportive documentation are on file in the Registrar's Office by th published deadline. The Registrar's Office cannot assume respons bility for mailed petitions which arrive after the deadline, and pe tions will not be accepted after the published date.

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

Financial Obligations of Students

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

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

A student who is in any way financially obligated to the Colleg through a tuition deferment, emergency student loan, National D fense Loan, etc., or who has failed to account for College proper in his possession will be denied a transcript of record and registra tion for subsequent sessions until he has made a satisfactory settl ment with the College.

Withdrawal Procedure and Tuition Refunds

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

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

1. 100 percent tuition and fees will be refunded for course dropped between the day of registration and the first day the term.
2. A 75 percent refund of tuition only for total or partial with drawal from the first day of the term through the 12th day 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 th term.
4. Prior to the 12th day of the term, no tuition or fee shall b charged to a student for adding or dropping classes unless th difference between the number of credits dropped or adde takes that student beyond the amount the student has orig nally paid.
5. If original tuition paid warrants, students are entitled to a 10 percent refund of tuition and fees paid for any class(es) can celled by the College. This refund must be initiated by the stu dent through the Registrar's Office.

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 (proof required),
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 Of Progress Policy

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.

1. Mid-Semester Warning

A mid-semester warning notice may be issued to a student who is not making satisfactory progress toward graduation.

2. Progress Alert Status

The progress alert status affects the following two classifications of students:

a. A student who has earned 15 or more credit hours and has less than a 1.5 cumulative grade point average, and

b. A student who has earned 30 or more credit hours and has less than a 2.0 (C) cumulative grade point average.

3. Scholastic Probation

After have been placed on a "progress alert" status, and no evident change in the grade point average has been indicated, a student is automatically placed on scholastic probation until he/she has accumulated an additional 15 credit hours.

a. Continuation of Probation
A student may be continued on probation if, during the probation period, and after consultation with the division director, it is determined that he/she has maintained a 2.0 (C) or better grade point average since being placed on probation but has not been able to achieve a 2.0 (C) cumulative grade point average.

b. Removal from Probation
A student who earns at least 2.0 (C) cumulative grade point average during the period of probation and who has removed previous grade point deficiencies may be removed from probation.

4. Administrative Suspension

Administrative suspension is appropriate if:

a. A student has been on scholastic probation for two consecutive semesters, or

b. A student has failed to obtain a cumulative grade point average of 2.0 (C) for two consecutive semesters, or

c. A student has received all failing grades, or "I" *(incomplete) grades, or

d. In the opinion of the division director and instructors concerned, the student shows poor scholarship and is no longer profiting from the educational program, or

e. In the interest of the student or CCD, the administration deems it advisable.

* For the purposes of this policy, an "I" grade is awarded zero (0) grade points in computing the cumulative grade point average.

During this period of suspension all non-instructional laboratories and support services, i.e., Counseling, Career Planning, Academic Advising, Learning Development Center, etc., will be available for students to utilize to correct deficiencies in their academic progress. Students are encouraged to take advantage of these college resources.

A student can be reinstated to enrollment in a course(s) or to enrollment in the college when:

a. Non-enrollment has taken place for one semester; or

b. the administrative suspension decision is over-ruled by appropriate college officials, based either on informal administrative appeal or established formal grievance policies and procedures. However, prior to re-enrolling, students must contact an academic advisor, if they are to be allowed to register for additional courses at CCD.

5. Appeal Procedure

Information concerning the procedure to appeal any of the types of academic censure is available from the offices of the deans of instruction and/or the deans of student services. A complete copy of the Academic Standards of Progress Policy is available from the offices of the deans of instruction and/or the deans of student services.

Evaluation and Grading

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
F	The student has not demonstrated satisfactory mastery or achievement of course objectives.	0
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

Grade Symbol	Quality of Work Indicated by Symbol	Grade Points
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
	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.	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, nd grade slips will be mailed approximately one week after the last ay of classes.

uidelines For Grade Symbols

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

RADE 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.

RADE 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.

GRADE F—A Failing Grade

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 grade if the course work is not completed by the end of the next consecutive fall or spring semester. 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 completed. 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
F equals 0 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	F (3X0)	0
Totals:		15		39

Total grade points divided by total credits equals the cumulative grade point average. Therefore, the grade point average for the above example would be: 39 divided by 15 equals 2.60.

Cooperative Education Program

The Cooperative Education Program provides opportunities to supplement course work with practical work experiences related to the student's educational program and occupational objective. The Cooperative Education Program is an extension to and application of classroom instruction through work experience under the immediate supervision of experienced personnel at the business or industry involved. However, the College has complete control of the Cooperative Education Program. A qualified College instructor and/or coordinator coordinates and directly supervises the total work experience program by working closely with the student and the employer through telephone contacts, site visitations, student reports and reports from the student's supervisor.

A required Training Agreement defining responsibilities of all parties involved is signed by the student, the College, and the employer. In addition to the signing of the Training Agreement, all students are required to identify job-oriented learning objectives which must be approved by the work supervisor and the College faculty coordinator, and to submit weekly time sheets. In addition, appropriate individual assignments and a final report must be submitted according to specific program requirements.

A required on-campus seminar is scheduled each week duri the semester for the student to meet with a faculty advisor or coo dinator on theory application related to the student's field of stud This seminar has a COE prefix and is numbered 296 at the Fro Range Community College.

Evaluation of the work experience is similar to that used in oth courses, with additional emphasis on the employer's rating whi becomes a part of the final evaluation process.

Cooperative Education courses earn one hour of college credit f three hours of work experience. In some programs, Cooperative E ucation is a part of the instructional program and is required f graduation. The catalog states the total number of credit hours student may apply to a degree in a specific instructional prograr For programs in which Cooperative Education is not a requiremer Co-op is considered an approved substitute, or an elective upo permission of the faculty advisor.

All Cooperative Education courses carry a course/program pref and are numbered 297. The following description applies to all C operative Education courses:

Prerequisite: Permission of instructor and Training Coordinator o submission of approved Training Agreement.

This course provides the student with the opportunity to suppl ment course work with practical work experience related to th student's educational program and occupational objective. A Cooperative Education courses are to comply with all policy an procedure requirements as outlined in the publication *Cooperative Education: Student Handbook,* Community College of Den ver, 8/82.

Credit hours: variable
Contact hours: variable

Independent Study

The College recognizes a commitment to provide for individu needs, and independent study is seen as one means of meeting th commitment. All Independent Study courses carry a course/pro gram prefix and are generally numbered 299. The following cours description applies to all Independent Study courses:

Prerequisite: Permission of instructor and Division Director o submission of approved proposal.

This program provides the opportunity for the student to engag in intensive study and/or research on a specific topic under the d rection of a qualified faculty member. The number of semeste hours of credit will be determined by the instructor and the Divisio Director. No more than six (6) semester hours of Independent Stud course work may be applied to any Associate Degree program.

Special Topics Courses

The College utilizes Special Topics courses for specific stud topics for a class size situation. All Special Topics courses carry course/program prefix and are numbered 290. The followin course description applies to all Special Topics courses:

Prerequisite: Permission of instructor and Division Director o submission of approved proposal.

The course focuses on selected topics within the program o academic area. The number of semester hours of credit will be de termined by the instructor and Division Director. No more than si (6) semester hours of Special Topics courses may be applied to an Associate Degree program.

Credit hours: 1-6
Contact hours: 15-90

Credit for Prior Learning

Students are allowed to earn credit for college equivalent educa tion which has been acquired through earlier schooling, work, o other life experiences. Such prior learning must be comparable t CCD courses or curricula and must relate to the student's educa tional objectives; however, appropriate elective credit may be ac cepted.

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

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

For more details than are presented here, contact the Office for Prior Learning on any campus.

Military Courses

Students desiring credit for courses completed through the U.S. Armed Forces Institute 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.

National Examinations

College Level Examination Program.

The College recognizes the College Level Examination Program (CLEP) examination as well as selected subject examinations. Up to 26 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.

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.

Challenge Examinations

Most CCD courses may be challenged by currently enrolled students. No more than one challenge of a particular course will be arranged during any one semester.

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.

Student Services

Financial Aid

General Information

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

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

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

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

Application Procedures

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

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

The following applications are required:

1. American College Testing Program's Family Financial Statement (FFS). Students may use this form to apply for the PELL Grant and other types of financial aid.
2. Institutional application.

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

Applications are available in the Office of Financial Aid.

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

Summer 1983—April 1, 1983
Academic Year 1983-84—June 1, 1983
Spring 1984—December 1, 1983
Summer 1984—April 1, 1984

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 determined.

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.

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 an measurable progress each semester. Full-time aid recipients mus complete at least 12 credit hours per semester with a 2.0 grad point average to remain in good standing.

In general, financial aid recipients may receive up to five semes ters of financial assistance. For more detailed information contac the Office of Financial Aid or refer to the "Financial Aid Informatio Booklet."

Repayment Policy

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

Types of Financial Aid

1. Pell Grants

The Pell Grant program provides federal grants to assist with edu cational expenses. Award amounts range from $200 to $180 depending upon the cost of education. Approximately six weeks af ter the student applies, he/she will receive a Student Aid Repor (SAR). All copies of the SAR must be brought or mailed to the Of fice of Financial Aid even if the student is ineligible to receive a Pel Grant award.

2. Self Help Programs

a. **College Work-Study Program**
The College Work-Study Program provides employment op portunities 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 stu dents who do not demonstrate financial need and who are Colorado residents for tuition purposes. Hourly rates start at federal minimum wage.

c. **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 stu dent status. Interest accrues at the rate of six percent per an num.

3. Grants

a. **Colorado Student Grant (CSG)**
Grants are available to Colorado residents based on financial need. Awards range up to $1,000 per academic year.

b. **Colorado Student Incentive Grant (CSIG)**
Grants are available on a need basis. The maximum award is $2,000 per year.

c. **Supplemental Educational Opportunity Grant (SEOG)**
Grants range from $200 to $2,000 depending on financial need.

4. Scholarships

Colorado Scholars Program
Scholarships are available to Colorado residents who have com pleted a minimum of 12 credit hours at CCD with at least a 3.0 grade point average in all courses attempted. Applications are available in the Office of Financial Aid. Scholarships are dependent upon the availability of funds.

. Guaranteed Student Loan (GSL)

a. Loans to Students

The GSL program provides loans to students at 9 percent interest rates per annum. Undergraduate students may borrow up to $2,500 per year, not to exceed an aggregate amount of $12,500 for their undergraduate studies. Loans have a six-month grace period.

b. Loans to Parents

The maximum amount a parent of a dependent undergraduate student may borrow for any one student in any academic year is $3,000. The aggregate loan limit is $15,000. The interest rate is 12 percent per annum and the parent has up to ten years to repay the loan.

/eterans Affairs Office

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

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

Services available include:

— Information about veterans benefits — federal, state and comunity

— Assistance with VA inquiries

— Referral for emergency food, clothing, housing, legal aid and mployment.

/eterans Academic Standards of rogress

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

. Evaluation and Grading

Please refer to pages 20-22 of this catalog for a description of the ollege grading system.

. Grade Point Average

Under this system, grade points measure the achievement of the udent for the number of credits completed. To calculate the grade oint average, multiply the number of grade points per credit by the umber of credits for each course. Total the credits and points and ivide the grade points by the credits.

A equals 4 grade points	D equals 1 grade point
B equals 3 grade points	F equals 0 grade points
C equals 2 grade points	

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

ourse	Course Title	Credits	Grade	Points
LT 100	DC Fundamentals	3	A (3X4)	12
LT 105	DC Circuits and Magnetism	3	A (3X4)	12
LT 106	AC Fundamentals	3	B (3X3)	9
NG 111	English Composition	3	C (3X2)	6
AT 111	Introductory Algebra	3	F (3X0)	0
	Totals:	15		39

Total grade points divided by total credits equals the cumulative rade point average. Therefore, the grade point average for the bove example would be: 39 divided by 15 equals 2.60.

Veteran students are required to maintain a cumulative GPA of .0 for all course work attempted. Any veteran whose cumulative PA is below 2.0 will be placed upon academic probation for the llowing term. Should the veteran fail to raise his GPA to the required 2.0 cumulative GPA during the probation term, the veteran will be suspended for one academic term. Reinstatement will only occur after approved counseling.

Suspension of the veteran student under the Veterans Academic Standards of Progress Policy will result in the College not certifying enrollment to the Veterans Administration. Veterans in such status may still attend the College, however, they will be subject to the provisions of the College's Academic Standards of Progress Policy requirements for continuation of enrollment in the College.

3. 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 21 in this catalog for a description of this grade symbol. An Incomplete or "I" grade must be made up before the end of the following term (fall or spring). If an "I" grade is not completed in this required period, the "I" will remain on the transcript, but will be treated as a failing grade and calculated as an "F" under Veterans Academic Standards of Progress Policy. The veterans certification will be adjusted back to the beginning date of the term in which the "I" grade was received.

C. 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" and may be dropped administratively and his VA certification adjusted accordingly. Such an administrative drop will be initiated by the instructor.

4. Attendance

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

5. 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.

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 Development Specialists conduct

career development seminars on a credit or non-credit basis and are available to class members for individual career counseling as a follow-up to the seminar. Career Development Specialists 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 Development Specialists 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 Development Program is a project in which members of the Career Planning and Advising Center Staff offer several Career Development Seminars each semester. The purpose of the seminars is 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, conducted 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 responsibility of students to:

1. Meet with members of the Center staff and/or faculty advisors to discuss the most appropriate classes for their educational or career goals and to discuss their plans for enrolling in the next term's classes prior to each registration.
2. Contact their instructors or advisors when problems arise in their programs.
3. Contact their advisors or Career Development Specialists if they are thinking about a change in programs.
4. Determine that 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 college 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.

At the Denver Auraria Community College, all of the above vices are available at the Auraria Student Assistance Center.

Food Service

A cafeteria serving hot and cold selections is open during p meal hours at all campuses. Automated food service is available in designated areas throughout each college campus.

Health Services

Student Health Services are designed to foster and main proper attitudes and habits of personal and community hea Various programs and activities related to current health probl are planned each semester. These programs are designed to e cate students, faculty and staff regarding health problems and means of preventing them, which includes a wellness program.

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

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

Housing

Students who attend the Community College of Denver commu The College does not operate a residence hall program and s dents are expected to arrange their own housing. Those desi assistance in locating housing may contact the Office of Stud Activities.

Student Activities

The College cooperates in the development of those stude initiated activities which supplement the more formal instructio program. Such activities are expected to provide constructive ex riences which will stimulate personal growth and social devel ment and add to the student's enjoyment of life. Opportunities the development of leadership, cooperative planning and special terests are fostered through participation in these activities. student activities are coordinated through the Office of Student tivities.

Offices, club rooms, lounges, activity areas and student gove ment rooms are located in special areas on each college campus

Student Government Association

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

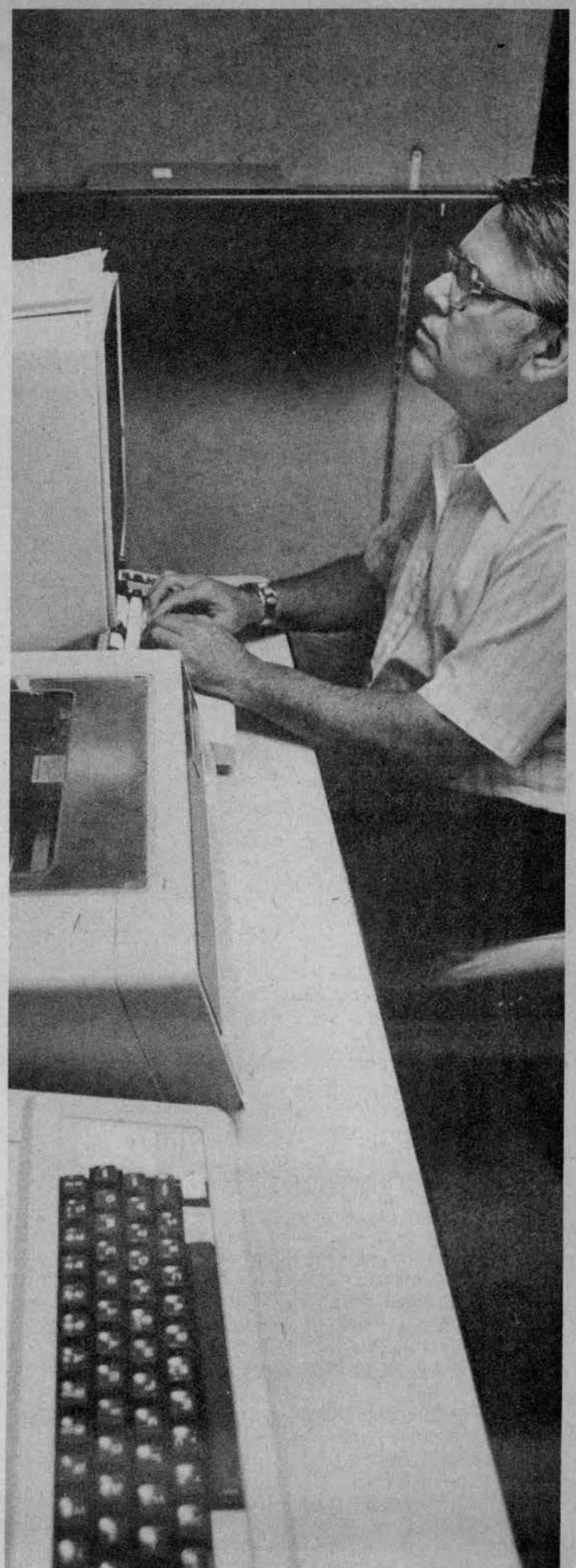
Student Publications

A school newspaper and other publications are produced un the sponsorship of the Board of Publications, with the cooperati 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 866-2101.



Other Support Services

Center for the Physically Disadvantaged

It is the policy of the Community College of Denver (CCD) to provide equitable opportunities for disabled students to pursue education in regular classes without discrimination. In order to accommodate this component of the student body, the college has established the Center for the Physically Disadvantaged (CPD) through which approximately 30 professional personnel offer numerous support services on all four locations of the college. Examples include such services as:

— academic advising
— accessible parking
— adapted scheduling
— curriculum adaptation
— health education and advising
— interpreting for hearing impaired students
— job placement
— liaison with community resources
— modification of classroom setting
— notetaking
— reading and Braille transcribing
— registration assistance
— specialized career planning
— temporary wheelchair loan
— textbook recording
— tutorial assistance
— vocational assessment

Services are provided without additional cost for any handicapped student attending the college, including those with temporary disabilities. A brochure describing CPD is available at any location of CCD.

Mainstreaming of disabled students into regular college classes has been an integral part of CCD's philosophy since its inception in 1968. All facilities of the college are of recent construction, with barrier-free design being a prime factor in planning.

This combination of accessible facilities, faculty orientation to mainstreaming, and the availability of one of the most comprehensive support systems of any post-secondary institution in the nation has attracted large numbers of handicapped persons to the Community College of Denver.

It is recognized that some disabled candidates seeking admission to or presently pursuing studies at the college may not be able to succeed in this type of educational environment despite the accessible programs and facilities, the broad choice of career options, and the full range of support services. Because mainstreaming is an integral portion of the college philosophy, retention of the student is based upon the capability of succeeding in 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 Incomplete grade.

Free assistance in the following areas:

Reading-English (D,F,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 (D,F,R)
French, German, Spanish
Vocabulary Building
Grammar
Conversation
Individual Tutoring
French, German, Spanish Tapes (D,F,R)
ESL Tutoring and Tapes (D,F,R)

Additional Taped Instruction (F)
Tapes in Hebrew, Greek, Russian, Japanese, Arabic, Swedish, Portuguese, Italian.
Tapes in English for Arabic speakers.
Tapes in Spanish for Medical Professions.

Health Occupations (D)
Basic Skills in Nursing Fundamentals

Math (D,F,R)
Math Anxiety Reduction
Basic Math
Algebra
Geometry
Trigonometry
Calculus
Statistics
Applied Math
Metrics
Computer Math

Math Skills (D,F,R)
Nursing
Drafting
Automotive
Welding
Graphics
Hydraulics
Electronics
Food Service
Physics
Chemistry
Plumbing (R)
Water — Waste-Water (R)

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

.E.D. Preparation (D,F,R)
Social Studies
Science
Mathematics
Reading Skills
Writing Skills

tudy Skills (D,F,R)
Test Taking
Note Taking
Time Management
Textbook Reading
Memory Techniques
Research Techniques

earning Disabilities (D)
Diagnostic Evaluation
Prescriptive Tutoring

.earning Development Center Offerings

In addition to free LDC services, students may register for non-redit learning (Front Range and Red Rocks only). Tuition and fees ill be assessed after initial testing to determine skill deficiencies.

DC 071 —Basic Skills in Reading (F,R)
1-3 tuition hours) Personalized learning programs designed to im-rove ability in reading speed, comprehension, vocabulary, and tudy skills. (2-6 contact hours per week.)

DC 073 — Basic Skills in Writing (F,R)
1-3 tuition hours) Individual programs directed to meet student riting needs in the academic or vocational worlds. (2-6 contact ours per week.)

DC 081 — Basic Skills in Math (F,R)
1-3 tuition hours) Individualized assistance planned to improve kills in arithmetic, algebra. (2-6 contact hours per week.)

DC 090 — General Skills (F,R)
) tuition hours) Individualized assistance in any of the skills areas or no tuition charge.

lote: At Denver Auraria Community College, these courses are of-ered for credit through Developmental Studies. See page 32.

Individual instruction and sample testing are combined to help tudents achieve their GED Certificate. Students prepare for the ED test by registering for a maximum of three of the following ourses in any one semester. (At Auraria, equivalent GED courses re offered through Developmental Studies.) See page 36.

DC 091 — GED Preparation in Social Studies (F,R)
1-5 tuition hours) Covers knowledge and reading comprehension of istory, economics, geography, political science, and behavioral cience. (2-9 contact hours per week.)

DC 092 — GED Preparation in Reading Skills (F,R)
1-5 tuition hours) Covers reading comprehension and interpreta-ion of practical, general, and literary selections. (2-9 contact hours er week.)

DC 093 — GED Preparation in Science (F,R)
1-5 tuition hours) Covers knowledge and reading comprehension in iology and physical sciences. (2-9 contact hours per week.)

DC 094 — GED Preparation in Writing Skills (F,R)
1-5 tuition hours) Covers spelling, capitalization, punctuation, rammatical usage, diction and style, sentence structure, logic and rganization. (2-9 contact hours per week.)

DC 095 — GED Preparation in Mathematics (F,R)
1-5 tuition hours) Covers arithmetic, algebra, and geometry. (2-9 ontact hours per week.)

Testing (D,F,R)

The College provides a voluntary testing program to assist stu-dents in clarifying interests and assessing general aptitudes. With his information, counselors are better able to assist individual stu-dents in making their educational and career choices and making ptimum 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.

Test Center (Denver Auraria)

The test center, located in S0141A, is open half days and two evenings a week. Students should check the schedule posted in the Learning Development Center (S0141) at the beginning of each semester for test center hours. The test center provides achievement, aptitude, and vocational interest testing in addition to the College assessment program.

Writing Center (Denver Auraria only)

The Writing Center (SO141E) provides direct support for students enrolled in various English classes and assists students with writing projects from any course offered at the College. Through individual instruction and using a variety of materials the Center helps students develop writing skills in the following areas:

Planning
— choosing and narrowing a topic
— determining the aspects of the topic to be developed
— developing concrete/specific details
— organizing details

Writing
—writing a topic sentence
— writing a thesis statement
— writing a paragraph
— writing an essay
— writing a research paper or report
— using transitions

Revising
— subject focus
— sentence structure

Editing
— grammar and usage
— punctuation
— spelling

Research
— using library sources
— taking notes
— referencing secondary sources

The Writing Center is staffed with highly qualified, professional faculty who have successfully trained students to be competent, self-reliant writers across a variety of fields.

Learning Materials Centers

(Front Range and Red Rocks Campuses)

The Learning Materials Centers (LMC), which are located on Front Range 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.

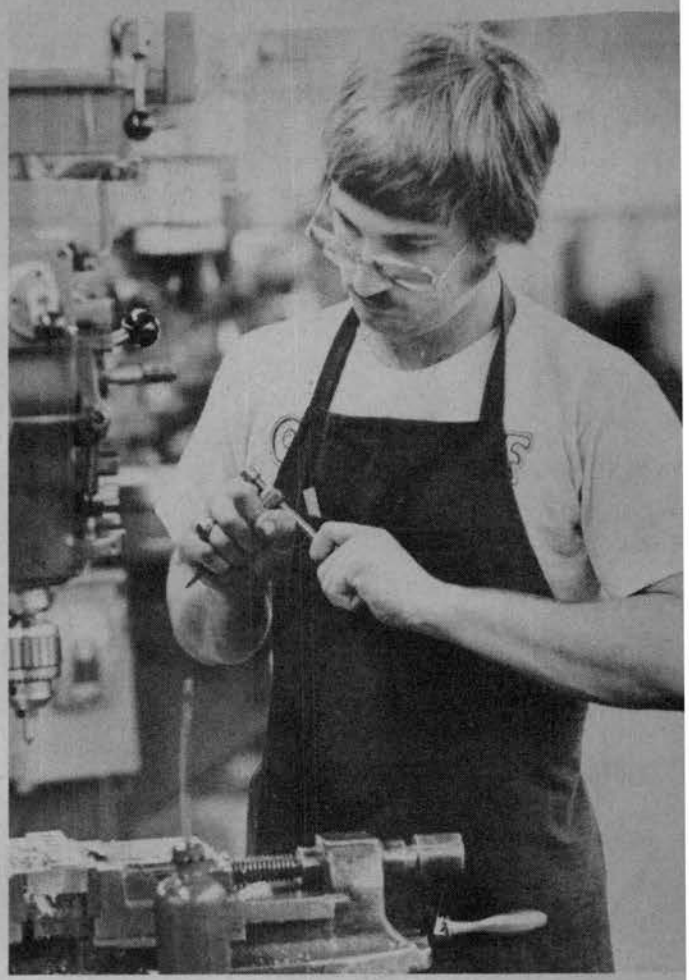
Auraria Library

Denver Auraria Community College

The Auraria Library provides a wide variety of learning resources for the students and faculty of Community College of Denver/Auraria and the other Auraria institutions. The library has almost 700,000 volumes of books, microforms, and bound periodicals, in addition to over 1,700 current periodical and newspaper subscriptions. The main collection is supplemented by a Design and Planning Resource Center which is located in Bromley Building, Suite 200. In addition, as a member of the Colorado Alliance of Research Libraries, the Auraria Library has access to an additional six million volumes through interlibrary loan as well as being able to access materials across the country.

All students are encouraged to take a 50 minute self-guided audiotape tour of the library to familiarize themselves with the services and resources available to support their academic pursuits. Special services offered by the library include computerized bibliographic searches, library orientation and instruction for groups and individuals, a depository of U.S. and Colorado government publications, and media listening and viewing facilities. Library rooms are also available for individual study, group conferences and typing. A new resource center for disabled students has also been established within the library.

The Media and Telecommunications Division of the library also has an internship program and a self-service graphics lab which might be of particular interest to students.



Bookstores

Auraria Book Center

Serving the Denver Auraria Community College
Telephone: 629-3230
Location: Lawrence at 10th St. in the Student Center
Hours: Please call for information.

Front Range Community College Bookstore

Serving the Front Range Community College
Telephone: 466-8811
Location: 3645 West 112th Ave. in the Student Center
Hours (during class sessions): 9 a.m.-8:30 p.m.
Mon.-Thur.; 9 a.m.-3 p.m. Fri.

Red Rocks Community College Bookstore

Serving the Red Rocks Community College
Telephone: 988-6160
Location: 12600 West Sixth Ave. on the Bridge
Hours (during class sessions): 9 a.m.-8:30 p.m.
Mon.-Thur.; 9 a.m.-4 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, 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.

Disadvantaged Supplemental Services

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

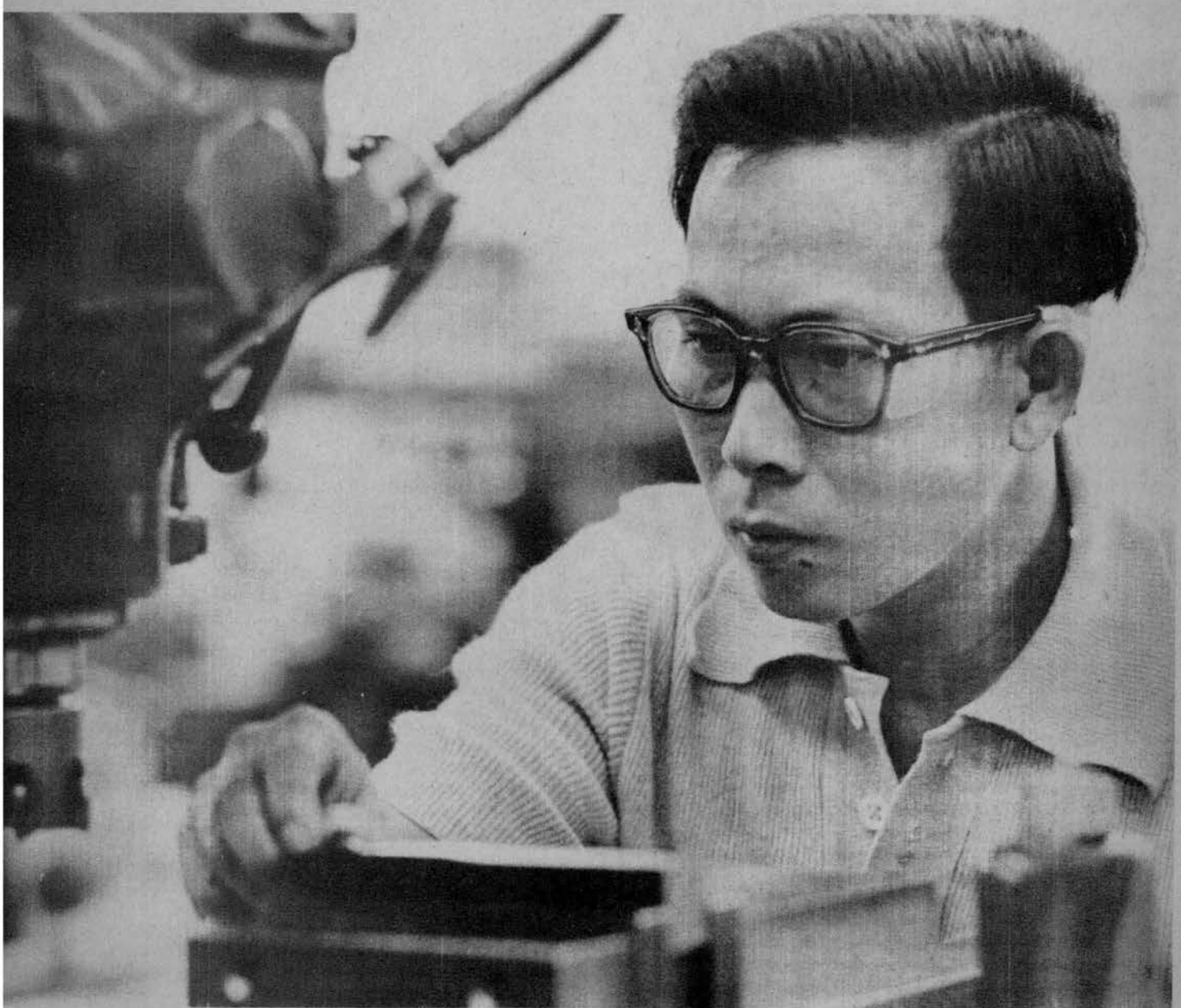
Consortium of Ethnic Studies

The College offers the Associate of Arts Degree with an emphasis in Black Studies or Chicano Studies at the *Denver Auraria Community College.*

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.

ART	195	The Art of Africa and Black Americans
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 Their 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	251	Curanderismo
LIT	125	Introduction to Chicano Literature
LIT	229	Contemporary Black Literature
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

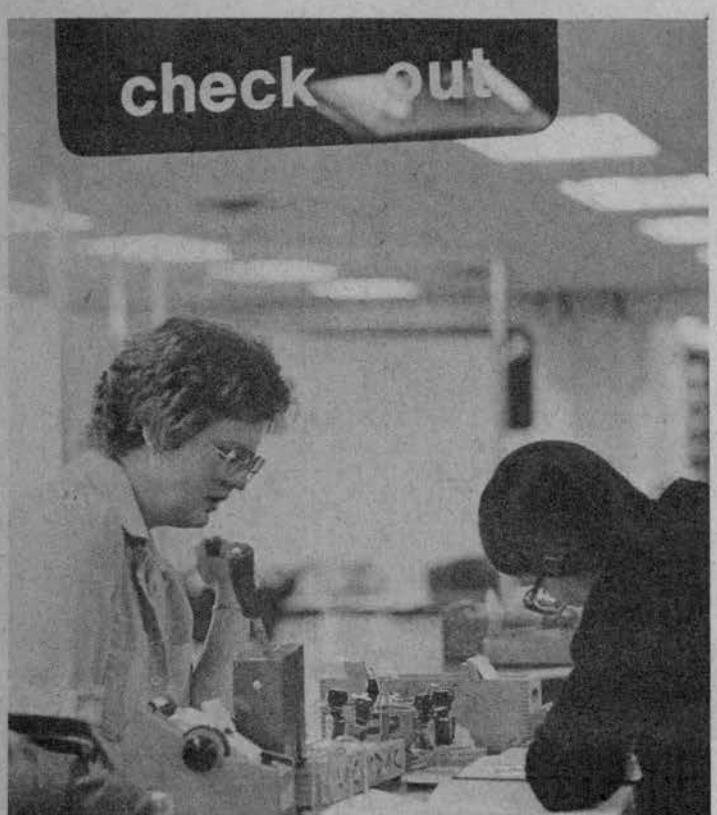


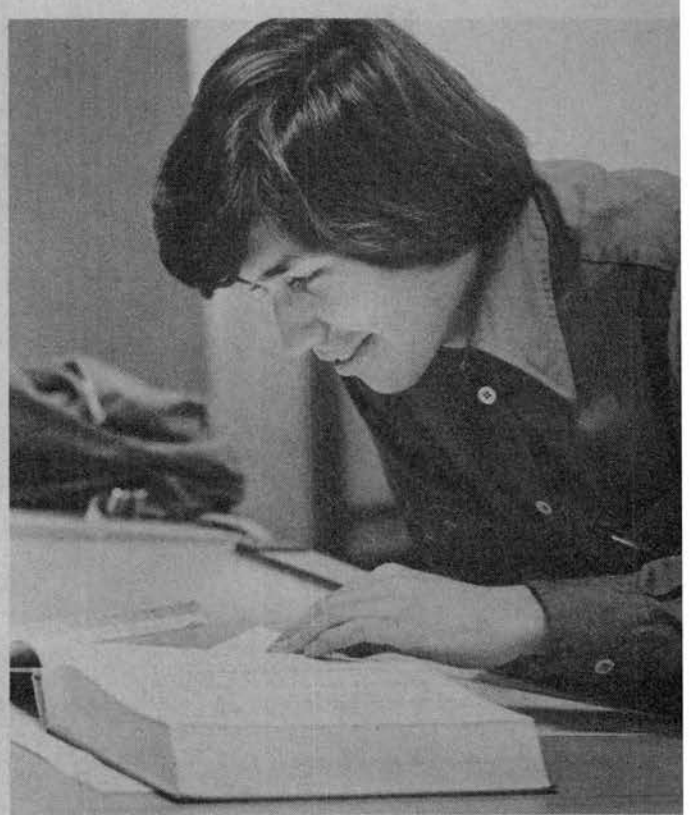
Developmental Studies Program

The Developmental Studies Program (at Denver Auraria Community College 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 099	1-3 Credit Hours	Sound and Spelling
ENG 103	1-3 Credit Hours	Workshop to 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
ESL 100	1-3 Credit Hours	Basic ESL
ESL 101	1-3 Credit Hours	Low Intermediate ESL
ESL 102	1-3 Credit Hours	High Intermediate ESL
ESL 103	1-3 Credit Hours	Advanced ESL
GED 010	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 Wh Numbers
MAT 095	3 Credit Hours	Process and Procedures Mathematics I
MAT 096	1-3 Credit Hours	Process and Procedures 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 Everyday Readi Skills
REA 101	3 Credit Hours	Skills for College Readin
REA 102	1-3 Credit Hours	Skills for College Readin
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 Developmen
REA 109	1-3 Credit Hours	Reading Efficiency
REA 110	1-3 Credit Hours	Speed Reading
REA 299	1-3 Credit Hours	Independent Study





Red Rocks Community College Coordinated Programs with Warren Occupational Technical Center

here is an increased number of educational programs available students as a result of a cooperative agreement between Red cks Community College and the Warren Occupational Technical nter. The Warren Center is a Jefferson County technical center high school students. Through the cooperative agreement, lts may enroll in the following vocational-technical programs of- ed 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
- 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 Red Rocks Community College. The selected programs are listed in the Warren Center Information Bulletin.

High School Students Wanting to Take Classes at Red Rocks Community College

High school students interested in taking an occupational program at Red Rocks Community College 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 Red Rocks Community College. The telephone number is 988-6160, Ext. 288.

Rocky Mountain Energy and Environmental Technology Center

This section lists selected occupational programs which are available through the Rocky Mountain Energy and Environmental Technology Center for students who are interested in short-term, concentrated training.

A cooperative effort between Red Rocks Community College and RME & ETC permits students to complete a certificate program in six months or less. College credit is granted by Red Rocks Community College for all courses successfully completed; these credits can be applied toward the Associate Degree should the student choose to complete the necessary requirements on campus.

RME & ETC is a job training center offering industry-based training. Programs are open-entry, open-exit and individually paced, allowing a student to enter anytime and leave when he or she has completed the program. Students attend class 7 hours a day, 5 days each week, and 75% of the time entails hands-on practice with industry-size production equipment.

The center also makes available to students GED remedial and tutorial assistance, job counseling and job placement assistance.

All programs have been approved by the State Board for Community Colleges and Occupational Education (SBCCOE) making V.A. and other federally funded sponsored program recipients eligible. Financial aid is also available to qualified students through the Red Rocks Community College.

The Center is located at:
1001 East 62nd Avenue
Denver, Colorado 80216
For more information call:
289-2243.

Chemical Operator Certificate

Students will receive instruction in the use and operation of chemical processing equipment pumps, valves, heat exchangers, filters, distillers, evaporators, flow meters, transfer lines with holding tanks, industrial safety and procedures. Trainees also receive instruction in sampling, analysis, and dissolution.

		Credits	Ct. Hrs.
RCO 100	Vacuum System	3	45
RCO 105	Chemical Reagents & Chem Makeups	3	45
RCO 106	Balance and Weights	2	30
RCO 107	Glove Box	2	30
RCO 108	Dissolution	3	45
RCO 109	Filtration	3	45
RCO 111	Ion Exchange	3	45
RCO 115	Raschig Ring Inspection	3	45
RCO 104	Job Orientation & Advancement		15
RCO 102	Basic Physics	4	60
RCO 110	Introduction to Mathematics	3	45
RCO 103	Fundamentals of Chemistry	4	90
	Total	33	540

Crane Operator Certificate

In this program the student will learn the difference between cal and hydraulic cranes, and how to operate the four basic types cranes; rough terrain, crawler, truck, and tower cranes. The stude will also receive instruction on crane capabilities, preventive main nance, safety procedures, rigging and crane functions.

Students who complete the program should possess the ba skills necessary for job entry operating light duty cranes.

		Credits	Ct. H
RCR 100	Introd. to Crane Oper. and Safety	2	
RCR 105	Crane Terminology	2	
RCR 106	PCSA Ratings	1	
RCR 107	Load Charts	2	
RCR 108	Job Equipment Selection	1	
RCR 110	Machine Ass., Set-up, Operation	2	
RCR 115	Operating Procedures and Precautions	4	1
RCR 116	Hand Signals	2	
RCR 117	Basic Oper. Control Arrangement	2	
RCR 118	Set-up Lattice Boom Crane	1	
RCR 119	Set-up of Rough Terrain Cranes	1	
RCR 225	Load Handling and Rigging	2	
RCR 226	Crane Service and Inspection	1	
	Total	23	5

Machine Tool Operator Certificate

Students will develop job entry skills upon completion of this pr gram, and should qualify as an operator of the following machine lathes, milling machines, boring machines, shapers, grinders, d presses, and hacksaws.

Also, the student should possess basic skills for inspector or to room attendant. The student should possess the potential to qual for the Machinist Apprentice or Machinist Trainee Program.

		Credits	Ct. H
RMT 100	Shop Safety	3	
RMT 105	Intro. to Machine Shop	2	
RMT 106	Metrology	2	
RMT 107	Blueprint Reading for Mach.	2	
RMT 109	Machinist Handtool Bench	1	
RMT 110	Your Future as a Machinist	1	
RMT 115	Lubrication and Maintenance	1	
RMT 116	Bandsaw, Hacksaw & Drilling	1	
RMT 117	Vertical Mill Setups & Oper. I	4	
RMT 118	Vertical Mill Setups & Oper. II	4	
RMT 119	Horizontal Mill Setups & Oper.	4	
RMT 120	Machine Shop Grinding	3	
RMT 125	Shaper Setup & Operation	1	
RMT 126	Engine Lathe Setups & Oper. I	4	
RMT 127	Engine Lathe Setups & Oper. II	4	
RMT 128	Engine Lathe Setups & Oper. III	4	
RMT 129	Job Shop Machining	2	
RMT 114	Gen. Math for College Students	3	
RMT 104	Job Orien. & Adv. for Mach.		
	Total	46	92

Welder/Pipefitter Certificate

This is a concentrated program in which a student can, in six months or less, complete the program with job entry skills, as a pipefitter/welder.

The student will learn to set up and use AC/DC welding machines, acetylene welding units and other related shop equipment. This course will also prepare the student for A.S.M.E. and A.W.S. pipe testing.

		Credits	Ct. Hrs.
RWE 100	Oxy-Acetylene Safety	3	60
RWE 106	Brazing & Spec. Applications	3	60
RWE 107	Blueprint Reading & Est.	3	60
RWE 108	S.M.A.W. Safety, Electrode	3	60
RWE 109	S.M.A.W. Surface Padding	3	60
RWE 110	S.M.A.W. Joints in 3 Positions	3	60
RWE 115	Plate Code Testing With Back St.	3	60
RWE 116	Plate Code Testing Without Bk. St.	3	60
RWE 130	GMAW - A.W.S. Pipe and Plate	3	45
RWE 201	A.S.M.E. Pipe Preparation	3	60
RWE 203	A.W.S. Pipe Testing 2G & 5G	3	60
RWE 206	A.W.S. Pipe Testing 6G	3	60
RWE 208	Welding Alloys & Join Var. Shapes	3	60
*RWE 297	Cooperative Education	1	
RWE 299	Independent Study		20
RWE 111	Pipe Measuring, Threading	3	60
RWE 114	Gen. Math for College Students	3	60
RWE 104	Job Orientation and Advancement		15
		46	920

*Optional-must meet all requirements for Cooperative Education as outlined in this catalog.

Word Processing Typist Certificate

This program is designed to prepare students, within a six month period, for entry level positions in business, governmental agencies, and other institutions which employ persons for individual or structured word processing centers.

Students will experience practical use of a blind text editor and CRT equipment. Both types of equipment use magnetic storage media. Students receive training in telephone usage, office procedures, machine transcription, and business English.

		Credits	Ct. Hrs.
WP 101B	Typing Skill Development	2	30
WP 102	Typewriting II	4	75
WP 120	Filing and Record Control	2	30
WP 131	Introduction to Word Processing	3	45
WP 135	Magnetic Typewriting (Memory)	3	45
WP 200	Office Procedures	3	45
WP 217	CRT Typing	3	45
WP 230	Machine Transcription	4	60
WP 136	Business Communications Appl.	3	45
WP 296	Office Occupations Seminar	1	15
WP 104	Job Orientation & Advancement		15
WP 107	Language Fundamentals I	3	45
	Total	31	495
	*		415
	Total	31	910

Students are required to spend additional lab hours developing required skills in each course.

Chemical Operator

CO 100 Vacuum System
Credit Hours
this course, the student will demonstrate the safety procedures and learn to erform all the activities in the objectives of the course, as they apply, given a ll operating vacuum system.
5 Contact Hours

RCO 102 Basic Physics
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 allows 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 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

RCO 103 Fundamentals of Chemistry
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 bio-chemistry.
90 Contact Hours

RCO 104 Job Orientation & Advancement
This course will deal with the various aspects of the world of work, from finding a job, holding a job, to advancing on the job. Areas covered are job seeking skills, interviewing skills, resumes and applications, attitudes, responsibility, goal setting and continuing education.
15 Contact Hours

RCO 105 Chemical Reagents and Chemical Makeups
3 Credit Hours
In this course, the student will demonstrate the safety procedures and learn to perform all the activities in the objectives of this course, as they apply, given chemical reagents and a complete chemical make-up unit.
45 Contact Hours

RCO 106 Balance and Weights
2 Credit Hours
In this course, the student will demonstrate the safety procedures and learn to perform all the activities in the objectives of the course, as they apply given a full operating set of balance and weights.
30 Contact Hours

RCO 107 Glove Box
2 Credit Hours
In this course, the student will demonstrate the safety procedures and learn to perform all the activities in the objectives of the course, as they apply, given a fully operating glove box.
30 Contact Hours

RCO 108 Dissolution
3 Credit Hours
In this course, the student will demonstrate the safety procedures and learn to perform all the activities in the objectives of the course, as they apply, given a fully operating dissolution system.
45 Contact Hours

RCO 109 Filtration
3 Credit Hours
In this course, the student will demonstrate the safety procedures and learn to perform all the activities in the objectives of the course, as they apply, given a fully operating filtration system.
45 Contact Hours

RCO 110 Introduction to Mathematics
3 Credit Hours
Designed for students who need a comprehensive review of arithmetic. Topics include the fundamental operations of whole numbers, fractions, decimals, and percentages, proporation, operations with signed numbers, and equations.
45 Contact Hours

RCO 111 ION Exchange
3 Credit Hours
In this course, the student will demonstrate the safety procedures and learn to perform all the activities in the objectives of the course, as they apply, given a fully operating ion exchange system.
45 Contact Hours

RCO 115 Raschig Ring Inspection
3 Credit Hours
In this course, the student will demonstrate the safety procedures and learn to perform all the activities in the objectives of the course, as they apply, given a rashig ring inspection unit, changing and gamma units.
45 Contact Hours

Crane Operator

RCR 100 Introduction to Crane Operation and Safety
2 Credit Hours
This unit will cover how cranes are manufactured, why they differ in design, the crane's role in industry, the different kinds of jobs cranes are designed to perform, and safety in operation. The introduction will cover crawler type cranes, truck cranes, rough terrain cranes, and tower cranes. Both cable and hydraulic cranes will be covered.
45 Contact Hours

RCR 105 Crane Terminology
2 Credit Hours
This unit will cover both the proper names for items associated with cranes and what they are commonly called in the field. It will include manufacturer's names as well as industries' names.
45 Contact Hours

RCR 106 PCSA Ratings
1 Credit Hour
This unit will cover the organization of the Power Crane and Shovel Association and the standards that manufacturers agreed to incorporate in all boom-type cranes.
15 Contact Hours

RCR 107 Load Charts
2 Credit Hours
This unit will cover the importance of load charts, how manufacturers build them, and how cranes are rated. Students will learn to read and use load charts and to determine at what point instability and/or structural failure occurs.
30 Contact Hours

RCR 108 Job Equipment Selection
1 Credit Hour
This unit will cover the selection of the correct equipment to fit the job's demands. Students will learn how to determine what size and type of crane will best handle a particular job.
15 Contact Hours

RCR 110 Machine Assembly/Set-Up/Operation
2 Credit Hours
This unit will cover how to assemble the crane on the job site, how to set the crane in operating position, how to test the crane for proper operating conditions, and how to safely operate the crane.
45 Contact Hours

RCR 115 Operating Procedures and Precautions
4 Credit Hours
This unit will cover how to pick and handle a load safely and how to control the load in motion. Students will also learn the things an operator should avoid.
105 Contact Hours

RCR 116 Hand Signals
2 Credit Hours
This unit will cover the communications between the operator and signal person and why signals are so important. The student will learn and practice all of the signals used in industry.
45 Contact Hours

RCR 117 Basic Operating Control Arrangement
2 Credit Hours
This unit will cover where each control is mounted, what each control's function is and how the controls are used.
45 Contact Hours

RCR 118 Set-Up Lattice Boom Crane
1 Credit Hour
This unit will cover how to install the boom sections on a lattice boom crane, how to disassemble and remove the section, and how to accomplish both processes safely.
25 Contact Hours

RCR 119 Set-Up of Rough Terrain Cranes
1 Credit Hour
This unit will cover how to set-up rough terrain cranes, how to select the c rect spot for set-up, the things to avoid, and the procedures to avoid trouble
25 Contact Hours

RCR 225 Load Handling and Rigging
2 Credit Hours
This unit will cover load handling skills and safe operation methods. It will clude cable condition, sling angles, knots, rigging hardware, reeving, a rigging procedures and precautions.
45 Contact Hours

RCR 226 Crane Service and Inspection
1 Credit Hour
This unit will cover how to service a crane, when service should be perform who is responsible for service, what should be inspected and when, the r sons for inspection, the daily, weekly and monthly records which must kept, and why they must be kept.
25 Contact Hours

Machine Tool Operator

RMT 100 Shop Safety
3 Credit Hours
In this unit, instruction will cover safety policies and practices, in general, a deal specifically with the engine lathe, vertical mill, horizontal mill, drill pre shaper, pedestal grinder, surface grinder, bandsaw, power hacksaw, he treat furnace and hand tools.
60 Contact Hours

RMT 104 Job Orientation and Advancement for Machinist
This course will deal with the various aspects of the world of work, from findi a job, holding a job, to advancing on the job. Areas covered are job seeki skills, interviewing skills, resume and applications, attitudes, responsibili goal setting and continuing education.
15 Contact Hours

RMT 105 Introduction to Machine Shop
2 Credit Hours
In this unit, information will cover the machine shop program lathe bit grindi the pedestal grinder, use of heat treating and metallurgy and layout of a wo piece. The student will use this information to make machinist tools.
40 Contact Hours

RMT 106 Metrology
2 Credit Hours
In this unit, the student will cover the use of the outside and inside micromet combination square, bend protractor, Verniew height gages, sine bar, and spection on finished parts.
40 Contact Hours

RMT 107 Blueprint Reading for Machine Shop
2 Credit Hours
In this unit, information will cover the principles of mechanical drawings a related technical information needed to make shop sketches and read indu trial drawings of machine parts and tools. The student will demonstrate his her ability to perform the task covered throughout the remainder of the cour to the instructors satisfaction. The student will be required to complete t blueprint books.
40 Contact Hours

RMT 109 Machinist Handtool Bench Work
1 Credit Hour
In this unit, information will cover the names of hand bench tools and th proper use. The students will then make parts using this tool group.
20 Contact Hours

RMT 110 Your Future as a Machinist
1 Credit Hour
In this unit, information will cover how to apply for a machinist job, wages a benefits, starting in the trade, shop management and organization and wo of work and your place in it.
20 Contact Hours

RMT 114 General Math for College Student
3 Credit Hours
This course provides the student with the basics of the mathematical areas arithmetic review, calculators, measurement, algebra, geometry, and trig nometry.
45 Contact Hours

RMT 115 Lubrication and Maintenance
1 Credit Hour
n this unit, information will cover how to lubricate and oil all the machines in he shop. This includes lathes, milling machines, drill pressers, grinders, saws, shapers and the different kinds of lubricant to use on each machine. The course will also cover how to clean and deburr the machines and minor machine repair. In addition, pump/seals/packing, bearing use and types and rigging/safe lifting will be taught.
20 Contact Hours

RMT 116 Bandsaw, Hacksaw, and Drilling
1 Credit Hour
n 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

RMT 117 Vertical Mill Setups and Operation I
Credit Hours
n this unit, the student will gain skill and knowledge on the vertical mill, its arts and functions, in how to indicate a vise, edge location, surface milling, lial adjustment, drilling and tapping, squaring of work piece, and speeds and eeds formulas.
0 Contact Hours

RMT 118 Vertical Mill Setups and Operation II
Credit Hours
he 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 ircles, slots and cut angles.
0 Contact Hours

MT 119 Horizontal Mill Setups and Operation
Credit Hours
this unit, the student will be able to develop his skills and knowledge on the orizontal milling machine, parts and their functions, learn horizontal mill accessories, form milling, squaring of work piece, and speeds and feeds.
0 Contact Hours

MT 120 Machine Shop Grinding
Credit Hours
this unit, the information will cover the principles of grinding wheel selection, harpening, surface grinding theory, operations and the student will apply this nowledge to grinding parts made on the milling machines.
0 Contact Hours

MT 125 Shaper Setup and Operation
Credit Hour
this unit, information will cover the shaper parts, functions and proper operion and work holding methods not covered in the mill, and tool geometry ommon to single plain machines. Shaper, plainers slotting and broaching achines theory and limited use in today's machine shop will complete this ourse. The student will demonstrate his knowledge of this information by aking parts using this machine group.
0 Contact Hours

MT 126 Engine Lathe Setups and Operation I
Credit Hours
this unit, the student will be able to find out how to use and mount the tree w chuck on the spindle of the lathe, how to set their lathe tools on center ill, drill, ream, knurl, tap and chamfer. The students will also be able to calulate the feeds and speeds on the lathe and hold tolerances of +−.015.
0 Contact Hours

MT 127 Engine Lathe Setups and Operation II
Credit Hours
this unit, the student will develop the knowledge and skill of how to single int external and internal threads holding tolerances of Class 2 and 3 thread, w to use the taper attachment, and to do "radius" forming.
Contact Hours

MT 128 Engine Lathe Setups and Operation III
Credit Hours
this unit, the student will center round and square parts in a four jaw chuck, achine internal and external diameters holding tolerances of .0005. The stunt will be able to use previous experience, theories and operations in achining more difficult parts to develop more skill and knowledge.
Contact Hours

RMT 129 Job Shop Machining
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 performance level expected in industry.
40 Contact Hours

Welder/Pipefitter

RWE 100 Oxy-Acetylene Safety
3 Credit Hours
Follow all shop safety rules and work in a safety conscious manner at all times. Student should be able to demonstrate an ability to perform oxy-acetylene welding and fuel gas burning.
60 Contact Hours

RWE 104 Job Orientation and Advancement
This course will deal with the various aspects of the world of work, from finding a job, holding a job, to advancing on the job. Areas covered are job seeking skills, interviewing skills, resume and applications, attitudes, responsibility, goal setting and continuing education.
15 Contact Hours

RWE 106 Brazing and Special Applications
3 Credit Hours
Demonstrates the ability to make good beads of size and shape with bronze rod for the following joints, butt, lae, tee and corner. The student should acquire an understanding of brazing including ferrous, and ferrous to non ferrous.
60 Contact Hours

RWE 107 Blueprint Reading and Estimating
3 Credit Hours
Demonstrate the ability to read welding shop drawings and identify various welding symbols; estimate the cost of material and labor.
60 Contact Hours

RWE 108 S.M.A.W. Safety Electrode Identification
3 Credit Hours
Apply safety rules applicable to S.M.A.W. power; identify electrodes by the A.W.S—A.S.T.M. numbering system; practice surface padding in designated positions.
60 Contact Hours

RWE 109 S.M.A.W. Surface Padding
3 Credit Hours
Demonstrate the ability to apply surface padding in designated positions.
60 Contact Hours

RWE 110 S.M.A.W. Joints in Three Positions
3 Credit Hours
Prerequisite: Permission of instructor
Demonstrate the ability to properly set up and weld the lap, tee, and corner joints using E-6010 and E-7018 in the flat, horizontal, vertical, and overhead positions. Open square butt joint will be done with E-6010 in all positions. Results will meet A.W.S. standards.
60 Contact Hours

RWE 111 Pipe Measuring, Threading and Preparation
3 Credit Hours
Prerequisite: Permission of instructor
This course will cover the need and safe application for threaded pipe, the measurement, the type of pipe, the cutting of length, the threading with machine, and fabrications, and the proper use of pipe wrenches and tools used in pipefitting.
60 Contact Hours

RWE 114 General Math for College Students
3 Credit Hours
Designed for students who need a comprehensive review of arithmetic. Topics include the fundamental operations of whole numbers, fractions, decimals, and percentages, proporation, operations with signed numbers and equations.
60 Contact Hours

RWE 115 Plate Code Testing with Backing Strip
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

RWE 116 Plate Code Testing without Backing Strip
3 Credit Hours
Prerequisite: Permission of instructor
Produce a weldment capable of passing the slide bend test using E-7018 on the open bevel with a backing strip. This will be done in the 2G, 3G, and 4G positions to meet A.W.S. standards.
60 Credit Hours

RWE 130 GMAW-A.W.S. Pipe and Plate
3 Credit Hours
Demonstrate an ability to "MIG" weld 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.
45 Contact Hours

RWE 201 A.S.M.E. Pipe Preparation/Test
3 Credit Hours
Prerequisite: Permission of instructor
The student should be able to construct and illustrate pipe preparation using the oxy-acetylene hand and automatic pipe beveler, also align and tack weld pipe for testing, using the proper root gap in the 2G, 5G, and 6G position.
60 Contact Hours

RWE 203 A.W.S. Pipe Testing 2G and 5G
3 Credit Hours
Prerequisite: Permission of instructor
Demonstrate the ability to properly set-up 6″ diameter, schedule 40 pipe. Welding will be taught using the beveled butt joining in the 2G and 5G position. Results will meet A.W.S. standards.
60 Contact Hours

RWE 206 A.W.S. Pipe Testing 6G
3 Credit Hours
Set-up and weld 6″ diameter, schedule 40 pipe in 6G position. The E-6010 electrode will be used for the root pass and E-7018 electrode will be used for the filler. Results will meet the A.W.S. guidelines.
60 Contact Hours

RWE 208 Welding Alloys and Joining Various Shapes
3 Credit Hours
Prerequisite: Permission of instructor
Identify the alloys and the filler rod for welding carbon steel aluminum and stainless steel; welding the butt, lap, tee and corner joints in the 1G, 2G, 3G and 4G positions; use a back purge for stainless steel. Results will meet the A.W.S. standards.
60 Contact Hours

RWE 297 Cooperative Education
1-3 Credit Hours
Prerequisite: Permission of instructor
Coordinates college course work and industry work and experience. A minimum of one hour of class per week is required.
45-135 Contact Hours

RWE 299 Independent Study
1-3 Credit Hours
Prerequisite: Permission of instructor
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.
20-60 Credit Hours

Word Processing Typist

RWP 101B Typing Skill Development
2 Credit Hours
This course stresses application of the keyboard skills and places emphasis on centering, letters, tabulation, and manuscripts.
30 Contact Hours

RWP 102 Typewriting II
4 Credit Hours
Reinforcement of fundamentals of typewriting procedures. Development speed and accuracy in more advanced levels of production work, using prevailing business forms. Emphasis on quality of output.
75 Contact Hours

RWP 104 Job Orientation and Advancement
This course will deal with the various aspects of the world of work; from find a job, holding a job, to advancing on the job. Areas covered are job seek skills, interviewing skills, resume and applications, attitudes, responsibil goal setting, and continuing education.
15 Contact Hours

RWP 107 Language Fundamentals I
3 Credit Hours
This course is designed for the student who needs a review of basic gramr and formal/informal use of the English language. It introduces sentence str ture, organization patterns and word use. Utilizing an individual approach will help prepare students for higher level English courses.
45 Contact Hours

RWP 120 Filing and Record Control
2 Credit Hours
The word processing student will learn filing and record control for the retrie of permanently stored documents, and learn record management, using phabetic, numerical and geographical systems.
30 Contact Hours

RWP 131 Introduction to Word Processing
3 Credit Hours
This course is designed to acquaint the student with word processing s tems, equipment, vocabulary, and reprographics.
45 Contact Hours

RWP 135 Magnetic Typewriting (Memory)
3 Credit Hours
Instruction in operating techniques of magnetic-media typewriting with mer ry feature to develop an employable skill in the operation of the equipment.
45 Contact Hours

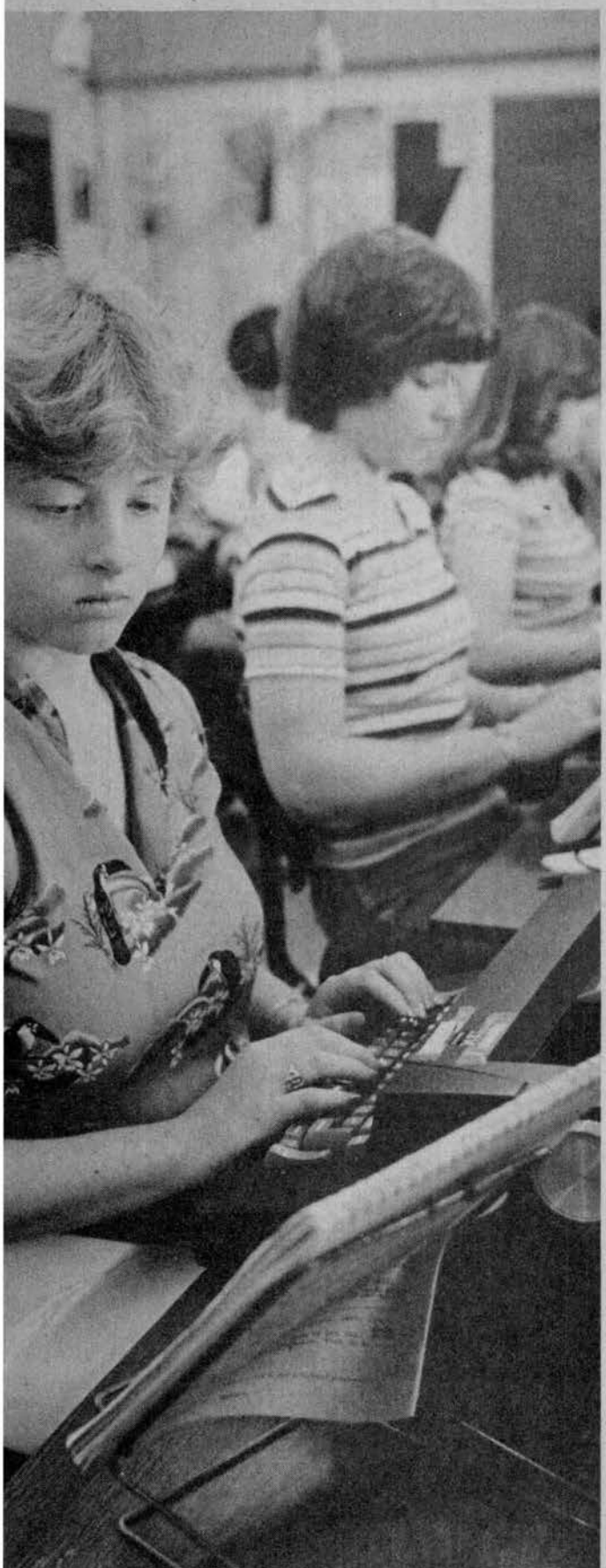
RWP 136 Business Communications Applications
3 Credit Hours
Applied business techniques of communications that require problem solv and understanding of human relations in business situations. Students cc pose and evaluate various types of correspondence; prepare and analy business reports, memos, etc. Emphasis will be placed on dictation te niques.
45 Contact Hours

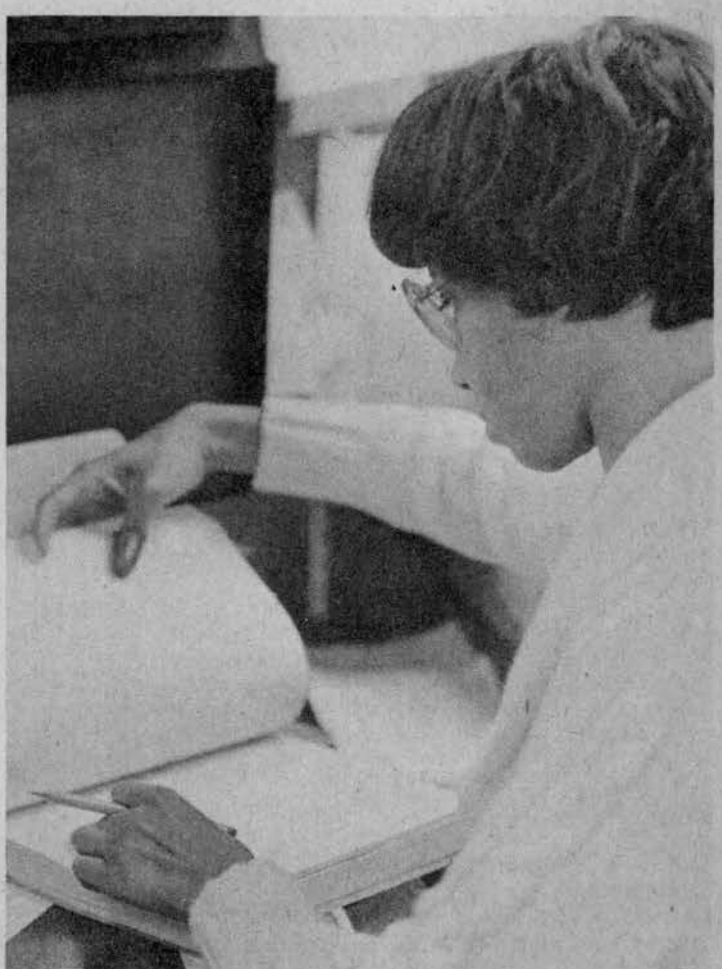
RWP 200 Office Procedures
3 Credit Hours
This course introduces the student to the business world and acquaints prospective office employee with the various office duties. Units covered clude organization of office work, incoming and outgoing mail, postal a shipping services, telephone techniques, maintenance and control of off supplies, and business and social conduct. A practicum is used in the cou which correlates classroom discussion with related office projects in the s dents' specialized areas.
45 Contact Hours

RWP 217 CRT Typing
3 Credit Hours
This course is designed to enable a student to transfer typing skills to the of cathode ray video screen. It includes the creating, editing, printing and st age of material on diskettes.
45 Contact Hours

RWP 230 Machine Transcription
4 Credit Hours
This course provides instruction in the use of transcribing machines in preparation of business letters and other correspondence. The course cludes a review of letter styles, rules of transcription and punctuation, and mechanics of producing mailable letter at high production rates.
60 Contact Hours

P 296 Office Occupations Seminar
redit Hour
se seminars are designed to make the students specifically aware of ex-
tation of the business, industry and government sectors. Additionally,
se seminars are designed to help students attain skills and knowledge they
ht not have received in other course work.
Contact Hours





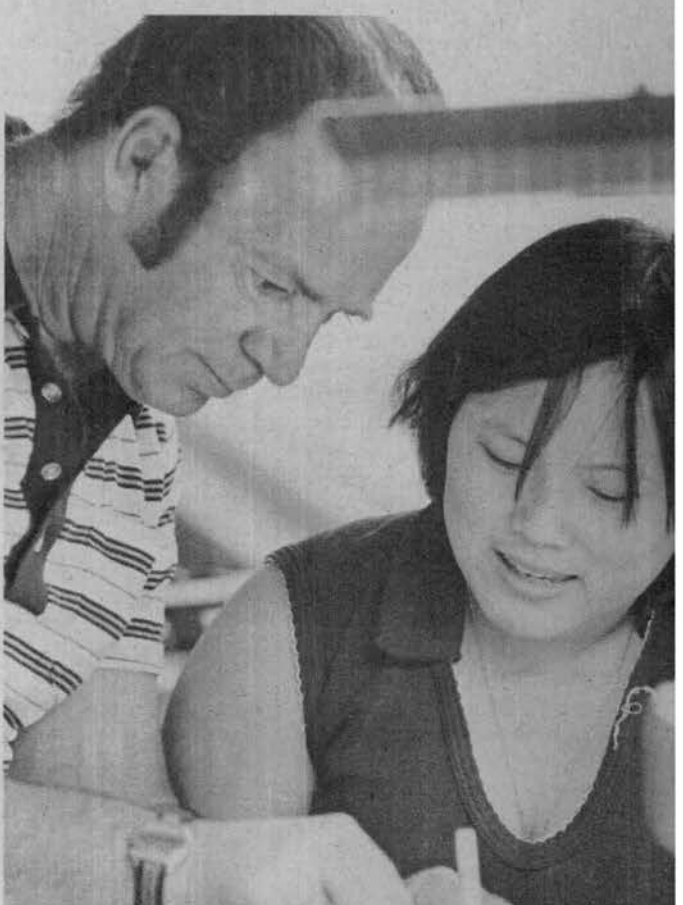
Aurora Education Center

The Community College of Denver Aurora Education Center (AEC), headquartered at 791 Chambers Road, 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
- Audiovisual Technology
- Biology
- Business
- Computer Programming for Business
- Computer Science
- Communications
- Continuing Education for Nurses
- Criminal Justice
- Early Childhood Education and Management
- Earth Science
- Economics
- Education
- Electricity Industrial/Commercial
- English As A Second Language
- English
- Geography
- Health Occupations
- History
- Humanities
- Human Services
- Journalism
- Literature
- Management
- Marketing
- Mathematics
- Paralegal
- Philosophy
- Political Science
- Psychology
- Reading
- Sociology
- Solar Energy
- Speech
- Study Skills
- Urban Ecology

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



Graduation Requirements

egrees

Community College of Denver awards the following degrees:
Associate of Arts (AA)
Associate of Science (AS)
Associate of General Studies (AGS)
Associate of Applied Science (AAS)

To receive an ASSOCIATE DEGREE, a student shall:

1. Be currently enrolled in the College with exceptions approved by the Dean of Instruction.
2. File an "application for graduation" form during the term in which the student intends to graduate, according to the deadline published in the schedule of courses for that term.
3. 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 sixty (60) hours.
4. Complete appropriate general education requirements for the degree.

ther Policies Pertaining to Graduation

1. The Community College of Denver will not accept "D" grades in transfer.
   In order to graduate from Community College of Denver with a certificate or an Associate of Applied Science degree, some programs, as stated in the current catalog, may require a student to earn at least a "C" in all program area coursework. A cumulative 2.0 GPA is required in all credit attempted.
   In the Associate of General Studies (AGS), Associate of Arts (AA), and Associate of Science (AS) degrees, a cumulative GPA of 2.0 (C) in all credit attempted is required for graduation.
   A student may repeat a course only once with less than a "C" grade. Courses for which the student has received a grade of "C" or better may not be repeated for credit; exceptions must be made by both the full time faculty or the advisor and the division director.
2. Students who transfer to CCD with 45 semester hours or more, must complete the last 15 hours counted toward the degree with a "C" or better average at the Community College of Denver. Students who have earned 45 semester hours or more at CCD may earn a degree by transferring approved 15 semester hours that may be counted toward the degree with a "C" or better average. For the Associate of Applied Science degree, a minimum of 15 hours in the program area must be earned at CCD. Exceptions may be approved by the Dean of Instruction.
3. No more than six (6) semester hours of Independent Study course work may be applied to any Associate Degree program.
4. No more than six (6) Semester hours of Special Topics courses may be applied to any Associate Degree program.
5. A student is considered to be under the guidelines of the catalog of the year of initial entry. If a break in attendance of two consecutive semesters or more occurs, the catalog of the new re-entry year is the document of authority.
6. The College reserves the right to substitute, or delete coursework requirements based on current curriculum. Students are assured that if the curriculum does change, the College will make every effort to determine an equitable solution.

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. (In mitigating circumstances, certain portions of this requirement may be waived by the Dean of Instruction).
2. Earn an overall grade point average of 2.0 (C) in all credit counted toward the certificate.
3. File an "application for graduation" form during the term in which the student intends to graduate, according to the deadline published in the schedule of courses for that term.

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 Degree (AA)

The Associate of Arts degree (AA) is intended to prepare students to transfer to a four-year college or university for the purpose of obtaining a baccalaureate or other advanced degree. This degree is designed for the student whose emphasis of study is in the arts, communications and/or social sciences.

Students should review the catalog of the institution to which they plan to transfer in order to determine specific course and graduation requirements. Students are also urged to seek the advice of division directors, faculty, and counselors in the selection of transfer courses.

Information concerning transfer to Colorado universities and colleges is available in the Office of Student Services

Requirements:

A student who is interested in earning an AA degree must complete a minimum of sixty (60) credits in transferable course work. Please refer to the list of "Courses Intended For Transfer" on page 42-43. Credits are to be distributed as follows:

(no course fulfills more than one (1) requirement)

1. GENERAL EDUCATION REQUIREMENTS: (Please refer to the list of non-applicable courses on page 43.)

ENG 111, 112 (Communications)	6 credits
Arts and Humanities (ART, DRA, FRE, GER, HUM, LIT, MUS, PHI, SPA)	3 credits
Mathematics (MAT)	3 credits
*Science (BIO, CHE, CSC, EAS, PHY, SCI)	3 credits
Social Sciences (ANT, ECO, GEO, HIS, POS, PSY, SOC, SOS)	3 credits
Credit from any of the following five (5) areas in any combination:	12 credits
Arts and Humanities (ART, DRA, FRE, GER, HUM, LIT, MUS, PHI, SPA)	
Communications (COM, ENG, JOU, SPE)	
Mathematics (MAT)	
Science (BIO, CHE, CSC, EAS, PHY, SCI)	
Social Sciences (ANT, ECO, GEO, HIS, POS, PSY, SOC, SOS)	

*GEO 111,112, and ANT 201, 202 may be taken and counted toward the science requirement. However, these courses may not then be counted toward the social science requirement.

2. ELECTIVES ** 30 credits

**Excluding courses that will not transfer and limited to a maximum of three (3) credits in physical education.

Associate Of Science Degree (AS)

The Associate of Science degree (AS) is intended to prepare students to transfer to a four-year college or university for the purpose of obtaining a baccalaureate degree or other advanced degree. This degree is designed for the student whose emphasis of study is in science or mathematics.

Students should review the catalog of the institution to which they plan to transfer in order to determine specific course and graduation requirements. Students are also urged to seek the advice of division directors, faculty, and counselors in the selection of transfer courses.

Information concerning transfer to Colorado universities and colleges is available in the Office of Student Services.

Requirements:

A student who is interested in earning an AS degree must complete a minimum of sixty (60) credits in transferable course work. Please refer to the list of "Courses Intended For Transfer" on this page. Credits are to be distributed as follows:

(no course fulfills more than one (1) requirement)

1. GENERAL EDUCATION REQUIREMENTS: (Please refer to the list of non-applicable courses on page 42-43)
   - ENG 111, 112 (Communications) 6 credits
   - Arts and Humanities (ART, DRA, FRE, GER, HUM, LIT, MUS, PHI, SPA) 3 credits
   - Mathematics (MAT) 3 credits
   - Science (BIO, CHE, CSC, EAS, PHY, SCI) 3 credits
   - Social Sciences (ANT, ECO, GEO, HIS, POS, PSY, SOC, SOS) 3 credits
   - Credit from any of the following five (5) areas in any combination: 12 credits
     - Arts and Humanities (ART, DRA, FRE, GER, HUM, LIT, MUS, PHI, SPA)
     - Communications (COM, ENG, JOU, SPE)
     - Mathematics (MAT)
     - Science (BIO, CHE, CSC, EAS, PHY, SCI)
     - Social Sciences (ANT, ECO, GEO, HIS, POS, PSY, SOC, SOS)
2. SCIENCE AND MATHEMATICS (BIO, CHE, CSC, EAS, MAT, PHY, SCI) 20 credits
3. ELECTIVES * 10 credits

*Excluding courses that will not transfer and limited to a maximum of three (3) credits in physical education .

Associate Of General Studies Degree (AGS)

The Associate of General Studies degree (AGS) is available for students who want to complete a broad program of courses without constraints of specialization. This degree is not intended for transfer. Depending upon the receiving institution, individual courses within the degree may be transferable.

Information concerning transfer to Colorado universities and colleges is available in the Office of Student Services.

Requirements:

A student who is interested in earning an AGS degree must complete a minimum of sixty (60) credits to be distributed as follows:

(no course fulfills more than one (1) requirement)

1. GENERAL EDUCATION REQUIREMENTS: (Please refer to the list of non-applicable courses on page 43.)
   - Credit from each of the following five (5) areas:
     - Arts and Humanities (ART, DRA, FRE, GER, HUM, LIT, MUS, PHI, SPA) 3 credits
     - Communications (COM, ENG, JOU, SPE) 3 credits
     - Mathematics (MAT) 3 credits
     - *Science (BIO, CHE, CSC, EAS, PHY, SCI) 3 cr
     - Social Sciences (ANT, ECO, GEO, HIS, POS, PSY, SOC, SOS) 3 cr
   - Credit from any of the following five (5) areas: 3 cr
     - Arts and Humanities (ART, DRA, FRE, GER, HUM, LIT, MUS, PHI, SPA)
     - Communications (COM, ENG, JOU, SPE)
     - Mathematics (MAT)
     - Science (BIO, CHE, CSC, EAS, PHY, SCI)
     - Social Sciences (ANT, ECO, GEO, HIS, POS, PSY, SOC, SOS)

   *GEO 111, 112 and ANT 201, 202 may be taken and cou toward the science requirement. However, these courses not then be counted toward the social sciences requireme
2. ELECTIVES ** 42 cr

**May be selected from transfer and/or occupational cou

Associate of Applied Science Degree (AAS)

The Associate of Applied Science degree (AAS) prepares dents for (a) entry-level employment in a given occupation, upgrading/stabilizing employment. This program is not intende transfer to a baccalaureate degree program; however, some courses may be accepted toward a bachelor's degree at son stitutions. Please consult an academic advisor for further info tion.

Requirements:

A student who is interested in earning an AAS degree must plete a minimum of sixty (60) credits to be distributed as follow

(no course fulfills more than one (1) requirement)

1. GENERAL EDUCATION REQUIREMENTS: (Please refer t list of non-applicable courses on page 43.)
   - Communications (COM, ENG, JOU, SPE) 3 cr
   - Mathematics (MAT) 3 cr
   - Credit from any two (2) of the following three (3) areas: 6 cr
     - Arts and Humanities (ART, DRA, FRE, GER, HUM, LIT, MUS, PHI, SPA)
     - Science (BIO, CHE, EAS, PHY, SCI)
     - Social Sciences (ANT, ECO, GEO, HIS, POS, PSY, SOC, SOS)

   Individual departments may specify particular courses that may be counted toward these general education requirem
2. SPECIFIC PROGRAM REQUIREMENTS 48 cr

NOTE: Most AAS degree programs require more than sixty credits.

Summary of Minimum Degree Requirements

Degree	General Education	Electives	Science and Mathematics	Specific Program Requirements	To Cr
AA	30	30	–	–	60
AS	30	10	20	–	60
AGS	18	42	–	–	60
AAS	12	–	–	48	60

Courses Intended For Transfer

These courses transfer to one or more of the four year colleg universities in Colorado.

Anthropology - All courses.

Art - All courses except 299.

Biology - All courses except 105, 106, 109, 299.

Chemistry - 111, 112, 201, 202.

Communications - All courses except 130.

Computer Science - All courses.

Drama - All courses.

Earth Science - 111, 112, 201, 206, 207, 208.

Economics - All courses.

English - All courses numbered 110 and above.
Geography - All courses numbered 111 and above except 299.
German - 111, 112, 211, 212.
History - All courses.
Humanities - All courses.
Journalism - All courses.
Literature - All courses.
Mathematics - All courses numbered 121 and above.
Music - All courses.
Philosophy - All courses.
Physical Education - All courses.
Physics - 151, 152, 161, 162, 163, 164.
Political Science - All courses.
Psychology - All courses numbered 111 and above.
Sociology - All courses.
Social Science - All courses except 101, 102.
Spanish - All courses except 101, 102.
Speech - All courses.

Additional courses may be transferable to one or more of the four year colleges or universities in Colorado. For specific information, please consult an advisor.

Courses That Are Not Applicable Toward The General Education Requirements

The following courses will not count toward the general education requirements:

ESL 100	1-3 Credits	Basic ESL
ESL 101	1-3 Credits	Low Intermediate ESL
ESL 102	1-3 Credits	High Intermediate ESL
ESL 103	1-3 Credits	Advanced ESL
ENG 099	1-3 Credits	Sound and Spelling
ENG 103	3 Credits	Workshop in Reading, Writing, and Speaking
ENG 105	1-3 Credits	Study Skills
ENG 107	3 Credits	Language Fundamentals I
ENG 108	3 Credits	Language Fundamentals II
GED 010	1-5 Credits	GED Preparation: Reading and Writing
GED 011	1-5 Credits	GED Preparation: Mathematics
MAT 090	3 Credits	Basic Operations on Whole Numbers
MAT 095	1-3 Credits	Process and Procedures of Mathematics I
MAT 096	1-3 Credits	Process and Procedures of Mathematics II
MAT 101	1-3 Credits	Applied Mathematics I
MAT 102	1-3 Credits	Applied Mathematics II
MAT 103	1-3 Credits	Math Anxiety
MAT 105	1-2 Credits	Mathematics for the Physical Sciences
MAT 106	3 Credits	Introduction to Mathematics
MAT 107	5 Credits	Mathematics for Electronics
JOY 099	3 Credits	Job Search Technique Workshop
JOY 108	3 Credits	Vocational Exploration
REA 090	1-3 Credits	Introduction to Basic Reading Skills
REA 091	1-3 Credits	Introduction to Reading and Study Skills
REA 100	1-3 Credits	Building Everyday Reading Skills
REA 101	3 Credits	Skills for College Reading
REA 102	1-3 Credits	Skills for College Reading II
REA 103	3 Credits	Workshop in Reading, Writing, and Speaking
REA 104	1-3 Credits	Skill in Test-Taking
REA 105	1-5 Credits	Study Skills
REA 106	1-3 Credits	Vocabulary Development
REA 109	1-3 Credits	Reading Efficiency
REA 110	1-3 Credits	Speed Reading
REA 299	1-3 Credits	Independent Study

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.

Instructional Programs

Special Note for All Associate of Applied Science Degree (AAS) Programs and All Certificate Programs:

These programs are not intended for transfer to a baccalaureate degree program; however, some of the courses may be accepted toward bachelor's degree at some institutions. Please consult an advisor for further information.

ccounting

sociate of Applied Science Degree (D,F,R,AEC)

his program is designed for students whose objective is to ob- a technical degree in accounting. Students with an existing ociate or baccalaureate degree in non-accounting areas or with icient earned college credit may be able to qualify for the ac- nting Associate of Applied Science degree by taking ac- nting courses only.

tudents planning to transfer to a senior institution can design, in junction with an accounting adviser, their associate degree pro- ms in accounting for maximum transferability. Students should ate this advisement early in the program.

quired Core Courses

		Credits	Ct. Hrs.
C 111	Accounting Principles I	5	75
C 112	Accounting Principles II or		
C 116	Corporate Accounting	2-5	30-75
C 131	Individual Income Tax I	3	45
C 211	Intermediate Accounting I	3	45
C 221	Cost Accounting	3	45
S 110	Mathematics of Business/Personal Finance	3	45
B 100*	Introduction to Computers	4	60
C 105	Office Skills for Non-Secretarial Students	3	45
	Total Core Hours	26-29	390-435

ditional Required Courses

nagement/Economics: Select at least two courses.

		Credits	Ct. Hrs.
O 201	Principles of Economics (Macro)	3	45
N 105	Introduction to Business	3	45
N 206	Business Law	4	60
N 215	Principles of Management	3	45
		6-7	90-105

ounting/Computers/Finance Electives: Select at least four rses with a minimum of two at the 200 level having ACC pre- s.

tudents whose objective is transfer to a senior institution may stitute transfer courses for non-transferable courses in this area counting/Computers/Finance). Any such substitution must be riting, approved by the Accounting Department, and include T 127—Survey of Calculus.

		Credits	Ct. Hrs.
C 105	Payroll Procedures	3	45
C 113	Introduction to Accounting on the Computer	3	45
C 132	Individual Income Tax II	2	30
C 212	Intermediate Accounting II	3	45
C 215	Accounting Systems	3	45
C 216	Governmental Accounting	3	45
C 235	Business Taxation	3	45
C 250	Oil and Gas Accounting I	4	60
B 106	COBOL (4) or		
B 108	BASIC (3)	3-4	45-60
N 225	Managerial Finance	3	45
		11-13	165-195

eral Education Electives: Select a minimum of four courses with ounting advisor approval to meet current College general edu- on requirements for the Associate of Applied Science degree.

Communications	One course	3	45
Mathematics	One course	3-4	45-60
Arts and Humanities, Social Science, Science	Two courses, one each from two of the three areas bracketed	6-8	90-120
		12-15	180-225

Electives: When all above requirements for the Associate of Applied Science degree in accou nting have been fulfilled, students may, as needed to reach the 60-hour minimum required for the degree, take additional elective courses. These electives must be chosen in conjunction with an accounting advisor.

Total Minimum Required Hours	60	900

Students desiring to qualify for the Associate of Applied Science degree must earn a minimum of C in all courses having the following prefixes: ACC, BUS, and MAT.

Students desiring to acquire Cooperative Education work experience as part of the Associate of Applied Science degree program should consult an accounting advisor before entering the third semester of course work.

*CPB 100 requires an additional laboratory credit hour of CPB 095. Any laboratory credit does not count towards the 60-credit minimum for the degree.

Accounting (D,F,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 Major Courses

		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 105	Introduction to Business or		
MAN 206	Business Law	3-4	45-60
SEC 105	Office Skills for Non-Secretarial Students or Elective with approval of accounting adviser	3	45
	Total Required Hours	20-21	300-315

Required Electives

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

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

CPB 100 requires one additional laboratory credit (CPB 095).

Administrative Support Occupations (D,F,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

		Credits	Ct. Hrs.
ACC 103	Bookkeeping (3)		
	or		
ACC 106	Intro to Beginning Accounting (3)		
	or		
ACC 111	Accounting Principles I	3-5	45-75
BUS 110	Mathematics of Business/Personal Finance (3)		
	and		
SEC 115	Business Machines (1)		
	or		
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 120	Filing and Records Control	2	30
SEC 200	Office Procedures		
	or		
BUS 297	Cooperative Education	3-6	135-270
		26-31	510-675

Administrative Assistant Option (D,F,R) Associate of Applied Science Degree

Required Major Courses

		Credits	Ct. Hrs.
Core Course Requirements		26-31	510-675
	plus		
SEC 131	Introduction to Word Processing	3	45
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
	Elective	3	45
General Education Courses		12	180
	Total Required Hours	61-66	1035-1200

[1]CPB 100 requires CPB 095 (1 Credit Hour)

Legal Secretarial Option (D,F) Associate of Applied Science Degree

Required Major Courses

		Credits	Ct. Hrs.
Core Course Requirements		26-31	510-675
	plus		
MAN 206	Business Law	4	60
PAR 107	Para Legal Research	3	45
SEC 209	Legal Terminology	2	30
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 131	Introduction to Word Processing	3	45
SEC 215	Mag Card II Typewriting		
	or		
SEC 217	CRT Typing	3	45
SEC 230	Machine Transcription	4	60
General Education Courses		12	
	Total Required Hours	66-71	1110-1

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

Required Major Courses

		Credits	Ct
Core Course Requirements		26-31	510-
	plus		
SEC 100	Spanish Typewriting	3	
SEC 124	Spanish Gregg Shorthand		
	or		
SEC 230	Machine Transcription	4	
SEC 256	Sp. Bus. Terminology & Translation Techniques	3	
SEC 260	Spanish Business Correspondence & Documentation	3	
SPA 111	Spanish—First Year	5	
SPA 112	Spanish—First Year		
	or		
SPA 211	Intermediate Spanish I	3-5	45
SPA 221	Current Spanish	3	
	Electives	3	
General Education Courses		12	
	Total Required Hours	65-72	1095-1

Medical Secretarial Option (D) Associate of Applied Science Degree

Required Major Courses

		Credits	Ct.
Core Course Requirements		26-31	510-
	plus		
HOC 100	Medical Terminology	1	
ACC 105	Payroll Procedures	3	
SEC 111	Alpha Shorthand I	5	
SEC 112	Alpha Shorthand II		
	or		
SEC 203	Typewriting III	4	
SEC 131	Introduction to Word Processing	3	
SEC 215	Mag Card II Typewriting		
	or		
SEC 217	CRT Typing	3	
SEC 206	Insurance Methods and Claims	3	
SEC 230	Machine Transcription	4	
General Education Courses		12	
	Total Required Hours	64-69	1080-1

Secretarial Option (D,F,R,) Associate of Applied Science Degree

Required Major Courses

		Credits	Ct.
Core Course Requirements		26-31	510-
	plus		
SEC 111	Alpha Shorthand I		
	or		
SEC 121	Gregg Shorthand I	5	
SEC 112	Alpha Shorthand II		
	or		
SEC 122	Gregg Shorthand II	4	
SEC 131	Introduction to Word Processing		
	or		
CPB 100	Introduction to Computers[1]	3-4	45
SEC 203	Typewriting III	4	
SEC 223	Shorthand Speedbuilding	4	
SEC 230	Machine Transcription	4	
General Education Courses		12	
	Total Required Hours	62-68	1050-1

[1]CPB 100 requires CPB 095 (1 Credit Hour)

ord Processing Option (D,F,R)
ssociate of Applied Science Degree

		Credits	Ct. Hrs.
re Course Requirements		26-31	510-675
	plus		
PB 100	Introduction to Computers[1]	4	60
AN 116	Principles of Supervision	3	45
EC 131	Introduction to Word Processing	3	45
EC 133	Word Processing Communications I	3	45
EC 203	Typewriting III	4	60
EC 215	Mag Card II Typewriting		
	or		
EC 217	CRT Typing	3	45
EC 230	Machine Transcription	4	60
	Electives	3	45
neral Education Courses		12	180
	Total Required Hours	62-67	1050-1215

PB 100 Requires CPB 095 (1 credit hour)

eneral Clerical (D,F,R)
rtificate

		Credits	Ct. Hrs.
C 103	Bookkeeping		
	or		
C 106	Intro to Beginning Accounting	3	45
S 115	Business Math by Machines	4	60
S 136	Business Communications		
	Applications	3	45
C 101	Typewriting I	4	75
C 102	Typewriting II	4	75
C 120	Filing & Records Control	2	30
C 200	Office Procedures		
	or		
C 205	Office Simulation		
	or		
S 297	Cooperative Education	3	135
	Business Elective[1]	3	45
	English Elective[1]	3	45
	Total Required Hours	29	555

ctive chosen must have approval of advisor.

iropractic Assisting (D)
rtificate

gram Not Yet Approved by State Agencies)

he objective of this program is to prepare students for entry-l employment in chiropractic offices and clinics. Graduates will st the chiropractic doctor in clinical and front office procedures.

uired Major Courses

		Credits	Ct. Hrs.
101	Chiropractic Modalities I	3	60
102	Chiropractic Modalities II	3	60
100	Medical Terminology I	1	15
100	Radiographic Techniques I	3	60
105	Radiographic Positioning	3	60
		13	255

itional Required Courses

103	Bookkeeping	3	45
297	Cooperative Education	6	270
101	Typewriting I	4	75
115	Business Machines	1	25
120	Filing and Records Control	2	30
206	Insurance Methods and Claims	3	45
	English Elective	3	45
		22	535
	Total Required Hours	35	790

Medical Secretarial (D)
Certificate

		Credits	Ct. Hrs.
ACC 103	Bookkeeping	3	45
ACC 105	Payroll Procedures	3	45
SEC 115	Business Machines	1	15
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 & Records Control	2	30
HOC 100	Medical Terminology	1	15
SEC 200	Office Procedures		
	or		
BUS 297	Cooperative Education	3-6	135-270
SEC 206	Insurance Methods and Claims	3	45
SEC 131	Introduction to Word Processing	3	45
SEC 215	Mag Card II Typewriting		
	or		
SEC 217	CRT Typing	3	45
SEC 230	Machine Transcription	4	60
	Total Required Hours	40-43	720-855

Stenographic (D,F,R)
Certificate

		Credits	Ct. Hrs.
	English Elective	3	45
BUS 136	Business Communications Applications	3	45
SEC 101	Typewriting I	4	75
SEC 102	Typewriting II	4	75
SEC 111	Alphabetic Shorthand I		
	or		
SEC 121	Gregg Shorthand I	5	75
SEC 112	Alpha Shorthand II		
	or		
SEC 122	Gregg Shorthand II	4	60
SEC 115	Business Machines	1	15
SEC 120	Filing & Records Control	2	30
SEC 223	Shorthand Speedbuilding and Transcription	4	60
BUS 297	Cooperative Education	3-6	135-270
	Total Required Hours	33-36	615-750

Word Processing (D,F,R)
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.

		Credits	Ct. Hrs.
SEC 133	Word Processing Communications I	3	45
SEC 102	Typewriting II	4	75
SEC 131	Introduction to Word Processing	3	45
SEC 215	Mag Card II Typewriting		
	or		
SEC 217	CRT Typing	3	45
SEC 230	Machine Transcription	4	60
	Total Required Hours	17	270

Airframe Power Plant (D,F)

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 fifteen (15) semester hours, the student may receive an associate degree from Community College of Denver. (Opportunity School credits are quarter hours. When application is made for the Associate Degree, these quarter hours will be computed as semester hours.) Other FAA certificates may be substituted for Emily Griffith Opportunity School courses.

Anthropology (D,F,R)

The College offers an Associate of Arts degree with an emphasis in anthropology. A student who is interested in pursuing a baccalaureate degree should consult a CCD advisor, the Transfer Guide, and the current catalog of the four year institution.

Architectural Technology (F)

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**

		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
	Total Required Hours	60	1200

General Education Courses

MAT 114	Gen Math for College Students	3	45
PHY 100	Basic Physics	3	45
SOS 115	Intro to Soc. Sci	3	45
COM 117	Career Comm.	3	45
		12	180
	Total Required Hours	72	1380

*Equivalent COE 296 and ATE 297 may be substituted for any of the modules with permission of the instructor, not to exceed six (6) credit hours.

Art (D,F,R)

The College offers an Associate of Arts degree with an emphasis in art. A student who is interested in pursuing a baccalaureate degree should consult a CCD advisor, the Transfer Guide, and the current catalog of the four year institution.

Audiovisual Technology (R)

Associate of Applied Science Degree

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

Required Major Courses

		Credits	C
AVT 105	Audiovisual Equipment Utilization	3	
AVT 108	Introduction to Audiovisual Photography	5	
AVT 109	Graphic Techniques for Media Productions	4	
AVT 125	AV Projection Equipment Maintenance	5	
AVT 180	AV Audio Production	5	
AVT 202	Slide/Tape Production I	4	
AVT 211	AV Television Production I	6	
AVT	Elective Courses	16	293
General Education Courses		12	
	Total Required Hours	60	1074-

Elective Courses

AVT 100	Introduction to Educational Media	2	
AVT 113	Script Visualization	1	
AVT 115	Basic Video Production	1	
AVT 201	Intermediate AV Photography	5	
AVT 212	AV Television Production II	4	
AVT 219	Slide Duplication	1	
AVT 231	Audiovisual Design I	4	
AVT 232	Audiovisual Design II	4	
*AVT 297	Cooperative Education	2-6	90
AVT 299	Independent Study	2-6	45

*Students who are not presently employed in the professior be required to take a minimum of six credit hours of AVT 297, operative Education before they can receive their Associate gree.

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

Auto Body Painting (F)

Nine Month Certificate

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

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

Required Major Courses

		Credits	C
ABP 100	Orientation on Policy and Auto Body Painting Safety Sanding	3	
ABP 102	Priming	3	
ABP 103	Painting Acrylic Lacquer	3	
ABP 104	Spot Painting with Acrylic Lacquer	3	
ABP 105	Painting with Acrylic Enamel and Enamel	3	
ABP 111	General Refinishing I	3	
ABP 112	General Refinishing II	3	
ABP 113	General Refinishing III	3	
ABP 114	General Refinishing IV	3	
ABP 115	General Refinishing V	3	
	Total Required Hours	30	

Auto Body Service (F)

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

		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 IV	3	60
ABS 215	General Auto Body Repair V	3	60
		60	1200

General Education Courses

SOS 115	Intro to Soc. Sci	3	45
MAT 114	Gen Math for College Students	3	45
PHY 100	Basic Physics	3	45
COM 117	Career Comm.	3	45
		12	180
	Total Required Hours	72	1380

Equivalent COE 296 and ABS 297 may be substituted for ABS and/or ABS 215

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

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

Required Major Courses

		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 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

MAT 114	Gen Math for College Students	3	45
PHY 100	Basic Physics	3	45
SOS 115	Intro to Soc Sci	3	45
COM 117	Career Comm	3	45
		12	180
	Total Required Hours	72	1380

Fiberglass Repair Six Week Certificate

		Credits	Ct. Hrs.
ABS 130	Fiberglass Repair	3	60
ABS 135	Fiberglass Panel Replacement	3	60

Radiator Repair Six Week Certificate

ABS 136	Cleaning, Leak Testing, Soldering (Radiator)	3	60
ABS 137	Repair, Recore (Radiator)	3	60

Frame Repair Three Week Certificate

Prerequisites: ABS 100, 109 and 120

ABS 204	Frame Repair	3	60

Auto Body Repair and Refinishing Option (F)

Required Major Courses

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

MAT 114	Gen Math for College Students	3	45
PHY 100	Basic Physics	3	45
SOS 115	Intro to Soc. Science	3	45
COM 117	Career Communications	3	45
		12	180
	Total Required Hours	72	1380

Automotive Mechanics (F,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

		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 145	GM Computer Command Control	2	30
AUM 146	GM Light Duty Diesel	1	20
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	6
AUM 217	Air Conditioning, Theory, Service, & Safety	3	6
AUM 218	General Service Repair, or one of the following: Cooperative Education or Independent Study	3	6
		60	119
PHY 100	Basic Physics	3	4
MAT 114	Gen Math for College Students	3	4
SOS 115	Introduction to Social Science	3	4
COM 117	Career Communication I	3	4
	Total Required Hours	72	137

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

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

		Credits	Ct. H
AUM 100	Principles of Engine Operation, Basic Electricity and Ignition Systems	6	12
AUM 106	Starting and Charging Systems	3	6
AUM 107	Fuel Systems	3	6
AUM 110	Electronic Testing and Emission Control	3	6

Check with advisor for prerequisites.

Drum and Disc Brakes (F,R)
Six-Week Certificate

		Credits	Ct. H
AUM 115	Drum Brake Systems	3	6
AUM 116	Disc Brake Systems	3	6

Check with advisor for prerequisites.

Automatic Transmissions (F,R)
Nine-Week Certificate

		Credits	Ct. H
AUM 207	Automatic Transmissions, Theory and Maintenance	3	6
AUM 208	Automatic Transmission, Rebuild	6	12

Wheel Alignment and Suspensions (F,R)
Six-Week Certificate

		Credits	Ct. H
AUM 117	Wheel Alignment	3	6
AUM 118	Wheel Balance and Suspension	3	6

Check with advisor for prerequisites.

Air Conditioning (F,R)
Three-Week Certificate

AUM 217	Air Conditioning Theory, Service and Safety	3	6

iology (D,F,R)

The College offers an Associate of Science degree with an em-
ıasis in biology. A student who is interested in pursuing a
ıccalaureate degree should consult a CCD advisor, the Transfer
ıide, and the current catalog of the four year institution.

lack Studies (D)

The College offers an Associate of Arts degree with an emphasis
black studies. A student who is interested in pursuing a bac-
laureate degree should consult a CCD advisor, the Transfer
ıide, and the current catalog of the four year institution.

ricklaying (R)

ertificate or Associate of Applied Science Degree

This program provides you with job entry skills in brick and block
ing for residential construction fireplace design and construction
d teaches flagstone, moss rock and advanced masonry tech-
ques.

quired Major Courses

		Credits	Ct. Hrs.
RI 100	Safety, History, Glossary, Use of Mason Tools and Related Equipment Used by a Brickmason	6	120
RI 105	Safety Codes Used in Masonry, State of Colorado	1	20
RI 106	Spreading Mortar, Laying to Line, Use of Masonry Tools, Basic Leads, Masonry Walls	6	120
RI 107	Bonded Brick Leads, Joints, Striking and Brushing	2	40
RI 109	Masonry Piers, Pilasters, Solid and Hollow Masonry, Bonds, Floors, and Masonry Walls	6	120
RI 110	Laying to the Line, Headers, Soldiers, Sailors, Rollock, Miter Corners	6	120
RI 115	Through-the-Wall Units, Laying to the Line	2	40
RI 116	Masonry Codes	1	20
RI 200	Mortar Types, Masonry Cement and Fireplace Basics	6	120
RI 206	Fireplace Construction and Heatilator Construction	6	120
RI 207	Chimney Construction, Flashing and Cooping	2	40
RI 208	Masonry Materials	1	20
RI 210	Fireplace Codes, Flagstone and Moss Rock	6	120
RI 215	Reinforced Masonry and Over-the-Wall Construction	5	100
RI 217	Mason Tender	3	60
RI 218	Building Codes	1	20
		60	1200

litional Required Courses		
ieral Education Courses	12	180
tives	3	45
Total Required Hours	75	1425

ertificate Requirements
ote: Additional courses are listed and described in the Course
cription section of this catalog.

siness (D,F,R)

ıe College offers an Associate of Arts degree with an emphasis
usiness. A student who is interested in pursuing a baccalaureate
ee should consult a CCD advisor, the Transfer Guide, and the
ent catalog of the four year institution.

Business Machine Technology (D)

Certificate

This program teaches the student to maintain, troubleshoot, 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

		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

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

		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.

Chemistry (D,F,R)

The College offers an Associate of Science degree with an emphasis in chemistry. A student who is interested in pursuing a baccalaureate degree should consult a CCD advisor, the Transfer Guide, and the current catalog of the four year institution.

Chicano Studies (D)

The College offers an Associate of Arts degree with an emphasis in Chicano studies. A student who is interested in pursuing a baccalaureate degree should consult a CCD advisor, the Transfer Guide, and the current catalog of the four year institution.

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

		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	4	68
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
		45	850

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	74	1375

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

Commercial Art (D)

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

		Credits	Ct. Hrs.
COA 100	Lettering/Typographic Design and Career Survey	5	100
COA 105	Advertising Typography and Layout	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	10
ART 101	Basic Design I	3	9
ART 102	Basic Design II	3	9
ART 111	Basic Drawing I	3	9
ART 112	Basic Drawing II	3	9
PHO 100	Fundamentals of Photography	4	8
PHO 100L	Fundamentals of Photography Lab	1	2
	or		
GRA 120	Process Camera and Halftones	6	12

Additional Major Electives

COA 208	Illustration	5	10
COA 209	Three Dimensional Advertising	5	10
COA 297	Cooperative Education	3-5	60-10
ART 271	Printmaking	3	9
General Education Courses		12	18
	Total Required Hours	69-70	1440-146

Communications (D,F,R)

The College offers an Associate of Arts degree with an emphas in communications. A student who is interested in pursuing a ba calaureate degree should consult a CCD advisor, the Transf Guide, and the current catalog of the four year institution.

Computer Programming for Business (D,F,R)

Certificate or Associate of Applied Science Degree

The objective of this program is to prepare the student as a entry-level programmer, programmer trainee, or junior programme Upon completion of this degree program, the student will ha completed a minimum of 50 programs ranging from simple busine programs to the design and completion of a complex business sy tem.

Required Major Courses

		Credits	Ct. H
CPB 100*	Introduction to Computers	4	
CPB 104*	Programming Logic	3	
CPB 106*	COBOL	4	
CPB 108*	BASIC	3	
CPB 205*	Basic Assembler Language (BAL)	4	
CPB 206*	Advanced COBOL	4	
CPB 220*	Systems Analysis	5	
MAT 225*	Introduction to Statistics		
	or		
CPB 225*	Business Statistical Programming	3	
CPB Electives (Select 6 credits from below. One course must be selected from the first three courses)		6	
		36	5

CPB 200	Operating Systems & JCL (3)
CPB 208	Advanced Basic (3)
CPB 209	FORTRAN (3)
CPB 290a	Special Topics - RPG (1)
CPB 290b	Special Topics - Data Base Concepts (1)
CPB 290c	Special Topics - Data Files for Microcomputer (1)
CPB 290d	Special Topics - Pascal (1)
CPB 290e	Special Topics - Electronic Spreadsheet (1)
CPB 290f	Special Topics - Telecommunications (1)
CPB 290g	Special Topics - Data Structures in Pascal (1)
CPB 290h	Special Topics - Advanced
BUS 297	Cooperative Education (3)

Additional Required Courses

		Credits	Ct. Hrs.
ACC 111*	Accounting Principles I	5	75
ACC 112	Accounting Principles II or	5	75
ACC 116*	Corporate Accounting (2) and		
ACC 221*	Cost Accounting (3)		
MAN 105*	Introduction to Business	3	45
ENG 111	English Composition	3	45
BUS 136*	Business Communications Applications or		
ENG 112	English Composition or		
ENG 231	Technical Writing	3	45
		19	285

General Education Courses

SPE 111	Introduction to Speech	3	45
MAT 111	Introduction to Algebra	3	45
ECO 202	Principles of Econ-Micro	3	45
	Take 1 course from any 2 of the following areas:		
	Arts & Humanities		
	Science	3	45
		12	180
	Total Required Hours	67	1005

*These courses must be completed to obtain a Certificate in Computer Programming for business.

Note: Elective options must be approved by advisor.

Only grades of C or better in courses with a CPB prefix will be counted toward a degree or certificate.

CPB 095 Computer Programming Lab
Lab is required for students taking CPB courses. One (1) credit hour per course per semester.

Computer Programming for the Severely Handicapped (D)

Certificate

This program is specifically designed to train selected severely handicapped persons for entry level positions as computer programmers, emphasizing the COBOL language.

Required Major Courses:

		Credits	Ct. Hrs.
CPB 100	Introduction to Computers	4	60
CPB 104	Programming Logic	3	45
CPB 106	COBOL	4	60
CPB 206	Advanced COBOL	4	60
CPB 200	Operating Systems and JCL	3	45
CPB 220	System Analysis and Design	5	75
CSC 218	Advanced Programming Techniques	3	45
BUS 297	Cooperative Education	3-6	135-270
		29-32	525-660

Additional Required Courses

MAN 105	Introduction to Business	3	45
ACC 103	Bookkeeping	3	45
BUS 136	Business Communications Applications	3	45
	Elective	3	45
		12	180
	Total Required Hours	41-44	705-840

Note: CPB 095 Computer Lab is required as a co-requisite for CPB 100, 106, 206, 215, and CSC 218

Computer Science (D,R)

The College offers an Associate of Science degree with an emphasis in computer science. A student who is interested in pursuing a baccalaureate degree should consult a CCD advisor, the Transfer Guide, and the current catalog of the four year institution.

Consumer Electronics Technology (F)

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

		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

MAT 114	Gen Math for College Students	3	45
PHY 100	Basic Physics	3	45
SOS 115	Intro to Soc. Sci	3	45
COM 117	Career Comm.	3	45
		75	1440

* Equivalent COE 296 and TCE 297 may be used as an elective not to exceed 12 credit hours.

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

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

		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	3	68
CRJ 201	Introduction to Criminal Investigation	4	60
CRJ 202	Advanced Investigation	3	68
CRJ 210	Community Relations	3	45
CRJ 220	Traffic Enforcement	3	68
CRJ 297	Cooperative Education	1-4	45-180
		27-30	504-639
General Education Courses		12	180
Additional credits in major courses are required			
	Total Required Hours	60	

Note: Additional courses are listed and described in the Course Catalog section of this catalog. Courses are offered on all campuses.

Certificate—Corrections

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

		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	45
CRJ 128	Correctional Services in the Community	3	45
CRJ 149	Reports & Records	3	45
CRJ 201	Intro. to Criminal Investigation	4	60
	Total Required Hours	29	435

Certificate—Industrial Security

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

		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	3	68
CRJ 149	Reports & Records	3	45
CRJ 201	Intro. to Criminal Investigations	4	60
CRJ 227	Emergency Techniques for Police	3	45
CRJ 155	Physical Security	3	45
CRJ 156	Loss Prevention	3	45
	Total Required Hours	29	458

Certificate—Investigations

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

		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 Criminal Investigations	4	60
CRJ 202	Advanced Investigations	3	68
CRJ 205	Interview, Interrogation and Confession	3	45
	Total Required Hours	29	458

Dental Assisting (F)

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

		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	Introduction to Human Biology	3	45
BIO 110	Dimensions of Human Living	3	45
DIT 155	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.

Diagnostic Radiologic Technology (D) (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.

This program begins in the fall term of each academic year. It is twenty-four months in duration.

Application and a health occupations assessment test must be completed prior to entrance into the program.

Admission information may be obtained from Student Advising and/or the Division of Health and Human Services. Enrollment is limited to thirty (30) students.

equired Major Courses

		Credits	Ct. Hrs.
DC 106	Basic Patient Care	2	30
AT 100	Radiographic Technique I	3	60
AT 105	Radiographic Positioning I	3	60
AT 106	Clinical Laboratory Experience I	3	120
AT 108	Radiographic Positioning II	3	60
AT 109	Physics of Diagnostic Radiology	3	45
AT 110	Clinical Practicum I	5	240
AT 115	Radiographic Positioning III	3	60
AT 116	Clinical Practicum II	5	240
AT 200	Survey of Medical and Surgical Diseases	2	30
AT 205	Special Procedures & Techniques	3	45
AT 206	Clinical Practicum III	11	480
AT 207	Radiographic Technique II	3	45
AT 208	Clinical Practicum IV	12	540
AT 209	Review Concepts	3	45
AT 210	Clinical Pract. V	12	540
		76	2640

ditional Required Courses

O 109	Human Biology for Health Sciences	4	45
Y 115	Intro to Medical Physics	3	45
AT 130	Contemp. Coll. Math.	3	45
neral Education Courses			
NG 111 & PSY 115)		6	90
		16	225
	Total Required Hours	92	2865

esel Power Mechanics (R)

rtificate or Associate of Applied Science Degree

his program is designed to train individuals for entry into the sel power mechanics of the heavy duty mechanic field. In addi-, courses are offered for job refreshing and upgrading.

quired Major Courses

		Credits	Ct. Hrs.
PE 100	Safety, Tools, Bolts, Bearings, Gaskets and Seals	3	60
PE 105	Four-Cycle Engine Overhaul	6	120
PE 106	Two-Cycle Engine Overhaul	6	120
PE 107	Clutches and Manual Transmissions	9	180
PE 108	Power-Shift Transmissions	6	120
PE 200	Differentials	3	60
PE 201	Chassis Components and Suspension Systems	6	120
PE 202	Steering Systems	6	120
PE 205	Brake Systems (Air/Hydraulic)	3	60
PE 208	Electrical Troubleshooting	3	60
PE 210	Practical Shop Experience	9	180
		60	1200

litional Required Courses

neral Education Courses		12	180
roved Elective		3	45
		15	225
	Total Required Hours	75	1425

rtificate Requirements

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

Dietetic Technology (F)

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

		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 103	Bookkeeping	3	45
		3	45
General Education Courses		12	180
	Total Required Hours	66	1328

Dietetic Technology (F)

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

		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

Drafting

Certificate or Associate of Applied Science Degree

The Drafting program includes four options:

a. Drafting for Civil/Topographic Mapping (D,R)
b. Drafting for Construction (R)
c. Drafting for Industry (D,R)
d. Drafting for Petro/Chemical Piping Processes (D)

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

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

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

		Credits	Ct. Hrs.
*DRI 105	Intro. to Drafting	6	120
*DRI 106	Basic Descrip. Geom. and Aux. View Project	3	60
*DRI 107	Sections and Dimension Practices	6	120
*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 203	Air Photo Interpretation	3	105
DRM 205	Advanced Map Construction Techniques	6	120
DRM 210	Civil Topographic Mapping Technical Project	12	240
		60	1245

General Education Courses

MAT 114	General Mathematics for College Students	5	75
PHY 101	Fundamentals of Physics I	4	90
ENG 231	Technical Writing	3	45
	Arts & Humanities	3	45
	Total Required Hours	75	1500

*Certificate Requirements

Drafting for Construction (R) Option B

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

		Credits	Ct. Hrs.
*DRI 105	Intro. to Drafting	6	120
*DRI 106	Basic Descrip. Geom. and Aux. View Proj.	3	60
*DRI 107	Sections & Dimensioning Practices	6	120
*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 Arch.-Struct. Plans & Details	6	1
DRI 206	Indus. Piping & Util. Consid.	3	
DRC 207	Structural Design & Drafting	5	1
DRC 208	Practical Application of Construction Drafting	10	2
		60	12

General Education Courses

MAT 114	Gen. Mathematics for College Students	5	
PHY 101	Fundamentals of Physics I	4	
ENG 231	Technical Writing	3	
	Arts & Humanities	3	
	Total Required Hours	75	14

*Certificate Requirements

Drafting for Industry (D,R) Option C

Certificate or Associate of Applied Science Degree

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

Required Major Courses

		Credits	Ct.
*DRI 105	Intro. to Drafting	6	
*DRI 106	Basic Descrip. Geom and Aux. View Proj.	3	
*DRI 107	Sections and Dimension Practices	6	
*DRI 109	Intersect. and Devel.	3	
*DRI 110	Intro. to Assem. and Weld. Draw.	3	
*DRI 115	Perspective Drawing	3	
*DRI 116	Mechanical Assembly and Detail Proj.	6	
DRI 200	Industrial Plant Devel.	6	
DRI 205	Intro. to Archit-Struct. Plans and Det	6	
DRI 206	Indust. Piping and Utility. Consid.	3	
DRI 207	Large Mech. Equip	9	
DRI 208	Material Handling and Convey. Meth.	6	
		60	1

General Education Courses

MAT 114	Gen. Mathematics for College Students	5	
PHY 101	Fundamentals of Physics I	4	
ENG 231	Technical Writing	3	
	Arts & Humanities	3	
	Total Required Hours	75	1

*Certificate Requirements

rafting for Petro/Chemical Piping rocesses (D) ption D

ertificate or Associate of Applied Science Degree

The Petro/Chemical Pipe Process Drafting option prepares you job entry positions on drafting and design teams in petro- emical design, engineering and manufacturing firms.

quired Major Courses

		Credits	Ct. Hrs.
RI 105	Intro. to Drafting	6	120
RI 106	Basic Descrip. Geom. and Aux. View Proj.	3	60
RP 107	Drafting and Dimension Pract.	3	60
RI 109	Intersect. and Devel.	3	60
RI 110	Introduction to Piping	6	120
RP 111	Process Piping Drafting I	3	60
RP 112	Process Piping Drafting II	6	120
RP 115	Engineering Problems	3	60
RP 200	Process Piping Design I	8	160
RP 201	Model Making	4	80
RP 202	Welding	3	60
RP 210	Process Piping Design II	9	180
RP 211	Safety & Maintenance	3	60
RP 212	Plumbing	3	60
		63	1260
neral Education Courses		12	180
	Total Required Hours	75	1440

ertificate Requirements

rama

his College offers an Associate of Arts degree with an emphasis drama. A student who is interested in pursuing a baccalaureate gree should consult a CCD advisor, the Transfer Guide, and the rent catalog of the four-year institution.

arly Childhood Education and anagement (D,F,R)

rtificate or Associate of Applied Science Degree

he Early Childhood Education and Management Program is de- ed to meet the vocational training needs for personnel involved he care of young children (0-6) and to meet State Social Ser- s licensing requirements.

quired Major Courses

		Credits	Ct. Hrs.
E 100	Intro to Early Childhood Education	3	45
E 101	Child Study and Observation I	6	90
E 105	Supv. Lab Exper.	8	160
E 109	Preschool Seminar for Parents/Students I	1-3	15-45
E 110	Supv. Ed. Internship and Seminar I	6	120
E 115	Classroom Curriculum Development	5	75
E 150	Nutrition for Young Children	2	30
E 206	Child Study and Observation II	3	45
E 210	Supv. Ed. Internship and Seminar II	8	160
E 215	Admin. I—Parent Involvement and Staff Dev.	3	45
E 216	Admin. II—Child Care Business Operation	3	45

gram Electives

program faculty for specific courses that l elective requirements 6 90

Total 54-56 920-950

General Education Requirements

See program faculty for specific courses that fulfill General Education Requirements 12 180

Total Required Hours 66-68 1100-1130

Child Development Associate (F)

Competency Based Curriculum Certificate Program

The Early Childhood Education program is designed around a core curriculum, which can be earned through two approaches: the on-campus approach or the innovative field-based CDA (Child Development Associate) approach.

Required Major Courses

		Credits	Ct. Hrs.
ECE 165	Initial Assessment of the C.D.A.	2	30
ECE 175	Creative Learning Environments	5	75
ECE 176	Physical and Intellectual Dev. of the Child	5	75
ECE 177	Self Concept and Indiv. Strength of the Child	5	75
ECE 178	Children and Adults—Group Management	5	75
ECE 179	Administration I Home—Center Parent Involvement	5	75
ECE 180	Administration II Staff Development	5	75
ECE 185	Child Abuse and Neglect	1-5	15-75
ECE 190	Final Assessment for the C.D.A.	2	30
		39	585

The following courses are required for the Colorado Department of Social Services Director qualifications:

ECE 102	Applied Child Growth and Development	3	45
ECE 216	Child Care Business Operations	3	45
ECE 150	Nutrition For The Young Child	2	30
	Sociology elective	3	45
	Psychology elective	3	45
		53	795

The student must also complete General Education requirements to earn the AAS degree under this option.

Infant Toddler Certificate (F)

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.

		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 and the Young Child	2	30
ECE 195	Infant Stimulation	3	45
DIT 150	Infant Nutrition	1	15

Colorado Department of Social Services Licensing Requirements

To be Group Leader qualified by the State Social Services Department, 12 semester hours in Child Study and Curriculum are required.

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.

Earth Science (R)

The College offers an Associate of Science degree with an emphasis in earth science. A student who is interested in pursuing a baccalaureate degree should consult a CCD advisor, the Transfer Guide, and the current catalog of the four year institution.

Economics (D,F,R)

The College offers an Associate of Arts degree with an emphasis in economics. A student who is interested in pursuing a baccalaureate degree should consult a CCD advisor, the Transfer Guide, and the current catalog of the four year institution.

Education (D)

The College offers an Associate of Arts degree with an emphasis in education. A student who is interested in pursuing a baccalaureate degree should consult a CCD advisor, the Transfer Guide, and the current catalog of the four year institution.

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

		Credits	Ct. Hrs.
*ELF 100	Fundamentals of AC/DC Electricity	9	180
*ELF 105	Solid State Devices and Circuits	6	120
*EIC 105	Electrical Blueprint Reading	3	45
*EIC 115	Electrical Planning	3	45
*EIC 121	Electrical Installations I	3	60
*EIC 122	Electrical Installations II	3	60
*EIC 131	National Electric Code I	3	45
EIC 132	National Electric Code II	3	45
EIC 200	Electrical Calculations	4	60
EIC 201	Transformer Installation and Theory	3	60
EIC 202	AC and DC Machines, Installation and Theory	3	60
EIC 203	Polyphase Rotating Machines and Transformers	3	60
EIC 207	Electrical Control Wiring for Plumbing, Heating, Air-Conditioning	3	60
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	11
Additional Required Courses			
General Education Courses		12	1
Elective		3	
		15	2
	Total Required Hours	76	13

*Certificate Requirements

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

Electronic Digital Technology (R)

Associate of Applied Science Degree

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

Required Major Courses

		Credits	Ct. H
*EDT 110	Fundamentals of AC/DC Circuits for Electronics	9	1
*EDT 120	Solid State Devices & Circuits for Electronics	6	1
*EDT 130	Digital Logic Devices & Circuits for Electronics	9	1
*EDT 140	Operational Amplifiers and A to D Converters for Electronics	6	1
EDT 210	Introduction to Computers	7	1
EDT 220	Computer Troubleshooting	7	1
EDT 230	Interfacing/Computer Peripheral	7	1
EDT 240	Microprocessors	7	1
		58	11
Additional Required Courses			
General Education Courses		12	1
	Total Required Hours	70	13

* Certificate Requirements

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

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

:lectronics Technology (D)

ssociate of Applied Science Degree

This program is designed to prepare individuals with job entry kills in assembly, test, repair and maintenance areas and basic nowledge to advance into more detailed and specific areas with rther training and experience.

equired Major Courses

		Credits	Ct. Hrs.
LT 100	DC Fundamentals	3	60
LT 105	DC Circuits and Magnetism	3	60
LT 106	AC Fundamentals	3	60
LT 107	AC Circuits	3	60
LT 108	Vacuum Tubes	3	60
LT 109	Solid State Fundamentals	3	60
LT 110	Transistor Amplifiers	3	60
LT 115	Transistor Oscillators and FETs	3	60
LT 116	SCR, UJT and Special Devices	3	60
LT 117	IC Operational Amplifiers	3	60
LT 200	Instruments and Measurements	6	120
LT 206	Digital Fundamentals	3	60
LT 207	Digital Circuits	3	60
LT 208	Microprocessor Fundamentals	3	60
LT 205	Communications Systems	3	60
LT 209	Trouble-shooting Techniques	3	60
LT 210	Electronic Fabrication Techniques	6	120
LT 216	Introduction to Electro-Mechanical Devices	3	60
eneral Education Courses		12	180
	Total Required Hours	72	1380

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

ertificate Programs (D)

asic Electronics

		Credits	Ct. Hrs.
LT 100	DC Fundamentals	3	60
LT 105	DC Circuits and Magnetism	3	60
LT 106	AC Fundamentals	3	60
LT 107	AC Circuits	3	60
	Total	12	240

acuum Tube Techniques

		Credits	Ct. Hrs.
LT 108	Vacuum Tube Fundamentals and Circuits	3	60
	Total	3	60

olid State Theory

		Credits	Ct. Hrs.
LT 109	Solid State Fundamentals	3	60
LT 110	Transistor Amplifier	3	60
LT 115	Transistor Oscillators and FETs	3	60
	Total	9	180

ansistors Special Devices

		Credits	Ct. Hrs.
LT 116	SCR, UJT	3	60
LT 117	IC Operational Amplifiers	3	60
	Total	6	120

quipment Servicing

		Credits	Ct. Hrs.
LT 200	Instruments and Measurements	6	120
LT 209	Troubleshooting Techniques	3	60
	Total	9	180

Digital Fundamentals

		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

		Credits	Ct. Hrs.
ELT 210	Electronic Fabrication Techniques	6	120
ELT 216	Introduction to Electro-Devices	3	60
	Total	9	180

Solid State Devices (15 Credit Certificate)

		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)

		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)

		Credits	Ct. Hrs.
ELT 210	Electronic Fabrication Techniques	6	120

Check with advisor for prerequisites

Electronics Technology (F)

Certificate or Associate of Applied Science Degree

This program provides you with job entry skills in assembly, test, repair, and maintenance areas and basic knowlege 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**

		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

MAT 114	Gen Math for College Students	3	45
PHY 100	Basic Physics	3	45
SOS 115	Intro to Soc. Sci.	3	45
COM 117	Career Comm.	3	45
		12	180
	Total Required Hours	72	1380

*COE 296 and ELT 297 may be substituted for any of the ELT modules with permission of the instructor, not to exceed 6 credit hours.

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

Engineering (D,F,R)

The Community College of Denver offers courses which will transfer to many of the four year institutions including Colorado State University, Colorado School of Mines and the University of Colorado. All transfer students are subject to a minimum grade point of 3.0 (B) or better and test scores to compete successfully for admission to these institutions. No single criterion for admission is used, however, the most important single factor is scholastic achievement. Students who are interested in pre-engineering should see a pre-engineering advisor.

English (D,F,R)

The College offers an Associate of Arts degree with an emphasis in English. A student who is interested in pursuing a baccalaureate degree should consult a CCD advisor, the Transfer Guide, and the current catalog of the four year institution.

Environmental and Refrigeration Technology (D)

Certificate or Associate of Applied Science Degree

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

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 o commercial-industrial refrigeration, heating and air conditioning.

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

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

Required Courses

		Credits	Ct. Hr
RAC 100	Safety, Tools, and Piping	3	6
RAC 106	Fund. of Refrigeration	3	6
RAC 110	Fund. of Electricity I	3	6
RAC 115	Fund. of Electricity II	3	6
RAC 116	Fund. of Refrigeration II	3	6
*RAC 200	Refrig. Sys. Comp. & Applications	3	6
*RAC 205	Refrig. Heat Loads & System Development	3	6
*RAC 206	Install. & Startup	3	6
*RAC 207	Troubleshooting & Service	3	6
*RAC 208	Special Refrig. Systems	3	6
*RAC 209	Fund. of Air Conditioning	3	6
*RAC 210	Unitary & Central Station Systems	3	6
*RAC 215	Air Flow Principles	3	6
*RAC 216	Control Systems	3	6
*RAC 217	Troubleshooting & Svc.	3	6
		45	90

Additional Required Courses

(To be taken at any time)

RAC 297	Cooperative Education	3	9
	or		
RAC 299	Independent Study	3	9
General Education Courses		12	18
	Total Required Hours	60	117

Major Appliance Repair Option (D)

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

Required Courses

		Credits	Ct. H
RAC 100	Safety, Tool, and Piping	3	6
RAC 106	Fund. of Refrigeration I	3	6
RAC 111	Fund. of Electricity I	3	6
RAC 112	Fund. of Elect. II	3	6
RAC 116	Fund. of Refrig. II	3	6
*APT 218	Automatic Washers I	3	6
*APT 219	Clothes Dryers I	3	6
*APT 220	Kitchen Equipment I	3	6
*APT 225	Refrig./Freezers I	3	6
*APT 226	Room Air Conditioning	3	6
*APT 227	Automatic Washers II	3	6
*APT 228	Clothes Dryers II	3	6
*APT 229	Kitchen Equipment II	3	6
*APT 230	Refrig./Freezers II	3	6
*APT 235	Automatic Washers III	3	6
		45	90

Additional Required Courses

(To be taken at any time)

RAC 297	Cooperative Education	3	9
	or		
RAC 299	Independent Study	3	9
General Education Courses		12	18
	Total Required Hours	60	117

Environmental Technology (D)

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

		Credits	Ct. Hrs.
VT 100	Introduction to Environment	3	45
VT 105	Environmental Problems	3	45
VT 106	Noise Pollution	3	45
VT 107	Introduction to OSHA-COSH	3	45
VT 108	Solid Waste Pollution	3	45
VT 109	Water Pollution	3	45
VT 200	Environmental Decision Making	4	60
VT 205	Land Use and the Quality of Life	5	83
VT 206	Industrial Hygiene	3	45
VT 207	Atmospheric Pollution	5	83
VT 208	Pollution Control Systems	4	60
VT 209	Data Collection and Evaluation	3	45
VT 217	Map Reading and Photo Interpretation	3	45
VT 297	Cooperative Education	4	180
		50	885
dditional Required Courses			
eneral Education Courses		12	180
	Total Required Hours	62	1065

Fire Science Technology (R)

ssociate of Applied Science Degree
ire Suppression

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

equired Major Courses

		Credits	Ct. Hrs.
ST 100	Fire Protection	3	45
ST 105	Fire Apparatus & Equip	3	45
ST 106	Fire Prevention	3	45
ST 107	Related Codes & Ordinances	3	45
ST 108	Fire Hydraulics	4	68
ST 109	Building Plans & Construction	3	45
ST 121	Hazardous Materials	4	68
ST 141	Automatic Sprinkler Systems	1	15
ST 142	Special Automatic Protection Systems	1	15
ST 143	Portable Fire Extinguishers	1	15
ST 144	Automatic Fire Detection Systems	1	15
ST 145	Firefighter Respiratory Protection	1	15
ST 215	Strategy & Tactics	3	45
ST 216	Rescue Procedures	3	45
ST 217	Operating & Driving Procedures	4	68
ST 218	Fire Service Management	3	45
ST 286	Firefighter Safety	3	45
ST 297	Cooperative Education	4	120
ST 299	Independent Study	3	69
		51	873
dditional Required Courses			
eneral 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

		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

Flexible Automation - Robotics (R)

Associate of Applied Science Degree

Required Major Courses

		Credits	Ct. Hrs.
EDT 110	Fundamentals of AC/DC Circuits for Electronics	9	180
EDT 120	Solid State Devices and Circuits for Electronics	6	120
EDT 130	Digital Logic Devices for Electronics	9	180
EDT 214	Introduction to Microprocessors	3	60
FLP 105	Basic Principles of Hydraulics	3	60
FLP 116	Pump, Overhaul and Testing	3	60
FLP 207	Directional Control Valves	3	60
FLP 215	Pneumatic Logic Controls	3	60
FAR 100	Introduction to Industrial Robotics	2	30
FAR 105	Intermediate Robot Configuration	3	45
FAR 106	Survey of Robot Drive Systems	3	45
FAR 108	Intermediate Robot Control Theory	3	45
FAR 109	Intermediate Robot Programming	3	45
FAR 110	Intermediate Robot Maintenance and Repair	3	45
FAR 205	Internship Applications Engineering	3	45
FAR 206	Internship	3	45
		62	1125

General Education Courses

ENG 231	Technical Writing	3	45
MAT 111	Introductory Algebra	3	45
PSY 111	General Psychology I	3	45
PHY 101	Fundamentals of Physics I	4	90
		13	225
	Total Required Hours	75	1350

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. It also provides 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. The certificate program consists of either one year in the FLP 100s or one year in the FLP 200s. The Associate Degree requires 15 credits of electives—math, English, social science, etc.

Required Major Courses

Hydraulics

		Credits	Ct. Hrs.
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	
FLP 205	Compressors	3	
FLP 206	Primary, Secondary Air Treatment	3	
FLP 207	Directional Control Valves	3	
FLP 208	Cylinders, Motors, Pneumatics	3	
FLP 209	Piping, Hose, Fitting, Pneumatic Systems	3	
FLP 210	Pressure Control Valves, Pneumatic Systems	3	
FLP 215	Pneumatic Logic Controls	3	
FLP 216	Troubleshooting, Print Reading	3	
FLP 217	Basic Fluidics	3	
		60	12

Additional Required Courses

General Education Courses	12	1
Approved elective	3	
	15	2
Total Required Hours	75	14

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

Foreign Automotive Mechanics (D)

Certificate or Associate of Applied Science Degree

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

Required Major Courses

		Credits	Ct. H
*FAM 100	Orientation, Safety, Basic Electrical and Ignition Systems	3	
*FAM 105	Starting and Charging Systems	3	
*FAM 106	Carburetor Service	3	
*FAM 107	Oscilloscopes and Electronic Testing	3	
*FAM 108	Emission Control	3	
*FAM 109	Drum Brake Systems	3	
*FAM 110	Disc Brake Systems	3	
*FAM 115	Wheel Alignment	3	
*FAM 116	Wheel Balance and Suspension	3	
*FAM 117	Steering Gears and Systems	3	
FAM 200	Clutches and Manual Transmissions	3	
FAM 205	Drive Lines and Differentials	3	
FAM 206	Automatic Transmission Theory and Maintenance	3	
FAM 207	Automatic Transmission Rebuilding	6	1
FAM 208	Engine Operation, Diagnosis, Disassembly and Measurement	6	1
FAM 209	Engine Reconditioning and Assembly	3	
FAM 210	Air Conditioning Theory, Service and Safety	3	
FAM 215	General Service Repair or one of the following: inter-department elective or cooperative education	3	
General Education Courses		12	1
	Total Required Hours	72	13

* Certificate Requirements

French (D,R)

The College offers an Associate of Arts degree with an empha in French. A student who is interested in pursuing a baccalaure degree should consult a CCD advisor, the Transfer Guide, and current catalog of the four year institution.

Geography (D,F,R)

The College offers an Associate of Arts degree with an emphasis in geography. A student who is interested in pursuing a baccalaureate degree should consult a CCD advisor, the Transfer Guide, and the current catalog of the four year institution.

German (R)

The College offers an Associate of Arts degree with an emphasis in German. A student who is interested in pursuing a baccalaureate degree should consult a CCD advisor, the Transfer Guide, and the current catalog of the four year institution.

Graphic Arts (D)

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 Major Courses

		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
Additional Required Courses			
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
General Education Courses		12	180
	Total Required Hours	75	1510

*Certificate requirements

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

		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 (D,F,R)

The College offers an Associate of Arts degree with an emphasis in history. A student who is interested in pursuing a baccalaureate degree should consult a CCD advisor, the Transfer Guide, and the current catalog of the four year institution.

Hospitality and Restaurant Administration (D)

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

		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
		38	930

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	65	1360

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

Hospitality and Restaurant Administration (D)

Certificate

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

Required Major Courses

		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.

Humanities (D,F,R)

The College offers an Associate of Arts degree with an emphasis in humanities. A student who is interested in pursuing a baccalaureate degree should consult a CCD advisor, the Transfer Guide, and the current catalog of the four year institution.

Human Services (D)

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

		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	Human Services Practicum III	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

		Credits	Ct. Hrs
ELF 100	Fundamentals of AC/DC Electricity	9	18
ELF 105	Solid State Devices and Circuits	6	12
ELF 106	Digital Logic Devices and Circuits	9	18
ELF 107	Operational Amplifiers and A to D Converters	6	12
IMA 200	Electronic/Pneumatic Instrumentation	9	18
EIC 201	Transformer Installation and Theory	3	6
EIC 202	AC and DC Machines, Installations and Theory	3	6
EIC 203	Polyphase Rotating Machines and Transformers	3	6
IMA 205	Industrial Control Systems	9	18
Technical Elective (advisor's approval required)		3	6
		60	120
Additional Required Courses			
General Education Courses		12	18
Elective		3	4
		15	22
	Total Required Hours	75	142

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

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 job advancement.

Required Major Courses

		Credits	Ct. H
BUS 110	Business Mathematics	3	
BUS 136	Business Communications Applications	3	
INM 211	Production Management I	3	
INM 215	Production Management II	3	
INM 215	Production Management Case Study	2	
MAN 105	Intro. to Business	3	
MAN 116	Principles of Supervision	3	
MAN 206	Business Law	4	
MAN 225	Managerial Finance	3	
		27	4
Additional Required Courses			
ACC 111	Accounting Principles I	5	
ACC 112	Accounting Principles II	5	
CPB 100	Introduction to Computers	4	
MAR 107	Principles of Marketing	3	
MAT 111	Introductory Algebra	3	
MAT 225	Statistics	3	
		23	3
General Education Courses		12	1
	Total Required Hours	62	9

formation Media Technology (D)

anagement Information Systems
ertificate

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

quired Major Courses

		Credits	Ct. Hrs.
S 110	Introduction to Records Management	3	45
S 112	Records Indexing and Coding	2	30
S 114	Forms Design and Control	4	60
C 131	Introduction to Word Processing	3	45
S 297	Cooperative Education	6	270
		18	450

ditional Required Courses

B 100	Introduction to Computers[1]	4	60
C 148	Communications in the Office	1	15
B 103	Data Entry Systems	5	75
C 101	Typewriting	4	75
		14	225
	Total Required Hours	33	690

PB 100 requires CPB 095 Computer Programming Lab with iable contact hours.

terpreter Training Program (F)

ertificate or Associate of Applied Science Degree

This program provides the student with job entry skills in inter-eting for deaf individuals. Upon completion of this two-year rtificate or degree program, the student will be eligible to take the aluation offered by the Registry of Interpreters for the Deaf.

Demonstrated mastery of skills is required when exiting this pro-am.

Students who wish to enter this program must make application he Interpreter Training Office located in the Division of Arts and manities.

Students are enrolled in the program only during the fall of each ar.

n order to satisfy the requirements for a certificate, the following urses must be taken in the listed sequence. This can be done by ending two years of daytime courses or three years of evening urses. To satisfy requirements for the Associate of Applied Sci-ce Degree, students must take an additional 12 hours of core urses as listed in the catalog.

quired Major Courses

		Credits	Ct. Hrs.
L 111	American Sign Language I	5	75
T 105	Ethnography of the Deaf Community	3	45
100	Hearing Process and Pathology	2	30
110	Interpreter Seminar I	3	45
L 112	American Sign Language II	5	75
Y 220	Ecology of Deafness	3	45
106	Fingerspelling	3	45
107	Speechreading and Oral Communication Facilitation	3	45
111	Interpreter Seminar II	2	30
L 211	American Sign Language III	3	45
200	Sign to Voice Interpreting	3	45
205	Voice to Sign Interpreting	3	45
206	Systems of Manually Coded English	2	30
207	Transliterating	3	45
ITP 203	Educational Interpreting	3	45
ITP 210	Practicum Seminar	3	45
ITP 215	Interpreting Practicum	12	360
	Total Required Hours For Certificate	61	1,095
	General Education Courses	12	180
	Total Required For Degree	73	1,275

Journalism (D,F,R)

The College offers an Associate of Arts degree with an emphasis in journalism. A student who is interested in pursuing a baccalaureate degree should consult a CCD advisor, the Transfer Guide, and the current catalog of the four year institution.

Literature (D,F,R)

The College offers an Associate of Arts degree with an emphasis in literature. A student who is interested in pursuing a baccalaureate degree should consult a CCD advisor, the Transfer Guide, and the current catalog of the four year institution.

Machine Drafting Technology (F)

Associate of Applied Science Degree

This program provides the student with job entry skills as a mechanical technician in the mechanical drafting field. Demonstrated mastery of skills is required. Programs are open-entry and open-exit. Student may complete some of the courses, enter the work force, then return at any time either to complete the program for a degree or to upgrade specific skills.

Required Major Courses

		Credits	Ct. Hrs.
MDT 101	Mechanical Drafting Theory & Techniques I	3	60
MDT 102	Mechanical Drafting Theory & Techniques II	3	60
MDT 103	Mechanical Drafting Theory & Techniques III	3	60
MDT 111	Machine Detail & Assembly Drawing I	3	60
MDT 112	Machine Detail & Assembly Drawing II	3	60
MDT 113	Machine Detail & Assembly Drawing III	3	60
MDT 114	Machine Detail & 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
MDT 200	Introduction to Casting	3	60
MDT 206	Introduction to Technical Illustration	3	60
MDT 207	Introduction to Gears & Cams	3	60
MDT 208	Introduction to Pipe Drawing	3	60
MDT 209	Introduction to Welding Drawing	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

MAT 114	General Mathematics for College Students	3	45
PHY 100	Basic Physics	3	45
SOS 115	Introduction to Social Science	3	45
COM 117	Career Communication	3	45
		12	180
	Total Required Hours	72	1380

Note: MDT 200, MDT 206, MDT 207, MDT 208, & MDT 209 may be substituted by the following five classes:

MAS 100	Introduction to Machine Shop	3	60
MAS 101	Engine Lathe Setups and Operations I	3	60
MAS 111	Vertical Mill Setups & Operations	3	60
MAS 115	Horizontal Mill Setups and Operations	3	60
MAS 201	Surface Grinder Setups & Operations	3	60

*Equivalent COE 296 and MDT 297 may be substituted for MDT 205 with permission of the instructor.

Machine Shop (F)

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**

		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

MAT 114	Gen Math for College Students	3	45
PHY 100	Basic Physics	3	45
SOS 115	Intro to Soc Sci.	3	45
COM 117	Career Comm.	3	45
		12	180
	Total Required Hours	72	1380

*COE 296 and MAS 297 may be substituted for any of the MAS modules with permission of the instructor, not to exceed 12 credit hours.

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

Lathe Operator
27 Week Certificate

		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 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

		Credits	Ct.
MAS 105	Blueprint Reading	3	
MAS 111	Vertical Mill Setups and Operations I	3	
MAS 112	Vertical Mill Setups and Operations II	3	
MAS 115	Horizontal Mill Setups and Operations	3	
MAS 116	Milling Machine Setups and Operations	3	
MAS 207	Point-to-Point Numerical Control	3	
MAS 212	Job Shop Machining II	3	

Check with advisor for prerequisites

Management (D,F,R)

Associate of Applied Science Degree

This program provides the student with a broadly based expos to general business functions and fundamental management c cepts. Upon completion, the student should qualify for job er into a wide variety of lower level general business positions wh carry initial functional administrative responsibility. Students ready employed in these areas should acquire background nec sary for personal development directed to job advancement.

Required Major Courses

		Credits	Ct.
MAN 105	Introduction to Business	3	
MAN 215	Prinicples of Management	3	
MAN 116	Principles of Supervision	3	
MAN 206	Business Law	4	
MAN 225	Managerial Finance	3	
MAN 239	Business Policies	3	
MAN 240	Management Information Systems	3	
		22	3

Additional Required Courses

ACC 111	Accounting Principles	5	
ACC 112	Accounting Principles II	5	
Bus 110	Mathematics of Business/Personal Finance	3	
BUS 136	Business Communications Applications	3	
CPB 100	Introduction to Computers	4	
ECO 118	Labor Relations or Elective[1]	3	
ECO 201	Principles of Economics (Macro)	3	
MAR 107	Principles of Marketing	3	
	Elective[1]	3	
		32	4
General Education Courses		12	1
	Total Required Hours	66	9

[1]Electives to be selected with advisor approval

Marketing (D,F,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

		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	Mathematics of Business/Personal Finance	3	45
BUS 136	Business Communications Applications	3	45
BUS 297	Cooperative Education	3-6	135-270
CPB 100	Introduction to Computers	4	60
ECO 201	Principles of Economics (Macro)	3	45
		21-24	405-540

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 115L	Visual Marchandising Lab	1	
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	63-66	1035-1170

[1]Electives to be selected with advisor approval

Mathematics (D,F,R)

The College offers an Associate of Science degree with an emphasis in mathematics. A student who is interested in pursuing a baccalaureate degree should consult a CCD advisor, the Transfer Guide, and the current catalog of the four year institution.

Music (D,F,R)

The College offers an Associate of Arts degree with an emphasis in music. A student who is interested in pursuing a baccalaureate degree should consult a CCD advisor, the Transfer Guide, and the current catalog of the four year institution.

Nuclear Medicine Technology (D)

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.

The AAS program begins in September of each year and continues for 24 months (two calendar years). The Certificate program, which requires previous certification in a health related field or four-year degree, begins in June of each year and continues for fifteen months. Since enrollment is limited, early application is highly recommended.

		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	15
*NMT 206	Radiation Physics for Nuclear Medicine	3	45
*NMT 207	Nuclear Medicine Instrumentation	4	60
*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	Rádiopharmaceutical Preparations	4	68
*NMT 218	Radioassay Procedures	4	68
*RTT 215	Radiation Biology and Pathology	2	30

Additional Required 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 (D)

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.

This program begins in the summer term and continues through the fall and spring semesters for two years. Applications, transcripts, and the Nursing Diagnostic Test must be completed by January 8th of each calendar year for the following June admission. Information may be obtained from the Educational Planning and Advising Center. Enrollment is open to 70 students each year.

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

		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	1115

Additional Required Courses

*BIO 111	Human Anatomy and Physiology I	4	90
*BIO 112	Human Anatomy and Physiology II	4	90
*BIO 115	Intro. to Microbiology	3	75
*BIO 211	Adv. Phys. and Pathogenesis	3	45
*PSY 235	Psych. of Human Growth and Development	3	45
*ENG 111	English Composition	3	45
	Total Required Hours	80	1505

*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. All applicants must take a nursing diagnostic test.

		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
*MAT 111 or Math 130		3	45

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

*Meets General Education Requirement

Nursing — (F)

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.

Applications to the Front Range Community College Nursing Program are only accepted during the month of October. However, non-nursing courses may be started before applications have been accepted. Nursing courses begin each Fall.

After successful completion of the first year (courses indicated by an 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

		Credits	Ct. Hrs
*NUR 116	Medical Terminology	1	15
*NUR 102	Pharmacology I	1	15
*NUR 103	Calculations of Dosages	1	15
*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
Additional General Education Courses (Communications & Mathematics)		6	90
	Total Required Hours	83	1571

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.

Continuing Education for Nurses (D,F,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.

		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 234	Assessing Health Problems of Elderly	2	30
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 241	Arthritis & Related Disorders	2	30
NCE 242	Therapeutic Touch	1	15
NCE 243	Understanding IV Solutions	1	15
NCE 244	Holistic Nursing	2	30
NCE 245	Intermediate EKG Interpretation	2	30
NCE 247	Intro. to Critical Care	2	30
NCE 248	Psychiatric Nursing Update	2	30
NCE 249	Sexual Aspects of Patient Care	2	30
NCE 250	Tubes and Intubation	1	15
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

Paralegal (D)

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 Major Courses

		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 115	Domestic Relations	3	45
PAR 201	Business Organizations	3	45
PAR 202	Commercial Law	3	45
PAR 203	Constitutional Law	3	45
PAR 204	Criminal Law and Procedures	3	45
PAR 205	Probate	3	45
*PAR 210	Paralegal Workshop	6	90
*PAR 219	Paralegal Seminar	3	45
PAR 207	Legal Research Seminar I	3	45
	or		
PAR 208	Legal Research Seminar II	3	45
	or		
PAR 214	Administrative Law	3	45
	or		
PAR 215	Real Estate and Land Use Law	3	45
	or		
PAR 290	Selected Topics in PAR	1-6	15-90
	or		
PAR 297	Cooperative Education	1-6	45-270
General Education Courses		12	180
	Total Required Hours	60-66	1035-1395

*Certificate program consists of those courses marked with an * plus 15 hours of PAR electives.

Petroleum Technology (R)

Associate of Applied Science Degree

This program prepares you for employment in the petroleum industry as a technical assistant in the exploration, production, engineering or land departments of a petroleum company, or other company or government agencies engaged in geologic, geophysical or environmental work.

Required Courses

		Credits	Ct. Hrs.
EAS 111	Physical Geology	4	90
EAS 112	Historical Geology	4	90
EAS 203	Map & Airphoto Interpretation	3	45
EAS 207	Geologic Field Methods	3	45
ENG 111	English Composition: Essay	3	45
ENG 112	English Composition: Research Paper	3	45
	or		
ENG 231	Technical Writing	(3)	(45)
DRI105	Introduction to Drafting	6	120
PET 105	Petroleum Industry	3	45
PET 108	Geophysical Concepts	3	45
	or		
PET 206	Land and Legal Aspects	(3)	(45)
PET 207	Petroleum Drilling	3	45
PET 216	Petroleum Production	3	45
MAT 111*	Introductory Algebra	3	45
MAT 112*	Intermediate Algebra	4	60
MAT 113*	Introduction to Geometry	3	45
CSC 111	Introduction to Computing with Basic	4	90
CPB 095	Computer Programming Laboratory	1	30
General Education Course (from approved list)		3	45
Science Electives, (PET 220, 299, EAS, MAT, PHY, CHE, BIO, CSC, CPB, SUR)		4	60
		60	1035

*MAT 121-122 and 3 hours of science electives may be substituted for MAT 111,112,113.

Philosophy (D,F,R)

The College offers an Associate of Arts degree with an emphasis in philosophy. A student who is interested in pursuing a baccalaureate degree should consult a CCD advisor, the Transfer Guide, and the current catalog of the four year institution.

Physical Education (F,R)

The College offers an Associate of Arts degree with an emphasis in physical education. A student who is interested in pursuing a baccalaureate degree should consult a CCD advisor, the Transfer Guide, and the current catalog of the four year institution.

Photography (D)

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 photojournalism, commercial photography, freelance photography, portrait photography, wedding photography and other similar areas of application.

Required Major Courses

		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 107L	History of Photography Lab	1	20
*PHO 200	Advanced Color	4	80
*PHO 200L	Advanced Color Lab	1	20

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

PHO 205	Documentary Photography	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 three 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	Airbrush I	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 (D,F,R)

The College offers an Associate of Science degree with an emphasis in physics. A student who is interested in pursuing a baccalaureate degree should consult a CCD advisor, the Transfer Guide, and the current catalog of the four year institution.

Plumbing (R)

Certificate or Associate of Applied Science Degree

This program is designed to prepare individuals with basic job entry skills for plumbing. It is also intended for job upgrading in special areas and for preparation of plumbers for city or State journeyman tests.

Required Major Courses

		Credits	Ct. H
*PLU 100	Orientation of Tools, Basic Plumbing Drawings	3	6
*PLU 106	Basic Waste and Vent Layout and Code Requirements	6	12
*PLU 107	Water Piping Methods	3	6
*PLU 108	Gas Pipe, Code and Sizing, and Flue Vents	3	6
*PLU 109	Residential Plumbing	6	12
*PLU 110	Finish and Installation of Plumbing Fixtures	3	6
*PLU 116	Plumbing Repair	3	6
*WEF 120	Welding for Construction and Mechanical Trades	3	6
PLU 205	Blueprint Reading and Layout	3	6
PLU 206	Hot Water Heating — Installation and Maintenance	3	6
PLU 207	Basic Solar Energy	3	6
PLU 208	Advanced Solar Energy	3	6
PLU 210	Commercial Layout and Code Multi-story Projects	3	6
PLU 215	Colorado State Code Requirements	3	4
PLU 216	Uniform Plumbing Code	3	4
PLU 220	City of Denver Code	3	4
PLU 225	Technical Project	6	18
		60	12
General Education Courses		15	22
	Total Required Hours	75	144

*Certificate Requirements

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

Political Science (D,F,R)

The College offers an Associate of Arts degree with an emphas in political science. A student who is interested in pursuing a ba calaureate degree should consult a CCD advisor, the Transf Guide, and the current catalog of the four year institution.

Psychology (D,F,R)

The College offers an Associate of Arts degree with an emphas in psychology. A student who is interested in pursuing a ba calaureate degree should consult a CCD advisor, the Transf Guide, and the current catalog of the four year institution.

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

		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 116	Principles of Supervision	3	45
MAN 206	Business Law	4	60
MAN 215	Principles of Management	3	45
MAN 239	Business Policies	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

Radiation Therapy Technology (D)

Certificate or Associate of Applied Science Degree

This accredited program is designed to provide job entry level skills for a therapy technologist. A radiation therapy technologist is responsible for the accurate delivery of ionizing radiation to those patients with cancer. Candidates for admission to the two year Associate Degree program must have a high school diploma or a G.E.D. equivalent. The Certificate program, a 12 month option, is also available to those students who have obtained an R.T. or an R.N. education. The program is conducted so that the academic portion is offered at the Denver Auraria campus and the clinical "hands on" experience is offered in one of eight participating hospitals. Both the degree and certificate programs begin each September. Applications are accepted from January to March.

Required Major Courses

		Credits	Ct. Hrs.
HOC 106	Basic Patient Care	2	40
HOC 107	Orientation to Clinical Practicum	1	45
HOC 108	Positioning and Techniques	3	45
RTT 125	Radiation Therapy Practicum I	4	180
RAT 200	Survey of Medical and Surgical Diseases	2	30
RTT 150	Radiation Therapy Practicum II	4	180
*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 III	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 IV	11	500
*RTT 218	Radiation Therapy Practicum V	14	644
*RTT 285	Selected Topics in Radiation Therapy	3	45
	Total	69	2415

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	3	45
CHE 101	Fundamentals of Chemistry	4	90
General Education Courses		6	90
		25	465
	Total Required Hours	94	2880

*Certificate Requirements

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

		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	3	45
REE 207	Real Estate Invqestments	3	45
REE 209	Real Estate Closings	3	45
REE 210	Real Estate Tax Factors	3	45
REE 216	Real Estate Listings & Selling Techniques	3	45
REE 217	Real Estate Contracts	3	45
		32	480

Additional Required Courses

ACC 103	Bookkeeping	3	45
BUS 115	Business Mathematics by Machines	4	60
CPB 100	Intro. to Computers	4	60
MAN 105	Intro. to Business	3	45
MAN 215	Principles of Management	3	45
		17	255
General Education Courses		12	180
	Total Required Hours	61	915

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

		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 (F)

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

		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 Therapy	4	90
CHE 101	Fundamentals of Chemistry I	4	90
PHY 101	Fundamentals of Physics I	3	75
MAT 112	Intermediate Algebra	3	45
BIO 115	Microbiology	3	75
PSY 111	General Psychology	3	45
		24	410
	Total Required Hours	72	1995

Science (D,F,R)

The College offers an Associate of Science degree with an emphasis in science. A student who is interested in pursuing a baccalaureate degree should consult a CCD advisor, the Transfer Guide, and the current catalog of the four year institution.

Social Science (D,F,R)

The College offers an Associate of Arts degree with an empha in social science. A student who is interested in pursuing a b calaureate degree should consult a CCD advisor, the Trans Guide, and the current catalog of the four year institution.

Sport Crafts and Specialty Area Mechanics (F)

Certificate or Associate of Applied Science Degree

This program provides you with job entry skills for small engir and the specialty area mechanics field. The program places empl sis on comprehensive small engine repair with second year optic in lawn and garden equipment repair, outboard repair, snowmob repair and motorcycle repair.

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

Required Major Courses

		Credits	Ct.
SCS 100	Basic Engines, Tools, and Safety	3	
SCS 105	Carburetor and Fuel Systems	3	
SCS 106	Ignition Systems	3	
SCS 107	Engine Rebuild and Special Tools	3	
SCS 108	Engine Control Systems	3	
SCS 109	Basic Electrical Theory and Test Equipment	3	
SCS 110	Charging and Starting Systems	3	
SCS 115	Engine Troubleshooting and Tune-Up	3	
SCS 116	General Service I	3	
SCS 117	General Service II	3	
SCS 200	Clutches, Transmissions, and Drive Systems	3	
SCS 205	Basic Hydraulics, Service, and Repair	3	
SCS 206	Brake Systems, Front Axles, and Steering Systems	3	
SCS 207	Hydrostatic Drive, Service, and Repair	3	
SCS 208	Rotary and Reel Mowers, Service and Repair	3	
SCS 209	Roto-tillers and Snow Blowers	3	
SCS 210	Garden Tractors and Rider Mowers	3	
SCS 215	Chainsaws, Edgers, and Power Trimmers	3	
*SCS 216	Customer Service I	3	
*SCS 217	Customer Service II	3	
		60	12
General Education Courses			
MAT 114	Gen Math for College Students	3	
PHY 100	Basic Physics	3	
SOS 115	Intro to Social Science	3	
COM 117	Career Communication	3	
		12	1
	Total Required Hours	72	13

*Equivalent COE 296 and SCS 297 may be substituted for S 216 and/or SCS 217

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

Rental Equipment Service and Repair (9 Week Certificate)

		Credits	Ct. Hrs.
SCS 102	Introduction to Rental Equipment	3	60
SCS 103	Customer Service Operations	3	60
SCS 104	Rental Equipment Troubleshooting & Safety	3	60
COE 296	Cooperative Education Seminar	1	15
SCS 297	Cooperative Education	2	90

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

		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)

		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)

		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
SCS 237	Motorcycle Customer Service I	3	60
SCS 238	Motorcycle Customer Service II	3	60

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

Sociology (D,F,R)

The College offers an Associate of Arts degree with an emphasis in sociology. A student who is interested in pursuing a baccalaureate degree should consult a CCD advisor, the Transfer Guide, and the current catalog of the four year institution.

Solar Energy Technology (R)

Option A
Active Solar—Installation and Maintenance
Certificate or Associate of Applied Science Degree

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

		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 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	3	63
CAR 120	Carpentry for Construction Trades	3	60
SOM 100	Basic Sheet Metal for Solar Energy	3	60
		63	1227
	Additional Required Courses		
	General Education Courses	12	180
	Total Required Hours	75	1407

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

Option B
Passive Solar Design
Certificate or Associate of Applied Science Degree

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 design, and to provide upgrading and refresher courses for people already employed in the field.

Required Major Courses

		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 245	Solar Greenhouse Design	4	68
SOM 242	Passive Solar Retrofit	3	60
SOM 248	Solar Greenhouse Construction	3	60
SOM 260	Computer and Calculator Techniques for Solar Energy	4	68
BRI 120	Bricklaying for Construction Trades	3	60
BRI 126	Solar Walls and Fireplaces	3	60
SOM 249	Earth Shelter Dwellings	4	68
SOM 224	Passive Solar Engineering Technology	4	68
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
SOM 210	Solar Design Technical Project	5	150
		63	1262
Additional Required Courses			
General Education Courses		12	180
	Total Required Hours	75	1442

Additional Courses*

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

Spanish (D,F,R)

The College offers an Associate of Arts degree with an emphasis in Spanish. A student who is interested in pursuing a baccalaureate degree should consult a CCD advisor, the Transfer Guide, and the current catalog of the four year institution.

Speech (D,F,R)

The College offers an Associate of Arts degree with an emphasis in speech. A student who is interested in pursuing a baccalaureate degree should consult a CCD advisor, the Transfer Guide, and the current catalog of the four year institution.

Surgical Technology (D)

Certificate Program

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

Applications and all germane documents and tests need to be completed by mid-February of each calendar year for the program starting the following summer. Admissions information may be obtained from Student Advising or the Health and Human Services Division at Denver Auraria Community College. Enrollment is limited to 25 students.

Required Major Courses

		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 Technology	1	15
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
		37	870

Additional Required Courses

These courses may be taken, when available, any time prior to, concurrently with the Surgical Technology Program. The followi requirements may be taken prior to entering the program:

HOC 100	Medical Terminology
HOC 106	Basic Patient Care
BIO 111	Human Anatomy and Physiology I
BIO 112	Human Anatomy and Physiology II
ENG 111	English Composition

Semester Course Distribution

Summer	Credits	Fall	Cred
HOC 100	1	BIO 112	
HOC 106	2	STE 105	
BIO 111	4	STE 106	
ENG 111	3	STE 107	
STE 100	4	STE 108	
	Total 14		Total

Spring	Credits
STE 109	5
STE 110	7
STE 115	4
STE 119	2
Total	18

Surveying (R)

Associate of Applied Science Degree

The Surveying Program provides theoretical training and fie practice for a surveyor to enter and succeed in employment in t surveying profession. Parts of this program can be taken for u grading within the profession.

Required Major Courses

		Credits	Ct. H
SUR 100	Surveying—Field Work, Elementary	11	2
SUR 101	Surveying Calculations I	4	
SUR 105	Surveying Drafting	8	1
SUR 200	Surveying—Field Work, Advanced	11	2
SUR 201	Surveying Calculations II	3	
SUR 202	Surveying Calculations III	3	
SUR 203	Surveying Calculations IV	3	
SUR 204	Surveying Computer Applications	4	
SUR 205	Photogrammetry for Surveyors	6	1
SUR 206	Legal Aspects of Surveying	3	
		56	10
Additional Required Courses			
MAT 121	College Algebra	4	
MAT 122	Trig. and Functions	3	
General Education Courses		12	1
	Total Required Hours	75	13

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

Technical Illustration (D)

Associate of Applied Science Degree

The Technical Illustration program prepares students for ent level positions as members of drafting and illustration teams in t technical illustration field, working with trade publications, annu reports, presentations, proposals, and product information.

Required Major Courses

		Credits	Ct. Hrs.
DRI 105	Intro. to Drafting	6	120
DRI 106	Basic Descript. Geom. and Aux. View Proj. Prac.	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 201	Airbrush I	6	60
TEI 205	Airbrush II	3	60
ART 101	Basic Design	3	90
ART 111	Basic Drawing	3	90
COA 107	Advert. Design and Rendering	5	100
TEI 207	Special Problems	6	120
ART 112	Basic Drawing	3	90
COA 205	Creative Graphic Design	3	80
		62	1350
General Education Courses		12	180
	Total Required Hours	74	1540

Note: Additional courses for all four drafting options are listed and described in the Course Description section of this catalog.

Traffic Engineering Technology (D)

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

		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 (D)

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

		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 Transportation I	2	30
TTM 212	Economics of Transportation II	2	30
TTM 221	Transportation Regulations I	3	45
TTM 222	Transportation Regulations II	3	45
TTM 231	Transportation Management I	2	30
TTM 232	Transportation Management II	2	30
	Transportation Electives	6-9	90-135
		27-30	405-450
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	60-63	900-945

Travel and Tourism Occupations (D)

Certificate

This program is designed to prepare students for entry level employment in travel agencies, airlines and tourist offices.

Required Major Courses

		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 Horticulture (F)

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

A total of 30 URH credit hours are required for the certificate and 60 URH credit hours plus 12 credit hours in General Education are required for the AAS Degree.

Required Major Courses (All Options)

		Credits	Ct. Hrs.
URH 101	Plant Science I	4	68
URH 125	Soils and Fertilizers	4	75

Greenhouse and Garden Center Management Option (F)

		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 Education	4	150

*Certificate Requirements

Landscape Construction Option (F)

		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 Education	4	150

*Certificate Requirements

Landscape Design Option (F)

		Credits	Ct.
URH 100	Rocky Mountain Horticulture	2	
*URH 105	Intro. to Landscape Construction Drafting	3	
*URH 106	Landscape Plant Materials	4	
URH 107	Plants in the Landscape	2	
URH 115	Plant Usage	4	
*URH 116	Landscape Planning	4	
*URH 145	Sprinkler System Design	3	
URH 206	Interior Landscape Design	3	
URH 210	Landscape Management	3	
URH 212	Garden Management	3	
URH 216	Landscape Grading	3	
URH 226	Horticulture Business Operations	3	
URH 235	Diseases and Pests	4	
URH 236	Basic Landscape Construction	4	
URH 237	Bidding and Estimating	2	
*URH 246	Advanced Landscape Planning	4	
URH 256	Landscape Perspective Drawing	3	
URH 297	Cooperative Education	4	1

*Certificate Requirements

Nursery Management Option (F)

		Credits	Ct.
URH 100	Rocky Mountain Horticulture	2	
URH 102	Plant Science II	4	
*URH 106	Landscape Plant Materials	4	
URH 107	Plants in the Landscape	2	
URH 115	Plant Usage	4	
URH 126	Small Engine and Carburetor Repair for URH	3	
*URH 135	Plant Propagation	4	
URH 146	Sprinkler System Installation	3	
*URH 155	Arboriculture	3	
URH 200	Greenhouse and Field Experience	3	
URH 204	Garden Center Operations	2	
*URH 205	Nursery Management	4	
URH 210	Landscape Management	3	
*URH 225	Horticulture Equipment	4	
*URH 235	Diseases and Pests	4	
URH 236	Basic Landscape Construction	4	
URH 240	Preparation for Commercial Appl. Certification	3	
URH 297	Cooperative Education	4	1

*Certificate Requirements

Turf and Landscape Management Option (F)

		Credits	Ct.
URH 100	Rocky Mountain Horticulture	2	
URH 102	Plant Science II	4	
URH 106	Landscape Plant Materials	4	
URH 115	Plant Usage	4	
URH 126	Small Engine and Carburetor Repair for URH	3	
URH 145	Sprinkler System Design	3	
*URH 146	Sprinkler System Installation	3	
*URH 147	Sprinkler Service and Repair	2	
URH 155	Arboriculture	3	
*URH 210	Landscape Management	3	
URH 212	Garden Management	3	
URH 216	Landscape Grading	3	
*URH 225	Horticulture Equipment	4	
URH 226	Horticulture Business Operations	3	
*URH 235	Diseases and Pests	4	
URH 236	Basic Landscape Construction	4	
URH 237	Bidding and Estimating	2	
*URH 245	Turf Production and Management	4	

*Certificate Requirements

ban Planning Technology (D)

sociate of Applied Science Degree

his program is designed to prepare individuals with job-entry ls for the urban planning field. The program is intended to pre- e the student for private sector and public sector employment. It deal with local, county, regional and state concerns.

quired Major Courses

		Credits	Ct. Hrs.
T 100	Intro. to Planning	3	45
T 105	Data Collecting Techniques and Evaluation I	5	90
T 106	Data Collecting Techniques and Evaluation II	5	90
T 108	Problems in Urban Planning	3	45
T 109	Statistics for Planners	3	45
T 115	Data Processing for Planners	5	90
T 201	Map Reading and Photo Interpretation I	5	90
T 202	Map Reading and Photo Interpretation II	5	90
T 205	Drafting for Urban Planning	6	105
T 206	Planning Law	3	45
T 207	Transportation Planning	3	45
		46	780
ditional Required Courses			
th elective		9	135
neral Education Courses		12	180
	Total Required Hours	67	1095

te: Additional courses are listed and described in the Course De- iption section of this catalog.

ater-Wastewater Technology Program)

sociate of Applied Science Degree

his program is designed to prepare students for entry level em- yment in jobs related to various water-wastewater treatment thods. Main emphasis is placed on water-wastewater plant oper- ons, procedures, problems and costs.

quired Major Courses

		Credits	Ct. Hrs.
VT 100	Introduction to Water-Wastewater	3	45
VT 105	Specific Calculations for W/W	4	60
VT 119	Basic Water Analysis	5	83
VT 120	W/W Equipment Maintenance	5	83
VT 200	Hydraulics for Water-Wastewater	5	83
VT 206	Design Interpretation—W/W Systems	5	83
VT 210	Advanced Water Analysis	5	83
VT 216	Biological & Bacteriological Water Analysis	5	83
VT 217	WWT—Disinfection Techniques	3	45
VT 297	Cooperative Education	4	180
VT Electives		10	150
		54	978
ditional Required Courses			
neral Education Courses		12	180
	Total Required Hours	66	1165

tudents who are not presently employed in the profession will be uired to take a minimum of four credit hours of WWT 297 Coop- tive Education, before they can receive their Associate Degree.

tudents currently employed in the W/W field will be required to mplete four credit hours of additional major courses to satisfy operative Work Experience requirements.

Note: Additional courses are listed and described in the Course scription 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

		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	Hydraulics 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

		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

		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

		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

		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 and 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

		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 111	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.

Welding and Fabrication (D,F,R)

Certificate or Associate of Applied Science Degree

This program provides job entry skills in the welding trade and grading for those in the field who need to acquire more skill.

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

Required Major Courses

		Credits		Ct.
		D	F	R
WEF 100	Oxy-acetylene Safety, Cutting & Welding	3	3	3
WEF 106	Brazing & Special Applications	3	3	
WEF 107	Blueprint Reading & Estimating	3	3	3
WEF 108	SMAW Safe Electrode ID & Surface Padding	3	3	3
WEF 109	SMAW Surface Padding	3		3
WEF 110	SMAW Joints, in Three Positions	3	3	3
WEF 115	Plate Code Test E7018 w/Backing Strip/Plate	3	3	3
WEF 116	Plate Code Test E6010 wo/Backing	3	3	3
WEF 117	Plate Code Test E6010/6011, E7018 wo/ Backing	3		3
WEF 118	Special Applications in Arc Welding	3	3	3
WEF 119	Metallurgy for Welders		3	
WEF 130	GMAW AWS Pipe & Plate		3	
WEF 200	Pipe Joint Design & Fab Pipe Testing 2G	3		3
WEF 201	Pipe Prep & Test A.S.M.E., Sec IX, E6010			3
WEF 203	Pipe Code Testing 2G & 5G Position		3	
WEF 205	Pipe Code Testing 5G Position	3		
WEF 206	Pipe Code Testing 6G Position	3	3	0
WEF 207	GTAW Safety & Welding	3		3
WEF 208	GTAW Welding Alloys & Joining Varied Shapes	3		
WEF 209	GMAW Pipe & Plate Code Testing	3		3
WEF 210	Structural Shapes & Joint Design-Proj Develop	3	3	3
WEF 215	Structural Project Layout & Fab	3	3	0
WEF 216	Structural Fabrication	3		3
WEF 217	Maintenance Welding & Repair	3	3	0
*WEF 221	Ornamental Iron I		3	
*WEF 222	Ornamental Iron II		3	
WEF 226	GTAW Welding Alloys		3	
WEF 227	GTAW Safety & Welding		3	
WEF 228	GTAW & SMAW Pipe Testing		3	3
WEF 235	Pipe Test ASME, Sec. IX, E6010, E7018			3

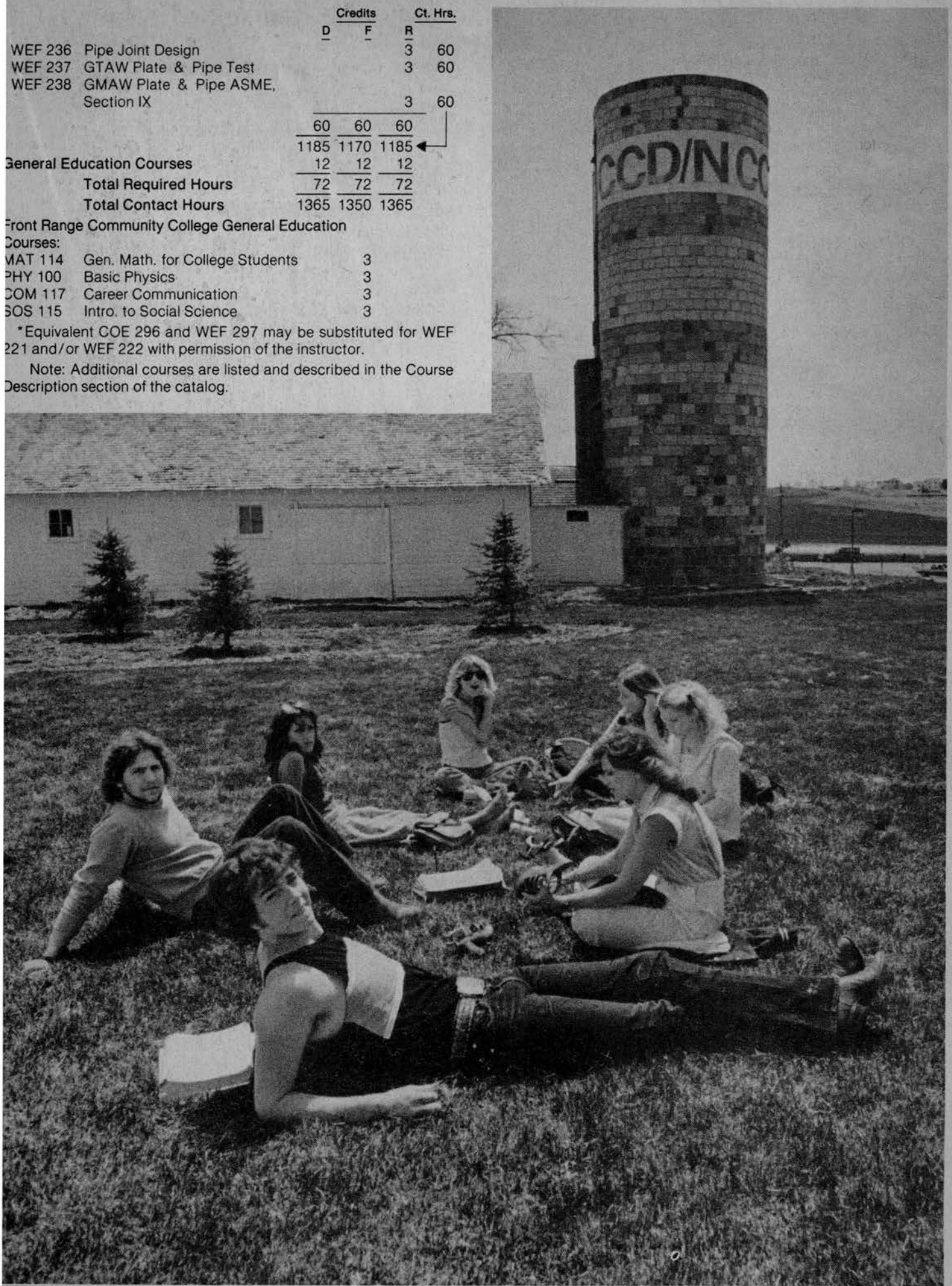
		Credits D	Credits F	Ct. Hrs. R	
WEF 236	Pipe Joint Design			3	60
WEF 237	GTAW Plate & Pipe Test			3	60
WEF 238	GMAW Plate & Pipe ASME, Section IX			3	60
		60	60	60	
		1185	1170	1185	
General Education Courses		12	12	12	
	Total Required Hours	72	72	72	
	Total Contact Hours	1365	1350	1365	

Front Range Community College General Education Courses:

MAT 114	Gen. Math. for College Students	3
PHY 100	Basic Physics	3
COM 117	Career Communication	3
SOS 115	Intro. to Social Science	3

*Equivalent COE 296 and WEF 297 may be substituted for WEF 221 and/or WEF 222 with permission of the instructor.

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



Course Descriptions

Course descriptions are listed in Alphabetical Order by Prefix by Course Number. Please refer to the semester Class Schedules for each location for the list of courses offered each semester.

Course Modifications

The courses listed in the following pages are an indication of college 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.

College Locations

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

D—Denver Auraria Community College
F—Front Range Community College
R—Red Rocks Community College

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 complete before taking the next higher level course or the prerequisite for course may be "permission of instructor."

Auto Body Painting

ABP 100 ORIENTATION ON SHOP POLICY, AUTO PAINTING SAFETY, AND SANDING (F)
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 (F)
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 (F)
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 (F)
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 (F)
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 (F)
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 (F)
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

ABS 100 ORIENTATION, REMOVE AND REPLACE FRONT SHEET METAL, AND BOLT-ON PARTS (F)
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 (F)
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 (F)
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 (F)
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 (F)
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 (F)
3 Credit Hours
Prepare a damaged surface to be filled and mix the material to manufacturer's specification, apply and finish filler. The knowledge will be evidenced by demonstration and scoring 90 percent on the unit test.
60 Contact Hours

ABS 117 PULL ROD AND PRY BAR REPAIRS (F)
3 Credit Hours
Demonstrate use of dent pullers, pry bars, and pull rods to repair small dents and creases on double panels and hard-to-get areas, and metal finish or fill with body filler. The knowledge will be evidenced by demonstration and scoring 90 percent on the unit test.
60 Contact Hours

ABS 118 MINOR DENT REPAIR (F)
3 Credit Hours
Repair a small area of damage by using hammer and dolly, pry bars, pull rods, dent pullers, using shrinking procedures and either metal finish or use of body filler. The knowledge will be evidenced by demonstration and scoring 90 percent on the unit test.
60 Contact Hours

ABS 119 MINOR DENT REPAIR (F)
3 Credit Hours
Repair damaged areas by cutting out and patch welding in new metal, bumping out dents with hammer and dolly, using pry bars, pull rods, dent pullers and the use of all shrinking procedures and finish area with a body filler. The knowledge will be evidenced by demonstration and scoring 90 percent on the unit test.
60 Contact Hours

ABS 120 BODY ALIGNMENT (F)
3 Credit Hours
Identify damaged area and align body using hydraulic jacks, tram gauge, alignment equipment, read and use measuring devices. The knowledge will be evidenced by demonstration and scoring 90 percent on the unit test.
60 Contact Hours

ABS 130 FIBERGLASS REPAIR (F)
3 Credit Hours
Identify types of materials and equipment used for fiberglass repair and also demonstrate such repairs on fiberglass panels. The knowledge will be evidenced by demonstration and scoring 90 percent on the unit test.
60 Contact Hours

ABS 135 FIBERGLASS PANEL REPLACEMENT (F)
3 Credit Hours
Identify different panels or sections that are used and demonstrate how to reinforce spliced areas for strength and safety, select the tools and material to replace or section a panel. The knowledge will be evidenced by demonstration and scoring 90 percent on the unit test.
60 Contact Hours

ABS 136 CLEANING, LEAK TESTING, SOLDERING RADIATORS (F)
3 Credit Hours
Demonstrate safety factors of working with overheated radiators and the caustics used in cleaning a radiator for repair. 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 its repair. The knowledge will be evidenced by demonstration and scoring 90 percent on the unit test.
60 Contact Hours

ABS 137 REPAIR, RECORE (RADIATOR) (F)
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 (F)
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 (F)
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 (F)
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

ABS 297 COOPERATIVE EDUCATION (F)
Please refer to the description of Cooperative Education in this catalog on page 22.

Accounting

ACC 103 BOOKKEEPING (D,F,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 (D,F,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 (D,F,R,AEC)
3 Credit Hours
Prerequisites: ACC 103 or ACC 111
Includes a study of various payroll systems and related laws. Practice in pr aration of payrolls, review and reinforcement of payables and receivables, a an introduction to one-write systems.
45 Contact Hours

ACC 106 INTRODUCTION TO BEGINNING ACCOUNTING (D,F,R,AE
3 Credit Hours
An introduction to beginning accounting for those students seeking ba background or preparation for ACC 111 and/or ACC 113. A study of the sic elements of the accounting cycle through statement preparation. Inclu are procedures for cash control, receivables and payables, payroll prepa tion, recognition of accrued revenues and expenses, and other fundamer areas of accounting. Completion of this course does not fulfill the requ ments of ACC 111.
45 Contact Hours

ACC 111 ACCOUNTING PRINCIPLES I (D,F,R,AEC)
5 Credit Hours
An introductory study of accounting principles to acquaint the student w the theory and logic that underlie accounting procedures. Course content cludes the accounting cycle, periodic reporting, notes, inventory, systems a controls and plant assets. Emphasis on theory.
75 Contact Hours

ACC 112 ACCOUNTING PRINCIPLES II (D,F,R,AEC)
5 Credit Hours
Prerequisite: ACC 111
A continuation of Accounting Principles I with emphasis on partnership a corporation accounting, department and branch accounting, introduction cost systems, management reports, and special analysis.
75 Contact Hours

ACC 113 INTRODUCTION TO ACCOUNTING ON THE COMPUTER (D,F,R,AEC)
3 Credit Hours
An introduction to data entry procedures on the computer in accounting plications. The course includes accounting training in both manual and co puter procedures. Phase 1: Completion of a manual practice set for review and/or updating accounting fundamentals. Phase 2: In-class theoretical cussion and introduction to hands-on data entry procedures. Phase Assigned accounting problems which the student is required to run on a co puter culminating in the practical application of the material covered in Pha 1 and 2.
45 Contact Hours

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

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

ACC 131 INDIVIDUAL INCOME TAX (D,F,R,AEC)
3 Credit Hours
Designed to familiarize the student with the most frequently used tax for tax information and procedures. Coverage is limited to individual income preparation as required by the Internal Revenue Service and the Income Division of the Colorado Revenue Department.
45 Contact Hours

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

ACC 133 INCOME TAX SERVICE (R,AEC)
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.
5 Contact Hours

ACC 170 ACCOUNTING SEMINAR (D,F,R,AEC)
Credit Hour
Prerequisite: Instructor approval
Designed to examine contemporary accounting practices and procedures.
5 Contact Hours

ACC 211 INTERMEDIATE ACCOUNTING I (D,F,R,AEC)
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.
5 Contact Hours

ACC 212 INTERMEDIATE ACCOUNTING II (D,F,R,AEC)
Credit Hours
Prerequisite: ACC 112 or 221
A continuation of the study of the framework of accounting as begun in Intermediate Accounting I.
5 Contact Hours

ACC 215 ACCOUNTING SYSTEMS (D,F,R,AEC)
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.
5 Contact Hours

ACC 216 GOVERNMENTAL ACCOUNTING (D,F,R,AEC)
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.
5 Contact Hours

ACC 221 COST ACCOUNTING (D,F,R,AEC)
Credit Hours
Prerequisite: ACC 112 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.
5 Contact Hours

ACC 235 BUSINESS TAXATION (D,F,R,AEC)
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.
5 Contact Hours

ACC 250 OIL AND GAS ACCOUNTING (D,F,R,AEC)
Credit Hours
Prerequisite: ACC 112
A study of accounting principles as they relate to the energy industry. This study includes a review of law and practices as they relate to accounting principles and concepts peculiar to the energy industry.
0 Contact Hours

ACC 255 COMPUTERIZED ACCOUNTING (D,F,R,AEC)
Credit Hours
Prerequisite: CPB 100, SEC 105 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.
0 Contact Hours

ACC 290 SPECIAL TOPICS (D)
Please refer to the description of Special Topics in this catalog on page 22.

Anthropology

ANT 105 ETHNOGRAPHY OF THE DEAF COMMUNITY (F)
3 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 (D,F,R,AEC)
3 Credit Hours
Introduces the study of culture as an instrument of adaptation.
45 Contact Hours

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

ANT 119 ANTHROPOLOGY OF RELIGION (D,R,AEC)
3 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 (D,R,AEC)
3 Credit Hours
Studies and evaluates the evolution of cultural concepts and experiences in America.
45 Contact Hours

ANT 201 PHYSICAL ANTHROPOLOGY (F,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 (F,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 (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 AMERICAN (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 ARCHAEOLOGY (R)
3 Credit Hours
An introductory study of methods, techniques and theories of archaeological investigation.
45 Contact Hours

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

ANT 290 SPECIAL TOPICS (D,R,AEC)
Please refer to the description of Special Topics in this catalog on page 00.

ANT 299 INDEPENDENT STUDY (D)
Please refer to the description of Independent Study in this catalog on page 22.

Environmental and Refrigeration Technology (Major Appliance Repair)

APT 218 AUTOMATIC WASHERS I (D)
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 (D)
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 (D)
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 (D)
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 (D)
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 (D)
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 (D)
3 Credit Hours
Prerequisites: RAC 100 series or equivalent experiences
Presents a study of circuits, control devices, diagnostic and repair procedures on various makes of automatic gas clothes dryers.
60 Contact Hours

APT 229 KITCHEN EQUIPMENT II (D)
3 Credit Hours
Prerequisites: RAC 100 series or equivalent experiences
Presents the study and repair of gas and electric ranges and microwave ovens, and trash compactors.
60 Contact Hours

APT 230 REFRIGERATORS/FREEZERS II (D)
3 Credit Hours
Prerequisites: RAC 100 series or equivalent experience
Presents the study and repair of various makes and models of upright refrigerator/freezers and chest freezers.
60 Contact Hours

APT 235 AUTOMATIC WASHERS III (D)
3 Credit Hours
Prerequisites: RAC 100 series or equivalent experiences
Presents troubleshooting and the methods and procedures to adjust, repair or replace the components on Norge, Whirlpool, Speed Queen, Frigidaire and Franklin machines.
60 Contact Hours

APT 290 SPECIAL TOPICS (D)
Please refer to the description of Special Topics in this catalog on page 00.

APT 297 COOPERATIVE EDUCATION (D)
Please refer to the description of Cooperative Education in this catalog page 22.

APT 299 INDEPENDENT STUDY (D)
Please refer to the description of Independent Study in this catalog on pa 22.

Art

ART 101 BASIC DESIGN (D,F,R,AEC)
3 Credit Hours
Fundamentals of form, color, visual perception, principles of composition, ganization and structure introduced with experimentation in both two a three dimensional design.
90 Contact Hours

ART 102 BASIC DESIGN (D,F,R,AEC)
3 Credit Hours
Prerequisites: ART 101 or permission of instructor.
Continuation of ART 101.
90 Contact Hours

ART 111 BASIC DRAWING (D,F,R,AEC)
3 Credit Hours
Freehand drawing covering a selection of subjects, proportion perspecti line, texture, value and composition. Media includes pencil, conte cray charcoal, and ink.
90 Contact Hours

ART 112 BASIC DRAWING (D,F,R,AEC)
3 Credit Hours
Prerequisites: ART 111 or permission of instructor.
Introduction of color into drawing. Drawing in varied and mixed media, e phasizing experimentation. Broad range of size and material stress composition and concept. Introduction to drawing the human figure.
90 Contact Hours

ART 131 BASIC WATERCOLOR (D,F,R)
3 Credit Hours
Transparent and opaque water color painting.
90 Contact Hours

ART 132 BASIC WATERCOLOR (D,F,R)
3 Credit Hours
Prerequisites: ART 131 or permission of instructor.
Continuation of ART 131.
90 Contact Hours

ART 141 OIL AND ACRYLIC PAINTING (D,F,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 (D,F,R)
3 Credit Hours
Prerequisites: ART 141 or permission of instructor
Continuation of ART 141.
90 Contact Hours

ART 151 BASIC SCULPTURE (F,R)
3 Credit Hours
A creative approach to three dimensional design in sculpture, modeling, sembling, and construction in a variety of materials.
90 Contact Hours

ART 152 BASIC SCULPTURE (F,R)
3 Credit Hours
Continuation of ART 151.
90 Contact Hours

ART 161 POTTERY (F,R)
3 Credit Hours
Design and construction of pottery using various handbuilding methods.
90 Contact Hours

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

ɪT 163 POTTERY (R)
Credit Hours
sign and throwing of the basic forms with exploration in glazing techniques.
Contact Hours

ɪT 171 TEXTILE DESIGN AND WEAVING (R)
Credit Hours
oms, weaving and textile design techniques, studio experience in weaving, tik, and other textile design.
Contact Hours

ɪT 172 TEXTILE DESIGN AND WEAVING (R)
Credit Hours
erequisites: ART 171 or permission of instructor
ntinuation of ART 171.
Contact Hours

ɪT 181 BASIC METAL TECHNIQUES IN JEWELRY DESIGN (R)
Credit Hours
nstruction of jewelry designs in precious metals and small casting techues.
Contact Hours

ɪT 182 BASIC CASTING FOR JEWELRY DESIGN (R)
Credit Hours
erequisites: ART 181 or permission of instructor.
ntinuation of ART 181. Centrifugal and vacuum casting of precious metals ng lost-wax techniques, wax working techniques, mold making and wax intion.
Contact Hours

ɪT 190 ART APPRECIATION (D,F,R,AEC)
Credit Hours
tudy of the world's art masterpieces.
Contact Hours

T 191 A SURVEY OF ART MASTERPIECES (D,F,R,AEC)
redit Hours
appreciation and history of the masterpieces of the world from pre-history ɔugh the Renaissance.
Contact Hours

T 192 A SURVEY OF ART MASTERPIECES (D,F,R,AEC)
redit Hours
ontinuation of ART 191, from baroque through modern art.
Contact Hours

T 195 THE ART OF AFRICA AND BLACK AMERICANS (D)
redit Hours
ritical examination of the art of Africa and its relationship to the artistic deɔpment of the United States.
Contact Hours

T 201 SECOND-YEAR BASIC DESIGN (F,R,AEC)
redit Hours
ɔlied techniques of layout and design.
Contact Hours

T 202 SECOND-YEAR BASIC DESIGN (F,R,AEC)
redit Hours
ɪtinuation of ART 201.
Contact Hours

T 211 SECOND-YEAR DRAWING (D,F,R,AEC)
redit Hours
erimentation using a variety of media.
Contact Hours

T 212 SECOND-YEAR DRAWING (D,F,R,AEC)
redit Hours
requisites: ART 211 or permission of instructor
ɪtinuation of ART 211. Advanced concepts seeking more individualized ɪtions.
Contact Hours

T 221 FIGURE DRAWING (D,F,R,AEC)
redit Hours
ginning drawing of the human figure.
Contact Hours

T 222 FIGURE DRAWING (D,F,R,AEC)
redit Hours
ɪtinuation of ART 221.
Contact Hours

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

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

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

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

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

ART 263 CERAMICS DESIGN (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 large 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 and throwing techniques.
90 Contact Hours

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

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

ART 272 PRINTMAKING (D,F,R)
3 Credit Hours
Prerequisite: ART 271
A continuation of ART 271 with emphasis on intaglio, planographs, relief and stencil. Students will work with woodcuts, etchings and seriography with special attention 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 instructor.
Looms, weaving and textile design techniques, studio experience 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 290 SPECIAL TOPICS (D)
Please refer to the description of Special Topics in this catalog on page 22.

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

ART 292 HISTORY OF AMERICAN ART (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 (D)
3 Credit Hours
Prerequisites: ART 111 or ART 101 and 102 or permission of instructor.
Studies art for public spaces. Areas of application include both painting and sculpture for public buildings as well as design or community space. The emphasis is on environmental needs. (Entry-level skills: a fundamental knowledge of the principles of art.)
90 Contact Hours

ART 297 COOPERATIVE EDUCATION (D,R)
Please refer to the description of Cooperative Education in this catalog on page 22.

ART 299 INDEPENDENT STUDY (D,AEC)
Please refer to the description of Independent Study in this catalog on page 22.

American Sign Language

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

ASL 111 AMERICAN SIGN LANGUAGE I (F)
5 Credit Hours
Basic course in American Sign Langauge with focus on grammatical structure and receptive skills. (For students in the Interpreter Training Program.)
75 Contact Hours

ASL 112 AMERICAN SIGN LANGUAGE II (F)
5 Credit Hours
Prerequisite: ASL 111
Co-requisite: ITP 106
Continuation of American Sign Language I with more focus on express skills.
75 Contact Hours

ASL 211 AMERICAN SIGN LANGUAGE III (F)
3 Credit Hours
Prerequisite: ASL 112 with B or better
Continuation of ASL 112 with focus on conversational skills and basic trans tion.
45 Contact Hours

ASL 212 AMERICAN SIGN LANGUAGE IV (F)
3 Credit Hours
Prerequisite: ASL 211 with B or better or be enrolled in Sign Teacher Progr (STP)
Subtleties of ASL for the skilled signer.
45 Contact Hours

Architectural Technology

ATE 100 BASIC ARCHITECTURAL TECHNIQUES (F)
3 Credit Hours
Given applicable instructional standards, the student should be able to de onstrate basic, professional, architectural drafting skills in areas of letteri sketch technique, and format instrument drawing; the latter to include pr ciency in orthographic, oblique, isometric and "geometric constructio fundamentals.
60 Contact Hours

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

ATE 107 RESIDENTIAL CONSTRUCTION DRAWINGS (F)
6 Credit Hours
Prerequisites: ATE 106 or permission of instructor.
From either a concept sketch or set of preliminary drawings, the stud should be able to draw the major portion of a set of professional construct working drawings for a residence.
120 Contact Hours

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

ATE 109 LIGHT COMMERCIAL CONSTRUCTION DRAWINGS (F)
6 Credit Hours
Prerequisites: ATE 108 or permission of instructor.
From given requirements such as a set of presentation drawing, the stude should be able to draw the major portion of a professional set of construct working drawings for an assigned skeleton-framed building.
120 Contact Hours

ATE 110 LIGHT COMMERCIAL CONSTRUCTION DETAILS (F)
6 Credit Hours
Prerequisites: ATE 109 or permission of instructor.
Given standard references for detailing a structure, the student should be a to draw selected, assigned details for the skeleton-framed building started ATE 109; arrange the total project in proper sequence; reproduce, and b same into a comprehensive set of prints.
120 Contact Hours

TE 115 THREE-DIMENSIONAL DRAWING METHODS (F)
Credit Hours
erequisites: ATE 110 or permission of instructor.
ie student should be able to draw assigned objects and buildings by per-ective drawing methods, correctly adding shades and shadows thereon, to e professional standards provided and demonstrated by the instructor. Pro-essive proficiency in isometric and oblique methods should also be hieved.
Contact Hours

TE 200 PRELIMINARY WORKING DRAWINGS DEVELOPMENT (F)
Credit Hours
erequisites: ATE 115 and math elective or permission of instructor.
ilizing architectural sketches furnished, the student should be able to pro-ce, to scale, preliminary plans developed in accordance with building des, zoning ordinances, and regulatory agencies.
0 Contact Hours

TE 205 STRUCTURAL MATERIALS (F)
Credit Hours
erequisites: ATE 200 or permission of instructor.
ven load conditions super-imposed on building materials, the student should able to detail structural components, reflecting basic standard strength of aterials procedures.
Contact Hours

TE 206 STRUCTURAL FRAMING SYSTEMS (F)
Credit Hours
erequisites: ATE 205 or permission of instructor.
ilding plans furnished, the student should be able to draw framing plans, picting the use of various structural materials, in accordance with standard nstruction practices.
Contact Hours

TE 207 HEATING, VENTILATING, AIR CONDITIONING SYSTEMS (HVAC) (F)
Credit Hours
erequisites: ATE 206 or permission of instructor.
ing the assigned text as a guide, the student should be able to draw basic ating, ventilating, and air conditioning systems.
Contact Hours

TE 208 ELECTRICAL SYSTEMS (F)
Credit Hours
erequisites: ATE 207 or permission of instructor.
de requirements applied, the student should be able to circuit the distribu-n system of a commercial building.
Contact Hours

TE 209 PLUMBING SYSTEMS (F)
Credit Hours
erequisites: ATE 208 or permission of instructor.
signed a building plan, the student should be able to layout waste and wa-lines according to codes.
Contact Hours

TE 210 BUILDING SPECIALITIES (F)
Credit Hours
erequisites: ATE 209 or permission of instructor.
amples provided, the student should be able to produce detailed drawings assigned special equipment in buildings.
0 Contact Hours

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

TE 297 COOPERATIVE EDUCATION (F)
ase refer to the description of Cooperative Education in this catalog on ge 22.

utomotive Mechanics

IM 100 PRINCIPLES OF ENGINE OPERATION, BASIC ELECTRICITY, AND IGNITION SYSTEMS (F,R)
Credit Hours
ad schematic diagrams, use test equipment, and diagnose probable uses of electrical failure in automotive electrical systems. This will be evi-nced by demonstrations and a series of unit tests.
0 Contact Hours

AUM 106 CHARGING AND STARTING SYSTEMS (F,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 (F,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 (F,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 (F,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 (F,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 (F,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 (F,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 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 145 GM COMPUTER COMMAND CONTROL (F,R)
2 Credit Hours
This course is intended to acquaint students with operation, design, service procedures, and diagnostic procedures of General Motors automobiles manufactured after 1980 with computer command controlled engines. Students will participate in on-car adjustments, carburetor overhaul, system performance checks, and C.C.C. system diagnosis.
30 Contact Hours

AUM 146 GM LIGHT DUTY DIESEL (F,R)
1 Credit Hour
This course is intended to acquaint students with operation, design, maintenance, and service procedures of the light duty diesel engine. Students in this course will study diesel fuel and its major properties as well as each component of the diesel fuel system. Engine support systems will be discussed and demonstrated.
20 Contact Hours

AUM 205 CLUTCHES AND MANUAL TRANSMISSION (F,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 (F,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 (F,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 (F,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 (F,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 (F,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 (F,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 (F,R)
3 Credit Hours
This module is designed for work on automobiles and any work in which th student needs to complete the program. It may include any work that fits th instructional program in which the student has had experience.
60 Contact Hours

AUM 219 CUSTOMER SERVICE (F,R)
7 Credit Hours
This module is designed for the student desiring additional work experience i areas in which he feels deficient or in which he may want to specialize. Th may be arranged on an hourly basis with permission of the instructor or ir structors involved.
140 Contact Hours

AUM 225 ADVANCED AUTOMATIC TRANSMISSION (R)
7 Credit Hours
In this unit, the student will have advanced study diagnosing, removing, recor ditioning and replacing automatic transmissions. This knowledge will b evidenced by performance and unit tests.
140 Contact Hours

AUM 226 ADVANCED EMISSION CONTROL SERVICE (F,R)
7 Credit Hours
In this unit, the student will have advanced study diagnosing emission contr problems. This course is recommended for continuing students, individua preparing for N.I.A.S.E. Testing and State Emission's Inspection Certificatio This knowledge will be demonstrated by performance and unit testing.
140 Contact Hours

AUM 297 COOPERATIVE EDUCATION (F,R)
Please refer to the description of Cooperative Education in this catalog o page 22.

AUM 299 INDEPENDENT STUDY (F,R)
Please refer to the description of Independent Study in this catalog on pag 22.

Audio Visual Technology

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

AVT 105 AUDIOVISUAL EQUIPMENT UTILIZATION (R)
3 Credit Hours
This course covers set up, operation, and minor maintenance of various type of audiovisual equipment common to businesses and educational institution Projectors and basic audio and video recording systems will be covered.
67 Contact Hours

AVT 108 INTRODUCTION TO AUDIOVISUAL PHOTOGRAPHY (R)
5 Credit Hours
This course introduces black and white photography for the audiovisual tech nician. Operation of the camera, exposure, film development, printing, bas 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, ar transparency production will be covered. Students will work with a variety graphic materials.
83 Contact Hours

AVT 113 SCRIPT VISUALIZATION (R)
1 Credit Hour
A workshop focusing on the visualization of written scripts for media present tions. This class will present techniques and concepts used in selecting ar sequencing appropriate pictures to support and reinforce a written script. St ryboard techniques 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 180 AUDIOVISUAL AUDIO PRODUCTION (R)
5 Credit Hours
Prerequisites: AVT 105, AVT 125
Equipment and techniques used in the production of sound tracks for various media. Mike selection, physical editing, mixing, and syncing sounds with visuals are some of the topics to 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
Prerequisites: AVT 105, AVT 109, AVT 180
Introduction to planning and producing a slide/tape presentation. Objectives, scriptwriting, storyboarding and slide photography are examples of the subjects covered.
68 Contact Hours

AVT 211 AV TELEVISION PRODUCTION I (R, AEC)
3 Credit Hours
Prerequisites: AVT 105, AVT 125
Principles and operation of a closed-circuit television studio. Cameras, recorders, sound, and lighting equipment will be covered along with editing and production techniques.
113 Contact Hours

AVT 212 AV TELEVISION PRODUCTION II (R, AEC)
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 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 231 AUDIOVISUAL DESIGN I (R)
3 Credit Hours
Prerequisite: Permission of instructor.
A seminar/workshop on several aspects of media production. The student will be assigned to a "client" and will budget, plan and produce a media presentation to the client's specifications. A weekly meeting of all students will cover the problems students are experiencing.
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 (R)
Please refer to the description of Cooperative Education in this catalog on page 22.

AVT 299 INDEPENDENT STUDY (R)
Please refer to the description of Independent Study in this catalog on page 22.

Biology

BIO 105 MICROBIOLOGY FOR DENTAL ASSISTANTS (F)
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 (D,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 108 INTRODUCTION TO HUMAN BIOLOGY (D,F)
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 (D)
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 111 HUMAN ANATOMY AND PHYSIOLOGY I (D,F,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 (D,F,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 (D,F,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 (D,AEC)
3 Credit Hours
Contains a study of the basic principles of ecology, population dynamics, human impact upon natural ecosystems and possible solutions to the problems posed to and by man in his environment.
45 Contact Hours

BIO 125 URBAN ECOLOGY (D,AEC)
3 Credit Hours
Prerequisite: None although BIO 121 is helpful.
Studies urban environments, stressing basic ecological principles and comparing natural and urban ecosystems. Both physical aspects (geology, energy, water and air treatment, transportation and housing) and biological aspects (vegetation and animal characteristics) of urban areas will be included.
45 Contact Hours

BIO 126 FIELD BIOLOGY (D,F,R,AEC)
2 Credit Hours
Prerequisite: None although BIO 121 is helpful.
Covers a field study of the biomes, life zones and successions in the front range with an introduction to plant and animal identification and quantitative ecology. This course may also consist of field studies in ecosystems outside Colorado; for example, desert ecology, shore ecology, involving a week or more study during a semester break.
60 Contact Hours

BIO 131 GENERAL COLLEGE BIOLOGY I (D,F,R,AEC)
4 Credit Hours
Prerequisite: None although BIO 106 is helpful
Introduces biology and considers living systems from the environmental, evolutionary and behavioral points of view. Topics will include ecology, population dynamics, adaptation, microscopy and biological diversity and individual and social behaviors.
90 Contact Hours

BIO 132 GENERAL COLLEGE BIOLOGY II (D,F,R,AEC)
4 Credit Hours
Prerequisite: None although BIO 106 may be helpful.
Deals with living systems from a functional and developmental point of view. Topics include cellular function and structure, major biochemical concepts, reproduction, heredity and evolutionary mechanisms.
90 Contact Hours

BIO 147 HUMAN HEREDITY (D,AEC)
3 Credit Hours
Considers the biological aspects of race and human heredity and includes genetic foundations, ranges of human variability, racial mixtures and the usefulness of biological factors in understanding racial differences.
45 Contact Hours

BIO 157 DRUGS: THEIR USE AND ABUSE (D,R,AEC)
3 Credit Hours
Examines some of the drugs commonly used in society today and details the effects of these drugs on the human body. Drugs covered include alcohols, amphetamines, barbiturates, opiates, hallucinogens, marijuana, nicotine and street drugs.
45 Contact Hours

BIO 167 BIOLOGY OF WOMEN (D,F,R,AEC)
3 Credit Hours
Deals with all biological aspects of a woman's life from the basis of female roles through anatomy and physiology, sexuality, childbearing, basic health and diet, and finally to suggested solutions to improve function and effectiveness of the female.
45 Contact Hours

BIO 177 INTRODUCTION TO BIOLOGY OF THE SEA (D,F)
3 Credit Hours
Studies the various aspects of life in the oceans, including some of the different kinds of marine organisms, marine habitats, resources, pollution and the importance of the seas to human continued existence.
45 Contact Hours

BIO 205 GENERAL MICROBIOLOGY (F,R)
4 Credit Hours
Prerequisite: BIO 111, 131 or BIO 132 or permission of instructor
A survey of major microbial groups with special emphasis on bacteria. Emphasis is on basic principles and techniques of microbiology as well as identification, structure, function and role in nature and disease.
90 Contact Hours

BIO 206 ENVIRONMENTAL BIOLOGY (D,F,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 (D,F,R)
3 Credit Hours
Prerequisite: BIO 112
Studies the functions of the human body systems with emphasis on their interrelationships in adaptation to stress and disease. Alterations of normal body functions, pathogenesis and pathophysiology are delineated.
45 Contact Hours

BIO 216 CELL BIOLOGY (D,F,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 (D,F,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 (D)
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 297 COOPERATIVE EDUCATION (D,R)
Please refer to the description of Cooperative Education in this catalog on page 22.

BIO 299 INDEPENDENT STUDY (D,F,R)
Please refer to the description of Independent Study in this catalog on page 22.

Business Machine Technology

BMT 105 IBM TYPEBAR TYPEWRITER (D)
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 (D)
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 (D)
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 (D)
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

BMT 290 SPECIAL TOPICS (D)
Please refer to the description of Special Topics in this catalog on page 22.

MT 297 COOPERATIVE EDUCATION (D)
ease refer to the description of Cooperative Education in this catalog on ige 22.

MT 299 INDEPENDENT STUDY (D)
ease refer to the description of Independent Study in this catalog on page

ricklaying

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

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

RI 106 SPREADING MORTAR, LAYING TO LINE, USE OF MASONRY TOOLS, BASIC LEADS, MASONRY WALLS (R)
Credit Hours
requisites: BRI 100
e student will be taught to use the trowel to spread mortar, lay brick and ck to line, use of brickmason tools, and the layout and construction of ba- brick and block leads in this class.
) Contact Hours

I 107 BONDED BRICK LEADS, JOINTS, STRIKING AND BRUSHING (R)
redit Hours
requisites: BRI 106
s class presents layout and construction of bonded brickleads, different rtar joints, and methods used in tooling masonry walls.
Contact Hours

I 109 MASONRY PIERS, PILASTERS, SOLID AND HOLLOW MASONRY, BONDS, FLOORS, AND MASONRY WALLS (R)
redit Hours
requisites: BRI 107
dents in this class are taught layout, squaring and plumbing masonry piers pilasters, solid and hollow masonry walls, identification of masonry bonds, ng out of masonry walls, and laying brick floors.
Contact Hours

110 LAYING TO THE LINE, HEADERS, SOLDIERS, SAILORS, ROLLOCK, MITER CORNERS (R)
redit Hours
requisite: BRI 109
racteristics and skill development in laying brick in the various positions of soldiers, sailors, rollock and the miter corner are presented to the student.
Contact Hours

115 THROUGH-THE-WALL UNITS, LAYING TO THE LINE (R)
edit Hours
equisites: BRI 110
his unit, the student will learn the construction of leads using through-wall units, laying through-the-wall units to a line, and will be taught how to tify different types of through-the-wall bonding.
Contact Hours

116 MASONRY CODES (R)
edit Hour
equisites: BRI 115
es for cover brick veneer, solid masonry, fireplaces, and block laying with ections on job sites, will be presented in this class.
Contact Hours

120 BRICKLAYING FOR CONSTRUCTION TRADES (R)
edit Hours
rientation to the field of bricklaying is presented. Also, the general princi- initial techniques and skill development for bricklaying and how klaying relates to the various trades are presented.
ontact 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)
6 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)
6 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)
10 Credit Hours
This course will cover fireplace codes and construction of new energy fireplaces.
200 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)
Please refer to the description of Cooperative Education in this catalog on page 22.

BRI 299 INDEPENDENT STUDY (R)
Please refer to the description of Independent Study in this catalog on page 22.

Business

BUS 095 BUSINESS LABORATORY (D,F,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 credit/no-credit basis.
Variable Contact Hours

BUS 110 MATHEMATICS OF BUSINESS/PERSONAL FINANCE (D,F,R,AEC)
3 Credit Hours
Prerequisite: Minimum of high shool algebra or equivalent.
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 111 MATH ANALYSIS FOR BUSINESS (D)
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 (D,F,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 136 BUSINESS COMMUNICATION APPLICATIONS (D,F,R,AEC)
3 Credit Hours
Prerequisite: Course in Communication or English
Applied business techniques of communications that require problem solving and understanding of human relations in business situations. Students compose and evaluate various types of correspondence — business reports, memos, and letters. Emphasis will be placed on good format and writing principles. Course also develops proper dictation techniques.
45 Contact Hours

BUS 137 LISTENING SKILLS (D,F,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 290 SPECIAL TOPICS (D)
Please refer to the description of Special Topics in this catalog on page 22.

BUS 296 OFFICE OCCUPATIONS SEMINAR (D,F,R,AEC)
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 (D,F,R,AEC)
Please refer to the description of Cooperative Education in this catalog on page 22.

BUS 299 INDEPENDENT STUDY (D,F,R,AEC)
Please refer to the description of Independent Study in this catalog on page 22.

Carpentry

CAR 100 ORIENTATION, SAFETY AND CONSTRUCTION MATERIALS (R)
3 Credit Hours
Occupational outlook in the carpentry trade, securing of employment, presented to the student. Orientation to safety rules and practices required i the trade, identification of the grades of lumber and common defects, writin a bill of materials for ordering lumber, different fasteners and their uses ar 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 developmen identification and use of the power woodworking machines and tools, safet 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, measur 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 selectio of a building site, locating the buildings using the plot plans, layout, an squaring the building with the use of batter boards, footing form terminolog styles of footings, constructing types of footing forms will be covered in th 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 applicatio of all foundation walls forms, built in place bulkheads, blockouts, architectur 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 i stallation 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 a sembly 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 comm types, roofing members and styles, determining rafter lengths, cutting and a sembling various roof structures, estimating cost of material for each type 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 so 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 sof facia, freeze, brick mold and other exterior trim items are taught.
60 Contact Hours

AR 205 EXTERIOR DOORS AND WINDOWS (R)
Credit Hours
Prerequisites: Permission of instructor
e study of existing and new exterior doors and windows on the market and per installation of same are taught.
Contact Hours

AR 206 EXTERIOR WALL COVERINGS (R)
Credit Hours
Prerequisites: Permission of instructor
is course covers terminology associated with exterior wall coverings, com- n and new materials used and proper installation of same.
Contact Hours

AR 207 ROOF COVERINGS (R)
Credit Hours
Prerequisites: Permission of instructor
e study of roofing materials, estimating of materials and proper application various roofing systems are taught in this class.
Contact Hours

AR 208 INTERIOR TRIM WORK (R)
Credit Hours
Prerequisites: Permission of instructor
e study of interior trim materials, paneling, base, moldings, casings, door, elves, and proper installation of doors and all trim items are taught.
Contact Hours

AR 209 CABINETMAKING (R)
Credit Hours
Prerequisites: Permission of instructor
mponents of a cabinet, types of materials used, constructions, installation ardware and proper use of power tools are taught.
Contact Hours

AR 210 PLASTIC LAMINATES (R)
Credit Hours
Prerequisites: Permission of instructor
s course covers terminology and types of plastic laminates available, prop- handling, installation of laminated materials and installation of prefabricated unter tops.
Contact Hours

AR 215 CABINET INSTALLATION (R)
Credit Hours
Prerequisites: Permission of instructor
e proper installation of factory-built cabinets and a study of various cabi- s on the market/arrangement are taught.
Contact Hours

AR 216 DRYWALL CONSTRUCTION AND INTERIOR TRIM (R)
Credit Hours
Prerequisites: Permission of instructor
e terminology associated with drywall construction, estimating the materials ded, concealing joints and fasteners and interior trim are taught in this ss.
Contact Hours

AR 217 ADVANCED CABINETMAKING (R)
Credit Hours
Prerequisite: Permission of instructor
s course will expand on the basic skills taught in CAR 209. It will include a ew of the types of joints, gluing and hardware used in cabinets. The stu- nt will become familiar with various types and designs of cabinets used in dential and commercial construction. Construction of shop-built cabinets will include panel doors with mouldings, glass doors, and will include the per use of power tools for creating various designs. The uses and applica- of plastic laminates will be explored, and the student will learn the proper allation of shop-built cabinets.
Contact Hours

AR 219 ADVANCED STAIR AND ROOF FRAMING (R)
Credit Hours
Prerequisite: Permission of instructor
s is an advanced course for the student with the basic knowledge of car- ntry. The student will learn the techniques of stair framing for stairs such as ders, bowed U-shaped or spiral and the attachment of handrails and wel posts. The course will also cover framing for roofs such as hip, valley, ale, gambrel, mansard or multi-pitch.
Contact Hours

CAR 297 COOPERATIVE EDUCATION (R)
Please refer to the description of Cooperative Education in this catalog on page 22.

CAR 299 INDEPENDENT STUDY (R)
Please refer to the description of Independent Study in this catalog on page 22.

Chemistry

CHE 101 FUNDAMENTALS OF CHEMISTRY I (D,F,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 (D,F,R)
4 Credit Hours
Prerequisites: CHE 101
A continuation of CHE 101
90 Contact Hours

CHE 109 PREPARATION FOR COLLEGE CHEMISTRY (D)
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 (D,F,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 energy 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 (D,F,R)
5 Credit Hours
Prerequisite: CHE 111
A continuation of CHE 111.
105 Contact Hours

CHE 201 ORGANIC CHEMISTRY I (D,F,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 (D,F,R)
5 Credit Hours
Prerequisites: CHE 201
Continuation of CHE 201.
135 Contact Hours

CHE 297 COOPERATIVE EDUCATION (D,R)
Please refer to the description of Cooperative Education in this catalog on page 22.

CHE 299 INDEPENDENT STUDY (D,F,R)
Please refer to the description of Independent Study in this catalog on page 22.

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 205 APPLIED HYDROLOGY (R)
4 Credit Hours
Prerequisite: SUR 100
Rainfall, runoff, urban and rural drainage, flow measurements in conduits, and open channels. Basic fluid mechanics.
68 Contact Hours

CET 297 COOPERATIVE EDUCATION (R)
Please refer to the description of Cooperative Education in this catalog on page 22.

CET 299 INDEPENDENT STUDY (R)
Please refer to the description of Independent Study in this catalog on page 22.

Commercial Art

COA 100 LETTERING/TYPOGRAPHIC DESIGN AND CAREER SURVEY (D)
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 (D)
5 Credit Hours
Prerequiste: 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 (D)
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 (D)
5 Credit Hours
Prerequisite:COA 106: Should be taken with COA 105 Advertisin
Typography and Layout
Introduction to product rendering in pen and ink, cut films, wash and opaqu
water media for print reproduction. Both free hand and mechanical metho
are explored.
100 Contact Hours

COA 200 ADVERTISING DESIGN AND PORTFOLIO PREPARATION (D
5 Credit Hours
Prerequisites: COA 100, 105, 106 and 107
Introduces the student to the process of solving comprehensive advertisin
design problems. Student will gain experience in designing, advertising, ma
keting, research, media considerations and developing concept through
final presentations. Student projects will be prepared for portfolio presentatio
and consideration will be given to the final portfolio in practice and theory. (E
try level skills: minimum tenth grade reading skills.)
100 Contact Hours

COA 205 CREATIVE GRAPHIC DESIGN AND PORTFOLIO PREPARATION (D)
5 Credit Hours
Prerequisites: COA 200 and COA 206
Designed to give the student further experience in designing trademark
packaging, symbols, signing and resumes. The demonstration of job reac
ness is emphasized through portfolio preparation and presentation tec
niques.
100 Contact Hours

COA 206 ART PREPARATION FOR REPRODUCTION (D)
5 Credit Hours
Prerequisite: First year COA program.
Introduction to the production of type and paste up in simple one and two co
or printing. Emphasis placed on development of basic manual skills, precisio
measuring and copy proofing. Marking copy procedures are covered. (Ent
level skills: Knowledge of advertising layout.)
100 Contact Hours

COA 207 ADVANCED ART PREPARATION FOR REPRODUCTION (D)
5 Credit Hours
Prerequisite: COA 206
Designed to develop further competency in skills acquired in COA 206, A
Preparation for Reproduction. Exploration and exercises in production
more complicated, camera-ready art, including four-color separations, ink ar
paper specification, type mark-up, computer type setting, packaging m
chanicals and effects of printing production on design. (Entry level skills: son
knowledge of paste up.)
100 Contact Hours

COA 208 ILLUSTRATION (D)
5 Credit Hours
Prerequisite: First year COA program
Designed as an additional major course for the Commercial Art student ar
working professional who wishes to develop further competencies in illustr
tion. Current trends and printing production limitations are incorporated in
exercises aimed at developing proficiency in a variety of traditional as well
experimental techniques. (Entry level skills: Demonstrated drawing and layo
skills.)
100 Contact Hours

COA 209 THREE DIMENSIONAL ADVERTISING (D)
5 Credit Hours
Prerequisite: First year COA program
Designed as an additional major course for the commercial art student as w
as the working professional who wants training in designing three dimensior
advertising. The student will design point of purchase displays, corporate
trade show exhibits and be introduced to visual merchandising. (Entry lev
skills: Knowledge of layout and basic design.)
100 Contact Hours

COA 290 SPECIAL TOPICS (D)
Please refer to the description of Special Topics in this catalog on page 22.

COA 297 COOPERATIVE EDUCATION (D)
Please refer to the description of Cooperative Education in this catalog
page 22.

)A 299 INDEPENDENT STUDY (D)
ase refer to the description of Independent Study in this catalog on page

)mmunications

)M 111 SURVEY OF COMMUNICATION (D,R,AEC)
Credit Hours
roduces through readings and class discussion the many facets of commu-ation such as meaning of symbols, perception of life, non-verbal behavior d listening patterns. Offered normally fall term.
Contact Hours

)M 117 CAREER COMMUNICATION (D,F,R,AEC)
Credit Hours
velops skills in communication especially speaking, writing, and listening. cus on instruction giving, discussion and teamwork, interviewing skills, ting resumes, critical reading skills, and vocabulary development. Practical plication to career fields.
Contact Hours

)M 121 INTERPERSONAL COMMUNICATION (D,R,AEC)
Credit Hours
plores basic principles of interpersonal communication theory and involves dent in practicing skills to improve relationships with others. Offered nor-lly fall term.
Contact Hours

)M 130 TOPICS IN COMMUNICATION (R)
Credit Hours
erequisites: Reading level of 10th grade or above and level 4 on assess-nt.
s course is designed to sharpen competence in reading, writing, speaking, d listening as applied to the needs of students in career programs as well as jeneral and transfer studies.
Contact Hours

)M 131 INTRODUCTION TO SEMANTICS (D,R,AEC)
Credit Hours
amines the interrelationships of language, throught and behavior in the dy of language and the use of words. Offered normally spring term.
Contact Hours

)M 135 COMPARING LANGUAGES (D)
Credit Hours
s course will present an initial overview of the similarities and differences ween languages. This course will compare and contrast the following sys-ns of the English and Spanish languages: the sound system, the structural tem, and the meaning system. This will assist in revealing those features of rst language which may interfere in learning a second language.
Contact Hours

M 181 INTRODUCTION TO SIGN LANGUAGE (D,F,R,AEC)
redit Hours
eginning course in the use of the basic signs and finger spelling used by deaf.
Contact Hours

M 182 ADVANCED SIGN LANGUAGE (D,F,R,AEC)
redit Hours
requisite: COM 181
extension in the development of signs and emphasis of idomatic expres-n. Increased practice in the reading of signs.
Contact Hours

M 185 FINGER SPELLING (D,R)
redit Hours
elops speed and clarity with receptive and expressive finger spelling. Of-d normally fall term.
Contact Hours

M 186 SYSTEMS OF MANUAL COMMUNICATION (D,F,R)
redit Hours
requisite: COM 185 or permission of instructor
oduces manually coded English systems and their use by schools and ring-impaired persons. Offered normally spring term.
Contact Hours

COM 231 IMAGE AND MEANING (D,R,AEC)
3 Credit Hours
Prerequisite: COM 111 or permission of instructor
Studies the relation between 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 (D,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 (D,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 (D,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 (D,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 (D,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 (D,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 290 SPECIAL TOPICS (D,R,AEC)
Please refer to the description of Special Topics in this catalog on page 22.

COM 297 COOPERATIVE EDUCATION (D,F,R)
Please refer to the description of Cooperative Education in this catalog on page 22.

COM 299 INDEPENDENT STUDY (D,R,AEC)
Please refer to the description of Independent Study in this catalog on page 22.

Chiropractic Assisting

CPA 101 CHIROPRACTIC MODALITIES I (D)
3 Credit Hours
Co-requisite: HOC 100
The purpose of this course is to familiarize the student with the science, art, and philosophy of chiropractic; to gain knowledge of its beginning in the role chiropractic plays in the modern health care system today. A thorough understanding of clinic procedures, related medical terminology, an introduction to important anatomical structures, and basic physiology will be stressed.
60 Contact Hours

CPA 102 CHIROPRACTIC MODALITIES II (D)
3 Credit Hours
Prerequisite: CPA 101
An introduction to electro-therapy machines, their indications and contra-indications for use in the chiropractic office will be studied in detail in local chiropractic clinics. Any student with one year or more of clinical chiropractic experience can challenge CPA 102. All students completing CPA 101 and CPA 102 will receive a certificate of completion from the Colorado Chiropractic Association.
60 Contact Hours

CPA 290 SPECIAL TOPICS (D)
Please refer to the description of Special Topics in this catalog on page 22.

CPA 297 COOPERATIVE EDUCATION (D)
Please refer to the description of Cooperative Education in this catalog on page 22.

Computer Programming for Business

CPB 095 COMPUTER PROGRAMMING LAB (D,F,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 Credit/No Credit basis for each programming course taken during a semester.

CPB 100 INTRODUCTION TO COMPUTERS (D,F,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 104 PROGRAMMING LOGIC (D,F,R,AEC)
3 Credit Hours
Co-requisite: CPB 100 Introduction to Computers
An introduction to the development of computer program design using the concepts of structured programming and logic. Pseudocode, IPO 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 106 COBOL (D,F,R,AEC)
4 Credit Hours
Prerequisites: CPB 100 Introduction to Computers
CPB 104 Programming Logic
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 (D,F,R,AEC)
3 Credits Hours
Prerequisites: CPB 100 Introduction to Computers
CPB 104 Programming Logic
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, BASIC functions, and MAT statements.
45 Contact Hours

CPB 200 OPERATING SYSTEMS AND JCL (D,F,R,AEC)
3 Credit Hours
Prerequisites: CPB 100 Introduction to Computers, 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 205 BASIC ASSEMBLER LANGUAGE — BAL (D,F,R,AEC)
4 Credit Hours
Prerequisites: CPB 100 Introduction to Computers
CPB 104 Programming Logic, and at least one course in pr
gramming
An introduction to the coding and execution of simple buness problems usi
IBM 370 Assembler Language. A minimum of six programs will be coded a
executed using simple assembly language instructions (standard and pack
decimal instruction sets), macro instructions for the QSAM access metho
macro instructions to generate dumps, and JCL for data sets using QSA
Topics covered include: data representation, machine language instructi
formats, arithmetic instructions, data manipulation instructions, branch
structions, editing data, SNAP macros, logical operations, and debugging.
60 Contact Hours

CPB 206 ADVANCED COBOL (D,F,R,AEC)
4 Credit Hours
Prerequisite: CPB 106 COBOL
A continuation of CPB 106 COBOL. Students will be required to design, coc
execute, and document a business system composed of a minimum of
programs and related utilities. These programs will consist of the followi
table handling, magnetic tape sequential file creation, editing, and upda
creating, editing, and updating an ISAM file both sequentially and random
report writer, sort utilities and various dump utilities.
60 Contact Hours

CPB 208 ADVANCED BASIC (D,F,R,AEC)
3 Credit Hours
Prerequisites: CPB 108
This course is an extension of the introductory BASIC course. The activities
this course will include a combination of lecture and "hands-on" experienc
with menu-driven systems which are interactive in nature. Emphasis will
placed on ease-of-use for the system for the non-technical computer us
Topics covered will include: Extended BASIC features, Programming Sta
dards, String Functions/Parsing, CRT Formatting, Special RSTS/E Featu
and Advanced Input and Output.

CPB 209 FORTRAN (D,F,R,AEC)
3 Credit Hours
Prerequisites: CPB 100 Introduction to Computers
CPB 104 Programming Logic
An introduction to the coding and execution of business problems using FO
TRAN. A minimum of nine programs will be coded, executed and document
using structured programming techniques. The topics covered include:
put/output operations, arithmetic verbs, report headings, report editing, co
trol breaks, final total processing, use of nested DO Loops, and simple ta
handling procedures.
45 Contact Hours

CPB 220 SYSTEMS ANALYSIS AND DESIGN (D,F,R,AEC)
5 Credit Hours
Prerequisites: CPB 100 Introduction to Computers, and at least two cours
in programming
An introduction to the materials, techniques, and procedures to develop
computerized business system. The course requires the student to design
actual system. Topics covered include: the systems approach, fact gatheri
techniques, forms design, input/output, file design, file organization, varic
charting techniques, system processing and controls, system presentati
techniques, system audits and controls, project management, and impleme
tation and evaluation.
45 Contact Hours

CPB 290 SPECIAL TOPICS (D,F,R,AEC)
Please refer to the description of Special Topics in this catalog on page 22.

Criminal Justice

CRJ 110 INTRODUCTION TO CRIMINAL JUSTICE (R,AEC)
4 Credit Hours
An introduction to the components and procedures followed in the crimi
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 crimi
law.
45 Contact Hours

RJ 116 CONSTITUTIONAL LAW (R,AEC)
Credit Hours
rovides an overview of constitutional considerations affecting the criminal stice enterprise. Landmark Supreme Court cases will be examined in detail.
5 Contact Hours

RJ 117 CIVIL LAW (R,AEC)
Credit Hours
he concepts of torts is developed as it may effect the criminal justice practi-oner. Personal liability while acting in an official capacity is explored.
5 Contact Hours

RJ 118 RULES OF EVIDENCE (R,AEC)
Credit Hours
ifferent types of evidence and legal requirements for admission in court are resented. Court decisions regarding proper use and introduction are ex-mined in detail.
5 Contact Hours

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

RJ 120 CORRECTIONS (R,AEC)
Credit Hours
n examination of the corrections components of the development of correc-ons and special programs. Treatment approaches and problems associated ith certain offenses are presented.
5 Contact Hours

RJ 125 INTRODUCTION TO INDUSTRIAL SECURITY (R,AEC)
Credit Hours
n examination of arrest, search and seizure laws and legal restraints dealing ith civilian security officers. Relationships between civilian security com-anies and law enforcement agencies are examined.
5 Contact Hours

RJ 126 PATROL PROCEDURES (R,AEC)
Credit Hours
he daily duties of a patrol officer are presented as well as techniques and ctics involved in conducting a patrol.
3 Contact Hours

RJ 127 PROBATION, PARDON AND PAROLE (R,AEC)
Credit Hours
obation as a judicial process, parole as an executive function and the use of rdons are examined and reviewed.
Contact Hours

RJ 128 CORRECTIONAL SERVICES IN THE COMMUNITY (R,AEC)
Credit Hours
mmunity resources that can be brought to bear on the corrections function e examined. The role of vocational rehabilitation, welfare services, guidance nics and other community agencies is presented.
Contact Hours

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

RJ 135 POLICE ARMAMENT (R,AEC)
Credit Hours
examination of the devices and procedures available to police for control d restraint. The FBI pistol course will be included as well as armament from n-lethal restraints to automatic weapons. Student must furnish own am-unition.
Contact Hours

RJ 136 PUBLIC SERVICE DISPATCH PROCEDURES (R,AEC)
Credit Hours
examination of single service and multi-service dispatch systems. Orienta-n on various computer terminals will be provided, as well as familiarization h different systems of communication.
Contact Hours

CRJ 137 POLICE PHOTOGRAPHY (R,AEC)
3 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.
68 Contact Hours

CRJ 139 TERRORISM (R,AEC)
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,AEC)
1-3 Credit Hours
Discussion, role playing and other techniques to illustrate and offer possible solutions to problems found by police officers.
15-45 Contact Hours

CRJ 149 CRIMINAL JUSTICE RECORDS AND REPORTS (R,AEC)
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,AEC)
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.
45 Contact Hours

CRJ 156 LOSS PREVENTION (R,AEC)
3 Credit Hours
An overview of the functional oeprations of various specialized areas of security such as, theft and risk control, security surveys and loss prevention management in proprietary and governmental institutions.
45 Contact Hours

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

CRJ 202 ADVANCED INVESTIGATION (R,AEC)
3 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.
68 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,AEC)
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.
45 Contact Hours

CRJ 220 TRAFFIC ENFORCEMENT (R,AEC)
3 Credit Hours
Includes definiton of the traffic problem, patrol procedures, accident investigation, traffic direction and other aspects of the traffic control function of a police department.
68 Contact Hours

CRJ 225 BREATH EXAMINER SPECIALIST (R,AEC)
3 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.
68 Contact Hours

CRJ 226 CHILD ABUSE — ETIOLOGY AND RESPONSE (R,AEC)
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.
68 Contact Hours

CRJ 235 HAZARDOUS POLICE TACTICS (R,AEC)
4 Credit Hours
Prerequisite: Patrol Procedures or permission of instructor
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.
90 Contact Hours

CRJ 236 FRAUD INVESTIGATION (R,AEC)
3 Credit Hours
Detection, investigation, and prosecution of fraud forgery, deceptive practices, computer crime, confidence games and other scams.
45 Contact Hours

CRJ 237 ACCIDENT INVESTIGATION (R,AEC)
3 Credit Hours
Prerequisite: Traffic Enforcement or permission of instructor
Principles of automobile accident investigation to include vector analysis to determine speed, skid mark measurement to determine reaction time and reporting procedures.
45 Contact Hours

CRJ 238 SELF DEFENSE FOR POLICE (R,AEC)
3 Credit Hours
Techniques of prisoner handling, crowd control and personnel protection. A pragmatic approach to options short of deadly physical force.
90 Contact Hours

CRJ 297 COOPERATIVE EDUCATION (R,AEC)
Please refer to the description of Cooperative Education in this catalog on page 22.

CRJ 299 INDEPENDENT STUDY (R,AEC)
Please refer to the description of Independent Study in this catalog on page 22.

Computer Science

CSC 095 Computer Science Lab (D,F,R,AEC)
Lab is required for students taking CSC courses. One (1) credit hour per course per semester.

CSC 105 COMPUTERS AND YOU (D,F,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 the computer. Applications to be covered will include money and resource management, consumer affairs and the use of computers for entertainment.
45 Contact Hours

CSC 111 INTRODUCTION TO COMPUTING WITH BASIC (D,F,R,AEC)
3 Credit Hours
An introductory course in computer programming that will acquaint the student with the elements of the BASIC language, elementary programming techniques, and how a computer operates. This course is a prerequisite for all other CSC courses.
45 Contact Hours

CSC 112 ADVANCED BASIC (D,F,R,AEC)
3 Credit Hours
Prerequisites: CSC 111
A continuation of CSC 111 that will introduce the student to the more advanced features of today's extended BASICs. Topics will include numeric methods, string manipulations and use of sequential and random files.
45 Contact Hours

CSC 150 PROGRAMMING IN FORTRAN IV (D,F,R,AEC)
3 Credit Hours
Prerequisites: CSC 111 and MAT 121 or permission of instructor
An introduction to the FORTRAN language and the use of this language in advanced programming techniques including numerical methods, sub-routine string handling and file manipulation.
45 Contact Hours

CSC 155 PROGRAMMING IN PASCAL (D,F,R.AEC)
3 Credit Hours
Prerequisites: CSC 111 and MAT 121
An introduction to the PASCAL language and the application of its structured nature to such areas as numerical methods, string handling, and file manipulation.
45 Contact Hours

CSC 200 INTRODUCTION TO COMPUTER SCIENCE (D,F,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 (D,F,R,AEC)
3 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.
45 Contact Hours

CSC 215 INTRODUCTION TO COMPUTER HARDWARE (D,F,R,AEC)
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.
45 Contact Hours

CSC 216 DATA STRUCTURES (D,F,R,AEC)
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 (D,F,R,AEC)
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 multiuser system on a multipurpose computer system.
45 Contact Hours

CSC 218 ADVANCED PROGRAMMING TECHNIQUES (D,F,R,AEC)
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 (D,F,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 minicomputer systems. Students will learn "boot-up," operate and manage a computer system, and aid other students in the use of the computer systems.
15-135 Contact Hours

CSC 222 COMPUTER OPERATIONS (D,F,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.
15-135 Contact Hours

CSC 297 COOPERATIVE EDUCATION (D,F,R,AEC)
Please refer to the description of Cooperative Education in this catalog on page 22.

CSC 299 INDEPENDENT STUDY (D,F,R,AEC)
Please refer to the description of Independent Study in this catalog on page 2.

Dental Assisting

DEA 100 ORIENTATION TO DENTAL ASSISTING (F)
1 Credit Hours
An overview of dentistry with emphasis on the role of the dental assistant on the dental health team.
10 Contact Hours

DEA 105 INTRODUCTION TO DENTAL OPERATORY PROCEDURES (F)
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 (F)
2 Credit Hours
Chemical properties and uses of dental materials and solutions. Manipulation of materials included.
38 Contact Hours

DEA 107 DENTAL SCIENCE (F)
4 Credit Hours
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 (F)
3 Credit Hours
Prerequisites: DEA 105 and DEA 111
The identification and use of dental instruments in specialty practice. Pharmacologic agents and emergency measures common to dental practice are also included.
45 Contact Hours

DEA 110 DENTAL OFFICE PROCEDURES (F)
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 (F)
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 (F)
2 Credit Hours
Prerequisite: DEA 111
Further experience in chariside assisting in general dentistry. A continuation of front desk duties and radiography.
45 Contact Hours

DEA 121 DENTAL RADIOLOGY I (F)
2 Credit Hours
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 (F)
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 (F)
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 (F)
5 Credit Hours
Clinical practice in general and specialty offices and clinics.
225 Contact Hours

Dietetic Technology

DIT 100 DIETETICS ORIENTATION (F)
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 (F)
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 (F)
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 (F)
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 (F)
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 (F)
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 (F)
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 (F)
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 (F)
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 (F)
1 Credit Hour
Basic elements of nutrition as required for nursing.
15 Contact Hours

DIT 120 PRE CLINICAL (F)
4 Credit Hours
Exploration of dietetic field for student with limited background. Observations at clinical facilities.
105 Contact Hours

DIT 121 CLINICAL EXPERIENCE (F)
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 (F)
3 Credit Hours
Concurrent: DIT 105, DIT 109
The student will become familiar with means of determining quality and othe standard levels of purchased items. The emphasis will be on feasibility o need, methods of, and control in purchasing and accounting for purchase items.
45 Contact Hours

DIT 150 INFANT NUTRITION (F)
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 (F)
2 Credit Hours
Required for Early Childhood Education and Management, and Dental As sisting. A survey of basic nutrition of general interest. Open to all students.
30 Contact Hours

DIT 212 NUTRITIONAL CARE SEMINAR (F)
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 (F)
3 Credit Hours
The student will understand methods and reasons for suitable recruiting selecting, training and motivating the proper staffing of employees in the hos pitality industry. Also, the effect of labor relation negotiations and contract on the operations and supervision of the work force.
45 Contact Hours

DIT 220 MANAGEMENT BY MENU (F)
3 Credit Hours
The student will gain proficiency in developing through analytic planning an determination of customer desires, menus within constraints of allowed costs required nutrition, desirable color and texture, and available staff and equip ment limitations, as well as mechanical confines, through programmed lab ex perience.
45 Contact Hours

DIT 221 FOOD AND DRUG INTERACTIONS (F)
1 Credit Hour
Drugs in common use, both prescription and over-the-counter, are considere in relation to the side effects. Nutritional means of overcoming these side e fects are studied.
15 Contact Hours

DIT 240 FOOD MANAGEMENT (F)
3 Credit Hours
Layout, purchasing of food supplies and equipment specifically for health car food service.
45 Contact Hours

DIT 250 DIETETIC SEMINAR (F)
3 Credit Hours
Prerequisites: DIT 212, DIT 222, DIT 240
Application of principles of personnel and food management to specific healt care food service situation.
45 Contact Hours

DIT 256 SPECIFICS OF FOOD MANAGEMENT (F)
3 Credit Hours
This course is designed for students having previous work experience in a pa ticular major field of Food Operations Management in a specific area of th hospitality industry and will serve to reinforce their practical experience an gain proficiency or enhance job knowledge in the better methods of accon plishing their task.
45 Contact Hours

DIT 260 DIETETIC REVIEW AND UPDATE (F)
3 Credit Hours
This course is designed for the dietetic technician graduate or advanced st dent who wishes to keep abreast of continuous changes in the field.
45 Contact Hours

DIT 297 COOPERATIVE EDUCATION (F)
Please refer to the description of Cooperative Education in this catalog c page 22.

DIT 299 INDEPENDENT STUDY (F)
Please refer to the description of Independent Study in this catalog on page 22.

Diesel Power 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)
3 Credit Hours
Prerequisites: DPE 100
An introduction to 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)
3 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)
3 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)
3 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)
3 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)
3 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 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

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 126 BLUEPRINT READING FOR MECHANICAL TRADES (R)
4 Credit Hours
Principles of interpreting blueprints and trade specifications common to the mechanical trades.
68 Contact Hours

DPR 127 BUILDING INSPECTION FOR CONSTRUCTION TRADES (R)
4 Credit Hours
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 (D)
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

Drama

DRA 111 INTRODUCTION TO THEATRE ARTS (D,F,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 (D,F,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 (D,AEC)
3 Credit Hours
Trains student to select, cut, cast, produce and direct small scale production
offered normally fall term.
45 Contact Hours

DRA 211 SURVEY OF THEATRE I (D,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 (D,R,AEC)
3 Credit Hours
Continues survey of drama.
45 Contact Hours

DRA 221 THEATRE IMPROVISATION (D,AEC)
3 Credit Hours
Prerequisites: DRA 111 or DRA 112 or permission of instructor.
Develops skills in improvisation through the techniques and approaches of ac
tual production. Offered as need or interest arises.
45 Contact Hours

DRA 290 SPECIAL TOPICS (D,F)
Please refer to the description of Special Topics in this catalog on page 22.

DRA 297 COOPERATIVE EDUCATION (D,F,R)
Please refer to the description of Cooperative Education in this catalog o
page 22.

DRA 299 INDEPENDENT STUDY (D,R,AEC)
Please refer to the description of Independent Study in this catalog on pag
22.

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, variou
details will be drawn such as wall section, cross section, stair section, eleva
tions, fireplaces, foundation plans and sections, various schedules, dimen
sioning 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 con
struction, various details will be drawn such as wall sections, cross section
stair sections, elevations, foundation plans and section, masonry coursing an
precast units.
120 Contact Hours

DRC 207 STRUCTURAL DESIGN & DRAFTING (R)
5 Credit Hours
Prerequisite: DRC 200
An introduction to the selection of structural steel, wood, and concrete mem
bers used in building construction, using portions of the A.I.S.C., C.R.S.I. an
selected wood design manuals and building codes. Types of structured detai
as required on plans will be discussed and drawn.
100 Contact Hours

DRC 208 PRACTICAL APPLICATIONS OF CONSTRUCTION DRAFTING (R)
10 Credit Hours
Prerequisite: DRC 207
A drafting and design project for a commercial structure consisting of: floo
plans, elevations, sections and details, complete with dimensions and note
Approval of this project by the instructor is required and will be discussed
the first regular scheduled class meeting. Extensive use of reference materi
is required.
200 Contact Hours

DRC 210 ARCHITECTURAL TECHNICAL PROJECT (R)
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.
This course is in addition to the required program credit hours.
120 Contact Hours

Drafting for Industry

DRI 105 INTRODUCTION TO DRAFTING (D,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, solar, 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.
120 Contact Hours

DRI 106 BASIC DESCRIPTIVE GEOMETRY AND AUXILIARY VIEW PROJECTION (D,R)
3 Credit Hours
Prerequisites: DRI 105
The following problem areas will be covered: 1) Line problems; true length, point view, bearing, slope and aximuth. 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.
60 Contact Hours

DRI 107 SECTION AND DIMENSIONING PRACTICES (D,R)
3 Credit Hours
Prerequisite: DRI 106
This module introduces the principles of orthographic projection, and isometric drawing, sections, conventions, and basic dimensioning practices. Cumulative, aligned fractional and undirectional, coordinate, decimal dimensioning systems will be used. Introduction to inking.
120 Contact Hours

DRI 109 INTERSECTIONS AND DEVELOPMENTS (D,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 (D,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 (D,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 (D,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 INTRODUCTION TO INDUSTRIAL PLANT DEVELOPMENT (D,R)
6 Credit Hours
Prerequisites: DRI 116
Introduces the drawing of preliminary plans for an industrial plant development system 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 (D,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, use of AISC Manual of Steel Construction, Smoley's Tables and Architectural Graphic Standards.
120 Contact Hours

DRI 206 INDUSTRIAL PIPING AND UTILITY CONSIDERATIONS (D,R)
3 Credit Hours
Prerequisites: DRI 205
Industry-related drawings will be made based on details for industrial piping and/or electrical, hydraulic, pneumatic, plumbing, heating and air conditioning systems.
60 Contact Hours

DRI 207 LARGE MECHANICAL EQUIPMENT (D,R)
9 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.
180 Contact Hours

DRI 208 MATERIAL HANDLING AND CONVEYING METHODS (D,R)
6 Credit Hours
Prerequisite: 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.
120 Contact Hours

DRI 209 INSTALLATION PLANS AND DETAILS (D,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 (D,R)
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. This course is in addition to the required program credit hours.
120 Contact Hours

DRI 297 COOPERATIVE EDUCATION (D,R)
Please refer to the description of Cooperative Education in this catalog on page 22.

DRI 299 INDEPENDENT STUDY (D,R)
Please refer to the description of Independent Study in this catalog on page 22.

Drafting for Civil/Topographic Mapping

DRM 116 INTRODUCTION TO CIVIL/TOPOGRAPHIC MAPPING (D,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 (D,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 (D,R)
6 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 (D,R)
12 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.
240 Contact Hours

DRM 297 COOPERATIVE EDUCATION (D,R)
Please refer to the description of Cooperative Education in this catalog on page 22.

Drafting for Petro/Chemical Piping Processes

DRP 107 DRAFTING & DIMENSIONING PRACTICES (D)
3 Credit Hours
Prerequisite: DRI 105
This module expands the principles of orthographic projection, isometric drawing, sections and conventions and introduces basic dimensioning practices for cast and machined parts as used in the piping industry and fabrication shops.
60 Contact Hours

DRP 110 INTRODUCTION TO PIPING (D)
6 Credit Hours
Prerequisite: DRP 107
Introduces equipment, terms and drafting symbols: flanges and fittings and various valves. Flow diagrams and symbols, piping and general specifications. Nomenclature of vessels, structural, concrete and electrical components. Plot plan and foundation location plan. Standard piping details.
120 Contact Hours

DRP 111 PROCESS PIPING DRAFTING I (D)
3 Credit Hours
Prerequisite: DRP 110
Introduces piping drawings, control stations, orifice flanges, meter runs, pipe racks, instrument details and specifications. Isometric definitions, dimensioning, spools and call outs.
60 Contact Hours

DRP 112 PROCESS PIPING DRAFTING II (D)
6 Credit Hours
Prerequisite: DRP 111
Review equipment foundations, piping specifications and general specifications, standard piping details and general piping details. Draw major project plan, elevation, sections and isometric pipe runs of depropanizer area.
120 Contact Hours

DRP 115 ENGINEERING PROBLEMS (D)
3 Credit Hours
Prerequisites: Knowledge of math, trigonometry, and algebra
Introduces the student to some of the problems encountered in engineering and to support the student in developing the basic skills necessary to apply solutions to the problems. Students will learn specific procedures of order in problem solving, accuracy in results.
60 Contact Hours

DRP 200 PROCESS PIPING DESIGN I (D)
8 Credit Hours
Prerequisite: DRP 112
Introduces process terms, plant arrangement and feed tanks, plot plans, vessels and piping systems.
160 Contact Hours

DRP 201 MODEL MAKING (D)
4 Credit Hours
To develop a basic knowledge of the tools and materials used in model construction and the ability to think through the model as an engineering tool.
There will be a lab fee for this course.
80 Contact Hours

DRP 202 WELDING (D)
3 Credit Hours
Prerequisite: DRP 107
Introduces assembly and detail drawings by the use of a welded assembly. Introduces layout and dimensioning methods, welding symbols and methods of representation. Types of joints and types of welds.
60 Contact Hours

DRP 210 PROCESS PIPING DESIGN II (D)
9 Credit Hours
Prerequisite: DRP 200
Introduction to instrumentation, pumps and turbines, compressors, fired heaters, exchangers and piping flexibility.
180 Contact Hours

DRP 211 SAFETY & MAINTENANCE (D)
3 Credit Hours
Prerequisite: DRP 210
Introduction to safety and maintenance. Introduces steam, glycol, water, hot oil and electrical tracing.
60 Contact Hours

DRP 212 PLUMBING (D)
3 Credit Hours
Prerequisite: DRP 211
Introduces state plumbing codes. Piping and pipe fittings symbols and insulation details.
60 Contact Hours

Earth Science

EAS 111 PHYSICAL GEOLOGY (F,R,AEC)
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 (F,R,AEC)
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 116 ENVIRONMENTAL GEOLOGY OF COLORADO (R,AEC)
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 119 THE GREAT ICE AGE (R,AEC)
1 Credit Hour
This course will analyze the effect 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,AEC)
1 Credit Hour
This course will analyze the causes of tornadoes, hurricanes, thunderstorms, and drought.
15 Contact Hours

EAS 125 CONTINENTAL DRIFT (R,AEC)
1 Credit Hour
The history of continental movement and its relationship to earthquakes and volcanoes and the history of life.
15 Contact Hours

EAS 130 AVALANCHE STUDY (R,AEC)
2 Credit Hours
A comprehensive and in-depth study of snow and avalanches. Emphasis will be on recognizing and evaluating existing hazards. Classroom topics are: meteorological fundamentals, mountain snowpack, avalanche characteristics, snow mechanics, terrain analysis, and avalanche rescue. Field work will include identification of weak snowpack layers, route selection, avalanche rescue, avalanche hazard forecasting, and stability evaluation.
30 Contact Hours

EAS 201 INTRODUCTION TO MINERALOGY (R,AEC)
3 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 of 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.
60 Contact Hours

EAS 202 INTRODUCTION TO PETROLOGY (R,AEC)
3 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.
60 Contact Hours

EAS 203 MAP AND AIRPHOTO INTERPRETATION (R,AEC)
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 206 GEOLOGY FIELD EXPERIENCES (R,AEC)
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,AEC)
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,AEC)
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,AEC)
Please refer to the description of Independent Study in this catalog on page 22.

Early Childhood Education and Management

ECE 100 INTRODUCTION TO EARLY CHILDHOOD EDUCATION (D,F,R,AEC)
3 Credit Hours
By observing and recording the activities 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 OBSERVATION I (D,F,R,AEC)
6 Credit Hours
Co-requisite: Recommend ECE 100
This course presents the study of the child from prenatal stage through six years of age. 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 (D,F,R,AEC)
3 Credit Hours
Provides fundamental knowledge of the child's physical, cognitive, social, emotional growth and development individually and in groups.
45 Contact Hours

ECE 105 SUPERVISED LAB EXPERIENCE (D,F,R,AEC)
8 Credit Hours
Prerequisites: ECE 100 and 101 or permission of instructor.
This course provides the first supervised experience working with children in a group setting. It provides an introduction to all areas of curriculum and many aspects of operating a center. A weekly staff meeting for planning, evaluation and staff development is required.
180 Contact Hours

ECE 109 PRESCHOOL SEMINAR FOR PARENTS AND STUDENTS I (D,F,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 are included.
15-45 Contact Hours

ECE 110 SUPERVISED EDUCATIONAL INTERNSHIP AND SEMINAR (D,F,R,AEC)
6 Credit Hours
Prerequisite: ECE 105 or permission of instructor
This is the first field experience working with young children. It develops the student's understanding of children's growth and behavior and the ability to meet children's 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 (D,F,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 ACTIVITES (D,F,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 (D,F,R,AEC)
3 Credit Hours
Provides a participatory approach to motor development for the young child. Content will include sensory-motor experiences, movement education, use of diagnostic tools, movement teaching strategies and classroom utilization.
45 Contact Hours

ECE 118 PARENT-CHILD INTERACTION I (D,F,R,AEC)
2 Credit Hours
This is a seminar for parents and others interested in young children. Child growth and development, parenting skills and personal concerns will be explored.
30 Contact Hours

ECE 119 PARENT-CHILD INTERACTION II (D,F,R,AEC)
2 Credit Hours
This course considers and explores issues relevant to parents and others interested in parenting and young children.
30 Contact Hours

ECE 130 DEVELOPMENTAL ISSUES AND ACTIVITIES (D,F,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 (F)
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.
65 Contact Hours

ECE 133 SUPERVISED EDUCATION INTERNSHIP AND SEMINAR (F,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 PRESCHOOL SEMINAR FOR PARENTS/STUDENTS II (D,F,R,AEC)
3 Credit Hours
This course is designed to develop optimal coordination and understandin between caregivers and parents. Students will make home visits and pla meetings and develop techniques for understanding and working with parent of very young children.
45 Contact Hours

ECE 136 INFANT/TODDLER SEMINAR FOR PARENTS I (F,AEC)
2 Credit Hours
This seminar will address those specific issues that present themselves in th care and development of the individual children enrolled in the infant/toddle setting. It will also incorporate some general child development theories an practices. At times parents will observe and participate with their child, utiliz equipment or design activities to meet the needs of their child (Required fo parents and infants/toddlers enrolled).
30 Contact Hours

ECE 138 INFANT/TODDLER SEMINAR FOR PARENTS II (F)
2 Credit Hours
This seminar will continue to address specific issues presented in the previou seminars. Students will go in depth on specific developmental areas related t the young child. It will also incorporate some general child development theo ries and practices. At times parents will observe activities to meet the needs c their child. (Required for parents of infants/toddlers enrolled.)
30 Contact Hours

ECE 146 SAFETY AND THE YOUNG CHILD (D,F,R,AEC)
2 Credit Hours
This is a fundamental course in first aid and the set-up and maintenance of healthy and safe environment for children.
30 Contact Hours

ECE 150 NUTRITION FOR YOUNG CHILDREN (D,F,R,AEC)
2 Credit Hours
This is a seminar in basic nutrition, menu planning, food shopping and prepa ration, and cooking with children. There is an emphasis on developing a understanding of the relationship of good nutrition to optimum health and de velopment.
30 Contact Hours

ECE 165 INITIAL ASSESSMENT FOR CHILD DEVELOPMENT ASSOCIATE (F)
2 Credit Hours
Prerequisite: Permission of instructor
Initial assessment is designed to establish a base line of performance an knowledge in six competency areas to enable prescriptive training.
45 Contact Hours

ECE 175 CREATIVE LEARNING ENVIRONMENTS (D,F,R,AEC)
5 Credit Hours
A course in which the student learns to set up and maintain an environmer which is safe, healthy and conducive to creative learning.
75 Contact Hours

ECE 176 PHYSICAL AND INTELLECTUAL DEVELOPMENT OF THE CHILD (D,F,R,AEC)
5 Credit Hours
Introduction to methods and theories of teaching the young child while deve oping skills in the physical, cognitive, creative and language areas.
75 Contact Hours

ECE 177 SELF CONCEPT AND INDIVIDUAL STRENGTH OF THE CHILD (D,F,R,AEC)
5 Credit Hours
Designed to aid the student in developing the child's positive self-image an awareness of feelings. Intensified lab school experience includes major trend in child's growth and development.
75 Contact Hours

ECE 178 CHILDREN AND ADULTS — GROUP MANAGEMENT (D,F,R,AEC)
5 Credit Hours
A study of the factors involved in the teaching/learning process, the relatio ship of children and adults functioning together in planned group enviro ments and in group management.
75 Contact Hours

ECE 179 ADMINISTRATION I HOME-CENTER/PARENT INVOLVEMENT (D,F,R,AEC)
5 Credit Hours
Techniques for bringing about optimal coordination of home and center. Child rearing practices and expectations are included in program planning.
75 Contact Hours

ECE 180 ADMINISTRATION II STAFF DEVELOPMENT (D,F,R,AEC)
5 Credit Hours
Administrative and supplementary responsibilities related to children's programs are given with an emphasis on staff development and training. Staff will plan and implement children's program.
75 Contact Hours

ECE 185 CHILD ABUSE AND NEGLECT (D,F,R,AEC)
1-5 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.
15-75 Contact Hours

ECE 190 FINAL ASSESSMENT OF THE CHILD DEVELOPMENT ASSOCIATE (F)
2 Credit Hours
Final assessment is designed to establish exiting competence in six CDA competency areas for recommendation for national CDA assessment and credentialing.
30 Contact Hours

ECE 194 INTRODUCTION TO EARLY CHILDHOOD EDUCATION FOR THE DAY CARE HOME PROVIDER (D,F,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 STIMULATION (D,F,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 (D,F,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 (D,F,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 (D,F,R,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 (D,F,R,AEC)
2-6 Contact Hours
Prerequisite: Permission of instructor or division director.
Provides opportunity for the student to engage in intensive study and/or research on a specific topic under the direction of a qualified faculty member
30-90 Contact Hours

ECE 201 WORKSHOP OF IDEAS (D,F,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 education practices and an introduction to recent developments in the field.
15-45 Contact Hours

ECE 202 WORKSHOP OF THINGS (D,F,R,AEC)
1-3 Credit Hours
Examination of commercial and/or 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 (D,F,R,AEC)
3 Credit Hours
Through analysis of theories and recent trends relevant to the learning process, the student will develop a philosophy of education. Observations will be included.
45 Contact Hours

ECE 210 SUPERVISED EDUCATION INTERNSHIP II (D,F,R,AEC)
8 Credit Hours
Prerequisite: ECE 110 or permission of instructor
There is an assumption of increasing responsibility for program planning and implementation and evaluation for individual children, as well as for the total group, parent relationships and staff development.
180 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 — 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 evaluating 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 (D,F,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 ADMINISTRATION II — CHILD CARE BUSINESS OPERATIONS (D,F,R,AEC)
3 Credit Hours
The methodology involved in starting and operating a children's center small business is covered including: licensing requirements, insurance, tax information, funding procedures and basic bookkeeping.
45 Contact Hours

ECE 225 CLASSROOM APPLICATIONS OF LANGUAGE AND COGNITION (D,F,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 226 CLASSROOM APPLICATIONS OF MUSIC AND MOVEMENT (D,F,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 227 CLASSROOM APPLICATIONS OF SCIENCE AND MATH (D,F,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 (F,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 290 SPECIAL TOPICS (D)
Please refer to the description of Special Topics in this catalog on page 22.

ECE 297 COOPERATIVE EDUCATION (D,F,R,AEC)
Please refer to the description of Cooperative Education in this catalog on page 22.

ECE 299 INDEPENDENT STUDY (D,F,R,AEC)
Please refer to the description of Independent Study in this catalog on page 22.

Economics

ECO 117 INTRODUCTION TO ECONOMICS (D,F,R,AEC)
3 Credit Hours
Emphasizes development of economic systems and philosophies; applications of fundamental economic concepts.
45 Contact Hours

ECO 118 LABOR RELATIONS (D,F,R,AEC)
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 (D,F,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 (D,F,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 (F,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 (F,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 (D,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 (D,F,R,AEC)
3 Credit Hours
Presents 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 (D,F,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 (D)
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 (D,R,AEC)
3 Credit Hours
Focuses upon a topical approach to contemporary economic issues.
45 Contact Hours

ECO 290 SPECIAL TOPICS (D)
Please refer to the description of Special Topics in this catalog on page 22.

ECO 297 COOPERATIVE EDUCATION (D,R)
Please refer to the description of Cooperative Education in this catalog on page 22.

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 BASICS 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 MICROPROCESSORS (R)
3 Credit Hours
Prerequisite: EDT 140
Introduction course on the development and use of microprocessors, programming and hardware. Industrial orientation.
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 orientation.
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)
Please refer to the description of Independent Study in this catalog on page 22.

Education

EDU 140 PEER TUTORING (D,F,R,AEC)
1-3 Credit Hours
This seminar in peer tutoring prepares students to be effective tutors of their peers through class lecture, practical experience, and small group seminars. The variable credit, open-entry format allows students flexibility in scheduling and an opportunity to investigate certain features of teaching techniques.
Variable Contact Hours

EDU 200 THE CHICANO FAMILY & COMMUNITY AS CLASSROOM RESOURCES (D)
3 Credit Hours
This course will present significant aspects of the home culture that the teaching staff can incorporate into their classrooms and use as instructional resources. Some of these aspects are traditions, values, and socialization practices which can be strategies for utilizing parents and the community in the school program.
45 Contact Hours

EDU 220 LANGUAGE ASSESSMENT AND DEVELOPMENT: THEORY AND PRACTICE (D)
3 Credit Hours
Prerequisite: COM 135
This course will present an introductory framework to theories of language assessment and language development. Additionally, it will present techniques for developing first and second skills. Emphasis will be placed on presenting information for English and Spanish language development within bilingual or E.S.L. public school programs.
45 Contact Hours

EDU 230 TEACHING READING TO THE BILINGUAL CHILD (D)
3 Credit Hours
Prerequisites: ENG 111; EDU 110, 210, 211 (MSC); EDU 220
This course will provide basic information and methods for teaching reading to bilingual children. Emphasis will be placed on presenting English, as well as Spanish reading approaches. This course is intended for those individuals who provide instruction to bilingual children.
45 Contact Hours

EDU 240 DEVELOPMENT OF BILINGUAL/E.S.L. METHODS AND MATERIALS FOR THE CONTENT AREAS (D)
3 Credit Hours
Prerequisites: ENG 111; EDU 110, 210, 211 (MSC); EDU 220
This course will provide examples of Bilingual/E.S.L. methods for developing content area skills in classrooms with linguistically different students. It will present strategies for organizing and implementing bilingual content area lessons. Students will develop appropriate Bilingual/E.S.L. materials and integrating cultural differences to Supplement instruction in the content areas.
45 Contact Hours

EDU 250 SUPERVISED INTERNSHIP AND SEMINAR FOR THE BILINGUAL E.S.L. INSTRUCTIONAL ASSISTANT (D)
3 Credit Hours
Prerequisites: EDU 200, 220, 230, 240
This supervised internship will take place in a public school classroom with limited English proficient students. It is designed to integrate background knowledge, competencies, and practical skills of previous classes. Students will be developing, utilizing, and applying their instructional skills in language, culture, and the bilingual process.
90 Contact Hours (75 classroom, 15 seminar)

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, transistors, 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
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 (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,AEC)
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,AEC)
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
Prerequisite: 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,AEC)
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 are 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,AEC)
3 Credit Hours
Prerequisites: Journeyman's license or permission of instructor.
This is an advanced National Electrical Code class for the licensed journeyman electrician and in-plant electrician, and it prepares for the Master Electrician Examination.
45 Contact Hours

EIC 209 ADVANCED CODE CALCULATIONS (R,AEC)
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 takeoffs 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)
Please refer to the description of Cooperative Education in this catalog on page 22.

EIC 299 INDEPENDENT STUDY (R)
Please refer to the description of Independent Study in this catalog on page 22.

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 ELF 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 (D,F)
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 (D,F)
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 (D,F)
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 (D,F)
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 (D,F)
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 (D,F)
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 (D,F)
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 (D,F)
3 Credit Hours
Prerequisite: ELT 110
Analyze Armstrong, Colpitts, Hartley, crystal, RC phase shift, and multivibrator oscillator circuits, and diagnose the operational characteristics of JFET and MOSFET configurations.
60 Contact Hours

ELT 116 SCR'S, UJT'S AND SPECIAL DEVICES (D,F)
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 (D,F)
3 Credit Hours
Prerequisite: ELT 116
Identify and demonstrate the principles and applications of inverting and non-inverting amplifier, voltage follower, summing, integrator, differentiator, sine-wave, and squarewave generator circuits.
60 Contact Hours

ELT 200 INSTRUMENTS AND MEASUREMENTS (D,F)
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 (D,F)
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 (D,F)
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 (D,F)
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 (D,F)
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 (D,F)
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 (D,F)
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 ELECTROMECHANICAL DEVICES (D)
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 (F)
3 Credit Hours
Prerequisite: ELT 208
When given the required input and output parameters of a micro-compute control problem, formulate and fabricate peripheral interface connections be tween a Motorola D2-M6800 Microprocessor Trainer and a simulation of th controlled device; write an assembly language program to provide the re quired control functions; machine code this program; and demonstrate th successful operation of the microprocessor controlled system.
60 Contact Hours

ELT 219 FCC GENERAL CLASS LICENSE PREPARATION (F)
8 Credit Hours
Prerequisites: ELT 117 and ELT 108
Obtain FCC Second Class Radio Telephone License by learning basic law an operating procedures (FCC Elements I-II) and radio telephone theory.
120 Contact Hours

ELT 290 SPECIAL TOPICS (D)
Please refer to the description of Special Topics in this catalog on page 22.

ELT 297 COOPERATIVE EDUCATION (D)
Please refer to the description of Cooperative Education in this catalog o page 22.

ELT 299 INDEPENDENT STUDY (D,F)
Please refer to the description of Independent Study in this catalog on pag 22.

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 099 SOUND AND SPELLING (D,F,R,AEC)
1-3 Credit Hours
This course is designed for the student who needs a refresher course i spelling and pronunciation. It emphasizes understanding dictionary pronuncia tion keys, spelling rules, vocabulary, and spelling problems common to col lege level writing. It will provide for oral and written approaches to improv spelling ability.
14-45 Contact Hours

ENG 103 WORKSHOP IN READING, WRITING, AND SPEAKING (D)
3 Credit Hours
Designed for students whose reading skills are at a level 3 on the English an Reading Assessment Tests but who wish to integrate three basic communica tion areas — reading, writing, and speaking. Emphasizes the skills common t all three areas in order to facilitate the transfer of knowledge from one area t another. The student also learns to apply these skills to other college studies.
60-75 Contact Hours

ENG 105 STUDY SKILLS (D,F,R,AEC)
1-3 Credit Hours
NOTE: This course may be taken for either English or Reading Credit, de pending on the students needs (see REA 105).
Particularly helpful for the student who has been away from school for severa years, this course is designed for the student whose reading skills are ade quate but who needs a review of methods to improve study skills. Method used include the following: making better use of time, improving reading rate notetaking, outlining, skimming and scanning, test taking techniques, librar use, critical reading, and vocabulary building.
15-45 Contact Hours

ENG 107 LANGUAGE FUNDAMENTALS I (D,F,R,AEC)
3 Credit Hours
This course is designed for the student who needs a review of basic gramma and formal/informal use of the English language. It introduces sentence struc ture, organization patterns and word use. Utilizing and individual approach, i will help prepare students for higher level English courses.
45 Contact Hours

ENG 108 LANGUAGE FUNDAMENTALS II (D,F,R,AEC)
3 Credit Hours
A quick review of grammar, in addition to a general review of basic writin skills; teaches sentence structure, punctuation, basic paragraph style and or ganization. It will help prepare students for higher level English courses.
45 Contact Hours

ENG 110 ELEMENTS OF COMPOSITION, STYLE, AND TECHNIQUE (D,F,R,AEC)
3 Credit Hours
This 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 111 ENGLISH COMPOSITION: ESSAY WRITING (D,F,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. 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 (D,F,R,AEC)
3 Credit Hours
Prerequisite: ENG 111 or permission of instructor
The second semester of expository writing continues with instruction in style and 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. This course is required for graduation with the AA and AS degrees and provides transfer credit.
45 Contact Hours

ENG 115 CREATIVE WRITING (D,F,R,AEC)
3 Credit Hours
This course explores imaginative uses of language and teaches appreciation and creation of various forms such as short stories, short plays, poetry, and creative nonfiction.
45 Contact Hours

ENG 125 POETRY WRITING (D,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 135 BUSINESS COMMUNICATIONS APPLICATIONS I (F,AEC)
3 Credit Hours
Prerequisite: Assessment level of 3
Concentrates on basic grammar, business vocabulary, punctuation and business style (correctness, conciseness, and precision). Also teaches rhetorical principles of essay writing, including two short research papers.
45 Contact Hours

ENG 211 COMPOSITION II: ARTICLE WRITING (D,F,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 non-fiction writing for magazines.
45 Contact Hours

ENG 215 ADVANCED CREATIVE WRITING (D,F,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 (D,F,R,AEC)
3 Credit Hours
Prerequisite: Eng 111 or ENG 135 or permission of instructor
This course 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 programs or major areas.
45 Contact Hours

ENG 290 SPECIAL TOPICS (D)
Please refer to the description of Special Topics in this catalog on page 22.

ENG 297 COOPERATIVE EDUCATION (D,R)
Please refer to the description of Cooperative Education in this catalog on page 22.

ENG 299 INDEPENDENT STUDY (D,F,R,AEC)
Please refer to the description of Independent Study in this catalog on page 22.

English as Second Language

ESL 100 BASIC ESL (D,F,R,AEC)
1-3 Credit Hours
This course is for the student who has no or very little experience with spoken English. Emphasis is on the understanding and usage of basic grammatical patterns and common vocabulary in conversation.
45-75 Contact Hours

ESL 101 LOW INTERMEDIATE ESL (D,F,R,AEC)
1-3 Credit Hours
A continuation of ESL 100. Emphasis is on increasing understanding and usage of basic grammatical patterns and vocabulary in conversation and improvement of pronounciation.
45-75 Contact Hours

ESL 102 HIGH INTERMEDIATE ESL (D,F,R,AEC)
1-3 Credit Hours
Prerequisite: ESL 101 or permission of instructor.
A continuation of ESL 101. Gives additional practice to increase fluency and comprehension of spoken English.
45-75 Contact Hours

ESL 103 ADVANCED ESL (D,F,R,AEC)
1-3 Credit Hours
Prerequisite: ESL 102 or permission of instructor.
A continuation of ESL 102. Emphasis is on the development of conversation skills through discussion of social, political, or personal issues and cultural differences.
45-75 Contact Hours

ESL 290 SPECIAL TOPICS (D)
Please refer to the description of Special Topics in this catalog on page 22.

Environmental Technology

EVT 100 INTRODUCTION TO ENVIRONMENT (D,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 (D)
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 (D)
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 (D)
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 (D)
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 (D)
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 (D)
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 (D)
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 (D)
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 (D)
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 (D)
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 (D)
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 (D)
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 (D)
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 (D)
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 (D)
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 (D)
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 (D)
Please refer to the description of Cooperative Education in this catalog on page 22.

EVT 299 INDEPENDENT STUDY (D)
Please refer to the description of Independent Study in this catalog on page 22.

Foreign Automotive Mechanics

FAM 100 ORIENTATION, SAFETY, BASIC ELECTRICAL AND IGNITION SYSTEMS (D)
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 (D)
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 (D)
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 (D)
3 Credit Hours
Introduces the reading of oscilloscope patterns and use of electronic testing instruments.
60 Contact Hours

FAM 108 EMISSION CONTROL (D)
3 Credit Hours
Presents the theory of operation and the repair of emission control components.
60 Contact Hours

FAM 109 DRUM BRAKE SYSTEMS (D)
3 Credit Hours
Examines hydraulic principles, theory, and service as applied to the automotive brake systems.
60 Contact Hours

FAM 110 DISC BRAKE SYSTEMS (D)
3 Credit Hours
Introduces theory, operation, and service on automotive disc brakes.
60 Contact Hours

FAM 115 WHEEL ALIGNMENT (D)
3 Credit Hours
Presents theory, operation, and service of wheel alignment.
60 Contact Hours

FAM 116 WHEEL BALANCE AND SUSPENSION (D)
3 Credit Hours
Presents theory and service of wheel balance and suspension.
60 Contact Hours

FAM 117 STEERING GEARS AND SYSTEMS (D)
3 Credit Hours
Examines theory and service of steering gears and systems.
60 Contact Hours

FAM 200 CLUTCHES AND MANUAL TRANSMISSIONS (D)
3 Credit Hours
Includes construction, operation, and service techniques for standard transmission clutches.
60 Contact Hours

FAM 205 DRIVE LINES AND DIFFERENTIALS (D)
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 (D)
3 Credit Hours
Examines the theory and service of automatic transmissions.
60 Contact Hours

FAM 207 AUTOMATIC TRANSMISSION REBUILDING (D)
6 Credit Hours
Requires diagnosing malfunctions and rebuilding automatic transmissions.
120 Contact Hours

FAM 208 ENGINE OPERATION, DIAGNOSIS, DISASSEMBLY AND MEASUREMENT (D)
6 Credit Hours
Presents engine overhaul procedures, disassembly and measurement with micrometers and special tools.
120 Contact Hours

FAM 209 ENGINE RECONDITIONING AND ASSEMBLY (D)
3 Credit Hours
Presents assembly procedures and reconditioning of the complete engine.
60 Contact Hours

FAM 210 AIR CONDITIONING THEORY SERVICE AND SAFETY (D)
3 Credit Hours
Examines the service, theory and safety procedures on automotive air conditioning.
60 Contact Hours

FAM 215 GENERAL SERVICE REPAIR (D)
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 (D)
3 Credit Hours
Analyzes how to read the parts catalog, compare parts, stock an inventory of parts.
60 Contact Hours

FAM 290 SPECIAL TOPICS (D)
Plese refer to the description of Special Topics in this catalog on page 22.

FAM 297 COOPERATIVE EDUCATION (D)
Please refer to the description of Cooperative Education in this catalog on page 22.

FAM 299 INDEPENDENT STUDY (D)
Please refer to the description of Independent Study in this catalog on page 22.

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
Operation, 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)
Please refer to the description of Cooperative Education in this catalog on page 22.

FLP 299 INDEPENDENT STUDY (R)
Please refer to the description of Independent Study in this catalog on page 22.

Flexible Automation — Robotics

FAR 100 INTRODUCTION TO INDUSTRIAL ROBOTICS (R)
2 Credit Hours
The introductory course in robotics covers basic robot configuration and operation; a survey of robot drive systems, robot controls, and teaching methods, basic control theory and robot applications. The laboratory sessions provide hands-on operating experience.
30 Contact Hours

FAR 105 INTERMEDIATE ROBOT CONFIGURATION (R)
3 Credit Hours
Prerequisite: FAR 100
A detailed study of various robot systems configurations including mechanica arm configuration, power supply, and controller relationships; laboratory sessions included.
45 Contact Hours

FAR 106 SURVEY OF ROBOT DRIVE SYSTEMS (R)
3 Credit Hours
Prerequisite: FAR 100
A study of hydraulic, mechanical, electrical and pneumatic robot drive systems.
45 Contact Hours

FAR 108 INTERMEDIATE ROBOT CONTROL THEORY (R)
3 Credit Hours
Prerequisite: FAR 100
An in-depth study of programmable controllers and robot controls. The course includes hands-on laboratory sessions.
45 Contact Hours

FAR 109 INTERMEDIATE ROBOT PROGRAMMING (R)
3 Credit Hours
Prerequisite: FAR 100
This course offers the student theoretical and practical experience programming robots.
45 Contact Hours

FAR 110 INTERMEDIATE ROBOT MAINTENANCE AND REPAIR (R)
3 Credit Hours
Prerequisite: FAR 100
The student will be exposed to trouble-shooting and maintenance procedures on robot computer controls, air logic controls, drum controls, hydraulic servo systems, DC servo systems and various robot arm mechanisms.
45 Contact Hours

FAR 115 ADVANCED ROBOT APPLICATIONS PROGRAMMING (R)
4 Credit Hours
Prerequisite: FAR 109
During this course the student will program actual robot applications on a job site.
60 Contact Hours

FAR 116 ADVANCED ROBOT MAINTENANCE AND REPAIR (R)
3 Credit Hours
Prerequisite: FAR 110
The course offers in-house and job site experience maintaining and repairing demonstration and production robots.
45 Contact Hours

FAR 200 INTRODUCTION TO ROBOTIC SYSTEMS (R)
3 Credit Hours
An initial overview of selected robotic systems including:

1. Robot welding systems
2. Robot painting systems
3. Robot material handling systems
4. Robot machine loading systems
5. Robot assembly systems
6. Robot spot welding systems

The course includes information on robots, robotic interface, ancillary equipment, related machine and welding equipment, systems design, installation and maintenance.
45 Contact Hours

FAR 205 INTERNSHIP APPLICATIONS ENGINEERING (R)
3 Credit Hours
Prerequisite: Permission of instructor
This course offers the student on-site applications engineering experience and training.
45 Contact Hours

FAR 206 INTERNSHIP (R)
3 Credit Hours
Prerequisite: Permission of instructor
The internship features on the job maintenance training in actual production robotic installations.
45 Contact Hours

FAR 215 INTERMEDIATE ROBOT SYSTEMS (R)
4 Credit Hours
Prerequisite: FAR 200
More detailed than FAR 200, emphasis on maintenance, repair, on site exposures, multi robot use.
60 Contact Hours

French

FRE 101 CONVERSATIONAL FRENCH I (D,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 CONVERSATIONAL FRENCH II (D,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

FRE 290 SPECIAL TOPICS (D)
Please refer to the description of Special Topics in this catalog on page 22.

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
Construction methods, building and building materials, new and old as found in main street U.S.A. are studied in detail. Emphasis is placed on structural stability and passage of heat and products of combustion in a 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 photographic skills to take and prepare photographic evidence for judicial proceedings.
68 Contact Hours

FST 116 WALKTHROUGH REVIEW OF UNIFORM BUILDING CODE (R)
2 Credit Hours
A chapter-by-chapter review of changes between 1979 and 1982 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 classification of 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.
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 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, code enforcement, fire and related 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 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,AEC)
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 (R)
Please refer to the description of Cooperative Education in this catalog on page 22.

FST 299 INDEPENDENT STUDY (R)
Please refer to the description of Independent Study in this catalog on page 22.

General Education Development

GED 010 GED PREPARATION: READING AND WRITING (D,F,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 (F,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 (D,AEC)
1 Credit Hour
Designed for persons wanting to know where places are located.
15 Contact Hours

GEO 108 MAPS AND COMPASS USE (D,AEC)
1 Credit Hour
Designed to improve the student's ability to make and use maps.
15 Contact Hours

GEO 111 PHYSICAL GEOGRAPHY (LANDFORMS) (D,F,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) (D,F,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 (D,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 (D,F,R,AEC)
3 Credit Hours
Details the major regions of the world and introduces the concepts of cultural geography and how they apply to these regions.
45 Contact Hours

GEO 165 GEOGRAPHY OF LATIN AMERICA (D)
3 Credit Hours
An in-depth analysis of geographical patterns of Latin America.
45 Contact Hours

GEO 200 HUMAN ECOLOGY (D,F,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 (D,AEC)
3 Credit Hours
An examination of man's economic activities and their location.
45 Contact Hours

GEO 220 GEOGRAPHY OF COLORADO (D,F,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 (D,F,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 289 GEOGRAPHY PRACTICUM (D,AEC)
1-9 Credit Hours
Field experience related to the student's interests. Arrangement with instructor required.

GEO 290 SPECIAL TOPICS (D)
Please refer to the description of Special Topics in this catalog on page 22.

GEO 297 COOPERATIVE EDUCATION (D,R)
Please refer to the description of Cooperative Education in this catalog on page 22.

German

GER 101 CONVERSATIONAL GERMAN I (R)
3 Credit Hours
Basic conversational patterns for enjoyment and/or for practical use.
45 Contact Hours

GER 102 CONVERSATIONAL GERMAN II (R)
3 Credit Hours
Prerequisite: GER 101
Continuation of GER 101.
45 Contact Hours

GER 111 FIRST YEAR GERMAN I (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 II (R)
5 Credit Hours
Prerequisite: GER 111 or permission of instructor.
Continuation and expansion of GER 111.
75 Contact Hours

GER 211 INTERMEDIATE GERMAN I (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 II (R)
3 Credit Hours
Prerequisite: GER 211
Continuation and expansion of GER 211.
45 Contact Hours

GER 299 INDEPENDENT STUDY (R)
Please refer to the description of Independent Study in this catalog on page 22.

Graphic Arts

GRA 100 INTRODUCTION TO GRAPHIC ARTS (D)
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 (D)
3 Credit Hours
Prerequisite: GRA 100 or permission of instructor.
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 (D)
3 Credit Hours
Prerequisite: GRA 105 or permission of instructor.
Introduces theory of halftones, calibrate screens, compute flash chart, shoot halftones, halftone bumps, dropouts 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 (D)
3 Credit Hours
Prerequisite: GRA 106 or permission of instructor.
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 (D)
3 Credit Hours
Prerequisite: GRA 107 or permission of instructor.
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 (D)
3 Credit Hours
Prerequisite: GRA 100-108 series or permission of instructor.
Introduces offset press set-up for: paper feeder, register board, delivery and printing head.
60 Contact Hours

GRA 110 STRIPPING AND SMALL BINDERY (D)
3 Credit Hours
Prerequisite: GRA 109 or permission of instructor.
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 (D)
3 Credit Hours
Prerequisite: GRA 110 or permission of instructor.
Continues 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 (D)
3 Credit Hours
Prerequisite: GRA 115 or permission of instructor.
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 (D)
3 Credit Hours
Prerequisite: GRA 116 or permission of instructor.
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 (D)
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 (D)
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 (D)
3 Credit Hours
Prerequisite: GRA 100 series or permission of instructor
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 (D)
3 Credit Hours
Prerequisite: GRA 200 or permission of instructor.
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 (D)
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 (D)
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 (D)
3 Credit Hours
Prerequisite: GRA 200 series or permission of instructor.
Teaches basic settings lubrication, adjustments and minor repair of offset equipment, including presses, cameras, vacuum pumps, etc. Continues offset processes.
60 Contact Hours

GRA 290 SPECIAL TOPICS (D)
Please refer to the description of Special Topics in this catalog on page 22.

GRA 299 INDEPENDENT STUDY (D)
Please refer to the description of Independent Study in this catalog on page 22.

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)
Please refer to the description of Cooperative Education in this catalog on page 22.

HEO 299 INDEPENDENT STUDY (R)
Please refer to the description of Independent Study in this catalog on page 22.

History

HIS 111 WORLD CIVILIZATION I (D,F,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 II (D,F,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 (D,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 (D,F,R)
3 Credit Hours
An introduction to American Indian's historical and socio-cultural development with emphasis upon those processes and relations with non-Indians, which have contributed to the current conditions.
45 Contact Hours

HIS 125 AMERICAN CIVILIZATION: ITS HISTORY, ART AND CULTURE (D,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 (D,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 (D,F,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 peoples.
45 Contact Hours

HIS 135 INTRODUCTION TO LATIN AMERICAN HISTORY (D)
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 (D,F,R,AEC)
3 Credit Hours
Analyzes the historical and cultural development of modern man since 1900.
45 Contact Hours

HIS 205 WOMEN IN HISTORY (D,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 (D,F,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 (D,F,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 (D,F,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 (D,F,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 (D,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 (D,F,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 241 BLACK CIVILIZATION — AFRICA (D)
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 (D,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 (D)
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 (D)
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 (D,R,AEC)
3 Credit Hours
Study of individual and social freedom as a value and concern, with emphasis on Jeffersonian thought.
45 Contact Hours

HIS 261 ENGLAND I (R)
3 Credit Hours
The formative development of Britain from Stonehenge to the Restoration of 1660.
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 (D)
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

HIS 290 SPECIAL TOPICS (D)
Please refer to the description of Special Topics in this catalog on page 22.

HIS 299 INDEPENDENT STUDY (D)
Please refer to the description of Independent Study in this catalog on page 22.

Health Occupations

HOC 100 MEDICAL TERMINOLOGY I (D,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 (D)
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.
30 Contact Hours

HOC 107 ORIENTATION TO CLINICAL PRACTICUM (D)
1 Credit Hour
Prerequisite: This course is for the student enrolled in either the Nuclear Medicine Technology or Radiation Therapy Technology programs, or with permission of program's coordinator.
The goal of this course is to introduce the student to the terminology, equipment, and procedure performed by the technologist in the clinical education center.
30 Contact Hours

HOC 108 POSITIONING AND TECHNIQUES (D)
1 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.
45 Contact Hours

HOC 115 OBSTETRICS FOR CHILDBIRTH EDUCATORS (D)
1 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 (D,AEC)
1 Credit Hours
Prerequisite: Ninth 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. Open Entry/Open Exit Self Paced.)
30 Contact Hours

HOC 117 HOLISTIC HEALTH PERSPECTIVES (D,AEC)
1 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 (D,R)
Please refer to the description of Independent Study in this catalog on page 22.

HOC 290 SPECIAL TOPICS (D,AEC)
Please refer to the description of Special Topics in this catalog on page 22.

HOC 299 INDEPENDENT STUDY (D)
Please refer to the description of Independent Study in this catalog on page 22.

Hospitality and Restaurant Administration

HRA 110 INTRODUCTION TO THE HOSPITALITY INDUSTRY (D)
1 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 (D)
1 Credit Hours
Provides a basic knowledge of the principles of menu planning and the merchandising for food and beverages within the various settings of the hospitality industry.
45 Contact Hours

HRA 120 BARTENDING (D)
3 Credit Hours
Provides a working knowledge to the variety of alcoholic beverages served 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 (D)
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 (D)
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 (D)
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 (D)
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 (D)
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 (D)
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 (D)
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 (D)
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 (D)
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 290 SPECIAL TOPICS (D)
Please refer to the description of Special Topics in this catalog on page 22.

HRA 298 HOTEL MOTEL MANAGEMENT SEMINAR (D)
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 297 COOPERATIVE EDUCATION (D)
Please refer to the description of Cooperative Education in this catalog on page 22.

HRA 299 INDEPENDENT STUDY (D)
Please refer to the description of Independent Study in this catalog on page 22.

Human Services

HSE 105 INTRODUCTION TO SOCIAL WELFARE (D,AEC)
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, statutes and public policies.
45 Contact Hours

HSE 106 SURVEY OF HUMAN SERVICES (D,AEC)
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 (D,AEC)
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 (D,AEC)
3 Credit Hours
Prerequisites: HSE 105, 106, 107 or permission of instructor.
Introduces basic concepts of major therapeutic systems. Students will be exposed to the backgrounds, developmental theories and practices of specific systems from psychoanalysis to reality therapy.
45 Contact Hours

HSE 109 SOCIAL ISSUES IN HUMAN SERVICES (D,AEC)
3 Credit Hours
Prerequisites: HSE 105, 106, 107 or permission of instructor.
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 (D)
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 (D)
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 (D)
3 Credit Hours
Prerequisite: HSE 115
Provides an overview of family functions and roles. Cultural differences in fa
ilies are considered. Presents philosophies and techniques for interviewing
family conflicts and dysfunctions.
45 Contact Hours

HSE 207 COMMUNITY ORGANIZATION (D,AEC)
3 Credit Hours
Prerequisite: HSE 115
Introduces principles, concepts and methods of community development a
organization.
45 Contact Hours

HSE 208 SOCIAL WELFARE POLICY (D,AEC)
3 Credit Hours
Prerequisite: HSE 207
Present models for social policy analysis, program planning and evaluatio
Application of models to relevent social welfare issues is a major focus.
45 Contact Hours

HSE 209 CRISIS THEORY AND INTERVENTION (D,AEC)
3 Credit Hours
Prerequisite: HSE 108
Introduces the student to basic theories and principles of crisis interventi
from a historical as well as a practical orientation. Activities for gaining skills
interviewing in various types of crisis situations are included.
45 Contact Hours

HSE 211 HUMAN SERVICES PRACTICUM II (D)
4 Credit Hours
Prerequisite: HSE 115
Through placement in a service agency, the student applies the values, co
cepts and skills gained in theory courses to the actual process of helpi
people. Emphasis is upon sharpening skills and knowledge, use of self in t
helping process, understanding systems and use of community resource
Weekly classroom seminars are held to correlate theory with practice.
150 Contact Hours

HSE 212 HUMAN SERVICES PRACTICUM III (D)
7 Credit Hours
Prerequisites: HSE 115, 211
The student participates in various service agency functions as a group me
ber and leader. Further develops skills and knowledge in the use of self a
systems in the helping process. Develops an in-depth understanding of the r
lationships between human services and society. Weekly classroom semina
are held to correlate theory with practice. Upon completion of this course, t
student will have demonstrated mastery of paraprofessional human servic
skills.
285 Contact Hours

Humanities

HUM 111 STUDIES IN THE HUMANITIES I (D,F,R,AEC)
3 Credit Hours
A survey of ideas which have shaped humankind and which have influenc
the development of art, music, literature, the societies and behavior of indivi
uals throughout history.
45 Contact Hours

HUM 112 STUDIES IN THE HUMANITIES II (D,F,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 (D)
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 (D)
3 Credit Hours
A study of the folklore (myths, legends, music, medicine, riddles, games) of
digenous people and the Mestizo in Mexico and the Southwest.
45 Contact Hours

HUM 127 INDIGENISMO AND THE CHICANO (D)
3 Credit Hours
A study of non-European approach to philosophies and ideas of native pe
ples in the Americas as those philosophies and ideas affect the Chicano.
45 Contact Hours

HUM 200 POPULAR CULTURE (D,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 (D,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 (D,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 (D,R,AEC)
3 Credit Hours
Prerequisite: ENG 111 or permission of instructor.
An interdisciplinary study of the modes of change as manifested in artistic and social movements, in mass culture, and in changing life-styles.
45 Contact Hours

HUM 216 JESUS AND THE CHALLENGE OF BEING HUMAN (R)
3 Credit Hours
The historical Jesus, his environment and teachings.
45 Contact Hours

HUM 225 CONTEMPORARY CHICANO (D)
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 251 CURANDERISMO (D)
3 Credit Hours
A study of the history, philosophy and practicality of medicinal herbs of the Southwest.
45 Contact Hours

HUM 290 SPECIAL TOPICS (D)
Please refer to the description of Special Topics in this catalog on page 22.

HUM 229 INDEPENDENT STUDY (D)
Please refer to the description of Independent Study in this catalog on page 22.

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 the 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 penumatic and electronic systems. Specific control applications are for furnace, pipeline, pollution (pH), boiler and mixing.
120 Contact Hours

IMA 297 COOPERATIVE EDUCATION (R)
Please refer to the description of Cooperative Education in this catalog on page 22.

IMA 299 INDEPENDENT STUDY (R)
Please refer to the description of Independent Study in this catalog on page 22.

Information Media Technology

IMT 113 LIBRARY TECHNICAL SERVICES (D)
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 (D)
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 (D)
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 (D)
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 Conta **IMT 297 COOPERATIVE EDUCATION (D)**

Please refer to the description of Cooperative Education in this catalog on page 22.

IMT 299 INDEPENDENT STUDY (D)
Please refer to the description of Independent Study in this catalog on page 22.

Industrial Management

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

Interpreter Training Program

ITP 100 HEARING PROCESS AND PATHOLOGY (F)
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 106 FINGERSPELLING (F)
3 Credit Hours
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.
45 Contact Hours

ITP 107 SPEECHREADING AND ORAL COMMUNICATION FACILITATION (F)
3 Credit Hours
Prerequisite: ITP 110
Principles and techniques of speech-reading and facilitating oral communication with deaf individuals.
45 Contact Hours

ITP 110 INTERPRETER SEMINAR I (F)
3 Credit Hours
Co-requisite: ASL 111
Introduction to interpreting; the role of the interpreter, interpreter ethics; the physical setting; organizations for, and the certification of interpreters.
45 Contact Hours

ITP 111 INTERPRETER SEMINAR II (F)
2 Credit Hours
Prerequisite: ITP 110
Co-requisite: ASL 112
Continuation of ITP 110, with emphasis on observing professional interpreters and responding in writing/discussion to various aspects of the profession.
30 Contact Hours

ITP 200 SIGN TO VOICE INTERPRETING (F)
3 Credit Hours
Prerequisite: ASL 112, ITP 110, ITP 111
Basic skills in interpreting from sign language to spoken English.
45 Contact Hours

ITP 203 EDUCATIONAL INTERPRETING (F)
3 Credit Hours
Co-requisite: ITP 206, ITP 207
Techniques and knowledge needed for interpreting in an educational setting.
45 Contact Hours

ITP 205 VOICE TO SIGN INTERPRETING (F)
3 Credit Hours
Prerequisite: ASL 112, ITP 110, ITP 111
Basic skills in interpreting from English to Sign Language.
45 Contact Hours

ITP 206 SYSTEMS OF MANUALLY CODED ENGLISH (F)
2 Credit Hours
Prerequisite: ASL 112, ITP 110
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).
30 Contact Hours

ITP 207 TRANSLITERATING (F)
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 (F)
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 (F)
3 Credit Hours
Co-requisite: ITP 215
Discussion and role play related to ethical issues in interpreting and practicur experiences.
45 Contact Hours

ITP 215 INTERPRETING PRACTICUM (F)
12 Credit Hours
Prerequisites: ASL 211, ITP 200, ITP 205 with grade B or better, completio of all other program courses
Co-requisite: ITP 210 Practicum Seminar
Field experience interpreting in a supervised eudcational, community, servic agency or other setting.
360 Contact Hours

ITP 285 WORKSHOP IN INTERPRETING (F)
1-9 Credit Hours
Prerequisite: Employment as an interpreter
Conducted on a periodic basis, workshops will be designed to meet the need of interpreters in the field. Workshops will include such things as issues in in terpreting, new developments in the field of interpreting, interpreter ethics, in terpreter skills, specialized areas of interpreting, the structure of ASL and Sig Language issues.
15-135 Contact Hours

ITP 299 INDEPENDENT STUDY (F)
Please refer to the description of Independent Study in this catalog on pag 22.

Journalism

JOU 111 INTRODUCTION TO JOURNALISM I (D,F,R,AEC)
3 Credit Hours
Introduces basics of the print media including news writing, features, in terviews as well as giving exposure to layout, make-up and typesettin Offered normally fall term.
45 Contact Hours

JOU 112 INTRODUCTION TO JOURNALISM II (D,F,R,AEC)
3 Credit Hours
Prerequisite: JOU 111 or permission of instructor.
Continues JOU 111. Offered normally spring term.
45 Contact Hours

JOU 290 SPECIAL TOPICS (D,AEC)
Please refer to the description of Special Topics in this catalog on page 22.

JOU 297 COOPERATIVE EDUCATION (D,R)
Please refer to the description of Cooperative Education in this catalog o page 22.

JOU 299 INDEPENDENT STUDY (D,AEC)
Please refer to the description of Independent Study in this catalog on pag 22.

Literature

LIT 105 INTRODUCTION TO LITERATURE: THE SHORT STORY (D,F,R,AEC)
3 Credit Hours
Students read, discuss and write about selected works of recent and conten porary short fiction.
45 Contact Hours

LIT 106 INTRODUCTION TO LITERATURE: THE SHORT NOVEL (D,F,R,AEC)
3 Credit Hours
Students read, discuss and write about classic and contemporary short nove selected from the Western as well as the Oriental traditions.
45 Contact Hours

LIT 107 INTRODUCTION TO LITERATURE: POETRY (D,R,AEC)
3 Credit Hours
Students read, discuss and write about selected poems of world literature.
45 Contact Hours

LIT 110 THEMES IN LITERATURE (D,R,AEC)
3 Credit Hours
Students read, discuss and write about works selected according to their th matic content; a given semester's theme is announced in the schedule wh the course is offered.
45 Contact Hours

IT 125 INTRODUCTION TO CHICANO LITERATURE (D,AEC)
Credit Hours
tudents receive an overview of Chicano literature from its indigenous roots to ıe present.
5 Contact Hours

IT 201 LITERATURE BY AND ABOUT WOMEN (D,AEC)
Credit Hours
rerequisite: ENG 111 or permission of instructor.
tudents study the role of women as characters and authors in selected works f literature.
5 Contact Hours

IT 210 SCIENCE FICTION (D,AEC)
Credit Hours
rerequisite: ENG 111 or permission of instructor.
tudents study current trends in science fiction: selected readings in short sto-es and novels, from Jules Verne to Isaac Asimov. (Entry level skills twelfth rade reading level.)
5 Contact Hours

IT 215 CULT AND THE OCCULT (D,R)
Credit Hours
rerequisite: ENG 111 or permission of instructor.
tudents study a selection of classic and modern literature with aspects of the ccult. Related themes will include religion, parapsychology and mysticism.
5 Contact Hours

IT 216 FANTASY (D,R,AEC)
Credit Hours
rerequisite: ENG 111 or permission of instructor.
tudents read plays, poems, stories and fables from all over the world. (Entry vel skills: twelfth grade reading level).
5 Contact Hours

IT 217 HUMOR AND SATIRE (D,AEC)
Credit Hours
rerequisite: ENG 111 or permission of instructor.
tudents study the literature of laughter and its underlying seriousness; works e chosen both from the classics of world literature as well as from contem-orary scources. (Entry level skills: twelfth grade reading level.)
5 Contact Hours

T 229 CONTEMPORARY BLACK LITERATURE (D,R,AEC)
Credit Hours
udents perform an analytical and critical study of black literature and the ntributions of the black writer to American society.
5 Contact Hours

T 230 LITERATURE OF THE AMERICAN WEST (F,AEC)
Credit Hours
udents read novels, short stories and essays about the American West and e films adapted from Western fiction and images of the West in art.
5 Contact Hours

T 241 SURVEY OF AMERICAN LITERATURE I (D,F,R,AEC)
Credit Hours
udents perform a comparative study of major American authors through the vil War.
5 Contact Hours

T 242 SURVEY OF AMERICAN LITERATURE II (D,F,R,AEC)
Credit Hours
erequisite: LIT 241 or permission of instructor.
udents continue LIT 241, covering the period from the Civil War to the esent.
5 Contact Hours

T 251 ENGLISH LITERATURE I (R,AEC)
Credit Hours
survey of major works from the Anglo-Saxon period through the Elizabethan riod.
5 Contact Hours

T 252 ENGLISH LITERATURE II (R,AEC)
Credit Hours
survey of major works from the 18th Century to the present.
5 Contact Hours

LIT 261 GREAT BOOKS I (D,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 (D,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

LIT 290 SPECIAL TOPICS (D)
Please refer to the description of Special Topics in this catalog on page 22.

LIT 299 INDEPENDENT STUDY (D,F,R)
Please refer to the description of Independent Study in this catalog on page 22.

Management

MAN 105 INTRODUCTION TO BUSINESS (D,F,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 (D,F,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 (D,F,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 (D,F,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 (D,F,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 (D,F,R,AEC)
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 (D,F,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 (D,F,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 (D,F,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 (D,F,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 (D,F,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 (D,F,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 (D,F,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

MAN 290 SPECIAL TOPICS (D)
Please refer to the description of Special Topics in this catalog on page 22.

MAN 297 COOPERATIVE EDUCATION (D)
Please refer to the description of Cooperative Education in this catalog on page 22.

Marketing

MAR 107 PRINCIPLES OF MARKETING (D,F,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 (D,F,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 (D,F,R,AEC)
3 Credit Hours
A course enabling the student to understand and apply techniques in adver tising and promotion. Considers the role of advertising and sales promotion i our economy, and includes the kinds and purposes of different media, con sumer behavioral implications and student practice and application i campaign programming.
45 Contact Hours

MAR 115 VISUAL MERCHANDISING (D,F,R,AEC)
2 Credit Hours
A course enabling the student to understand and apply techniques in th various areas of visual merchandising. The course covers principles and a rangement of merchandise displays, store design and layout, promotiona signs, store fixtures and customer service.
30 Contact Hours

MAR 115L VISUAL MERCHANDISING LAB (D,F,R,AEC)
1 Credit Hour
Corequisite: MAR 115 Visual Merchandising
This lab provides an opportunity for practical application of principles learne in Visual Merchandising such as principles and arrangements of merchandis display, store design and layout, promotional signs, store fixtures, and cus tomer service.
30 Contact Hours

MAR 207 MARKETING SEMINAR (D,F,R,AEC)
2 Credit Hours
Prerequisite: MAR 107, Principles of Marketing or equivalent.
This is an advanced course in marketing, enabling the student to apply ma keting strategies to the development of both individual and group projects.
30 Contact Hours

MAR 208 SALES SEMINAR (D,F,R,AEC)
2 Credit Hours
Prerequisite: MAR 108, Salesmanship or equivalent.
This is an advanced course designed for those students planning a career i sales. The course will enable the student to design a personal profile for sale success, develop advanced sales techniques, and develop an acquaintanc and association with professional salespeople.
30 Contact Hours

MAR 211 WHOLESALING AND DISTRIBUTION (D,F,R,AEC)
3 Credit Hours
A course enabling the student to understand and develop strategies in whol saling and physical distribution. The course will deal with the functio purposes and operation of the various wholesale middlemen, warehouse ar transportation policies and procedures and documentation of goods and se vices.
45 Contact Hours

MAR 215 RETAIL MANAGEMENT (D,F,R,AEC)
3 Credit Hours
A course designed to acquaint the student with the fundamentals of and d velop strategies for retail store management. The course will cover reta organization and management, store location, buying and handling mercha dise, pricing merchandise and promotional efforts.
45 Contact Hours

MAR 216 PRINCIPLES OF PURCHASING (D,F,R,AEC)
3 Credit Hours
Objectives and methodology of industrial, institutional and governmental pu chasing agents and buyers. Emphasizes value analysis, product quali control, maintenance of operating efficiency, analysis of competitive pri quotations and materials management.
45 Contact Hours

MAR 290 SPECIAL TOPICS (D)
Please refer to the description of Special Topics in this catalog on page 22.

MAR 297 COOPERATIVE EDUCATION (D)
Please refer to the description of Cooperative Education in this catalog page 22.

Machine Shop

MAS 100 INTRODUCTION TO MACHINE SHOP (F)
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 (F)
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 SETUPS AND OPERATION II (F)
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 (F)
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 (F)
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 (F)
1 Credit Hours
Read blueprints and interpret symbols, notes, dimensions, and tolerances. The knowledge will be evidenced by scoring 85 percent accuracy on an exam.
15 Contact Hours

MAS 111 VERTICAL MILL OPERATIONS AND SETUPS I (F)
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 (F)
3 Credit Hours
Prerequisite: MAS 111
Determine hole locations by coordinates and degrees, use a rotary table, use a jig 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 (F)
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 (F)
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 (F)
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 (F)
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 (F)
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 (F)
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 (F)
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 Contract Hours

MAS 211-215 JOB SHOP MACHINING I, II, III, IV, V (F)
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 (F)
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 (F)
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 (F)
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 (F)
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 235 INTERPRETING ENGINEERING DRAWINGS (F)
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

MAS 297 COOPERATIVE EDUCATION (F)
Please refer to the description of Cooperative Education in this catalog on page 22.

Mathematics

MAT 090 BASIC OPERATIONS ON WHOLE NUMBERS (D,F)
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 (D)
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 (D)
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 (D,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 (D,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 (D)
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 (D)
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 (D,F,R,AEC)
3 Credit Hours
Designed for students who need a comprehensive review of arithmetic. Topics include the fundamental operations of whole numbers, fractions, decimals and percentages, proportion, operations with signed numbers and equations.
45 Contact Hours

MAT 107 MATHEMATICS FOR ELECTRONICS (D)
5 Credit Hours
Includes powers of ten, scientific notation, electronic currents, use of electronic calculators, basic albegra, Ohm's law, power formulas, direct and alternating current circuits, equation systems, and elementary trigonometry.
75 Contact Hours

MAT 108 HAND-HELD CALCULATOR (D,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 (D,R,AEC)
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 (D,F,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 (D,F,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 (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 (D,F,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 121 COLLEGE ALGEBRA (D,F,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 (D,F,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 mapping associations and ordered pairs are also covered and included are theories equations and further solutions to systems of equations.
45 Contact Hours

MAT 127 SURVEY OF CALCULUS (F,R)
4 Credit Hours
Prerequisite: MAT 121 or permission or instructor.
For Business, Life Science, and Social Science majors. Derivatives, integral and their applications are included with attention restricted to algebraic, exponential and logarithmic functions.
60 Contact Hours

AT 130 CONTEMPORARY COLLEGE MATHEMATICS (D,AEC)
Credit Hours
is course concentrates on mathematical concepts needed to function in ntemporary society. The topics include electronic calculating devices (cal-lators and computers), problem solving skills (algebra and logic), consumer thematics, elementary probability theory and descriptive statistics, easurement (metric system, areas and volumes), and graphs of elementary nctions.
Contact Hours

AT 201 CALCULUS I (D,F,R,AEC)
Credit Hours
erequisite: MAT 122 or equivalent
roduces single variable calculus and analytic geometry. Concepts intro-ced will be motivated by geometric and physical interpretations.
Contact Hours

AT 202 CALCULUS II (D,F,R,AEC)
Credit Hours
erequisite: MAT 201
tends and further develops concepts of single variable calculus and analytic ometry studies as found in MAT 201. Applications of differentiation and in-ration and techniques of integration are emphasized.
Contact Hours

AT 203 CALCULUS III (D,F,R,AEC)
Credit Hours
erequisite: MAT 202
mpletes the traditional subject matter of single variable calculus not cov-d in MAT 201 and MAT 202 and introduces vector analysis, multi-variable culus and solid analytic geometry. Also covered are three-dimensional tor space and infinite series.
Contact Hours

AT 205 ORDINARY DIFFERENTIAL EQUATIONS (D,F,R,AEC)
Credit Hours
erequisite: MAT 202 or MAT 203 concurrently
oduces ordinary differential equations. Topics will include equations of first d second order with applications, linear equations, series methods and nsform methods.
Contact Hours

AT 207 PROBABILITY AND STATISTICS (D,AEC)
redit Hours
requisite: MAT 121
olies the principles of elementary probability theory and descriptive and in-ntial statistics. Topics include random variables, probability distributions, mpling, estimation and tests of hypotheses.
Contact Hours

AT 209 LINEAR ALGEBRA (D,F,R,AEC)
redit Hours
requisite: MAT 202
oduces theories of vector space, linear transformations, matrix representa-s, eigenvalues and eigenvectors. Theories will be appropriately applied.
Contact Hours

AT 225 INTRODUCTION TO STATISTICS (F,R,AEC)
redit Hours
requisite: Algebra
dy of the elementary statistical functions, introduction to statistical dis-utions, statistical inference, and hypothesis testing.
Contact Hours

AT 226 COMPUTER APPLICATIONS FOR STATISTICAL (R)
redit Hour
requisite:MAT 255 or concurrent enrollment in MAT 225
oratory course to include computer applications of statistical procedures h as correlation, chi square analysis, and analysis of variance. Data analy-will be done by using commercially prepared computer packages.
Contact Hours

AT 290 SPECIAL TOPICS (D)
ase refer to the description of Special Topics in this catalog on page 22.

AT 297 COOPERATIVE EDUCATION (D,R)
ase refer to the description of Cooperative Education in this catalog on e 22.

MAT 299 INDEPENDENT STUDY (D,F,R,AEC)
Please refer to the description of Independent Study in this catalog on page 22.

Machine Drafting Technology

MDT 101 MECHANICAL DRAFTING, THEORY, AND TECHNIQUES I (F)
3 Credit Hours
Demonstrate the use of orthographic projection, geometric construction, sketching and reproduction equipment.
60 Contact Hours

MDT 102 MECHANICAL DRAFTING, THEORY, AND TECHNIQUES II (F)
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 (F)
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 (F)
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 (F)
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.
60 Contact Hours

MDT 113 MACHINE DETAIL AND ASSEMBLY DRAWING III (F)
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.
60 Contact Hours

MDT 114 MACHINE DETAIL AND ASSEMBLY DRAWING IV (F)
3 Credit Hours
Prerequisite: MDT 113 or permission of instructor.
Continue to demonstrate all of the principles and techniques learned in MDT 113, and apply the principles and techniques of dual dimensioning.
60 Credit Hours

MDT 121 INTRODUCTION TO INKING (F)
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).
60 Contact Hours

MDT 122 INTRODUCTION TO SHEET METAL DRAWINGS (F)
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.
60 Contact Hours

MDT 123 INTRODUCTION TO ELECTRO-MECHANICAL DRAWING (F)
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.
60 Contact Hours

MDT 200 INTRODUCTION TO CASTING DRAWINGS (F)
3 Credit Hours
Prerequisite: MDT 112 or permission of instructor.
Apply drafting techniques to the drawing and detailing of castings.
60 Contact Hours

MDT 201-205 MACHINE DRAFTING TECHNOLOGY I, II, III, IV & V (F)
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 (F)
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.
60 Contact Hours

MDT 207 INTRODUCTION TO CAMS AND GEARS (F)
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.
60 Contact Hours

MDT 208 INTRODUCTION TO PIPE DRAWING (F)
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.
60 Contact Hours

MDT 209 INTRODUCTION TO WELDING DRAWING (F)
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.
60 Contact Hours

MDT 297 COOPERATIVE EDUCATION (F)
Please refer to the description of Cooperative Education in this catalog on page 22.

Management Information Systems

MIS 110 INTRODUCTION TO RECORDS MANAGEMENT (D)
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 (D)
2 Credit Hours
In depth technical level study of indexing methods of document input to micromedia.
30 Contact Hours

MIS 114 FORMS DESIGN AND CONTROL (D)
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.
60 Contact Hours

MIS 209 MICROGRAPHIC TECHNICIAN CERTIFICATION (D)
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.
45 Contact Hours

MIS 211 ADVANCED MICRO-TECHNICIAN CERTIFICATION (D)
3 Credit Hours
Investigates color film chemistry, advanced optics, systems design, reco management administration, storage and retrieval method plus personnel quirements. Final course certification granted by the local Micrographic sociation Chapter.
45 Contact Hours

MIS 215 RECORDS MANAGEMENT SEMINAR (D)
3 Credit Hours
Students prepare records management proposals and projects. This cou prepares students for Certified Records Manager (CRM) examination give nually by the Association of Records Managers and Administrators (ARMA
45 Contact Hours

MIS 290 SPECIAL TOPICS (D)
Please refer to the description of Special Topics in this catalog on page 22.

MIS 297 COOPERATIVE EDUCATION (D)
Please refer to the description of Cooperative Education in this catalog page 22.

Music

MUS 100 ENSEMBLE: CHORUS (D,F,R)
1 Credit Hour
Study of choral styles and literature from the classics to the contemporary cluding vocal techniques and diction. (May be repeated for up to six hc credit.)
30 Contact Hours

MUS 105 BASIC MUSIC SKILLS (F,AEC)
1 Credit Hour
Study of the basic elements of music including pitch and rhythm notat scales, intervals, chords and terminology.
15 Contact Hours

MUS 106 ENSEMBLE: BAND (F)
1 Credit Hour
Study of instrumental styles and literature. (May be repeated for up to hours credit.)
30 Contact Hours

MUS 111 THEORY AND HARMONY (D,F,R)
3-5 Credit Hours
Corequisite: MUS 151 or 152 or permission of instructor.
The study of melody, harmony, rhythm, analysis, composition, sight sin and ear training.
75 Contact Hours

MUS 112 THEORY AND HARMONY II (D,F,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 technique harmonizing with inverted triads and seventh chords and modulation formu
75 Credit Hours

MUS 116 SONGWRITING (D,AEC)
3 Credit Hours
Presents the basics of pitch and rhythm notation, includes the element melody construction and analyzes the basic characteristics of popular m dies. Students will be encouraged to write at least one melody a week. (E level skills: Basic skills in music.)
45 Contact Hours

MUS 131 VOICE CLASS I (D,F,R)
1 Credit Hour
Corequisite: MUS 151
Study of vocal techniques of various major teachers, including emphasi breathing techniques, tonal control, stage presence and interpretatio vocal materials from all periods.
30 Contact Hours

MUS 132 VOICE CLASS II (D,F,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, enunciatior performance preparation.
30 Contact Hours

US 151 PIANO CLASS I (D,F,AEC)
Credit Hour
roduces the basic piano techniques. Includes major and minor chords, ac-mpaniment patterns, rhythm drills, and traditional notation.
Contact Hours

US 152 PIANO CLASS II (D,F,AEC)
Credit Hour
erequisite: MUS 151 or permission of instructor
ntinuation of MUS 151. Includes a complete study of chords, jazz rhythms d accompaniment techniques.
Contact Hours

US 161 FOLK GUITAR I (R)
Credit Hour
nciples and techniques of folk guitar.
Contact Hours

US 162 FOLK GUITAR II (R)
Credit Hour
ntinuation of MUS 162.
Contact Hours

US 165 GUITAR CLASS I (D,F,R)
Credit Hour
requisite: MUS 151 or permission of instructor
udies the elements of music as they apply to guitar playing and basic strum-g techniques for accompaniment patterns and elementary melody playing.
Contact Hours

US 166 GUITAR CLASS II (D,F,R)
Credit Hour
ntinuation of MUS 165.
Contact Hours

US 190 MUSIC APPRECIATION (D,F,R,AEC)
redit Hours
vey of music literature, style and form from inception to present day.
Contact Hours

US 200 CHORAL CONDUCTING (F)
redit Hours
oduction to conducting patterns and techniques with emphasis on choral mpositions and problems.
Contact Hours

S 205 INSTRUMENTAL CONDUCTING (F)
redit Hours
oduction to conducting patterns and techniques with emphasis on instru-ntal compositions and problems.
Contact Hours

S 211 ADVANCED THEORY AND HARMONY I (D,F,R)
redit Hours
equisite: MUS 112
tinuation of MUS 112 with emphasis on chromatic and contemporary har-y, counterpoint and instrumentation.
Contact Hours

S 212 ADVANCED THEORY AND HARMONY II (D,F,R)
edit Hours
tinuation of MUS 211.
Contact Hours

S 235 AMERICAN POPULAR MUSIC (D,F)
edit Hours
ey of American popular music (jazz, country, rock) from 1900 to the ent.
Contact Hours

S 251 ADVANCED PIANO CLASS I (D,AEC)
edit Hour
equisites: MUS 151 or permission of instructor
tinuation of MUS 152 with emphasis on ensemble playing, transposition improvisation.
ontact Hours

S 252 ADVANCED PIANO CLASS II (D,AEC)
edit Hour
equisite: MUS 251 or permission of instructor
tinuation of MUS 251 with emphasis on advanced improvisation and ac-paniment.
ontact Hours

MUS 290 SPECIAL TOPICS (D)
Please refer to the description of Special Topics in this catalog on page 22.

MUS 297 COOPERATIVE EDUCATION (D)
Please refer to the description of Cooperative Education in this catalog on page 22.

MUS 299 INDEPENDENT STUDY (D,AEC)
Please refer to the description of Independent Study in this catalog on page 22.

Continuing Education for Nursing

NCE 200 REGISTERED NURSE REFRESHER COURSE (D,F,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 (D,F,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 (D,F,R,AEC)
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 (D,F,R,AEC)
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 (D,F,AEC)
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 (D,F,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 (D,F,R,AEC)
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 (D,F,AEC)
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 (D,F,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 (D,F,R)
2 Credit Hours
New developments in laboratory test and analysis. Emphasis on nurses' responsiblities in interpreting and evaluating laboratory tests to improve patient care.
30 Contact Hours

NCE 210 PHYSICAL ASSESSMENT OF THE ADULT (D,F,R)
3 Credit Hours
Study and practice of techniques that are necessary in history taking and physically examing an adult patient for nursing care assessments.
45 Contact Hours

NCE 211 AUSCULTATION OF BREATH AND HEART SOUNDS (D,F,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 (D,F,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 (D,F,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 (D,F,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 RESUSCITATON (D,F,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 (D,F,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 (D,F,AEC)
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 (D,F,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 (D,F,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 (D,F,R,AEC)
2 Credit Hours
Introduction to the law and application to nursing practice.
30 Contact Hours

NCE 221 WELLNESS (D,F,R,AEC)
1 Credit Hour
Wellness is more than the absence of illness. Learn how to meet basic nee to prevent illness. Participants will be involved in wellness self evaluatio eating habit surveys, body stress assessment guides for self exploration a self responsibility, and tools for changing lifestyles.
15 Contact Hours

NCE 222 AUSCULTATION OF HEART SOUNDS (D,F,R)
1 Credit Hour
In-depth theory and practice of normal heart sounds and recognition of abn malities through audio-visual materials.
15 Contact Hours

NCE 223 AUSCULTATION OF BREATH SOUNDS (D,F,R)
1 Credit Hour
In-depth theory and practice of normal breath sounds and recognition of a normalities through audio-visual materials.
15 Contact Hours

NCE 224 THE FACES OF DRUG ABUSE: CARING AND COPING (D,F,R)
1 Credit Hour
This course offers a comprehensive review of common drugs of abuse: n cotics, sedatives, hypnotics, analgesics, tranquilizers, hallucinogens, a phetamines, and alcohol. Included will be the effects of abused dru intervention, community services; critical observations; and "dos and don' that we, as adults, nurses and/or parents need to know so that we can alert and effective in handling drug problems as they touch our lives and fe ings.
15 Contact Hours

NCE 225 BODY MECHANICS FOR NURSES (D,F,R)
1 Credit Hour
Fundamental principles, protection of the lowerback, rules of body alignm in activity, specific motions and postures, specific application to hospital tivities.
15 Contact Hours

NCE 226 I.V. THERAPY (D,F,R)
1 Credit Hour
Basic venipuncture techniques, factors involved in vein selection, p chological implications, complications and nursing measures.
15 Contact Hours

NCE 227 COMMUNICATION SKILLS FOR NURSES (D,F,R)
1 Credit Hour
Therapeutic listening, message-sending and problem solving techniques.
15 Contact Hours

NCE 228 HYPERALIMENTATION (D,F,R)
1 Credit Hour
Presents the facts of parenteral hyperalimentation as a therapeutic adjunc the treatment or prevention of negative nitrogen balance. Emphasis on plications of nursing care to promote maximum therapeutic benefit to the tient.
15 Contact Hours

NCE 229 FLUID AND ELECTROLYTES (D,F,R)
1 Credit Hour
Identifies the principles of fluids and electrolytes and their application to tient care. To include causative factors of imbalances, recognition of s and symptoms, laboratory tests, treatment and nurse's responsibilities.
15 Contact Hours

NCE 230 EMERGENCY NURSING ASSESSMENT (D,F,R)
1 Credit Hour
Basic patient assessment in any emergency situation.
15 Contact Hours

NCE 231 NURSE'S PERSONAL FINANCES (D,N,R)
1 Credit Hour
This course is specifically for nurses regarding tax deductions; retirement estate planning; establishing credit ratings; record keeping; insurance; in ments; budgeting money and laws which affect women's financial rights.
15 Contact Hours

NCE 232 PREVENTING THE BURNOUT SYNDROME (D,F,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 (D,F,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 234 ASSESSING HEALTH PROBLEMS OF THE ELDERLY (R)
2 Credit Hours
Physical assessment of breath sounds, the abdomen, the neurologic and musculoskeletal systems will be taught. Participants will plan nursing intervention for the elderly with respiratory congestion, edema, GI upset, leg pain, temperature elevation, falls, chest pain, and hypertension. Emphasis will be on health problems. Some physical assessment, pharmacology and medical-surgical principles will be integrated.
30 Contact Hours

NCE 235 EMERGENCY TRAUMA NURSING (D,F,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 (D,F,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 (D,F,R,AEC)
2 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 (D,F,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 (D,F,R)
1 Credit Hour
Your 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 (D,F,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 241 ARTHRITIS AND RELATED DISORDERS (R)
2 Credit Hours
This course will provide a review and an update of medical and nursing knowledge of arthritis and related disease processes. In this course, the student will learn or review physical assessment skills related to arthritic diseases. The student will receive updated information on pertinent laboratory data and medical diagnosis and treatments currently used.
30 Contact Hours

NCE 242 THERAPEUTIC TOUCH (D,F,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 instruction in developing touch sensitivity and will practice the assessment and healing methods of therapeutic touch.
15 Contact Hours

NCE 243 UNDERSTANDING IV SOLUTIONS (D,F,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 244 HOLISTIC NURSING (R)
2 Credit Hours
The conscious application of life processes of self responsibility, caring, human development, stress, lifestyling, communication, problem solving, teaching/learning, leadership and change. This is approached through preventive, nurturative, and generative nursing activities to help the client help themselves move toward high level wellness.
30 Contact Hours

NCE 245 INTERMEDIATE EKG INTERPRETATION (D,F,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 (D,F,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 (D,F,R,AEC)
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 (D,F,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 (D,F,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 (D,F,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 (D,F,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 (D,F,R)
1 Credit Hour
First aid plus emergency care of patient with diabetes, epilepsy, fainting, burns, etc.
15 Contact Hours

NCE 259 AGING PROCESS (D,F,R,AEC)
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 (D,F,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 (D,F,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 (D,F,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 (D,F,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 (D,F,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 (D,F,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 (D,F,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 (D,F,R,AEC)
1 Credit Hour
Knowledge of drugs, meaning of symptoms, and the alarming spread to 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 (D,F,R)
2 Credit Hours
Study of the anatomy, physicology 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 (D,F,R)
2 Credit Hours
The role of the rehabilitation nurse; pathophysiology and dysfunction resultin 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 (D,F,R)
1 Credit Hour
A look at the new school immunization laws, the epidemiological reasons fo the current changes, long range effects on child health, and how immunizatio programs relate to broader issues of community health.
15 Contact Hours

NCE 280 NURSING SKILLS (D,F,R)
1 Credit Hour
Lecture and student practice of nursing skills; catheterizations, intravenou therapy, nasogastric intubation, injections and dressings.
15 Contact Hours

NCE 285 ADVANCED COMMUNICATION SKILLS (D,F,R)
1 Credit Hour
Improve your written communication skills for charting nurse's notes, writin memos, announcements, and incident reports. Learn how to write for publica tion. You will have an opportunity to publish locally what you have writte Also includes legal issues involved in written communications.
15 Contact Hours

NCE 295 PSYCHOLOGICAL ASPECTS OF PATIENT CARE (D,F,R,AEC)
2 Credit Hours
Psychological assessment and intervention of patient care. Includes how cope with normal and abnormal stress and tension.
30 Contact Hours

NCE 296 COMMON CHILDHOOD ILLNESSES (D,F,R)
2 Credit Hours
Lecture/Discussion of current Pediatric problems from the body systems a proach: gastrointestinal, cardiovascular, etc. The course will focus on t more common pediatric problems seen in practice utilizing input from st dents.
30 Contact Hours

NCE 297 STRESS MANAGEMENT FOR NURSES (D,F,R,AEC)
1 Credit Hour
Undue stress is unavoidable in our fast-paced life, but it can be a positi force in personal growth. Learn about the nature of stress, how it affects o body and personal goals, and principles of managing stress.
15 Contact Hours

NCE 298 VITAL ISSUES IN NURSING (D,F,R)
1 Credit Hour
What's happening in nursing today? Nurse Practice Act, 1985 proposal, leg aspects, expanded roles, collective bargaining, nurse's organizations, unic ization. Be well informed!
15 Contact Hours

Nuclear Medicine Technology

NMT 199 INDEPENDENT STUDY (D)
Please refer to the description of Independent Study in this catalog on pa 22.

NMT 200 CLINICAL APPLICATIONS I (D)
2 Credit Hours
Prerequisites: BIO 111, BIO 112 or equivalent
Designed to introduce the basic methodology of various *in vivo* procedu routinely performed in nuclear medicine departments. Includes specializ anatomy and physiology, criteria for performing the study, and basic proto for imaging performance.
30 Contact Hours

NMT 203 NUCLEAR MEDICINE PRACTICUM ORIENTATION (D)
1 Credit Hour
Prerequisite: Admission to Certificate NMT Program
Designed to provide the student with an orientation to the program requ ments and design of their nuclear medicine technology clinical educati Utilizes systems approach to health care delivery in nuclear medicine.
15 Contact Hours

NMT 205 STATISTICS OF RADIOACTIVE COUNTING (D)
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.
5 Contact Hours

NMT 206 RADIATION PHYSICS FOR NUCLEAR MEDICINE (D)
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.
5 Contact Hours

NMT 207 NUCLEAR MEDICINE INSTRUMENTATION (D)
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 equality assurance procedures for all major instrumentation used in nuclear medicine departments.
0 Contact Hours

NMT 208 CLINICAL PRACTICUM I (D)
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.
60 Contact Hours

NMT 209 CLINICAL APPLICATIONS II (D)
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.
Contact Hours

NMT 210 CLINICAL PRACTICUM II (D)
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.
0 Contact Hours

NMT 215 COMPUTERS IN NUCLEAR MEDICINE (D)
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.
Contact Hours

NMT 216 CLINICAL PRACTICUM III (D)
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.
0 Contact Hours

NMT 217 RADIOPHARMACEUTICAL PREPARATIONS (D)
4 Credit Hours
Prerequisites: CHE 101 or equivalent, and NMT 206
Examines the basic theory and practice of radiopharmaceutical preparation and quality control in nuclear medicine. Emphasis is placed on the design and function of radionuclide generators, labeling procedures, sterility and pyrogenicity considerations, and radionuclide and radiochemical quality control procedures.
60 Contact Hours

NMT 218 RADIOASSAY PROCEDURES (D)
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.
60 Contact Hours

NMT 290 SPECIAL TOPICS (D)
Please refer to the description of Special Topics in this catalog on page 22.

NMT 299 INDEPENDENT STUDY (D)
Please refer to the description of Independent Study in this catalog on page 22.

Nursing — Denver Auraria Community College

NUR 100 INTRODUCTION TO NURSING (D)
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 110 REVIEW OF NURSING CONCEPTS (D)
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 (D)
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 (D)
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 (D)
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 (D)
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 (D)
4 Credit Hours
Prerequisite: Nursing Diagnostic Test and 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 (D)
Please refer to the description of Independent Study in this catalog on page 22.

NUR 201 ADVANCED PHARMACOLOGY (D)
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 (D)
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 (D)
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 (D)
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. *Part B* is concerned with nursing interventions related to problems occurring throughout the childbearing cycle.
210 Contact Hours

NUR 212 COMPREHENSIVE NURSING II (D)
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.
270 Contact Hours

NUR 214 SOCIALIZATION INTO NURSING II (D)
1 Credit Hour
Prerequisite: Concurrent enrollment in level II
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 (D)
1 Credit Hours
Prerequisite: NUR 214/Level II enrollment
Focuses on current issues related to legislation, licensure, professional o ganizations and the relationship of nursing history to current trends in th delivery of health care. Attention is given to the realities and expectations the new graduate in nursing.
15 Contact Hours

NUR 259 MEDICAL SURGICAL NURSING SEMINAR (D)
2-4 Credit Hours
Reviews and reinforces nursing theory related to care of the patient wi medical or surgical problems.
30-60 Contact Hours

NUR 269 PEDIATRIC NURSING SEMINAR (D)
2-4 Credit Hours
Reviews and reinforces nursing theory related to the care of the pediatric p tient. Growth and development are stressed.
30-60 Contact Hours

NUR 279 PSYCHIATRIC NURSING SEMINAR (D)
2-4 Credit Hours
Reviews and reinforces nursing theory related to the care of the patient wi emotional and behavioral problems.
30-60 Contact Hours

NUR 289 OBSTETRICAL NURSING SEMINAR (D)
2-4 Credit Hours
Reviews and reinforces nursing theory related to the care of the child beari family and newborn. Obstetrical problems and related nursing care is emph sized.
30-60 Contact Hours

NUR 290 SPECIAL TOPICS (D)
Please refer to the description of Special Topics in this catalog on page 22.

NUR 299 INDEPENDENT STUDY (D)
Please refer to the description of Independent Study in this catalog on pa 22.

Nursing — Front Range Community College

NUR 102 PHARMACOLOGY I (F)
1 Credit Hour
Prerequisite: NUR 103
Co-requisite: NUR 108
This is an introductory pharmacology course focusing on the classification drugs as they relate to body systems. Therapeutic and toxic effects of d classes and specific prototype drugs are emphasized. The student learns h to use drug reference materials in gathering data for giving effective nurs care.
15 Contact Hours

NUR 103 CALCULATION OF DRUG DOSAGES (F)
1 Credit Hour
Co-requisite: NUR 105
This course provides an opportunity for the study of the metric, apothec and household systems of weights and measures as applied to the administ tion of drugs and solutions within the health care system. Included are con sions from one system to another and practice solving typical problem drug administration.
15 Contact Hours

NUR 105 BASIC CONCEPTS OF NURSING (F)
6 Credit Hours
Co-requisites: NUR 103, NUR 116, BIO 111
This is an introductory course in the fundamentals of nursing care focusing assessment of basic needs of the patient and how to meet those nee Nursing knowledge and skills necessary for safe and accurate delivery nursing care are stressed. Basic mental health and cultural concepts are in duced. Learning experiences are provided in the college classroom and la ratory and in clinical facilities in the community.
120 Contact Hours

NUR 106 BASIC CONCEPTS IN FAMILY CENTERED MATERNAL-NEWBORN NURSING (F)
Credit Hours
rerequisites: NUR 105 and successful completion of previous clinical course ork.
his is an introductory course in the fundamental nursing care of the pregnant amily. Emphasis is placed on the basic needs and nursing care by the ractical nurse of the family during pregnancy, integrating basic mental health nd cultural concepts. The focus is normal pregnancy, physiological changes ccurring during this time, and care of the normal newborn. Nursing assess- ent skills are introduced to facilitate the student's knowledge in com- rehending patients' needs, nursing actions and evaluation of outcome. earning experiences are provided in the college classroom and in clinical acilities in the community.
5 Contact Hours

UR 107 BASIC CONCEPTS OF NURSING OF CHILDREN (F)
Credit Hours
rerequisites: NUR 105 and successful completion of previous clinical course ork.
his is an introductory course which focuses on the role of the practical nurse meeting the individual needs of the child from infancy through adolescence health and illness. Beginning assessment in basic growth and development, athophysiology, nutrition and relevant emotional, cultural and family con- epts are integrated throughout. Learning experiences are provided in the col- ge classroom and clinical facilities in the community.
5 Contact Hours

UR 108 BASIC CONCEPTS OF NURSING OF ADULTS (F)
Credit Hours
rerequisites: NUR 103, NUR 106 or NUR 107, BIO 111
o-requisites: NUR 102, BIO 112, DIT 115
his is an introductory course designed to prepare the individual for the begin- ng role of the practical nurse in assessing and meeting the nursing needs of atients with medical/surgical conditions. Emphasis is on the application of owledge from the sciences, pharmacology, and nutrition as well as con- ued integration of mental health and cultural concepts. Learning experi- ces are provided in the college classroom and laboratory and in clinical cilities in the community.
8 Contact Hours

UR 116 MEDICAL TERMINOLOGY (F)
Credit Hour
study designed to acquaint the student with the origin and structure of edical terms. The intent of this course is to help the student interpret and un- rstand medical terms, reports and therapy related to his field.
Contact Hours

UR 130 SOCIALIZATION INTO NURSING I (F)
Credit Hour
erequisites: NUR 105 and NUR 106 or NUR 107
-requisite: NUR 108
is course explores the changing trends in nursing with emphasis on the spe- ic legal and ethical implications for the practical nurse. The focus is on the e of the practical nurse as a health team member in the community.
Contact Hours

UR 199 INDEPENDENT STUDY (F)
riable Credit Hours
erequisite: Instructor permission
is course provides the opportunity for the student to explore areas of actical nursing, specific skills, or specialized nursing functions. The learning y be clinical through the utilization of a preceptor, laboratory, or indepen- nt theory study in nature. The student is responsible for writing his/her own jectives specific to his/her learning goals. Faculty direction and guidance be provided.
-270 Contact Hours

IR 201 PHARMACOLOGY II (F)
redit Hours
requisites: NUR 102, NUR 103, NUR 106, NUR 107, NUR 108
-requisite: BIO 211
s course focuses on the therapeutic use of drugs in the treatment of dis- e processes. Emphasis is placed on situations that may alter absorption, tribution, biotransformation and excretion of drugs. Common drug interac- ns are identified and guidelines are provided that will enable both the client d health care provider to manage drug therapy more effectively.
Contact Hours

NUR 206 COMPREHENSIVE CONCEPTS IN FAMILY CENTERED MATERNAL-NEWBORN NURSING (F)
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 (F)
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 comprehensive study of the needs in health and illness of the total child from birth through adolescence. Nursing care is integrated with principles of growth and development, pathophysiology and related symptoms, emotional, family and cultural needs, and dietary and pharmacology therapies. The nursing process utilizing Maslow's hierarchy is applied in the clinical area.
65 Contact Hours

NUR 208 COMPREHENSIVE NURSING OF ADULTS (F)
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 (F)
2 Credit Hours
This course is a review and synthesis of nursing theory preparing the student for job readiness.
30 Contact Hours

NUR 216 COMPREHENSIVE NURSING OF THE EMOTIONALLY ILL (F)
6 Credit Hours
Prerequisites: NUR 208, NUR 231, PSY 235
Co-requisite: NUR 232
This course is designed to develop an understanding of the role of the nurse as a member of the mental health team in prevention, crisis situations and care of emotionally ill adults. Basic principles of psychiatric nursing will be studied, building on knowledge previously gained in meeting the bio-psychosocial-cultural needs of ill patients. Dynamics of psychopathology will be emphasized when applying the nursing process in assessing needs and planning patient care. Maslow's hierarchy and Brooks-Nisberg hierarchy will be integrated with nursing process.
113 Contact Hours

NUR 217 COMPREHENSIVE NURSING OF OLDER ADULTS (F)
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 (F)
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 (F)
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 (F)
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 (F)
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 (F)
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 (F)
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 (F)
Please refer to the description of Independent Study in this catalog on page 22.

Paralegal

PAR 100 INTRODUCTION TO PARALEGAL (D,AEC)
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 (D,AEC)
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 (D,AEC)
3 Credit Hours
Introduces the basic area of contracts, with special emphasis on the preparation of contracts.
45 Contact Hours

PAR 107 LEGAL RESEARCH (D,AEC)
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 (D,AEC)
3 Credit Hours
An intensive study of the Colorado Rules of Civil Procedure and their impor tance in the processing of cases through the court system. Emphasis is o drafting relevant forms arising from these rules.
45 Contact Hours

PAR 109 PROPERTY (D,AEC)
3 Credit Hours
Emphasizes drafting of forms for partnership agreements, real estate transac tions, procedures relevant to subdivision requirements and other requirement of real estate law practice.
45 Contact Hours

PAR 115 DOMESTIC RELATIONS (D,AEC)
3 Credit Hours
Deals with standard legal problems of marriage including dissolution of ma riage, dependent and neglected children, children in need of supervisio adoptions, etc.
45 Contact Hours

PAR 120 OFFICE PROCEDURES (D,AEC)
3 Credit Hours
Teaches the paralegal such skills as timekeeping, management controls, clie files, checklists, and other skills necessary to keep any law firm operating ef ciently.
45 Contact Hours

PAR 125 TAX LAW (D,AEC)
3 Credit Hours
Introduces Internal Revenue Code rules and regulations, its forms, and speci tax problems relating to property and inheritance. Deals with mechanics, n theory, of tax law.
45 Contact Hours

PAR 126 CREDITOR/DEBTOR/BANKRUPTCY (D,AEC)
3 Credit Hours
Examines creditor's rights with emphasis on prejudgment and judgment rem dies. Emphasis also on bankruptcy procedures.
45 Contact Hours

PAR 127 EVIDENCE (D,AEC)
3 Credit Hours
Introduces the Rules of Evidence and covers the methodology of interviewi witnesses, investigating and marshalling of evidence for trial of cases.
45 Contact Hours

PAR 128 ENVIRONMENTAL AND NATURAL RESOURCE LAW (D,AE
3 Credit Hours
Introduces new field of environmental law, with attention to mineral rights la water law, land-use litigation, public and private interest questions, tax que tions and other related areas.
45 Contact Hours

PAR 201 BUSINESS ORGANIZATIONS (D)
3 Credit Hours
Introduces the law of sole proprietorships, partnerships and corporations, w emphasis on drafting the numerous documents inherent in corporate l practice.
45 Contact Hours

PAR 202 COMMERCIAL LAW (D)
3 Credit Hours
Deals with Colorado law of sales and secured transactions with emphasis Uniform Commercial Code. Forms and documents dealing with these are will also be covered in detail.
45 Contact Hours

PAR 203 CONSTITUTIONAL LAW (D)
3 Credit Hours
Introduces state and federal constitutional law and principles and individ guarantees against governmental or private action. Individual rights are e phasized.
45 Contact Hours

PAR 204 CRIMINAL LAW AND PROCEDURE (D)
3 Credit Hours
Covers criminal law theory, construction and interpretation of criminal statutes, various categories of criminal offenses and process of criminal j tice, investigation, arrest, trial and judgment.
45 Contact Hours

PAR 205 PROBATE (D)
Credit Hours
mphasizes drafting wills, settling estates, trusts, and tax considerations in-olved in each of these areas.
5 Contact Hours

AR 207 LEGAL RESEARCH SEMINAR I (D)
Credit Hours
rerequisite: PAR 107
ontinued utilization of research techniques learned in PAR 109. Emphasis laced upon student's ability to brief cases and write legal memoranda.
5 Contact Hours

AR 208 LEGAL RESEARCH SEMINAR II (D)
Credit Hours
rerequisite: PAR 107
ontinues the use of techniques learned in PAR 109, and Legal Research eminar I.
5 Contact Hours

AR 210 PARALEGAL WORKSHOP (D)
Credit Hours
rerequisite: Completion of 15 credit hours of PAR courses.
aces students in working situations involving areas of specialty.
) Contact Hours

AR 214 ADMINISTRATIVE LAW (D)
Credit Hours
troduces the Rule of Administrative Agencies and daily operating proce-ures of agencies, plus how the paralegal can work within these various ency structures.
Contact Hours

AR 215 REAL ESTATE AND LAND USE LAW (D)
Credit Hours
nphasizes the methods of utilization of land with regard to land planning, de-lopment financing. Methods of appraisal will be studied, together with tax oblems relating to real estate.
Contact Hours

AR 219 PARALEGAL SEMINAR (D)
Credit Hours
erequisite: Any 100 level PAR course.
ngs together a focus in general paralegal skills, and reviews crucial func-ns in the general paralegal field.
Contact Hours

R 290 SPECIAL TOPICS (D)
ase refer to the description of Special Topics in this catalog on page 22.

R 297 COOPERATIVE EDUCATION (D)
ase refer to the description of Cooperative Education in this catalog on ge 22.

R 299 INDEPENDENT STUDY (D)
ase refer to the description of Independent Study in this catalog on page

troleum Technology

T 105 PETROLEUM INDUSTRY (R)
redit Hours
requisite: EAS 111 or permission of instructor.
tory, role and importance of technicians, energy spectrum and relationship nvironment, world energy policies, petroleum economics, petroleum accu-ation, drilling, completion, production, secondary recovery, transportation, ning, oil shale, coal gasification, and liquification.
Contact Hours

T 108 GEOPHYSICAL CONCEPTS (R)
redit Hours
requisite: EAS 111, 112
gnetometer, gravity, seismic, resistivity, magnetotellurics, remote sensing, logging analysis (basic), geophysical field methods.
Contact Hours

T 206 LAND AND LEGAL ASPECTS (R)
redit Hours
equisite: Permission of instructor.
sing, spacing, depletion allowance unitization and forced pooling, taxation ital, tangibles, intangibles), IRS, records, risks. Titles, agreements, state, eral and Indian regulations, environmental problems.
Contact Hours

PET 207 PETROLEUM DRILLING (R)
3 Credit Hours
Prerequisite: PET 105, EAS 111, 112
Normal and nonroutine drilling operations including site preparation, rotary drilling, rig components, rigging up, drilling fluids, drilling straight hole, directional drilling, casing and cementing, mud and well logging, drill stem testing, core sampling, well control, blowout prevention, fishing, air drilling and off shore drilling.
45 Contact Hours

PET 216 PETROLEUM PRODUCTION (R)
3 Credit Hours
Prerequisite: PET 105, EAS 111, 112
Reservoir characteristics and management; well completion, perforation, well tests, flowing well, artificial lift, pumps well stimulation by acid and hydraulic fractoring, secondary and tertiary recovery; separation, treatment, storage, sampling and testing of well fluids; well service and workover.
45 Contact Hours

PET 220 ADVANCED LAND AND LEGAL ASPECTS (R)
3 Credit Hours
Prerequisite: PET 206
Structuring of investment vehicles in oil and gas operations, conveyance of oil and gas interests, advanced contracts, drafting of curative instruments, transfer of property interests, resolution of development conflict with various mining operations.
45 Contact Hours

Physical Education

PHE 100 GROUP ACTIVITIES (F,R)
1 Credit Hour
Coed participation in soccer, volleyball, softball, basketball, water activities and outdoor activities.

PHE 101 FIRST AID (F,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 (F,R)
2 Credit Hours
Cardio-Pulmonary Resuscitation (or valid American Red Cross card).

PHE 105 GROUP ACTIVITIES, WOMEN (F,R)
1 Credit Hour
Participation in activities designed to improve physical fitness and to improve skills in various team sports.

PHE 106 HORSEMANSHIP (F,R)
1 Credit Hour
Beginning instruction in western style riding and horsemanship.

PHE 107 CANOEING (F,R)
1 Credit Hour
Basic strokes of canoeing, principles of water safety and self-rescue.

PHE 111 BEGINNING ARCHERY (F,R)
1 Credit Hour
Basic skills and techniques including target competition field shooting, equipment and terminology.

PHE 112 INTERMEDIATE ARCHERY (F,R)
1 Credit Hour
Continuation of PHE 111 with emphasis on advanced skills in shooting.

PHE 121 BEGINNING BOWLING (F,R)
1 Credit Hour
Basis skills and techniques of bowling.

PHE 122 INTERMEDIATE BOWLING (F,R)
1 Credit Hour
Continuation of PHE 121.

PHE 131 BEGINNING GOLF (F,R)
1 Credit Hour
Introduction to golf, its origin and development, with emphasis on basic skills and techniques.

PHE 132 INTERMEDIATE GOLF (F,R)
1 Credit Hour
Prerequisites: PHE 131
Advanced skills in golf.

PHE 141 BEGINNING SWIMMING (F,R)
1 Credit Hour
Basic fundamentals of swimming, includes basic crawl, elementary backstroke and life support.

PHE 142 INTERMEDIATE SWIMMING (F,R)
1 Credit Hour
Side stroke, elementary backstroke, surface dives, underwater swimming and endurance of crawl.

PHE 143 ADVANCED SWIMMING (F,R)
1 Credit Hour
Advanced skills and review of swim strokes, trudgen crawl, butterfly and diving.

PHE 144 SENIOR LIFESAVING (F,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 (F,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 (F,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 (F,R)
1 Credit Hour
Techniques and skills along with rules and regulations of the game.

PHE 152 INTERMEDIATE TENNIS (F,R)
1 Credit Hour
Advanced skills, team play and game strategy.

PHE 153 ADVANCED TENNIS (F,R)
1 Credit Hour
Individual competition and team play.

PHE 160 SOCIAL DANCING (F)
1 Credit Hour
Introduction to social dancing and various dance formations and rhythms.

PHE 161 BEGINNING COLLEGIATE DANCE (F,R)
1 Credit Hour
Exercises fundamental to theatrical dancing.

PHE 162 BEGINNING COLLEGIATE DANCE (F,R)
1 Credit Hour
Theatrical dancing with level step combinations.

PHE 165 SQUARE AND FOLK DANCE (F,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 (F,R)
1 Credit Hour
Basic instruction and skills of ice skating.

PHE 170 CROSS-COUNTRY SKIING (F,R)
1 Credit Hour
Skills and techniques for cross-country skiing.

PHE 171 BEGINNING SKIING (F,R)
1 Credit Hour
Basic techniques and skills for beginning skiing.

PHE 172 INTERMEDIATE SKIING (F,R)
1 Credit Hour
Continuation of PHE 171.

PHE 173 ADVANCED SKIING (F,R)
1 Credit Hour
Biomechanics of skiing. Parallel, wedeln, 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)
2 Credit Hours
Places one can go to hike or camp and how to use guide books.

PHE 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 re cue.

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 equ ment.

PHE 189 CLIMBING/BACKPACKING EXPEDITION (R)
3 Credit Hours
Expedition covering seven to ten days hiking and climbing in remote No American regions.

PHE 190 SNOWSHOEING (R)
1 Credit Hour
Basic skills and techniques.

PHE 191 BEGINNING SELF DEFENSE (F,R)
1 Credit Hour
Basic skills and techniques on the art of self defense.

PHE 192 INTERMEDIATE SELF DEFENSE (F,R)
1 Credit Hour
Advanced skills and techniques.

PHE 193 ADVANCED SELF DEFENSE (F,R)
1 Credit Hour
Prerequisites: Intermediate self defense.
Emphasis on perfection of self defense movement.

PHE 200 PHYSICAL EDUCATION IN THE ELEMENTARY SCHOOL (F,R)
2 Credit Hours
Theory and techniques involved in teaching elementary school physical e cation. Includes study of activity areas, program development and organ tion of learning activities.

PHE 201 BEGINNING MARTIAL ARTS (R)
2 Credit Hours
The history, philosophy, religion, psychology and skills of the martial art 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 (F,R)
1 Credit Hour
Orientation to history of physical education, objectives, opportunities in field, professional organizations and literature available.

PHE 206 PHYSICAL EDUCATION ACTIVITIES (F,R)
2 Credit Hours
nstruction and teaching techniques of sports.

PHE 207 PHYSICAL FITNESS FOR WOMEN (F,R)
2 Credit Hours
Fitness program, emphasis on theory of exercise, fundamental movements, body mechanics and health.

PHE 208 PHYSICAL FITNESS FOR MEN (F,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 (F,R,AEC)
2 Credit Hours
Study of rules and mechanics of officiating in group sports.

PHE 211 BEGINNING CONDITIONING (F,R)
1 Credit Hour
Basic program of body conditioning to meet individual needs.

PHE 212 INTERMEDIATE CONDITIONING (F,R)
1 Credit Hour
Continuation of PHE 211.

PHE 220 WILDERNESS EQUIPMENT AND FACILITIES (R)
1 Credit Hours
Designed to acquaint and familiarize the student with wilderness equipment and program facilities.

PHE 221 MOUNTAINEERING TEACHING CONCEPTS (R)
1 Credit Hours
Planning and methods required to teach mountaineering skills.

PHE 222 BASIC SEARCH AND RESCUE (R)
1 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)
1 Credit Hours
Continuation of PHE 180 and PHE 185.

PHE 228 WILDERNESS ETHICS (R)
1 Credit Hours
The motivation, aesthetics, and ethics of mountaineering, including conservation principles.

PHE 229 WILDERNESS SURVIVAL (R)
1 Credit Hours
The physical, physiological and psychological principles of survival. Field trip.

PHE 230 MOUNTAINEERING PHOTOGRAPHY (R)
1 Credit Hours
The fundamentals of mountaineering and mountain photography.

PHE 251 BEGINNING YOGA (F,R)
1 Credit Hour
Meditation techniques and proper breathing to relax mind and body.

PHE 252 INTERMEDIATE YOGA (F,R)
1 Credit Hour
Intermediate skills and techniques of meditation along with learning to relax the mind and body.

PHE 253 ADVANCED YOGA (F,R)
1 Credit Hour
Concepts of Eastern training of body, mind and spirit through physical culture.

PHE 260 TUMBLING (F,R)
1 Credit Hour
Skill progressions and teaching of stunts and tumbling.

PHE 261 BALLET (F,R)
1 Credit Hour
Emphasis on exercise fundamentals of ballet.

PHE 262 BALLET (F,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 (D,F,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 (D,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 (F)
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 (D,AEC)
3 Credit Hours
An analysis of the great religions of the Far East, including Hinduism, Buddhism, Confucianism and Taoism.
45 Contact Hours

PHI 140 AMERICAN PHILOSOPHY (D)
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 (D,F,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 (D,F,R,AEC)
3 Credit Hours
An investigation of the principles and tools of logic as applied to the problems encountered in the practical realities of life, with major consideration of inductive and deductive reasoning.
45 Contact Hours

PHI 290 SPECIAL TOPICS (D)
Please refer to the description of Special Topics in this catalog on page 22.

PHI 299 INDEPENDENT STUDY (D)
Please refer to the description of Independent Study in this catalog on page 22.

Photography

PHO 095 PHOTO LAB (D)
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 (D)
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 (D)
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 (D)
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 (D)
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 (D)
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 (D)
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, photojournalism, and social commentary. Course will include practical assignments in photography for publication and display.
80 Contact Hours

PHO 206 PORTRAIT PHOTOGRAPHY (D)
4 Credit Hours
Prerequisites: PHO 105 Advanced Photography;
PHO 106 Fundamentals of Color Photography.
Introduction to professional techniques in protraiture; 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 (D)
4 Credit Hours
Prerequisites: PHO 105 Advanced Photography;
PHO 106 Fundamentals of Color Photography.
An overview of current applications of professional photography in the area 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 (D)
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 (D)
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

PHO 290 SPECIAL TOPICS (D)
Please refer to the description of Special Topics in this catalog on page 22.

PHO 297 COOPERATIVE EDUCATION (D)
Please refer to the description of Cooperative Education in this catalog on page 22.

PHO 299 INDEPENDENT STUDY (D,F,R)
Please refer to the description of Independent Study in this catalog on page 22.

Physics

PHY 100 BASIC PHYSICS (F)
Variable Credit Hours: 1-4
Prerequisite: MAT 101 or equivalent
This course teaches basic understanding of the laws of physics. Emphasis 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 and 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.
15-60 Contact Hours

PHY 101 FUNDAMENTALS OF PHYSICS I (D,F,R)
4 Credit Hours
Prerequisite: MAT 106 or permission of instructor.
Introduces basic physics with an emphasis on concepts, problem solving, 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 (D,F)
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 115 INTRODUCTION TO MEDICAL PHYSICS (D)
Credit Hours
Prerequisite: MAT 121 or concurrent enrollment in MAT 121
Provides the physical theory pertinent to students of nuclear medicine and adiation therapy technology. Covers fundamentals of mechanics, electomagnetism, radiation, and atomic and nuclear theory.
5 Contact Hours

PHY 130 INTRODUCTION TO ASTRONOMY (D,F,AEC)
Credit Hours
nonmathematical introduction to the nature and structure of the universe. lass discussion will include current topics such as the lives of stars, the fate f the universe, and black holes. Each student will learn to recognize many tars and constellations. Opportunities will be provided for telescopic observaon of the moon, planets, galaxies, and nebulas.
0 Contact Hours

HY 131 GENERAL ASTRONOMY I (D,R,AEC)
Credit Hours
rerequisite: MAT 112 or permission of instructor
study of the history and methods of astronomy and an introduction into our resent understanding of the universe in terms of basic physical principles inuding the most recent discoveries and ideas such as quasars, pulsars, and ack holes.
) Contact Hours

HY 132 GENERAL ASTRONOMY II (D,R,AEC)
Credit Hours
erequiste: PHY 131
ontinuation of PHY 131.
) Contact Hours

HY 151 GENERAL PHYSICS I (D,F,R)
Credit Hours
erequisite: MAT 121 or permission of instructor
non-calculus study of classical and modern physics. An elementary but orough presentation of the fundamental principles of mechanics, heat, elecomagnetism, relativity, and quantum mechanics, and the application of ese principles on the micro and macro scale.
5 Contact Hours

HY 152 GENERAL PHYSICS II (D,F,R)
Credit Hours
erequisite: PHY 151 or permission of instructor
continuation of PHY 151. Topics will include heat, sound, electromagnem.
5 Contact Hours

Y 153 GENERAL PHYSICS — CALCULUS SUPPLEMENT I (F)
Credit Hours
erequisite: MAT 201 and concurrent enrollment in PHY 151
plication of calculus to physical concepts discussed in PHY 151.
Contact Hours

Y 154 GENERAL PHYSICS — CALCULUS SUPPLEMENT II (F)
Credit Hours
erequisite: PHY 153, MAT 202 and concurrent enrollment in PHY 152
plication of calculus to physical concepts discussed in PHY 152.
Contact Hours

Y 161 PHYSICS FOR SCIENTISTS AND ENGINEERS I (D,F,R)
Credit Hours
requisite: MAT 201 or concurrent enrollment in MAT 202
calculus-based study of general physics. Topics include kinematics, dynics, oscillations, heat and thermodynamics.
Contact Hours

Y 162 PHYSICS FOR SCIENTISTS AND ENGINEERS II (D,F,R)
redit Hours
requisite: PHY 161 and concurrent enrollment in MAT 202.
ontinuation of PHY 161. Topics will include thermodynamics, oscillatory tion and electromagnetism.
Contact Hours

Y 163 EXPERIMENTAL PHYSICS FOR SCIENTISTS AND ENGINEERS I (D,F,R)
redit Hour
equisite: PHY 161
boratory course in physics based on the material covered in PHY 161.
Contact Hours

PHY 164 EXPERIMENTAL PHYSICS FOR SCIENTISTS AND ENGINEERS II (D,F,R)
1 Credit Hour
Corequisite: PHY 162
A laboratory course in physics based on the material covered in PHY 162.
30 Contact Hours

PHY 299 INDEPENDENT STUDY (D,F,R)
Please refer to the description of Independent Study in this catalog on page 22.

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, waste, 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 MULTI-STORY PROJECTS (R)
3 Credit Hours
Prerequisite: PLU 106
This class introduces the student to commercial and multi-story 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
180 Contact Hours

Political Science

POS 111 INTRODUCTION TO POLITICAL SCIENCE (D,F,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 (D,F,R,AEC)
3 Credit Hours
Study of American government with emphasis on the role of institutions, individuals, and groups in forming American political behavior. Recommended for students going through the naturalization process.
45 Contact Hours

POS 122 AMERICAN STATE AND LOCAL GOVERNMENT (D,F,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 162 PRACTICAL POLITICS (R,AEC)
3 Credit Hours
Introduction to political activity at the local, state and/or national level.
45 Contact Hours

POS 201 COMPARATIVE POLITICS (D,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 (D,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 210 UNITED STATES CONSTITUTION (D)
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 (D)
3 Credit Hours
Studies local, state, national and international political events and developments.
45 Contact Hours

POS 251 CHICANO POLITICAL EXPERIENCE (D)
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 (D)
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 (D)
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 290 SPECIAL TOPICS (D)
Please refer to the description of Special Topics in this catalog on page 22.

POS 297 COOPERATIVE EDUCATION (D,R)
Please refer to the description of Cooperative Education in this catalog on page 22.

Psychology

PSY 099 JOB SEARCH TECHNIQUE WORKSHOP (D)
3 Credit Hours
The student becomes familiar with various aspects of looking for work. Topics covered include resources, nontraditional 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 career will also be explored.
45 Contact Hours

PSY 100 HUMAN RELATIONS IN BUSINESS AND INDUSTRY (D,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 emphathy for others.
15-45 Contact Hours

SY 108 VOCATIONAL EXPLORATION (D,R,AEC)
Credit Hours
he student determines suitable occupations through: 1) positive self-xploration; 2) exploration of occupations; 3) selecting a suitable occupation y matching self-information and occupational information; 4) development of ducational plans necessary to obtain chosen occupation.
5 Contact Hours

SY 110 ASSERTIVENESS TRAINING (R)
-3 Credit Hours
his course teaches the overall philosophy of assertive self-growth as well as pecific assertive communication skills. These serve to enhance and enrich ie student's interpersonal relationships and self-esteem.
5-45 Contact Hours

SY 111 GENERAL PSYCHOLOGY I (D,F,R,AEC)
Credit Hours
resents an overview of psychology as a behavioral science, with emphasis n psychological concepts and principles. Specific topics include psy-nological methods, the biological bases of behavior, sensation and percep-on, learning and thinking and motivation.
5 Contact Hours

SY 112 GENERAL PSYCHOLOGY II (D,F,R,AEC)
Credit Hours
erequisite: PSY 111
uilds on content covered in PSY 111. Specific topics include personality, sychological disorders, therapeutic techniques, attitudes and influence and terpersonal relationships.
5 Contact Hours

SY 115 PSYCHOLOGY OF PERSONAL DEVELOPMENT (D,F,R,AEC)
Credit Hours
mphasizes personal growth and the development of interpersonal skills. ocus is on practical application of psychological principles and theories in hieving self-understanding and personal growth.
Contact Hours

SY 116 STRESS MANAGEMENT (R,AEC)
Credit Hours
in-depth examination of interpersonal, health and on-the-job factors that oduce stress. Students will explore stress-producing factors in their own es, investigate techniques for minimizing and reducing stress and practice ess management.
Contact Hours

Y 125 CHILD GUIDANCE TECHNIQUES (R,AEC)
Credit Hours
practical and in-depth examination of techniques and methods for working h children. Focus will be placed on ways of enhancing the child's self-ncept while improving the student's understanding of and ability to commu-ate with children.
Contact Hours

Y 126 PSYCHOLOGY OF LAW ENFORCEMENT (R)
Credit Hours
als with the psychological effects of police work on the officer and the pub-

Contact Hours

Y 199 INDEPENDENT STUDY (D)
ase refer to the description of Independent Study in this catalog on page

Y 200 CURRENT PSYCHOLOGICAL TOPICS (D,R,AEC)
Credit Hours
requisites: PSY 111 and PSY 112
dies specific psychological topics in depth. The topic for a given semester be determined by the instructor based upon student input.
45 Contact Hours

Y 205 PSYCHOLOGY OF WOMEN (D,R,AEC)
redit Hours
psychological assumptions about the female personality and how these umptions are being questioned or verified by recent studies and cultural nge will be investigated.
Contact Hours

PSY 210 SOCIAL PSYCHOLOGY (D,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 (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 (D,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, physicial sexual development, love and theories relating to human sexual response.
45 Contact Hours

PSY 220 ECOLOGY OF DEAFNESS (F)
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 (D,F,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, bith, language development, peer groups, family relationships and the school experience.
45 Contact Hours

PSY 222 DEVELOPMENTAL PSYCHOLOGY (D,F,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 (D,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 (D,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 (D,F,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 (D,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 (D)
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 (D)
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 (D,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 (D,R,AEC)
1-3 Credit Hours
A study of patterns of human behavior in problem-solving and decision making.
15-45 Contact Hours

PSY 290 SPECIAL TOPICS (D,R,AEC)
Please refer to the description of Special Topics in this catalog on page 22.

PSY 297 COOPERATIVE EDUCATION (D,F,R)
Please refer to the description of Cooperative Education in this catalog on page 22.

PSY 299 INDEPENDENT STUDY (D)
Please refer to the description of Independent Study in this catalog on page 22.

Commercial-Industrial Refrigeration, Heating and Air Conditioning

RAC 100 SAFETY, TOOLS, AND PIPING (D)
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 (D)
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 (D)
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 (D)
3 Credit Hours
Prerequisite: RAC 100
Introduces atomic theory, charges, the basic concepts of electrical circuit and safe procedures when working with electrical breadboards and deve oping simple circuits.
60 Contact Hours

RAC 112 FUNDAMENTALS OF ELECTRICITY II (D)
3 Credit Hours
Prerequisite: RAC 110
Presents an understanding of magnetism, electric motor design and operatic and the use and care of testing meters.
60 Contact Hours

RAC 116 FUNDAMENTALS OF REFRIGERATION II (D)
3 Credit Hours
Prerequisite: RAC 106
Presents the opportunity to construct, evacuate, charge, start up and test th operation of a basic refrigeration system.
60 Contact Hours

RAC 200 REFRIGERATION SYSTEM COMPONENTS AND APPLICATIONS (D)
3 Credit Hours
Prerequisite: RAC 100 series or equivalent experiences.
Presents the individual components of refrigeration systems and their applic tions. Calculating evaporator and condensing unit capacities and matchir components.
60 Contact Hours

RAC 205 REFRIGERATION HEAT LOADS, SYSTEM DEVELOPMENT (D)
3 Credit Hours
Prerequisite: RAC 100 series or equivalent experiences.
Presents fundamentals of heat gains and losses of buildings and rooms for r frigeration and air conditioning.
60 Contact Hours

RAC 206 INSTALLATION AND START UP (D)
3 Credit Hours
Prerequisite: RAC 100 series or equivalent experiences.
Presents methods of installing various components and piping and code r quirements.
60 Contact Hours

RAC 207 TROUBLESHOOTING AND SERVICE (D)
3 Credit Hours
Prerequisite: RAC 100 series or equivalent experiences.
Covers procedures in troubleshooting systems and servicing components refrigeration systems.
60 Contact Hours

RAC 208 SPECIAL REFRIGERATION SYSTEMS (D)
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 (D)
3 Credit Hours
Prerequisite: RAC 100 series or equivalent experiences.
Examines the principles and definitions of atmosphere, humidity, measu ment and control, psychrometric charts and tables.
60 Contact Hours

RAC 210 UNITARY AND CENTRAL STATION SYSTEMS (D)
3 Credit Hours
Prerequisite: RAC 100 series or equivalent experiences.
Examines heat pump operation and the installation of packaged units, co ponents and piping for split systems and evaporative coolers.
60 Contact Hours

RAC 215 AIR FLOW PRINCIPLES AND DISTRIBUTION (D)
3 Credit Hours
Prerequisite: RAC 100 series or equivalent experiences.
Presents applications of air requirements, flow and sizing of air distribut ducts.
60 Contact Hours

RAC 216 CONTROL SYSTEMS (D)
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 (D)
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 290 SPECIAL TOPICS (D)
Please refer to the description of Special Topics in this catalog on page 22.

RAC 297 COOPERATIVE EDUCATION (D)
Please refer to the description of Cooperative Education in this catalog on page 22.

RAC 299 INDEPENDENT STUDY (D)
Please refer to the description of Independent Study in this catalog on page 22.

Diagnostic Radiologic Technology

RAT 100 RADIOGRAPHIC TECHNIQUE I (D)
3 Credit Hours
Prerequisite: Admission to program
Co-requisites: 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 (D)
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 (D)
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 (D)
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 PHYSICS OF DIAGNOSTIC RADIOLOGY (D)
1 Credit Hours
Prerequisites: Successful completion of all first year courses.
Co-requisites: RAT 206, RAT 207
This course discusses the physics of x-ray production and control, recording systems, and image quality. Radiation protection in diagnostic radiology is discussed.
15 Contact Hours

RAT 110 CLINICAL PRACTICUM I (D)
1 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 (D)
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 (D)
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 199 INDEPENDENT STUDY (D)
Please refer to the description of Independent Study in this catalog on page 22.

RAT 200 SURVEY OF MEDICAL AND SURGICAL DISEASES (D)
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 occupation interest.
30 Contact Hours

RAT 205 SPECIAL PROCEDURES AND TECHNIQUES (D)
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 (D)
11 Credit Hours
Prerequisites: RAT 116, RAT 200 or permission of instructor
Co-requisites: RAT 109, RAT 207
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 (D)
3 Credit Hours
Prereqiuisites: 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 (D)
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. Include one to two hours per week of film critique in affiliate hospitals.
540 Contact Hours

RAT 209 REVIEW OF RADIOLOGIC PRINCIPLES (D)
3 Credit Hours
Prerequisite: RAT 207, permission of instructor
Co-requisite: RAT 210
Provides a review and synthesis of radiologic principles to prepare the student for job readiness.
45 Contact Hours

RAT 210 CLINICAL PRACTICUM V (D)
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

RAT 290 SPECIAL TOPICS (D)
Please refer to the description of Special Topics in this catalog on page 22.

RAT 299 INDEPENDENT STUDY (D)
Please refer to the description of Independent Study in this catalog on page 22.

Reading

REA 090 INTRODUCTION TO BASIC READING SKILLS (D,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 (D,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 (D,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 (D,F,R,AEC)
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.)
45 Contact Hours

REA 102 SKILLS FOR COLLEGE READING II (D,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 stategies 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 (D)
3 Credit Hours
Designed for students whose reading skills are at a level 3 on the English and Reading Assessment Tests 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.
60-75 Contact Hours

REA 104 SKILL IN TEST-TAKING (D,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 (D,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 on reading assessment or grade of C or better in REA 101.)
15-75 Contact Hours

REA 106 VOCABULARY DEVELOPMENT (D,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 Contract Hours

REA 109 READING EFFICIENCY (D,F,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 contract hours (entry level skills: score of 4 on reading assessment).
15-45 Contact Hours

REA 110 SPEED READING (D,F,R,AEC)
1-3 Credit Hours
Increased speed, a more flexible reading pace and better comprehension.
15-45 Contact Hours

REA 290 SPECIAL TOPICS (D)
Please refer to the description of Special Topics in this catalog on page 22.

REA 297 COOPERATIVE EDUCATION (D)
Please refer to the description of Cooperative Education in this catalog on page 22.

REA 299 INDEPENDENT STUDY (D,AEC)
Please refer to the description of Independent Study in this catalog on page 22.

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 Colorado 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)
3 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.
45 Contact Hours

REE 207 REAL ESTATE INVESTMENT (R,AEC)
3 Credit Hours
A study of the investment opportunities of 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)
3 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.
45 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 skill 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 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.
30 Contact Hours

REL 299 INDEPENDENT STUDY (R)
Please refer to the description of Independent Study in this catalog on page 22.

Respiratory Therapy Technology

RIT 100 RESPIRATORY TECHNOLOGY I (F)
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 (F)
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 (F)
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 (F)
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 (F)
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 (F)
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 (F)
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 (F)
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 (F)
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 (F)
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 (F)
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 (F)
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 (D)
4 Credit Hours
Prerequisite: Orientation to Clinical Practicum
The goals of this course will be to build on student's previous clinical learning experiences by emphasizing teamwork in patient care. Students will rotate, observe and participate in the various departments of the clinical education center, that are related to the care and the responsibility of that institution to the cancer patient.
180 Contact Hours

RTT 150 RADIATION THERAPY PRACTICUM II (D)
5 Credit Hours
Prerequisite: Practicum I
The goal of this course is to introduce the student to the Nuclear Medicine, Ultrasound, Laboratory and Treatment Simulation areas; and, to extend the students learning experiences in the treatment area.
180 Contact Hours

RTT 199 INDEPENDENT STUDY (D)
Please refer to the description of Independent Study in this catalog on page 22.

RTT 200 PHYSICS OF RADIATION THERAPY (D)
2 Credit Hours
Prerequisite: Phy 115 or acceptance into certificate 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 (D)
2 Credit Hours
Prerequisite: All first year courses or acceptance into certificate 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 practicum course.
30 Contact Hours

RTT 206 RADIATION ONCOLOGY I (D)
3 Credit Hours
The purpose of this course is to provide the student with the necessary information to study cancer as a disease process. This course will present to the student each week a specific anatomical region and its disease process, and then, the student will apply that knowledge in the Clinical Education Center to complete their case study assignment.
45 Contact Hours

RTT 207 RADIATION THERAPY PRACTICUM III (D)
11 Credit Hours
Prerequisite: Admission to Radiation Therapy Program
The goals of this course are to involve the student in as many patient treatment-set-ups as possible, for the student to establish the necessary skills needed to accurately deliver a course of radiation therapy.
396 Contact Hours

RTT 208 PHYSICS OF RADIATION THERAPY II (D)
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 (D)
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 (D)
1 Credit Hour
This spring semester course is sequenced with Radiation Oncology I and will be completed in 5 weeks at 3 contact hours per week.
15 Contact Hours

RTT 215 RADIATION BIOLOGY AND PATHOLOGY (D)
2 Credit Hours
Provides students in Nuclear Medicine and those in Radiation Therapy with basic knowledge of the biological effects of radiation. Emphasis on practical aspects of radiation biology.
30 Contact Hours

RTT 216 RADIATION THERAPY PRACTICUM IV (D)
11 Credit Hours
Prerequisite: Successful completion of RTT 207
Develops an increased level of responsibility in the overall operation of a radiation therapy department. Eight week placement in treatment planning.
500 Contact Hours

RTT 218 RADIATION THERAPY PRACTICUM V (D)
14 Credit Hours
Prerequisite: Successful completion of spring courses
Prepares the student for job entry through performance of skills typical of a staff radiation therapy technologist.
644 Contact Hours

RTT 285 SELECTED TOPICS IN RADIATION THERAPY (D)
3 Credit Hours
Prerequisite: Successful completion of spring courses
Reviews course and clinical work in preparation for the registry examination given by the American Registry of Radiologic Technologists.
45 Contact Hours

RTT 290 SPECIAL TOPICS (D)
Please refer to the description of Special Topics in this catalog on page 22.

RTT 299 INDEPENDENT STUDY (R)
Please refer to the description of Independent Study in this catalog on page 22.

Science

SCI 106 SCIENCE AND THE PRESCHOOL CHILD (D,R)
2 Credit Hours
A course for the teacher or parent who desires an insight into the natural sciences and its meaning to the preschool child. It will provide the student with concepts and facts which will stimulate a child's interest in the natural sciences.
30 Contact Hours

SCI 111 SCIENCE FOR THE EARTH CITIZEN I (F)
4 Credit Hours
This course is a general introduction to the scientific view of the world designed to help nonscience majors live and vote intelligently in a world shaped by science. Basic concepts in astronomy, biology, chemistry, geology, physics and technology are studied in terms of words and pictures and with no mathematics other than arithmetic being employed.
75 Contact Hours

SCI 112 SCIENCE FOR THE EARTH CITIZEN II (F)
4 Credit Hours
Continuation of SCI 111.
75 Contact Hours

SCI 115 THE ASCENT OF MAN (R)
2 Credit Hours
An overview of the many disciplines which have contributed to the knowledge of human origins, based upon the popular television series broadcast on BBC-TV.
30 Contact Hours

SCI 116 SCIENCE AND SCIENCE FICTION: A CHANGING VISION (D,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 (D,F,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 (D,F,R)
Please refer to the description of Independent Study in this catalog on page 22.

Sport Crafts and Specialty Area Mechanics

SCS 100 BASIC ENGINES, TOOLS, AND SAFETY (F)
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 (F)
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 (F)
3 Credit Hours
Identify rental equipment by the use of proper and common names.
45 Contact Hours

SCS 103 CUSTOMER SERVICE OPERATIONS (F)
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 (F)
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 (F)
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 (F)
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 (F)
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 (F)
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 (F)
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 (F)
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 TUNEUP (F)
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 (F)
3 Credit Hours
Prerequisites: SCS 100, SCS 107
Repair small engines using special tools and equipment.
60 Contact Hours

SCS 117 GENERAL SERVICE II (F)
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 (F)
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 (F)
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 (F)
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 (F)
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 (F)
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 (F)
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 (F)
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 (F)
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 (F)
3 Credit Hours
Prerequisites: SCS 100
Troubleshoot and demonstrate all types of lawn and garden equipment.
60 Contact Hours

SCS 217 CUSTOMER SERVICE II (F)
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 SYSTEM (F)
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 (F)
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 (F)
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 (F)
3 Credit Hours
Prerequisites: SCS 100, SCS 105
Identify, service, and repair motorcycle carburetor systems using special tools, test equipment and shop manuals.
60 Contact Hours

SCS 228 SINGLE CYLINDER FOUR-CYCLE ENGINES (F)
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 (F)
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 (F)
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 (F)
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 237 MOTORCYCLE CUSTOMER SERVICE I (F)
3 Credit Hours
Prerequisites: SCS 100 thru SCS 115
Repair motorcycle engines using special tools and equipment.
60 Contact Hours

SCS 238 MOTORCYCLE CUSTOMER SERVICE II (F)
3 Credit Hours
Prerequisites: SCS 100 thru SCS 237
Demotrate the ability to identify and repair motorcycle deficiencies.
60 Contact Hours

SCS 297 COOPERATIVE EDUCATION (F)
Please refer to the description of Cooperative Education in this catalog on page 22.

Secretarial

SEC 100 SPANISH TYPEWRITING (F)
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 (D,F,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 (D,F,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 (D,F,R)
2 Credit Hours
Prerequisite: SEC 101A 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 (D,F,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 (D,F,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 (D,F,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 (D,F,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 (D,F,R)
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 (D,F,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 (D,F,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 (D,F,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 SPANISH-GREGG SHORTHAND (F)
4 Credit Hours
Prerequisite: Spanish II, SEC 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 (D,F,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 speedbuilding, mailability and transcription.
50 Contact Hours

SEC 131 INTRODUCTION TO WORD PROCESSING (D,F,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 133 WORD PROCESSING COMMUNICATION I (D,F,R,AEC)
3 Credit Hours
Prerequisites: SEC 101 or SEC 101A or equivalent knowledge of typing.
The purpose of this course is to teach the language arts through the use of realistic office correspondence. The principles taught and the materials used are relevant to business students. The course is also designed to make the student think. This course provides a variety of exposure to the review and experience of various aspects of the language arts as well as a review of typing principles. This course is one in a series which will prepare the student for entry level employment into the word processing field.
60 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 (D,F,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 (D,F)
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 (D,F,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 (D,F,R)
3 Credit Hours
Simulated office experience, including work flow, human relations, filing, record keeping and accounting. This course is designed to make the transistion 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 (D)
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.

SEC 209 LEGAL TERMINOLOGY (D,F)
2 Credit Hours
Designed to familarize the student with terms commonly used in the legal profession.
30 Contact Hours

SEC 215 MAGNETIC CARD II TYPEWRITING (D,F)
3 Credit Hours
Prerequisite: SEC 102 Typewriting II (Minimum speed 45 wpm)
Corequisite: SEC 131 Introduction to Word Processing
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 217 CRT TYPING (D,F,R)
3 Credit Hours
Prerequisite: SEC 102 Typewriting II (Minimum speed of 45 wpm)
Corequisite: SEC 131 Introduction to Word Processing
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 (D,F,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 (D,F,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 (F)
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 (F)
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 (D,F,R)
1 Credit Hour
Prerequisite: Advisor approval
A prerequisite course of study for BUS 297 Cooperative Education 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

SEC 290 SPECIAL TOPICS (D)
Please refer to the description of Special Topics in this catalog on page 22.

SEC 297 COOPERATIVE EDUCATION (D)
Please refer to the description of Cooperative Education in this catalog on page 22.

Sociology

SOC 111 INTRODUCTION TO SOCIOLOGY I (D,F,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 (D,F,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 (D,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 156 SOCIOLOGY OF WOMEN: SELECTED TOPIC (D,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 199 INDEPENDENT STUDY (D)
Please refer to the description of Independent Study in this catalog on page 22.

SOC 200 URBAN SOCIOLOGY (D,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 MANAGERIAL SOCIOLOGY (D,R,AEC)
3 Credit Hours
A study of the sociological aspects of human performance, interpersonal relations, effective use of human resources in business, problems of leadership and employee adjustment; areas include a survey of human abilities, learning and retention, social behavior, personnel selection, counseling, and motivation.
45 Contact Hours

SOC 210 LA FAMILIA CHICANA (D)
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 (D,F,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 220 MINORITY GROUPS IN AMERICAN SOCIETY (D,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 225 DEVIANT BEHAVIOR (D,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 (D,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 (D)
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 (D,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 (D)
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 (D)
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 (D)
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 (D)
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 250 MARRIAGE AND THE FAMILY (D,F,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 254 JUVENILE DELINQUENCY (D,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 (D,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 257 PREVENTION, CORRECTION, TREATMENT AND CUSTODY (D,R)
3 Credit Hours
Prerequisite: SOC 111 or SOC 255 or permission of instructor
Includes an overview of correctional approach. 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 266 THE CONTEMPORARY NATIVE AMERICAN (D)
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 (D)
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 American.
45 Contact Hours

SOC 285 DYNAMICS OF SOCIOLOGY (D,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

SOC 290 SPECIAL TOPICS (D)
Please refer to the description of Special Topics in this catalog on page 22.

SOC 297 COOPERATIVE EDUCATION (D,R)
Please refer to the description of Cooperative Education in this catalog on page 22.

SOC 299 INDEPENDENT STUDY (D)
Please refer to the description of Independent Study in this catalog on page 22.

Solar Energy Technology

SOM 100 BASIC SHEET METAL FOR SOLAR ENERGY (R)
3 Credit Hours
This class is an introduction to the sheet metal field, safety, basic equipment and tools. Fabrication techniques and blueprint interpretation are also taught in this unit.
60 Contact Hours

SOM 210 PASSIVE SOLAR DESIGN PROJECT (R)
5 Credit Hours
Prerequisite: Permission of instructor
This is a technical project consisting of (1) a written and approved proposal; (2) scheduled progress reports; and (3) a finalized set of drawings.
150 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 II
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 machanics, heat transfer and thermodynamics.
68 Contact Hours

SOM 224 PASSIVE SOLAR ENGINEERING TECHNOLOGY (R)
4 Credit Hours
Prerequisites: SOM 220
Corequisite: SOM 237
The purpose of this course is to give the student an understanding of the engineering and design of passive solar heating and cooling systems. This will enable the student to size and design these systems according to accepted standards of performance, reliability, cost, ease of construction and maintenance.
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, SOM 225, SOM 226
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 SYSTEMS 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 (R)
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,AEC)
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 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
Prerequisite: SOM 240
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 242 PASSIVE SOLAR RETROFIT (R)
3 Credit Hours
Prerequisites: SOM 220, SOM 237
To provide instruction concerning the site survey and energy conservation measures prior to installing a retrofit. Design and construction details of various passive retrofit projects. Analysis of performance of each type of retrofit.
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 credits in solar courses
In this class, the student is introduc d 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 effeciency analysis.
60 Contact Hours

SOM 248 SOLAR GREENHOUSE CONSTRUCTION (R)
3 Credit Hours
Prerequisites: SOM 245, CAR 120, BRI 120, DPR 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
Prerequisite: SOM 220
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 251 SOLAR GREENHOUSE OPERATION AND MAINTENANCE (R)
3 Credit Hours
Prerequisites: SOM 220 or equivalent, SOM 245, SOM 248 or approval of the instructor
The purpose of this course is to give the student an understanding of how to operate and maintain a solar greenhouse in an efficient manner. The student is introduced to principles of interior design and layout, the techniques of soil mixtures, hydroponics, ventilation, temperature and humidity control, shading, fertilizers, and diseases and insect control.
60 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, 221; 24 credits 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)
Please refer to the description of Cooperative Education in this catalog on page 22.

SOM 298 SOLAR LAB (R)
3-12 Credit Hours
Prerequisites: Limited to second 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)
Please refer to the description of Independent Study in this catalog on page 22.

Social Science

SOS 101 FIELD EXPERIENCE IN COMMUNITY ORGANIZATIONS I (D,F,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 (D,F,R,AEC)
3 Credit Hours
Continuation of Field Experience I. Arrangement with instructor required.
105 Contact Hours

SOS 115 INTRODUCTION TO SOCIAL SCIENCE (D,F,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 (D,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 (D,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 RESEACH METHODS IN THE SOCIAL SCIENCES (D,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 CONVERSATIONAL SPANISH I (D,F,R,AEC)
3 Credit Hours
Designed for beginning students who wish to understand and speak Spanish. The material will include basic conversational patterns for enjoyment and/or for practical use. Also used will be films, slides, music, songs, vocabulary and questions based on daily conversations.
45 Contact Hours

SPA 102 CONVERSATIONAL SPANISH II (D,F,R,AEC)
3 Credit Hours
Prerequisite: SPA 101 or permission of instructor.
A continuation of SPA 101.
45 Contact Hours

SPA 111 FIRST YEAR SPANISH I (D,F,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 (D,F,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 achieve basic Spanish conversation skills with the completion of the course.
75 Contact Hours

SPA 211 INTERMEDIATE SPANISH I (D,F,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 (D,F,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 (D)
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 (D,F,R)
3 Credit Hours
Prerequisite: SPA 112 or permission of instructor
Second-year course leading to more fluent and current usage of Spanish. Current Spanish publications will be used. May be substituted for SPA 221.
45 Contact Hours

SPA 222 CURRENT SPANISH — SPOKEN AND WRITTEN II (D,F,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 usage.
45 Contact Hours

SPA 225 SPANISH FOR THE PROFESSIONAL (D,F,R,AEC)
3 Credit Hours
Prerequisite: Permission of instructor
Job-related Spanish including technical vocabulary for the professional.
45 Contact Hours

SPA 290 SPECIAL TOPICS (D,F,R)
Please refer to the description of Special Topics in this catalog on page 22.

SPA 297 COOPERATIVE EDUCATION (D,F)
Please refer to the description of Cooperative Education in this catalog on page 22.

SPA 299 INDEPENDENT STUDY (D,R)
Please refer to the description of Independent Study in this catalog on page 22.

Speech

SPE 111 INTRODUCTION TO SPEECH (D,F,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 (D,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 211 ADVANCED PUBLIC SPEAKING (D,R,AEC)
3 Credit Hours
Prerequisite: SPE 111 or permission of instructor.
Reinforces basic public speaking skills through further practice with emphasis upon persuasive techniques.
45 Contact Hours

SPE 214 PROFESSIONAL AND BUSINESS SPEAKING (D,R,AEC)
3 Credit Hours
Prerequisite: SPE 111 or permission of instructor.
Strengthens skills in presenting briefings, sales presentations, public relations speeches, argumentation and conference speaking. Offered as needed or interest arises.
45 Contact Hours

SPE 231 VOICE AND DICTION (D,R,AEC)
3 Credit Hours
Prerequisite: SPE 111 or permission of instructor.
Explores the mechanisms of voice production and aids with the improvement of individual voice utilization. Offered normally spring term.
45 Contact Hours

SPE 290 SPECIAL TOPICS (D,R)
Please refer to the description of Special Topics in this catalog on page 22.

SPE 297 COOPERATIVE EDUCATION (D,F,R)
Please refer to the description of Cooperative Education in this catalog on page 22.

SPE 299 INDEPENDENT STUDY (D,R,AEC)
Please refer to the description of Independent Study in this catalog on page 22.

Surgical Technology

STE 100 INTRODUCTION TO SURGICAL TECHNOLOGY (D)
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 TECHNOLOGY (D)
1 Credit Hour
Corequisites: 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.
15 Contact Hours

STE 106 SURGICAL SKILLS (D)
6 Credit Hours
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 (D)
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 (D)
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 (D)
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 (D)
7 Credit Hours
Co-requisite: STE 109
Emphasizes refinement of skills begun in STE 109, 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 (D)
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 (D)
2 Credit Hours
Prerequisite: Permission of instructor
Reviews theory/skills content and focuses on intergration 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

STE 299 INDEPENDENT STUDY (D)
Please refer to the description of Independent Study in this catalog on page 22.

Sign Teacher Program

STP 100 UTILIZATION OF INSTRUCTIONAL MEDIA FOR SIGN LANGUAGE INSTRUCTION (F)
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 (F)
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 (F)
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 (F)
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 (F)
2 Credit Hours
Development of competence in utilizing a paradigm of instructional processes, indentification 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 (F)
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 (F)
3 Credit Hours
Prerequisite: STP 115, ASL 202
Study of techniques of ASL testing with emphasis on student developed evaluation.
45 Contact Hours

STP 210 SIGN LANGUAGE PRACTICUM SEMINAR (F)
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 relatic to Sign Language teaching as a profession.
45 Contact Hours

STP 215 SIGN LANGUAGE TEACHING PRACTICUM (F)
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 (F)
1-9 Credit Hours
Prerequisite: Experience as a Sign Language teacher, qualifying score on sig language proficiency exam.
Conducted on a periodic basis, workshops will be designed to upgrade th skills of teachers in the field. Topics will include the nature of Language, th structures of American Sign Language, second language teaching theorie methods and techniques and sign variation in the deaf community.
15-135 Contact Hours

STP 299 INDEPENDENT STUDY (F)
Please refer to the description of Independent Study in this catalog on pag 22.

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 prac tice in chaining, elevations with hand and engineer level and introductor 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 sur veying relationships.
64 Contact Hours

SUR 105 SURVEYING DRAFTING (R)
8 Credit Hours
Prerequisite: SUR 100, SUR 101
Basic drafting techniques and principles of three dimensional projection ap plied to surveying problems. Surveying drafting of traverses, plats, rout survey drawings and maps.
160 Contact Hours

SUR 120 SURVEYING FOR CONSTRUCTION AND TECHNICAL TRADES (R)
3 Credit Hours
General surveying concepts of distance, elevation and angles. Emphasis o field work, enough theory to understand basic principles. This course can b 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 plan table, field and office practice with horizontal and vertical angles applied t line, curve area problems and astronomical observations. Field problem stress application, accuracy and evaluation of the field data.
218 Contact Hours

SUR 201 SURVEYING CALCULATIONS II (R)
3 Credit Hours
Prerequisite: SUR 100, SUR 101 or permission of instructor
Understanding of application and theory of: plane coordinates, traverse calculations, area calculations, horizontal curves.
45 Contact Hours

SUR 202 SURVEYING CALCUATIONS 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 203 SURVEYING CALCUATIONS 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

TCE 100 ANALYZE AND TROUBLESHOOT DC CIRCUITS (F)
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 (F)
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 (F)
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 (F)
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 (F)
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 (F)
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 (F)
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 (F)
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 (F)
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 (F)
3 Credit Hours
Prerequisite: TCE 116
Troubleshoot and repair stereo audio amplifiers to the instructor's standards.
60 Contact Hours

TCE 200 SYMPTOM DIAGNOSIS MONOCHROME TV (F)
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 (F)
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 (F)
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 (F)
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 (F)
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 (F)
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 (F)
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 (F)
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 (F)
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 (F)
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 (F)
3 Credit Hours
Prerequisite: Permission of instructor.
Troubleshoot and repair automatic record changers to the instructor's standards.

TCE 219 DESIGN AND INSTALL MATV (F)
3 Credit Hours
Prerequisite: Permission of instructor
Demonstrate knowledge of an MATV distribution system.
60 Contact Hours

TCE 220 TRANSMISSION LINES AND ANTENNAS (F)
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 (F)
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 (F)
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 (F)
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 (F)
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 (F)
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) (F)
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 (F)
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 (F)
3 Credit Hours
Prerequisite: Permission of instructor.
Pass an Associate Level Certified Electronics Technician Exam.
60 Contact Hours

TCE 238 JOURNEYMAN CERTIFIED ELECTRONICS TECHNICIAN (F)
3 Credit Hours
Prerequisite: TCE 237
Pass a Journeyman Certified Electronics Technician Exam.
60 Contact Hours

TCE 297 COOPERATIVE EDUCATION (F)
Please refer to the description of Cooperative Education in this catalog or page 22.

TCE 299 INDEPENDENT STUDY (F)
Please refer to the description of Independent Study in this catalog on page 22.

Technical Illustration

TEI 200 RENDERING AND AIRBRUSH I (D)
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 (D)
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

TEI 205 AIRBRUSH II (D)
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 (D)
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, and visual aids.
120 Contact Hours

TEI 290 SPECIAL TOPICS (D)
Please refer to the description of Special Topics in this catalog on page 22.

TEI 297 COOPERATIVE EDUCATION (D)
Please refer to the description of Cooperative Education in this catalog on page 22.

TEI 299 INDEPENDENT STUDY (D)
Please refer to the description of Independent Study in this catalog on page 22.

Traffic Engineering Technology

TET 100 INTRODUCTION TO TRAFFIC ENGINEERING (D)
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 a survey course for students majoring in other related fields.
45 Contact Hours

TET 105 TRAFFIC ENGINEERING STUDIES I (D)
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 (D)
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 (D)
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 (D)
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 (D)
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 (D)
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 (D)
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 (D)
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 (D)
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 (D)
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 (D)
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 (D)
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 (D)
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 (D)
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 (D)
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 (D)
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 (D)
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 (D)
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 (D)
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 (D)
Please refer to the description of Cooperative Education in this catalog on page 22.

TET 299 INDEPENDENT STUDY (D)
Please refer to the description of Independent Study in this catalog on page 22.

Traffic and Transportation Mangement

TTM 101 FUNDAMENTALS OF COMMERCIAL TRANSPORTATION (D)
3 Credit Hours
A beginning course in the study of the U.S. transportation system. Designed to acquaint the student with 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

TTN 115 FREIGHT CLAIMS (D)
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 (D)
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 (D)
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 (D)
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 201 INTERNATIONAL TRADE (D)
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 211 ECONOMICS OF TRANSPORTATION I (D)
2 Credit Hours
Prerequisites: TTM 101, 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 (D)
2 Credit Hours
Prerequisites: TTM 211 or permission of instructor.
The competition between modes, transportation regulations, finance and problems of transportation policies.
30 Contact Hours

TTM 221 TRANSPORTATION REGULATIONS I (D)
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 (D)
3 Credit Hours
Prerequisites: TTM 221 or permission of instructor.
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 (D)
2 Credit Hours
Prerequisites: TTM 101
Analysis of the modern transportation manager's role within the comple: American transportation system. Emphasis is on identification of the com peting forces within that system — private vs. for-hire transportation, in terstate vs. intrastate transportation, market forces vs. regulatory pressures etc.
30 Contact Hours

TTM 232 TRANSPORTATION MANAGEMENT II (D)
2 Credit Hours
Prerequisites: TTM 231 or permission of instructor.
Continues in-depth study of the factors surrounding modern transportatior management. Narrows the issues explored in Transportation Management I e.g., by analyzing specific differences among modes of transport.
30 Contact Hours

TTM 290 SPECIAL TOPICS (D)
Please refer to the description of Special Topics in this catalog on page 22.

TTM 297 COOPERATIVE EDUCATION (D)
Please refer to the description of Cooperative Education in this catalog or page 22.

Travel and Tourism Occupations

TTO 101 GEOGRAPHY FOR TRAVEL AND TOURISM (D)
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 (D)
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 (D)
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 (D)
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 (D)
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.
45-60 Contact Hours

TTO 290 SPECIAL TOPICS (D)
Please refer to the description of Special Topics in this catalog on page 22.

TTO 297 COOPERATIVE EDUCATION (D)
Please refer to the description of Cooperative Education in this catalog on page 22.

Urban Planning Technology

UPT 100 INTRODUCTION TO PLANNING (D)
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 (D)
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 (D)
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 (D)
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 (D)
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 (D)
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 intrafirm and agency coordination.
90 Contact Hours

UPT 201 MAP READING AND PHOTO INTERPRETATION I (D)
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 (D)
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 (D)
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 (D)
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 (D)
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 (D)
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 (D)
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 (D)
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 (D)
Please refer to the description of Cooperative Education in this catalog on page 22.

UPT 299 INDEPENDENT STUDY (D)
Please refer to the description of Independent Study in this catalog on page 22.

Urban Horticulture

URH 100 ROCKY MOUNTAIN HORTICULTURE (F)
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 (F)
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 (F)
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 (F)
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 (F)
4 Credit Hours
The identification of deciduous and evergreen plant materials.
75 Contact Hours

URH 107 PLANTS IN THE LANDSCAPE (F)
2 Credit Hours
A class offered for summer study of the woody plants in our area.
30 Contact Hours

URH 115 PLANT USAGE (F)
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 (F)
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 (F)
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 (F)
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 (F)
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 (F)
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 (F)
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 (F)
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 (F)
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 (F)
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 (F)
2 Credit Hours
Methods employed in setting-up, operating and maintaining a garden center are studied.
30 Contact Hours

URH 205 NURSERY MANAGEMENT (F)
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 (F)
3 Credit Hours
Design, use and maintenance of green plants in public and commerical interiors. Of interest to general public.
53 Contact Hours

URH 210 LANDSCAPE MANAGEMENT (F)
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 (F)
2 Credit Hours
Abbreviated version of URH 212. Generally offered summers only.
30 Contact Hours

URH 212 GARDEN MANAGEMENT (F)
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 (F)
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 (F)
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 (F)
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 (F)
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 (F)
2 Credit Hours
A field study of local insect and disease problems. Generally offered summers only.
30 Contact Hours

URH 235 DISEASES AND PESTS (F)
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 (F)
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 (F)
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 (F)
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 (F)
Credit Hours
Commercial and private applicator preparation for EPA Certification in the rnamental and turf grass pest control and general examinations.
5 Contact Hours

URH 245 TURF PRODUCTION AND MANAGEMENT (F)
Credit Hours
Prerequisite suggested: URH 125
The principles and practices involved in the establishment and maintenance of urf grass for parks, golf courses and home grounds.
5 Contact Hours

URH 246 ADVANCED LANDSCAPE PLANNING (F)
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 (F)
Credit Hours
Problem-solving employer-employee relationships, motivations, morale building and goal orientation.
30 Contact Hours

URH 256 LANDSCAPE PERSPECTIVE DRAWING (F)
Credit Hours
Students will learn how to illustrate landscape plans in three-dimensional drawings.
53 Contact Hours

URH 297 COOPERATIVE EDUCATION (F)
Please refer to the description of Cooperative Education in this catalog on page 22.

URH 299 INDEPENDENT STUDY (F)
Please refer to the description of Independent Study in this catalog on page 22.

Welding and Fabrication

WEF 100 OXY-ACETYLENE SAFETY CUTTING AND WELDING (D,F,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 (D,F,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 (D,F,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 (D,F,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 (D,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 (D,F,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 (D,F,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 (D,F,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 (D,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 poisitons 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 (D,F,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 (D,F)
3 Credit Hours
Identify the different types of ferrous and non-ferrous metals utilizing basic spark and chip techniques known to the trade, distinguished chemical and structural change of metal brought about when heating and welding, and demonstrate a working knowledge of destructive and nondestructive 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 (D,F)
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 (D,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 (D,F)
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 (D)
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 (D,F)
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 (D,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 (D)
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 (D,F,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 (D,F,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 (D,F,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 (D,R)
3 Credit Hours
Prerequisite: WEF 215
Develop, plan (estimate), and fabricate structural jobs.
60 Contact Hours

WEF 217 MAINTENANCE WELDING AND REPAIR (D,F,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 de sign and preparation; demonstrate the uses of primary, secondary, paralle weld joints, estimating cost of repairs, and outside field repair using fiel equipment and actual industrial applications.
60 Contact Hours

WEF 219 CERTIFICATION PROCEDURE AND PREPARATION D)
3 Credit Hours
Prerequisite; Permission of instructor
Develop the ability to prepare and test all welding joints using applicable procedures.
60 Contact Hours

WEF 220 GENERAL SHOP AND IMPROVEMENT (F)
3 Credit Hours
Prerequisite; All other WEF courses
Have an opportunity for improvement in any area of welding.
60 Contact Hours

WEF 221 ORNAMENTAL IRON I (D, F)
3 Credit Hours
Prerequisites: 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 (F)
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 (F)
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 (F)
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 (F)
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.S.W. PIPE TEST (D,F,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 instrucor
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 (D,F,R)
Please refer to the description of Cooperative Education in this catalog on page 22.

WEF 299 INDEPENDENT STUDY (D,F,R)
Please refer to the description of Independent Study in this catalog on page 22.

Water-Wastewater Technology

WWT 100 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 polutants. Characteristics of water, water treatment, and protection of ground water.
45 Contact Hours

WWT 105 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

WWT 106 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

WWT 107 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

WWT 108 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

WWT 109 WATER DISTRIBUTION SYSTEM (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

WWT 110 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

WWT 115 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

WWT 116 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

WWT 117 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

WWT 118 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

WWT 119 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

WWT 120 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

WWT 121 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

WWT 122 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

WWT 125 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

WWT 127 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

WWT 128 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

WWT 200 HYDRAULICS FOR WATER-WASTEWATER (R)
5 Credit Hours
Introduction to princples 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

WWT 206 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

WWT 207 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

WWT 208 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

WWT 209 CLARIFICATION PROCESSES FOR WATER (R)
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

WWT 210 ADVANCED WATER ANALYSIS (R)
5 Credit Hours
A continuation of basic water analysis with emphasis on performing the fo lowing water purification and wastewater treatment laboratory tests: BOI phosphorus, nitrogen, taste and odor, colors, suspended solids, COD, a kalinity, hardness, etc. Studies will also include the correct methods f sampling and monitoring a water or wastewater treatment process.
83 Contact Hours

WWT 216 BIOLOGICAL AND BACTERIOLOGICAL WATER ANALYSIS (R)
5 Credit Hours
A course designed to familiarize the student with the procedures for isolatir and identifying microorganisms associated with the treatment of water ar wastewater. Topics to be covered will be pathogenic organisms, fecal col form testing (MF and MTF), and control tests for aerobic and anaerobic dige tion.
83 Contact Hours

WWT 217 W/W DISINFECTION TECHNIQUES (R)
3 Credit Hours
A study of the most common methods of disinfection — chlorination — a well as the lesser used methods utilizing ozone, iodine, bromine and oth chemicals. Studies will include analyzing and calculating dosage, maintenanc and operation of chemical equipment.
45 Contact Hours

WWT 226 TELEVISION SURVEILLANCE OF COLLECTION SYSTEMS (R)
3 Credit Hours
A course designed to introduce the student to television inspection of collec tion systems. Topics to be covered will be basic television inspection tech niques, how television and video systems operate and the development c reports and files.
45 Contact Hours

WWT 235 WATER SOFTENING PROCESSES (R)
1 Credit Hour
A study of methods used for removing hardness from water. Major methods t be discussed will be chemical precipitation and ion exhange. Oriented towar A and B operators.
15 Contact Hours

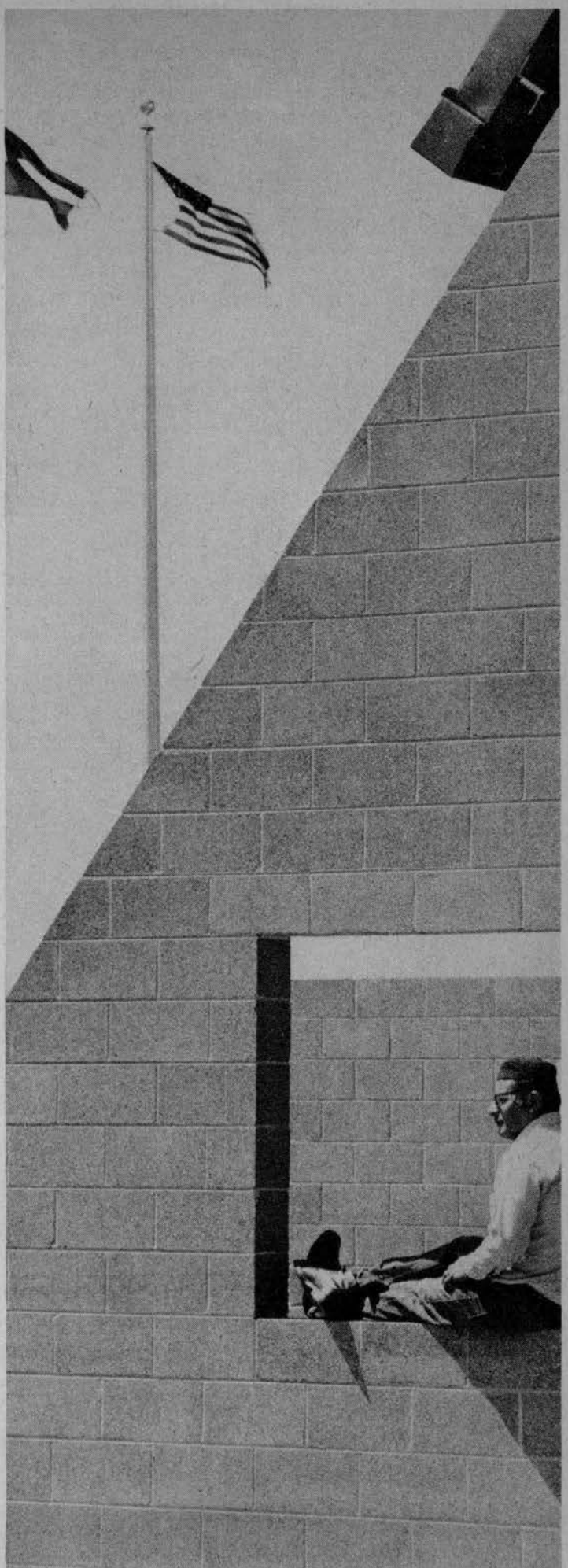
WWT 236 SAFETY PRACTICES FOR WATER/WASTEWATER (R)
1 Credit Hour
A study of the principles and procedures for water utility safety. Intended t show how these principles and procedures operate in actual practice. Or ented toward A and B operators and operators in responsible charge.
15 Contact Hours

WWT 237 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 equipmer and procedures used in fluoridation of water supplies.
15 Contact Hours

WWT 250 WASTEWATER DISCHARGE STANDARDS (R)
1 Credit Hour
A course designed to familiarize the student with the National Pollution Dis charge Elimination System (NPDES) guidelines. The student will becom acquainted with the effluent limitations permit system as it applies to Colora do. Also included will be information on sampling, monitoring and complianc to the system. Special attention will be given to proper methods of filling in a application for a discharge permit.
15 Contact Hours

WWT 297 COOPERATIVE EDUCATION (R)
Please refer to the description of Cooperative Education in this catalog o page 22.

WWT 299 INDEPENDENT STUDY (R)
Please refer to the description of Independent Study in this catalog on pag 22.



College Directory

Colorado State Board for Community Colleges and Occupational Education

Name	Term Expires
C. Gordon Dickinson, Chairman	1983
Ross Forney, Vice Chairman	1985
Angelo M. Daurio	1987
Elinor Miller Greenberg	1987
Thomas T. Grimshaw	1985
Raymond L. Guerrie	1985
Isaiah Kelley, Jr.	1983
Fred W. Valdez, Sr.	1983
Raymond Wilder	1987

Denver Area Council for Community Colleges

Name	Term Expires
Edwin Harshbarger, Jr., Chairman	1983
Linda Kay Turman, Vice Chairman	1985
Rosemary Dooley, Secretary	1983
Eddie L. Brandon	1985
Cipriano Griego	1983

Faculty and Administration

Central Administration

President's Office

Smith, G. Owen ..... President
Groth, David A. ..... Vice President, 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 ..... Director

College Relations

Pearson, JohnieAnn W. ..... Director

Controller

Asher, Gary W. ..... Controller
Matulik, Beverly ..... Assistant Controller

Personnel Services

Taylor, Edwin M. ..... Director
Zewe, Judith L. ..... Manager, Compensation
Montoya, Ron ..... Manager, Employee Relations

Purchasing

Finlay, William ..... Agent

Development

Keller, Louise J. ..... Director

Research

Casto, Lawrence T. ..... Director

Denver Auraria Community College

General Administration

Titus, Myer L. ..... President
Hall, Marlene ..... Dean, Instruction
VanDeVisse, Martin ..... Dean, Student Services
Orr, Lynnzy ..... Coordinator, Community Relations

Arts and Humanities

Cervantes, Cecilia ..... Director
Battey, Robert ..... Instructor/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
Miles, Kathy ..... Instructor/English
Mojica, Humberto ..... Instructor/History
Padilla, Francisco ..... Instructor/Spanish
Rivera, Tim ..... 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 ..... Instructor/Commercial Photography
Wohlauer, Ron ..... Instructor/Commercial Photography

Business and Governmental Studies

Kossik, Joseph ..... Director
Baade, Randy ..... Instructor/Political Science
Blan, Santos ..... Instructor/Accounting
Carfrae, Cal ..... Instructor/Computer Programming
Curtis, Ivory T. ..... Instructor/Economics
Feketa, Anita ..... Instructor/Accounting
Gilmore, Marjorie ..... Instructor/Management
Kleysteuber, Helen ..... Instructor/Secretarial
Krane, John ..... Instructor/Marketing
Norden, Robert ..... Instructor/Accounting
Oklak, Mark ..... Instructor/Computer Programming for Handicapped
Pigford, Lois ..... Instructor/Secretarial
Robnett, Harris H. ..... Instructor/Information Media Tech.
Rucker, Jennie ..... Instructor/Cooperative Work Experience
Thomas, Judy ..... Instructor/Secretarial
Vaughns, Louis ..... Instructor/Hospitality & Restaurant Administration

Continuing Education

Duran, John ..... Associate Dean
Monnett, John ..... Associate Director/Community Services
Copeland, Shyrel ..... Coordinator, Alternative Access Programs

Developmental Studies

Richards, William ..... Director
Berger, Mary Jo ..... Instructor/English
Frye, Yvonne ..... Instructor/Reading, English
Griego, Orlando ..... Instructor/Reading
Johnson, Ann ..... Instructor/GED/English
Loggins, Zenia ..... Learning Specialist
Martinez, Cleopatria ..... Instructor/Mathematics
Richards, Charles ..... Instructor/English
Tjeerdsma, Katrinus ..... Instructor/Mathematics
White, Janet ..... Coordinator/Supplemental Sys.
Valeska, Mary Ann ..... Instructor/ESL

Health and Human Services

Holliman, Juanita ..... Director
Bisch, Marjorie C. ..... Instructor/Nursing
Blasius, Ronald R. ..... Instructor/Psychology
Bremer, Sheri ..... Instructor/Nursing
Dolfinger, David ..... Instructor/Psychology
Earnest, Vicki V ..... Instructor/Nusing
Faubion, Betty ..... Coordinator/Instructor/Radiation Therapy Tech
Fears, Gerri ..... Coordinator/Instructor/Nursing
Hamann, Loy W. ..... Instructor/Nursing
Killeen, John ..... Instructor/Psychology
Miller, Marcella ..... Instructor/Nursing
Noyes, Lance ..... Instructor/Sociology
Ortega, Donna ..... Instructor/Sociology
Padilla, Roberto ..... Instructor/Psychology
Perkins, Deborah ..... Coordinator/Instructor/Nuclear Medicine Tech
Roberts, Evelyn ..... Coordinator/Instructor/Radiologic Tech
Schwartz, Jacquie ..... Coordinator/Instructor/Early Childhood Education
Salaiz, Theodore R ..... Coordinator/Instructor/Surgical Tech
Susman, Mary Beth ..... Instructor/Sociology

Program and Professional Development

Conway, Sally ..... Coordinator

Science and Technology

Raughton, Jim L ..... Director
Baade, Randy ..... Instructor/Geography
Beisswanger, Carl ..... Instructor/Appliance Refrigeration
Biagi, Jr., Paul E. ..... Instructor/Physics

Breslin, Edward ..... Instructor/Electronics
Caller, Ed ..... Instructor/Drafting
Coulter, William ..... Instructor/Computer Science, Math
Dallas, Keith ..... Instructor/Math
Foreman, Maxine ..... Instructor/Biology
Hall, Clem ..... Instructor/Electronics
I., Jesse ..... Instructor/Chemistry
Johnson, Jr., Sidney ..... Instructor/Math
Knighten, Calvin ..... Instructor/Electronics
Lundgren, Mary ..... Instructor/Biology
Pacheco, Nelson ..... Instructor/Business Machine Repair
Rogers, Guy E ..... Instructor/Drafting
Ross, William ..... Instructor/Foreign Auto Mechanics
Thomas, Jr., Arthur ..... Instructor/Welding
Velazquez, Janet ..... Instructor/Biology
Wood, Robert M ..... Instructor/Welding

Admissions Information Center

Gallegos, George ..... Director
Loomis, Jan ..... Registrar
Martinez, Edward ..... Recruitment Advisor
Harris, Ottawa ..... Recruitment Advisor

Career Planning and Advising Center

Rickord, William ..... Director
Brooks, Larry ..... Career Development Specialist
Griego, Louise ..... Student Advisor
Hamilton, Delmar ..... Student Advisor
Kusey, William ..... Student Advisor

Center for the Physically Disadvantaged

Hunsaker, Lil ..... Assistant Director
Cochrane, Donna ..... Career Planning Specialist
Ellinger, Jane ..... Health Specialist
King, Jackie ..... Interpreter/Coordinator
Machmer, Penny ..... Counselor

Educational Opportunity Center

Taylor, Michael ..... Director
Brillon, Carol ..... Counselor
Brooks, Betty ..... Counselor
Brown, Barbara ..... Counselor
Galiz, Mikki ..... Counselor
Morris, Betty ..... Counselor
Porter, Larry ..... Counselor

Financial Aid

Dominguez, Anna ..... Coordinator
Barrett, Tom ..... Student Services Specialist

Student Activities

Parks, Joyce ..... Officer

Veterans' Affairs

Loomis, Jan ..... Registrar

Hispanic Access Project

Cuaron, Alicia ..... Director

Front Range Community College

General Administration

Swenson, John H. ..... President
Mankenberg, Donald R. ..... Dean, Instruction
Trujillo, Orlando H. ..... Dean, Student Services
Thomas, Emery L. ..... Director, Physical Plant
Richman, Nancy ..... Coordinator, Community Relations

Arts and Humanities

Davis, William A. ..... Directo
Amick, David A. ..... Instructor/Psychology
Bowman, Michele D. ..... Instructor/Reading and English
Carpenter, Garrett ..... Instructor/Philosophy
Cattell, Judith ..... Instructor/CD/
Dudley, David A. ..... Instructor/Geography
French, Treva ..... Instructor/English and Literature
Galey, Thomas ..... Instructor/Interpreter Tuto
Hinga, John A. ..... Instructor/Sociology
Hudson, Julie ..... Instructor/Music
Hunter, Kenneth ..... Instructor/Anthropology
Lavroff, Ellen C. ..... Instructor/Spanish
Naiman, Rachel ..... Instructor/Interpretor Tuto
Ott, Charles ..... Instructor/Ar
Preskorn, Barbara ..... Instructor/Ar
Robinson, John A. ..... Instructor/History
Shaw, Mark ..... Instructor/English
Stuska, Sue ..... Instructor/Early Childhood Educatio
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. ..... Directo
Baniszewski, Jeanette ..... Instructional Associate/Computer Lab
Bowe, Mary Ellen ..... Instructor/Secretarial Science
Brasselero, Mike ..... Instructor/Economics
Christensen, William R. ..... Instructor/Accounting
Collins, Marian ..... Instructor/Accounting
Earle, William ..... Instructor/Secretarial
Espinosa, Jose ..... Instructor/Secretarial
Estrada, Paul ..... Instructor/Marketing
Freudenberg, Mary ..... Instructor/Accounting
Gomez, Joseph ..... Instructor/Computer Programming
Harbuz, Connie ..... Instructor/Marketing
Mahrer, Albert ..... Instructor/Management
Matthews, Noel ..... Instructor/Management
Miles, June ..... Instructor/Computer Programming
Milligan, Michael ..... Instructor/Computer Programming
Moore, James ..... Instructor/Marketing
Nickel, Barbara ..... Instructor/Secretarial
Pecikonis, Martin ..... Instructor/Computer Programming
Roberts, Joan M. ..... Instructor/Computer Programming
Schupbach, Warren ..... Instructor/Economics
Terada, James ..... Instructor/Management
Weiss, Donald ..... Instructor/Accounting
Zamarripa, Alice ..... Instructor/Accounting

Community Services/Continuing Education

Braman, David W. ..... Director
Vordenberg, Sue ..... Assistant Director

Admissions and Records

Albright, Morris G. ..... Director
Boyko, Mark M. ..... Registrar
Carson, Alexander A. ..... Counselor

Financial Aid

Thornton, Ronald D. ..... Manager

Career Planning and Advising Center

Young, Ronald S. ..... Director
Casper, Mary L. ..... Vocational Guidance Specialist
Lang, Jr., Edward M. ..... Counselor
Manuele, Magdalene ..... Counselor
Scott, Toni ..... Student Advisor
Tweed, William F. ..... University Counselor

Job Development and Placement

Epperson, Charles ..... Coordinator

Student Health Services
Dawson, Madge L. ..... Nurse

Student Activities
Romero, Ben ..... Officer
Vacant ..... Student Activities Advisor

Child Care Center
Latronica, Toni M. ..... Director
Green, Connie S. ..... Instructional Associate

Center for the Physically Disadvantaged
Bosch, Kenneth L. ..... Director
Williams, George ..... Assistant Director
Bassett, Tonya ..... Lab Coordinator
Custer, Carole ..... Career Planning and Placement Specialist
Ensenat, Darlene ..... Interpreter Coordinator
Roybal, Barbara ..... Health Specialist
Schwanke, Jean ..... Counselor for the Disabled

Instructional Resources
DuHasek, Jack R. ..... Director

Learning Materials Center
Hall, Josephine ..... Coordinator
Bond, Dorothy ..... Library Assistant
Bradshaw, H. Jerry ..... Instructional Media Specialist
Brito, Rodney ..... Graphic Designer
Cain, Kathi ..... Production Assistant
Candelaria, Susan ..... Audiovisual Technician
Hodges, John ..... Library Assistant
Robinson, Betty ..... Librarian
Sacher, David ..... Audiovisual Production Assistant
Shoemaker, Karen ..... Library Assistant

Learning Development Center
Rizzuto, Timothy ..... Coordinator
Boast, Mary C. ..... Instructor/Communications Lab.
Benavidez, Vera ..... Instructional Associate/ English and Language Lab.
Roffers-Payne, Sharon ..... Instructor/Mathematics
Zeches, Hubert E. ..... Instructor/Communications Lab.

Supplemental Services
Howie, Phyllis ..... Coordinator

Women's Program
Darr, Dixie L. ..... Coordinator

Industrial Applied Sciences
Duncan, Ralph ..... Director
Atkins, Rodney ..... Instructor/Machine Drafting
Brown, Edwin ..... Instructor/Welding
Doty, David ..... Instructor/Auto Mechanics
Etter, Cecil ..... Instructor/Electronics
Fedro, William ..... Instructor/Architectural Drafting
Foster, Norman ..... Instructor/Machine Shop
Maybury, Paul ..... Instructor/Architectural Drafting
McHenry, Ronald ..... Instructor/Electronics
Minamoto, Mitsuo ..... Instructor/Consumer Electronics
Payne, William ..... Instructor/Machine Drafting
Sanchez, Joe ..... Instructor/Welding
Seward, Roland ..... Instructor/Welding
Sheldon, Gary ..... Instructor/Auto Mechanics
Smith, Charles ..... Instructor/Auto Body/Paint
Smith, Frederick W. ..... Auto Mechanics
Smith, Jack ..... Instructor/Electronics
Svaldi, Paul ..... Instructor/Machine Shop
Thompson, Ole ..... Instructor/Electronics
Vigil, Paul ..... Instructor/Sportscraft
West, Jack ..... Instructor/Machine Shop
Wheeler, Charles ..... Instructor/Electronics
Winterhalder, Roy ..... Instructor/Auto Body Service

Interpreter Training Program
Antle, Lindsey ..... Coordinator

Science and Health
Brown, Robert E. ..... Director
Jones, Audrey A. ..... Associate Director
Boersema, Raymond ..... Instructor/Mathematics
Bouse, Edward F. ..... Instructor/Mathematics
Bowie, Thelma ..... Instructor/Nursing
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/Inhal. Therapy
Harris, Sendia ..... Instructor/Nursing
James, Evelyn ..... Instructor/Nursing
Kindle, Glenn ..... Instructor/Mathematics
Law, Helen ..... Instructional Associate/Food Service
Mueller, Alma ..... Coordinator/Nursing
O'Shea, James ..... Instructor/Urban Horticulture
Owen, Aubrey ..... Instructor/Mathematics
Palmer, David ..... Instructor/Physics
Pinar, Elizabeth ..... Instructor/Dietetics Technology
Pirolo, Dorothy ..... Instructor/Nursing
Sabus, John ..... Instructor/Physical Education
Smith, Janice ..... Instructor/Nursing
Sukle, Daniel ..... Instructor/Physics
Sullivan, Francis ..... Instructor/Biology
Trujillo, Julie ..... Instructor/Dental Assisting
VanDyke, Martin ..... Instructor/Chemistry
Wecal, Robert ..... Instructor/Urban Horticulture
Younger, Paul ..... Instructor/Mathematics

Red Rocks Community College

General Administration
Wilson, Richard E. ..... President
Noonan, Barry ..... Dean, Instruction
Adlfinger, Annette ..... Dean, Student Services
Sittner, George ..... Director, Physical Plant
Arnsparger, Arleen ..... Coordinator, Community Relations

Building and Machine Trades
Brown, James W. ..... Director
Kerr, Robert ..... Associate 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, Edward ..... Instructor/Automotive Mechanics
Plumb, Donald ..... Instructor/Automotive Mechanics
Rudden, Michael ..... Instructor/Welding and Fabrication
Rudden, Richard ..... Instructor/Bricklaying
Smith, Richard ..... Instructor/Electricity

Sperling, John ..... Instructor/Carpentry
Taylor, Mike ..... Instructor/Plumbing
Terhorst, W. James ..... Instructor/Carpentry
Vick, Robert ..... Instructor/Solar Energy
Ward, John ..... Instructor/Plumbing

Communications and Business

Davis, Howard ..... Director
Arnsparger, Jack ..... Instructor/Accounting and Data Proc.
Braswell, Michael ..... Instructor/Management/Law and Econ.
Collins, Charlene ..... Instructor/Secretarial Science
Ely, Beverly ..... Instructor/English
Fellows, Dave ..... Instructor/Accounting and Management
Haddad, Don ..... Instructor/Management
Hobkirk, Macie ..... Instructor/Secretarial Science
Juston, Harlan ..... Instructor/Management
Johnson, Cheryl ..... Instructor/Management and Accounting
Klinger, Denise ..... Instructor/Secretarial Science and Accounting
Kohler, Hertha ..... Instructor/German
Levine, Kent ..... Instructor/Real Estate and Law
Maxwell, Tom ..... Instructor/English and Literature
Mulay, Ray ..... Instructor/Marketing
Nelson, Walt ..... Instructor/English and Literature
Oleski, Ray ..... Instructor/Accounting
Pigford, Clementine ..... Instructor/English and Speech
Sabell, Haruko ..... Instructor/Secretarial Science
Sapienza, Leonard ..... Instructor/English and Literature
Scheib, Jim ..... Instructor/Economics
Sindt, Gloria ..... Instructor/Speech
Wiebe, Vern ..... Instructor/Data Processing and Bus. Math
Yohe, Bennett ..... Instructor/ English

Human Resources and Services

Zqut, JoElen K. ..... Director
Arndt, Susan ..... Instructor/Art
Boringer, Fred ..... Instructor/Criminal Justice
Coen, Don ..... Instructor/Art
Culpin, Alan ..... Instructor/History
Feeley, Tom ..... Instructor/Water-Wastewater
Harrison, Stephen ..... Instructor/Water-Wastewater
Healey, John ..... Instructor/Fire Science
Joy, Carla ..... Instructor/History
Lewand, Joe ..... Coordinator/Fire Service
Lucero, Frank ..... Instructor/Recreational Leadership
Mojica, Rafael ..... Instructor/Philosphy
Nelson, David ..... Instructor/Political Science and Geography
Nielsen, Thomas L ..... Instructor/Art and Pottery
Prince, Bob ..... Instructor/Anthropology and Sociology
Redifer, Don ..... Instructor/Audio Visual Technology
Schreibman, Walt ..... Instructor/Psychology
Totten-Sais, Diane ..... Instructor/Art and Pottery
Valvatne, Laura ..... Instructor/Psychology and Sociology
Wanzeck, Bill ..... Instructor/Criminal Justice
Wellisch, William ..... Instructor/Sociology
Wheatley, Anne ..... Instructor/Early Childhood Education
Wieder, Regina ..... Instructor/Early Childhood Education

Science and Technology

Perkins, P. Everett ..... Director
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/Physics
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
Salzman, John ..... Instructor/Chemistry
Smith, Mike ..... Instructor/Surveying
Stanesco, Jack ..... Instructor/Earth Scienc
Stephens, Carl ..... Instructor/Draftin
Tomkinson, Chuck ..... Instructor/Mathematic
Townrow, John ..... Instructor/Biolog
Tuggle, Dorothy ..... Instructor/Mathematic
White, Robert ..... Instructor/Earth Science and Petroleur
Williams, Roy ..... Instructor/Electronics (Digita

Admissions and Records

Sullivan, James ..... Directo
Schantz, Robert ..... Registra
Carrillo, Virginia ..... Coordinator/High School/College Relation

Career Planning and Advising Center

Riley, Russell ..... Directo
Anderson, Daniel ..... Career Dev. Specialis
Blackman, Robert ..... Career Dev. Specialis
Harris, Roy ..... Career Dev. Specialis
Swain, Barbara ..... Career Dev. Specialis
Ortega, Judy ..... Student Advisc
Gunther, Maureen ..... Instructional Advising Aid
Hammond-Harms, Theona ..... Instructional Advising Aid

Financial Aid

Zamarripa, Robert ..... Administrato

Center for the Physically Disadvantaged

Wooster, Alice ..... Assistant Directo
Applegate, Linda ..... Counselo
Brisnehan, Joan ..... Interprete
Powell, Darlene ..... Health Specialis
Avalos, Liz ..... Career Planning & Placement Specialis

Job Development & Placement

Porter, Harlan ..... Coordinato

Learning Development Center

Dey, Sarah ..... Coordinato
Marks, Alan ..... Developmental Studie
Summerton, Laurita ..... Developmental Studie
Vaiana, Mike ..... Developmental Studie
Vizvary, J. C. ..... Developmental Studie

Learning Materials Center

Berg, Robert G. Jr. ..... Acting Directo
Connole, Thomas P. ..... Librarian
Gauntanis, Anthea ..... Librarian

Student Activities

Vacant ..... Coordinato

Student Health Services

Garcia, Jo Anne ..... Coordinato

Veterans' Affairs

Hower, O. J. ..... Coordinato

Aurora Education Center

General Administration

Chang, Nai-Kwang ..... Executive Directo
Davis, Mary ..... Director, Academic Affairs
Morgan-Brooks, Jo ..... Manager, Student Services
Ulrich, Gerald ..... Administrator, Educational Support Services
Beyeler, Thomas ..... Coordinator, Center for the Physically Disadvantaged
Smolka, Catherine ..... Staff Assistant
Prokuski, Nora ..... Student Advisor
Robertson, Leo ..... Library Assistant

Bright, Betty ..... Senior Secretary
Douglass, Rella ..... Senior Secretary
Campbell, Terry ..... Secretary
Briggs, Diana ..... Administrative Clerk Typist
Fielden, Billy ..... Lead Custodian

General Education and Service Occupations

Cagle, Claude ..... Instructor/Solar Energy
Cheatwood, Diane ..... Instructor/Early Childhood Education
Coffey, Kathy ..... Instructor/English
Cohen, Joanne ..... Instructor/Speech
Demos, Epaminondas ..... Instructor/Biology
Hart, Richard ..... Instructor/Economics
Hekkers, James ..... Instructor/English
Kantor, Sherrie ..... Instructor/Early Childhood Education
McCarthy, Michael ..... Instructor/History
McInerney, Thomas ..... Instructor/Economics, History and Humanities
Opp, Leroy ..... Instructor/Psychology and Sociology
Pendergrass, Pat ..... Instructor/Mathematics
Ramsey, Joseph ..... Instructor/English
Searle, Lana ..... Instructor/Mathematics
Susman, Mary Beth ..... Instructor/Sociology
Tubbs, Richard ..... Instructor/English, Literature and Reading
Wagoner, James ..... Instructor/Psychology
Weedin, James ..... Instructor/Biology and Earth Science

Business and Management

Behr, Joy Lynn ..... Instructor/Accounting
Bigham, Harrel ..... Instructor/Business and Management
Cunningham, Kenneth ..... Instructor/Management and Marketing
Findlay, Carl ..... Instructor/Computer Programming
Gallegos, Richard ..... Instructor/Management
Holmes, David ..... Instructor/Business Law
Johnson, Peter ..... Instructor/Accounting
Medina, Lawrence ..... Instructor/Accounting
Mendoza, Arthur ..... Instructor/Computer Programming
Meyer, Fred ..... Instructor/Accounting
Novak, Daniel ..... Instructor/Computer Programming
Oberbillig, Ronald ..... Instructor/Accounting
Phillips, Jack ..... Instructor/Management
Piar, Karen ..... Instructor/Computer Programming
Rosenthal, Robert ..... Instructor/Accounting
Russell, Steve ..... Instructor/Computer Programming
Schlegel, Walter ..... Instructor/Computer Programming
Spain, Richard ..... Instructor/Accounting
Thibodeau, Charles ..... Instructor/Business Law
Wagner, Frank ..... Instructor/Management
Walker, Morris ..... Instructor/Management
Walters, Ronald ..... Instructor/Accounting
Yates, Larry ..... Instructor/Computer Programming

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