Section D: Course Descriptions
## SECTION D: Course Descriptions

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Accounting

PRINCIPLES OF ACCOUNTING I
ACCT& 201  Fall Winter  5 Credits
55 hours of lecture
Accounting theory and practice including the entire accounting cycle and accounting for merchandising operations, receivables, current liabilities, and payroll. Formerly BUS 231. Credit not allowed for both BUS 231 and ACCT& 201. Prerequisite: Eligibility for ENGL& 101 and MATH 095 or consent of Instructional Unit. [SE]

PRINCIPLES OF ACCOUNTING II
ACCT& 202  Winter Spring  5 Credits
55 hours of lecture
Continuation of ACCT& 201 with emphasis on payroll, partnership and corporation accounting, statement of cash flow, analysis and interpretation of financial statements, plant assets, depreciation, time value of money, long-term liabilities, and investments. Formerly BUS 232. Credit not allowed for both BUS 232 and ACCT& 202. Prerequisite: A grade of “C” or better in ACCT& 201. [SE]

PRIN OF ACCOUNTING III
ACCT& 203  Fall Spring  5 Credits
55 hours of lecture
Continuation of ACCT& 201 with emphasis on responsibility and departmental accounting, manufacturing operations, cost accounting, budgeting and standard costs, cost-volume-profit analysis, incremental analysis and capital budgeting. Prerequisite: A grade of “C” or better in ACCT& 201. Formerly BUS 233. [SE]

Addiction Counselor Education

SURVEY OF ADDICTIONOLOGY
ACED 101   3 Credits
33 hours of lecture
Biological, psychological, and sociological theories of the use of major drugs of abuse, as well as addictive behaviors. Explores the distinction between use, abuse and addiction. For majors and non-majors. Prerequisite: ENGL& 101 (or ENGL 101). [GE]

INTRODUCTION TO ADDICTIONOLOGY
ACED 105   5 Credits
55 hours of lecture
Basic theories course: effects on the body, diagnosis, treatment, and prevention of substance abuse. Emphasis on alcohol abuse and related problems in individuals and society. [GE]

INTRODUCTION TO ADDICTIONS COUNSELING SKILLS
ACED 122  Fall  3 Credits
33 hours of lecture
Application of basic counseling theories, including relapse prevention to an addiction client population. Group, individual and family counseling. Other cultures also addressed. Prerequisite: ACED 101 or CDEP 101, or consent of Instructional Unit. [GE]

GROUP COUNSELING IN ADDICTIONS
ACED 125  Winter  3 Credits
33 hours of lecture
Use of group process for modifying individual attitudes and actions. Application of group counseling theories to an addiction client population. Prerequisite: ACED 201 or CDEP 120/201, or consent of Instructional Unit. [GE]
INTRODUCTION TO COUNSELING FAMILY MEMBERS
ACED 132          3 Credits
33 hours of lecture
Knowledge and skills for working with significant persons in the addicted client's environment. Emphasis on counseling immediate family members. Prerequisite: ACED 201 or CDEP 201 (or 120). [GE]

LAW AND ETHICS IN ADDICTIONS COUNSELING
ACED 136          Winter 3 Credits
33 hours of lecture
Examination of state and federal laws governing the addictions field, including the Washington Administrative Code for CDP's. Legal and ethical duties in the client-counselor relationship. Prerequisite: ACED 101 or CDEP 101, or consent of Instructional Unit. [GE]

ADDICTIONS AND MENTAL ILLNESS
ACED 137          Fall 3 Credits
33 hours of lecture
Differential and dual diagnosis. Use of current edition of Diagnostic and Statistical Manual. Referral and networking with mental health professional; relapse prevention techniques; screening that includes comorbidity. Prerequisite: ACED 101 or CDEP 101 or consent of Instructional Unit. [GE]

PREVENTION AND EDUCATION IN THE COMMUNITY
ACED 138          3 Credits
33 hours of lecture
Application of the Public Health and Social Development models to prevention activities. Knowledge of community resources in developing community education and prevention programs. Prerequisite: ACED 101 or CDEP 101 or consent of Instructional Unit. [GE]

PHARMACOLOGY OF DRUGS OF ABUSE
ACED 160          3 Credits
33 hours of lecture
Pharmacological effects of alcohol and drugs on the human body and mind. Prerequisite: ENGL& 101 (or ENGL 101). [GE]

adolescent addiction assessment & treatment
ACED 164          Fall 3 Credits
33 hours of lecture
An examination of adolescent development and the detrimental impact of addiction on youth development. The assessment process and treatment modalities for adolescents are presented. Prerequisite: ACED 101 and 122, or CDEP 101 and 122 or consent of Instructional Unit. [GE]

AIR- AND BLOOD-BORNE PATHOGENS
ACED 170          2 Credits
22 hours of lecture
Skills to reduce impact of air- and blood-borne pathogens on addiction clients. HIV/AIDS brief risk intervention for the addiction client population. Community resources available to clients. [GE]

THEORIES OF COUNSELING
ACED 201          3 Credits
33 hours of lecture
Introduces the major counseling theories and techniques focusing on individual counseling within a Human Services framework. Students are encouraged to develop a counseling orientation based on these theories which include their own personal and professional ethical orientation. For majors and non-majors. Prerequisite: ACED 101 or CDEP 101 and PSYC 101, or consent of Instructional Unit. [GE]
MULTI-CULTURAL ADDICTIONS COUNSELING
ACED 202   3 Credits
33 hours of lecture
Culturally learned assumptions that shape a counseling interview. Culture as the heart of any counseling relationship. The impact of culture on treatment planning with an addiction client population. Prerequisite: ACED 122 or CDEP 122 and ACED 201 or CDEP 120/201. [GE]

CASE MANAGEMENT IN ADDICTION MEDICINE
ACED 203   3 Credits
33 hours of lecture
Requirements for managing cases in treatment clinics: treatment and aftercare plans, notes, testing, preparation of accurate reports and other documents, confidentiality, and advocacy. ASAM criteria and treatment. Prerequisite: ACED 201 or CDEP 120/201, and ACED 122 or CDEP 122, or consent of Instructional Unit. [GE]

ADVANCED TECHNIQUES FOR ADDICTION COUNSEL
ACED 205   3 Credits
33 hours of lecture
Development of skills needed to establish and maintain effective helping relationships with clients. Integration of relapse prevention counseling in treatment. Prerequisite: ACED 101 or CDEP 101, ACED 201 or CDEP 120/201, ACED 122 or CDEP 122. [GE]

FIELD PLACEMENT I
ACED 210   Fall Winter Spring 6 Credits
Twenty hours weekly of on-the-job supervised experience applying counseling theories and practices. Addiction Counselor Competencies are used as a framework for assessment. Prerequisite: 30 hours of ACED or CDEP courses including ACED 136 or CDEP 135 and consent of instructor’s permission. [GE]

FIELD PLACEMENT II
ACED 211   Fall Winter Spring 6 Credits
Twenty hours weekly of on-the-job supervised experience. Applying counseling theories and practices. Addiction Counselor Competencies will be used as a framework for assessment. Prerequisite: Grade of “C” or better in ACED 210 or CDEP 210 and instructor’s permission. [GE]

SELECTED TOPICS
ACED 280   1 – 3 Credits
33 hours of lecture
Special topics in chemical dependence as listed in the quarterly class schedule. May be repeated for credit. Prerequisite: ENGL 101. [GE]

SPECIAL PROJECTS
ACED 290   1 – 5 Credits
Opportunity to plan, organize, and complete special projects approved by the instructional unit. Prerequisite: Consent of Instructional Unit. [GE]

Adult Basic Education

EDUCATIONAL INTERVIEWING
ABE 002   Summer Fall Winter Spring 1 – 1 Credit
11 hours of lecture
REGISTER IN CLASS. Pretesting, assessment, and placement for ABE/GED prep classes. At the conclusion, students will have been assessed in the basic skills of reading, writing and mathematics. THIS COURSE IS A PRE-REQUISITE TO REGISTRATION IN ALL ABE/GED CLASSES. Students for whom English is not a native language, demonstrated competency at or above ESL level 5 is required.
EDUCATIONAL INTERVIEWING
ABE 003 Summer Fall Winter Spring 1 – 3 Credits
33 hours of lecture
An intake class that assesses new students in basic skills levels and learning styles, identifies barriers to student success, and helps student understand Clark College and Basic Education.

ABE I-BEST EDUCATIONAL INTERVIEWING
ABE 004 Summer Fall Winter Spring 1 Credit
11 hours of lecture
Assessment of new students in basic skills levels and learning styles. Topics include identifying barriers to student success, and helping students understand Clark College and I-BEST integrated instruction programs.

ADULT BASIC EDUCATION SPECIAL TOPICS
ABE 005 1 – 10 Credits
88 hours of lecture 44 hours of lab
Monthly seminars conducted by various college and local professionals for the purpose of enhancing the social, personal, and academic skills of the ABE student participant.

ABE PROJECT BASED LEARNING
ABE 006 Summer Fall Winter Spring 6 Credits
66 hours of lecture
Developing Basic Skills in mathematics, science, social studies, reading, and writing, based on the Washington State Learning Standards, while learning in a multi-level, multi-subject classroom explore real-world problems and challenges. Focus on developing confidence and self-direction with both team-based and independent work and understanding the social and professional skills necessary for working in the field, such as interacting in working groups, making compromises, and being dependable. Prerequisites: ABE Educational Interviewing.

ABE WRITING FUNDAMENTALS A
ABE 012 Summer Fall Winter Spring 1 – 6 Credits
66 hours of lecture
Practice writing simple, compound and some complex sentences to accomplish life purposes in structured writing activities in a range of familiar settings. Practice organizing information and sentences with correct word order to complete simple forms, notes, letters, and paragraphs. Practice spelling common everyday and significant personal words and using correct capitalization, punctuation, and subject-verb agreement for simple verb tenses. Practice proofreading and editing writing using writing aids, (checklists, dictionaries, etc.). Prerequisite: Appropriate CASAS score.

ABE WRITING FUNDAMENTALS B
ABE 014 Summer Fall Winter Spring 1 – 6 Credits
66 hours of lecture
Practice writing one to five understandable and well-constructed paragraphs easily and with few errors to independently accomplish well-defined and structured writing activities for varied reasons (such as for personal expression, to inform, to persuade or to complete a task) and for audiences in a range of comfortable and familiar settings.

ADULT BASIC EDUCATION MATH I
ABE 021 Summer Fall Winter Spring 1 – 6 Credits
66 hours of lecture
Practice recalling and using a few simple mathematical procedures such as very basic estimating, counting, sorting, ordering, grouping, adding and subtracting numbers up to three digits, and beginning multiplication of 2s, 5s, and 10s. Practice reading, writing, and interpreting simple benchmark fractions (1/2, 1/4), common monetary values, mathematical relationships (more, less, etc.), high frequency measurement (months, days, etc.), concepts of length and width, interpret simple charts and graphs, and communicate solutions to math tasks. Prerequisite: Entry level students with appropriate scaled CASAS placement scores.
ADULT BASIC EDUCATION MATH II
ABE 022 Summer Fall Winter Spring 1 – 6 Credits
66 hours of lecture
Building skills for evaluating solutions, adding and subtracting whole numbers through three digits, multiplying and dividing three digits numbers by one digit numbers, recall/use mathematical procedures such as estimating, counting, sorting, grouping, and measuring length and weight using calibrated instruments (rulers, scales). Practice reading, writing, and interpreting simple benchmark fractions and percents (1/2, 1/4, 50%), common monetary values, simple proportions (2:1), very simple data in charts and graphs, and communicate solutions to math related tasks. Prerequisite: ABE MATH 021 or appropriate scaled CASAS placement score.

ADULT BASIC EDUCATION MATHEMATICS III
ABE 023 Summer Fall Winter Spring 1 – 6 Credits
66 hours of lecture
Building skills to read, write, interpret, and use mathematical information and procedures for life purposes. Concepts and skills include: computing with whole numbers; converting and using benchmark fractions, decimals and percents (halves, quarters, tenths); determining simple patterns and proportions (4:1, etc); grouping, comparing, estimating numbers; using calibrated tools with benchmark units to measure; determining the area of common geometric shapes; selecting and organizing data into simple graphic arrangements; and communicating problem-solving strategies. Prerequisite: ABE MATH 022 or appropriate CASAS placement score.

ADULT BASIC EDUCATION MATHEMATICS IV
ABE 024 Summer Fall Winter Spring 1 – 6 Credits
66 hours of lecture
Building skills to read, write, interpret, and apply a variety of mathematical information such as the following: monetary values, extensions of benchmark fractions (1/8, 1/3, 1/5, etc.), decimals, and percents (15%, 30%, etc.), patterns and simple formulas (such as d=rt, A=lw), standard units of measurement including fractional units and benchmark angle measurements (90 degrees, 360 degrees, etc), geometric shapes, a combination of common shapes, concept of pi, converting between units of measurement, and ways to interpret and represent data (graphs). Prerequisite: ABE MATH 023 or appropriate CASAS placement score.

ABE READING FUNDAMENTALS A
ABE 032 Summer Fall Winter Spring 1 – 6 Credits
66 hours of lecture
Building skills in the four components of skilled reading: alphabetics, vocabulary, fluency, and comprehension. Students will recognize common everyday words and practice print-sound correspondence to decode simple texts. Developing simple strategies to increase vocabulary. Activities include reading simple texts accurately with appropriate phrasing and rates; practicing comprehension strategies to understand simplified informational and literary texts and connect the knowledge to personal experiences. Prerequisite: Appropriate CASAS score.

ABE READING FUNDAMENTALS B
ABE 034 Summer Fall Winter Spring 1 – 6 Credits
66 hours of lecture
Developing skills in the 4 components of skilled reading: alphabetics, vocabulary, fluency, and comprehension. Skills include decoding and recognizing common syllable patterns and developing strategies to increase vocabulary. Activities include reading intermediate texts accurately with appropriate phrasing and rates; practicing a variety of comprehension strategies for different reading purposes and various types of texts; analyzing and evaluating information in connection with previous knowledge in a range of informational and literary texts. Prerequisite: ABE 032 or appropriate CASAS score.

BASIC COMPUTER LITERACY AND KEYBOARDING
ABE 036 Summer Fall Winter Spring 1 – 2 Credits
44 hours of lab
Introduction to keyboarding development, computer terminology, use of software and word processing. Concurrent enrollment in ABE or ESL Level IV or above required.
ABE LANGUAGE ARTS I
ABE 041   1 – 6 Credits
66 hours of lecture
Skills for decoding and recognizing all of the letters of the alphabet and everyday words and word groups in short, simple texts by breaking words into parts, and applying pronunciation rules (decoding letter-sound correspondence, isolating first and last sounds, etc.). Activities include appropriately using everyday, high frequency vocabulary to produce a few sentences on a familiar topic with minimal attention to audience, recalling prior knowledge to assist in understanding information in the text students read/write, and making a few simple edits of handwriting, spelling, punctuation, and capitalization based on review and feedback from others. Prerequisite: Appropriate CASAS scores.

ADULT BASIC EDUCATION LANGUAGE ARTS II
ABE 042 Summer Fall Winter Spring 6 Credits
66 hours of lecture
Skills for learning to decode and recognize common/some unfamiliar words in short text, for demonstrating familiarity with simple, everyday content knowledge and vocabulary, for locating important information in simplified text, and for monitoring/enhancing reading comprehension. Skills for determining the purpose and audience for student writing, for following a highly-structured plan to organize ideas in order to support a single purpose and for producing a legible and comprehensible draft. Skills for appropriately using familiar vocabulary, and demonstrating beginning attention to revision strategies in order to make basic edits of grammar and syntax based on feedback from others. Prerequisite: ABE Language Arts II requires Language Arts I completion or the appropriate CASAS reading score upon entrance to the program.

ADULT BASIC EDUCATION LANGUAGE ARTS III
ABE 043 Summer Fall Winter Spring 1 – 6 Credits
66 hours of lecture
Practice writing simple, compound, and some complex sentences to construct simple paragraphs to accomplish well-defined and structured writing activities for varied life purposes. Skills for simple planning and editing strategies including generating and organizing ideas and proofreading for simple writing conventions in grammar, spelling, punctuation, and sentence structure. Skills for reading and comprehending most everyday words and some specialized vocabulary, adjust their reading pace, and use various comprehension strategies to accomplish well-defined activities in short to medium length texts in literature, science, and social studies. Prerequisite: Completion of Language Arts 042 or the appropriate reading/writing score on entrance to the program.

ADULT BASIC EDUCATION LANGUAGE ARTS IV
ABE 044 Summer Fall Winter Spring 1 – 6 Credits
66 hours of lecture
Practicing the steps in writing a few well-constructed and connected paragraphs to independently accomplish well-defined and structured writing activities for varied purposes. Practicing multiple writing and pre-writing strategies with everyday and specialized vocabulary in science, social studies, and literature. Practicing revision and editing strategies which include mechanics, grammar, and usage. Practice reading and comprehending a variety of texts to establish an appropriate pace and good comprehension for reading and writing in science, social studies, and literature. Prerequisite: Completion of Language Arts 043 or the appropriate reading/writing score on entrance to the program.

I-BEST SUPPORT
ABE 071 Summer Fall Winter Spring 1 – 6 Credits
66 hours of lecture
Additional instruction and support for student success in I-BEST designated classes. Review of important concepts and vocabulary introduced during I-BEST classes. Skills to communicate clearly and accurately using vocabulary and expressions commonly used in the I-BEST work place and job search environment. Activities to strengthen basic skills while studying in an I-BEST program. Students must be concurrently enrolled in an I-BEST designated class. Prerequisite: Admission into an I-BEST program.
# Agriculture

## COMPUTERS IN HORTICULTURE

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<td>AG 086</td>
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11 hours of lecture  
44 hours of lab  

Introduction to a wide variety of computer software and how it relates to site planning and other areas within the horticulture field. Students learn how to use the software through the research and knowledge gained from field studies, speakers, and/or visits to local city and county offices. Skills learned in this class help the student make logical decisions when designing a landscape and in using computer technology available to them.

## PLANT IDENTIFICATION

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<td>AG 106</td>
<td>Spring</td>
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44 hours of lecture  
22 hours of lab  

Practice and methods used by florists in house plant care and identification. Common names of plants sold in retail flower shops and greenhouses. Planting dish gardens and terrariums. [GE]

## FIELD STUDIES IN HORTICULTURE

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<td>AG 108</td>
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11 hours of lecture  
66 hours of lab  

Design and maintenance of various gardens, examination of comprehensive plant collections. Prerequisite: AG 130 or consent of Instructional Unit. [GE]

## INTRODUCTION TO HORTICULTURE

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<td>AG 130</td>
<td>Fall</td>
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44 hours of lecture  
22 hours of lab  

Vegetable and fruit crops, ornamentals, landscape and horticulture practices, controls, maintenance, basic plant science, growth and development. Field trips required. [GE]

## DECIDUOUS LANDSCAPE PLANT IDENTIFICATION

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<td>AG 135</td>
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44 hours of lecture  
22 hours of lab  

Deciduous plant materials. Identification, environmental requirements, growth habits, usage, maintenance and basic problems of ornamental plant materials: trees, shrubs, vines and ground covers. [GE]

## EVERGREEN LANDSCAPE PLANT IDENTIFICATION

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<td>AG 136</td>
<td>Winter</td>
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44 hours of lecture  
22 hours of lab  

Evergreen plant materials. Identification, environmental requirements, growth habits, usage, maintenance and basic problems of ornamental plant materials: trees, shrubs, vines and ground covers. Prerequisite: AG 135 or consent of Instructional Unit. [GE]

## FLOWERING LANDSCAPE PLANTS

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<tr>
<th>Course Code</th>
<th>Term</th>
<th>Credits</th>
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<tbody>
<tr>
<td>AG 137</td>
<td>Spring</td>
<td>5</td>
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44 hours of lecture  
22 hours of lab  

Identification, environmental requirements, growth habits, and landscape use of colorful local flowering trees and shrubs: rhododendrons and azaleas, popular annual and perennial flowers, flowering vines and ground covers. [GE]

## PLANT PROPAGATION

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Term</th>
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<tbody>
<tr>
<td>AG 140</td>
<td>Fall</td>
<td>5</td>
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44 hours of lecture  
22 hours of lab  

Sexual and asexual plant reproduction. Seed and cutting production of foliage plants and woody ornamentals. Grafting techniques. Field trips required. Prerequisite: AG 130 or consent of Instructional Unit. [GE]
GREENHOUSE MANAGEMENT
AG 150  Winter  5 Credits
44 hours of lecture  22 hours of lab
Greenhouse management skills. Production of greenhouse potted flowering and foliage plants and winter bedding crops. Greenhouse design, materials, crop scheduling and environmental control. Field trips required. Prerequisite: AG 130 or consent of Instructional Unit. [GE]

NURSERY OPERATIONS
AG 155  Spring  5 Credits
44 hours of lecture  22 hours of lab
Buildings, growing structures, equipment, and operations in the wholesale and retail nursery business. Planning, planting schedules, growing and marketing of container and field-grown nursery stock and bedding plants. Students will operate a nursery. Field trips required. Prerequisite: AG 130 or consent of Instructional Unit. [GE]

ANIMAL SCIENCE
AG 175   5 Credits
44 hours of lecture  33 hours of lab
Introduction to biological concepts including cellular basis of life, growth and development, genetics, reproduction, nutrition, and disease. Topics will be introduced using domestic animals as examples. This course is intended for nonscience majors and fulfills laboratory science requirements. It is also appropriate for science majors considering related careers, such as veterinary medicine. Concurrent enrollment in lab. Credit not allowed for both BIOL 104 and AG/BIOL 175. [NS]

FRUIT AND VEGETABLE CROPS
AG 185  Spring  5 Credits
44 hours of lecture  22 hours of lab
Fruit and vegetable crops grown in Southwestern Washington. Standard varieties planting, environmental requirements, pests, cultural practices, harvesting, storage and marketing. Field trips may be required. Prerequisite: AG 130 or consent of Instructional Unit. [GE]

COOPERATIVE WORK EXPERIENCE
AG 199 Summer Fall Winter Spring  1 – 5 Credits
165 hours of clinical
Supervised work experience in landscaping, grounds maintenance, greenhouse production or nursery stock production, etc. Completion of specific learning objectives and employer evaluation. Completion of, or concurrent enrollment in HDEV 195, 198 or 200 required. Prerequisite: Consent of Instructional Unit. [GE]

SOILS
AG 200  Fall  5 Credits
44 hours of lecture  22 hours of lab
Properties of soils, their origin, development and classification. Application of soil management with appropriate laboratory experience. [GE]

TURF MANAGEMENT AND MAINTENANCE
AG 205  Winter  5 Credits
44 hours of lecture  22 hours of lab
Turf establishment for home lawns, golf course greens and parks. Seeding, sodding, disease, fertilizer programs, insect problems and controls and maintenance. Field trips may be required. [GE]

LANDSCAPE DESIGN
AG 210   5 Credits
44 hours of lecture  22 hours of lab
Planning and design of landscape materials in residential and commercial properties. Prerequisite: AG 135, 136, 137, or consent of Instructional Unit. [GE]
COMPUTERIZED LANDSCAPE DESIGN
AG 211 Winter 5 Credits
33 hours of lecture 44 hours of lab
Introduction to Landscape Design using computer aided design programs, including Design Ware, PhotoShop and PowerPoint. Use of color, texture, direction, line and shape in the design process is also covered. Prerequisite: A grade of “C” or better in AG 086 or consent of Instructional Unit. [GE]

COMPUTERIZED LANDSCAPE DRAFTING
AG 212 Spring 5 Credits
33 hours of lecture 44 hours of lab
Introduction to computer-aided landscape drafting using LandCADD and/or AutoCAD software. Students learn basic landscape design principles in order to draft aerial views and incorporate irrigation systems. Topics include drafting techniques for base plans, site plans and landscape plans, as well as the ability to prepare presentations to show clients. Prerequisite: A grade of “C” or better in AG 086 or consent of Instructional Unit. [GE]

LANDSCAPE MAINTENANCE
AG 220 5 Credits
44 hours of lecture 22 hours of lab
Pruning, grooming, and maintaining landscape trees and shrubs. Cultural operations in annual and perennial flower beds and ground covers. Weed and pest control. Practices, care and use of pruning and hand tools. Business practices in maintenance operations and scheduling. Prerequisite: AG 135 or consent of Instructional Unit. [GE]

IRRIGATION MANAGEMENT
AG 240 Winter 5 Credits
44 hours of lecture 22 hours of lab
Installation and mechanization of irrigation systems for landscape of commercial and residential sites. Drip irrigation. Field trips may be required. Prerequisite: AG 130 or consent of Instructional Unit. [GE]

BACKFLOW PREVENTION IRRIGATION
AG 241 5 Credits
44 hours of lecture 22 hours of lab
Approved backflow protection, repair, maintenance, state plumbing codes, installation, test procedures, safety requirements, and upcoming events/knowledge. [GE]

LANDSCAPE INSTALLATION
AG 250 Spring 5 Credits
44 hours of lecture 22 hours of lab
Reading and interpreting landscape drawings, grading, leveling and soil preparation. Construction of decks, fences, walkways and other landscape features. Students will work on class and/or individual landscape projects. Field trips may be required. Prerequisite: AG 210 or consent of Instructional Unit. [GE]

TISSUE CULTURE
AG 255 Winter 2 Credits
11 hours of lecture 22 hours of lab
Introduction to tissue culturing: history and botanical basis for tissue culture, preparing media, and media formulas and tissue culture techniques. [GE]

ENVIRONMENTAL MANAGEMENT
AG 260 Fall Spring 5 Credits
44 hours of lecture 22 hours of lab
Identification of insects, diseases and miscellaneous pests and weeds in ornamentals, vegetable, fruit and greenhouse crops in Western Washington/Oregon. Controls for agricultural plant pests, insecticides, fungicides, herbicides, and soil fumigants. Preparation for public and commercial licenses. Current EPA standards, restrictions and regulations of chemical use. Prerequisite: AG 130 or consent of Instructional Unit. [GE]
SELECTED TOPICS
AG 280 1 – 5 Credits
55 hours of lecture
Selected topics in agriculture. Topics vary and course theme and content change to reflect new topics. Because the course varies in content, it is repeatable for credit. Specific topics are listed in the quarterly class schedule.

SPECIAL PROJECTS
AG 290 Summer Fall Winter Spring 1 – 5 Credits
Opportunity to plan, organize and complete special projects approved by the department. Prerequisite: Consent of Instructional Unit. [GE]

American Sign Language

AM SIGN LANGUAGE I
ASL& 121 5 Credits
55 hours of lecture
Introduction to American Sign Language emphasizing instruction and practice in expressive and receptive ASL skills. Focus on basic vocabulary, grammar, and cultural aspects of the deaf community.

AM SIGN LANGUAGE II
ASL& 122 5 Credits
55 hours of lecture
Continuation of ASL I, developing skills for the student with a basic knowledge of ASL. Focus on grammar, idioms, vocabulary building, culture and language. Prerequisite: ASL& 121 or consent of the instructor.

AM SIGN LANGUAGE III
ASL& 123 5 Credits
55 hours of lecture
Continuation of ASL II, developing grammar and vocabulary skills, with emphasis on students expressive and receptive skills. Topics include abstract concepts of language and the deaf culture’s values, attitudes, and community. Prerequisite: ASL& 122 or consent of the instructor.

AMERICAN SIGN LANGUAGE IV
ASL& 221 5 Credits
55 hours of lecture
First of the second-year sequence in studying the language of Deaf Americans. Topics include developing receptive and expressive skill and fluency; correct formation of signs, movement, rhythm, phrasing and clarity; vocabulary building; developing proficiency in ASL grammar. Students will develop a respect for ASL as a language, including acceptance and appreciation of its diverse regional and personal applications within its culture. Prerequisite: A grade of “C” or better in ASL& 123, demonstrated equivalent proficiency, or with permission of the instructor.

AMERICAN SIGN LANGUAGE V
ASL& 222 5 Credits
55 hours of lecture
Second of second-year sequence in studying the language of Deaf Americans. Topics include developing receptive and expressive skills in dialogue; applying ASL informal discourse styles; vocabulary building; developing proficiency in ASL grammar for recreation, social services, government and the workplace. Students will develop a respect for ASL as a language, including acceptance and appreciation of its diverse regional and personal applications within its culture. Prerequisite: A grade of “C” or better in ASL& 221, demonstrated equivalent proficiency, or with permission of the instructor.

AMERICAN SIGN LANGUAGE VI
ASL& 223 5 Credits
55 hours of lecture
Third of second-year sequence in studying the language of Deaf Americans. Continuing development of receptive
and expressive skills and fluency. Emphasis on increasing vocabulary, classifier, phrases and grammatical usage with a decrease dependency on English syntax structure. Students will be able to initiate and converse in topics such as technical fields of work, college level academic subjects, politics, and religion with consistent grammatical accuracy with native ASL users. Prerequisite: A grade of “C” or better in ASL& 222, demonstrated equivalent proficiency, or with permission of the instructor.

Anthropology

INTRODUCTION TO ARCHAEOLOGY
ANTH& 204  Fall Winter Spring  5 Credits
55 hours of lecture
Study of ancient and prehistoric cultures of the world. Introduction to theories and techniques of archaeological investigation. Formerly ANTH 102. [SE, SS]

INTRODUCTION TO CULTURAL ANTHROPOLOGY
ANTH& 206  Fall Winter Spring  5 Credits
55 hours of lecture
The concept of culture, a study of cultures directed toward a broad understanding of how people view their world, cope with their environments, and organize their lives. Formerly ANTH 103. [SE, SS]

BIOANTHROPOLOGY
ANTH& 215  Fall Winter Spring  5 Credits
44 hours of lecture  22 hours of lab
The biological study of human beings and primates, past and present: human genetics, biological adaptation and variation, evolutionary principles, the primate order, human origins, and applied biological anthropology. Fulfills social science or laboratory science (lab) distribution credit. Formerly ANTH 101. [SE, SS, NS]

SELECTED TOPICS
ANTH 280   1 – 3 Credits
33 hours of lecture
Varying topics for anthropology as listed in the quarterly class schedule. May be repeated for credit. [SE]

SPECIAL PROJECTS
ANTH 290   Fall Winter Spring  1 – 5 Credits
Opportunity to plan, organize, and complete special projects approved by the department. Prerequisite: Consent of Instructional Unit. [SE]

ARCHAEOLOGY FIELD SCHOOL
ANTH 299 Summer  9 Credits
11 hours of lecture  176 hours of lab
Archaeological fieldwork experience including: survey and controlled excavation methods, data recording and processing techniques, identification and recording of artifacts and features, limited archaeological laboratory methods, evaluation of the prehistoric human presence. Prerequisite: ANTH 102 and consent of Instructional Unit. [SE]

Art

DRAWING I
ART 103 Summer Fall Winter Spring  3 Credits
22 hours of lecture  22 hours of lab
Using line and shape effectively. Contour line and gesture. Emphasis on expressive content and accurate seeing. [HB, SE]
DRAWING II
ART 104  Summer Winter Spring  3 Credits
22 hours of lecture  22 hours of lab
Continuation of ART 103. Analysis and control of value, texture and color using a variety of techniques and drawing materials. Emphasis on accurate seeing. Prerequisite: ART 103. [HB, SE]

DRAWING III
ART 105  3 Credits
22 hours of lecture  22 hours of lab
Continuation of ART 104. Creative, critical-analytical, and historic approaches to composition in a variety of media. Prerequisite: ART 104. [HB, SE]

CREATIVITY AND CONCEPT
ART 110  Fall Winter Spring  3 Credits
22 hours of lecture  22 hours of lab
Introduction to creativity, conceptual thinking, and visual problem solving for artists, designers and other creative professionals. Focus on strategies and methods for developing original ideas such as brainstorming, sketching, automatic writing, etc; then translating those ideas to visual form using a variety of media and techniques. Hands-on studio activities contextualized by theoretical readings and in-class discussions.

TWO-DIMENSIONAL DESIGN
ART 115  Fall Winter Spring  4 Credits
22 hours of lecture  44 hours of lab
Foundation art course working with line, shape, value, texture and the principles of spatial organization. May include designing with computers. [HB, SE]

COLOR THEORY AND DESIGN
ART 116  Winter Spring  4 Credits
22 hours of lecture  44 hours of lab
Continuation of ART 115. Color theory and the application of color to specific design problems. Includes designing with computers. Prerequisite: ART 115. [HB, SE]

THREE-DIMENSIONAL DESIGN
ART 117  Spring  4 Credits
22 hours of lecture  44 hours of lab
Introduction to sculptural design concepts including volume, space and scale. Explores a variety of media and construction techniques, with a focus on creative problem solving in the context of sculptural objects. [HB, SE]

TIME-BASED ART AND DESIGN
ART 118  Fall Winter Spring  3 Credits
22 hours of lecture  22 hours of lab
Introduction of concepts and tools for the design of art to explore the transaction between people, objects and situations over time. Exploring the personal, cultural, formal, political, and historical aspects of the medium through readings, writings and critical reflection of relevant 20th and 21st century artworks, as well as the principles and aesthetics of moving imagery including timing, pacing, repetition, editing, composition, process and the link between sound and image. Activities include class discussions, software and equipment tutorials and studio time for experimental project development.

PHOTOGRAPHIC STORYTELLING
ART 131  Fall Winter Spring  3 Credits
22 hours of lecture  22 hours of lab
Introduction to photographic storytelling. Topics include: examining historical use of the medium, analysis of narrative photographic genres, and the creation of a personal photographic essay. Emphasis placed on seeing photographically and creating narrative. Includes field trip. Appropriate for non-majors and beginning photo students. Previous camera experience helpful, but not required. Student must provide digital camera.
PHOTO EXCURSIONS
ART 133 Summer  3 Credits
22 hours of lecture  44 hours of lab
Regional field trips to observe, discuss, evaluate, and photograph the elements that combine to form an effective image. Techniques for manipulation of value, hue, and form. No darkroom work.

PHOTOGRAPHY I
ART 140 Summer Fall Winter Spring  4 Credits
22 hours of lecture  44 hours of lab
Basic camera handling and darkroom procedures, metering, film processing, printing, and learning to see photographically. All work in black-and-white. Student must provide manual 35mm camera. A limited number of cameras are available for checkout in the Art Department. [HB, SE]

PHOTOGRAPHY II
ART 141 Spring  4 Credits
22 hours of lecture  44 hours of lab
Continuation of ART 140. Special darkroom and studio techniques. Introduction to the 4x5 and to computer manipulation of photographs. Particular emphasis on self-expression and print quality. Includes field trips to local galleries. Prerequisite: ART 140 or equivalent or consent of Instructional Unit. [HB, SE]

PHOTOGRAPHY III
ART 142 Spring  4 Credits
22 hours of lecture  44 hours of lab
Continuation of ART 141. Opportunities to develop additional technical skill and continued exploration of self-expression. Prerequisite: ART 141 or equivalent. [HB, SE]

DIGITAL PHOTOGRAPHY I
ART 145 Summer Fall Winter Spring  3 Credits
22 hours of lecture  22 hours of lab
Introduction to digital camera operation, image manipulation software use, seeing skills development, and expressive sensitivity. Special emphasis on the elements and principles of photographic composition, ethical issues, aesthetic vocabulary, and the study of how images communicate. Includes lecture, supervised lab, and group critiques. Familiarity with Adobe Photoshop and Macintosh platform recommended. Students must provide digital camera; a limited number of digital cameras are available for student checkout in the Art Department. [HB, SE]

DIGITAL PHOTOGRAPHY II
ART 146 Winter  4 Credits
22 hours of lecture  44 hours of lab
Digital imagery as self-expression. Refining technical skills, exploring the unique opportunities of the digital medium, and examining current trends via field trips and critiques. Practicing effective small group discussion to demonstrate visual literacy. Prerequisite: ART 145 or both ART 140 and GRCP 120, or consent of instructional unit. [HB, SE]

ART APPRECIATION
ART 151 Summer Fall Winter Spring  3 Credits
33 hours of lecture
The visual arts with which we come in contact every day. Ways contemporary and historic creative expression influence present day living and thinking. Personal contact with many art forms. Some hands-on experience. Especially for non-majors. [HA, SE]

GRAPHIC DESIGN EXPLORATION
ART 172 Fall Winter Spring  4 Credits
22 hours of lecture  44 hours of lab
Theoretical survey of Graphic Design and its cultural and historical context. Intended for both non-majors and pre-majors; focus on how Graphic Design functions as a mode of visual communication and its role in society, as well as exploring Graphic Design as a possible career.

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GRAPHIC DESIGN STUDIO I
ART 173 Fall 4 Credits
22 hours of lecture 44 hours of lab
Introduction to the elements and principles of graphic design and the design process through a series of hands-on projects stressing visual literacy, unity of form and utilizing common tools of the trade, including computers. Prerequisite: A grade of “C” or better in ART 115, 172 and CGT 100.

TYPOGRAPHY
ART 174 Winter 4 Credits
22 hours of lecture 44 hours of lab
Typography and its application in graphic design projects. Topics include the history and classification of typeface; choosing and combining fonts; typesetting on the computer, including issues of legibility, readability and spacing, and the creation of original letterforms. Working knowledge of Mac OS and Adobe software is recommended. Offered as the second of three courses in graphic design: Art 173, 174, 175. [HB, SE]

GRAPHIC DESIGN STUDIO II
ART 175 Spring 4 Credits
22 hours of lecture 44 hours of lab
Continuation of ART 173 with focus on layout, composition, messaging, technical considerations and functional constraints for various types of communication design disciplines such as editorial design advertising and persuasive design, branding and identity, or information design. Topics include ethical considerations related to graphic design such as sustainability, public service, consumerism, global diversity, and copyright issues. Prerequisite: A grade of “C” or better in ART 115, 172 and CGT 100.

CERAMICS I: POTTERY
ART 180 Fall Winter Spring 4 Credits
22 hours of lecture 44 hours of lab
Working with clay. Hand-building techniques of pinch, coil, slab and press mold. Introduction to the potter’s wheel. Basic glazing techniques. [HB, SE]

CERAMICS II: POTTERY
ART 181 Fall Winter Spring 4 Credits
22 hours of lecture 44 hours of lab
Potter’s wheel techniques of centering and throwing a variety of shapes, attaching handles and spouts, and fitting lids. Optional advanced hand-building assignments offered. Introduction to kiln stacking and firing. Prerequisite: ART 180. [HB, SE]

CERAMICS III: POTTERY
ART 182 Fall Winter Spring 4 Credits
22 hours of lecture 44 hours of lab
Combining hand and wheel techniques to create original pieces as sculpture or for specific functions. Mold making, slip casting, underglazing, and kiln firing. Prerequisite: ART 181. [HB, SE]

METAL ARTS I
ART 189 Fall Winter Spring 3 Credits
11 hours of lecture 44 hours of lab
Aesthetic expression within the context of applied design using metal. Design and technical skills will be equally emphasized. Fabrication and design of jewelry and other objects of metal. History of the fabrication of metal objects in other cultures. [HB, SE]

METAL ARTS II
ART 190 Fall Winter Spring 3 Credits
11 hours of lecture 44 hours of lab
Continuation of ART 189. Design and technical skills in the raising and forming of metal vessels. Development of metal arts in Europe from the Middle Ages to the present. Prerequisite: ART 189. [HB, SE]
### METAL ARTS III

**ART 191**  
**FALL WINTER SPRING**  
3 Credits  
11 hours of lecture  
44 hours of lab  
Continuation of ART 190. Design and technical skills applied to casting and forging of metal objects. Overview of contemporary metal artists and their work. Prerequisite: ART 190. [HB, SE]

### COOPERATIVE WORK EXPERIENCE

**ART 199**  
1 – 5 Credits  
165 hours of clinical  
Supervised work experience in art or photography. Completion of specific learning objectives and employer evaluation. Completion of, or concurrent enrollment in, HDEV 195, 198, or 200 required. Prerequisite: Consent of Instructional Unit. [GE]

### THE HUMAN FIGURE I

**ART 203**  
4 Credits  
22 hours of lecture  
44 hours of lab  
Working from the male and female form in media already familiar to the student. Emphasis on accurate seeing. Prerequisite: ART 103 or consent of Instructional Unit. [HB, SE]

### THE HUMAN FIGURE II

**ART 204**  
4 Credits  
22 hours of lecture  
44 hours of lab  
Working from the male and female form in media already familiar to the student. Emphasis on expressive power and individual development. Prerequisite: ART 203. [HB, SE]

### DIGITAL ILLUSTRATION

**ART 208**  
4 Credits  
22 hours of lecture  
44 hours of lab  
Developing digital illustration skills by using Adobe software with a focus on developing a personal voice, and exploring various styles and techniques. Activities include a series of hands-on creative projects. Prerequisite: A grade of “C” or better in ART 103, 110 and CGT 100.

### PORTFOLIO DEVELOPMENT

**ART 215**  
3 Credits  
22 hours of lecture  
22 hours of lab  
Preparation and presentation of individual portfolio for submission to potential employers, galleries and educational institutions. Topics include traditional and digital portfolio formats, photographing, writing, critiquing, and speaking about artwork. Activities include selecting, refining, and incorporating projects from the entire program into portfolios. Instructors play advisory role, culminating with formal portfolio reviews by instructors, peers, and industry professionals. Prerequisite: Consent of Instructional Unit.

### ART HISTORY: ANCIENT TO LATE ANTIQUE

**ART 220**  
5 Credits  
55 hours of lecture  
Survey of visual arts in the Mediterranean, the Near East, and in Northern Europe, covering the first arts of ancient humans through the Late Antique, 40,000 BCE-600 CE. Topics include why art and architecture exist and how they function in society; how religion, culture, artistic tradition, and patronage create, support, and influence art and architecture; how art and architecture achieve their effects, using materials, technique, style, and composition. [HA, SE]

### ART HISTORY: MEDIEVAL-RENAISSANCE

**ART 221**  
5 Credits  
55 hours of lecture  
Survey of visual arts and architecture of Early Medieval through Late Renaissance Europe, 500-1600 CE. Topics include why art and architecture exist and how they function in society, how religion, culture, artistic tradition, and
patronage create, support, and influence art and architecture, how art and architecture achieve their effects, using materials, technique, style, and composition. [HA, SE]

**ART HISTORY: BAROQUE-MODERN**

**ART 222**  
**Winter Spring**  
5 Credits  
55 hours of lecture  
Survey of the visual arts and architecture of Baroque through Modern Europe, ca. 1600-1914 CE. Topics include why art and architecture exist, and how they function in society; how religion, culture, artistic tradition, and patronage create, support, and influence art and architecture; how art and architecture achieve their effects, using materials, technique, style, and composition. [HA, SE]

**ART IN THE TWENTIETH CENTURY**

**ART 223**  
**Spring**  
5 Credits  
55 hours of lecture  
Survey of the visual arts and architecture of the Modern and Post-modern Periods, 1900-Present. Topics include why art and architecture exist, and how they function in society; how religion, culture, artistic tradition, and patronage create, support, and influence art and architecture; how art and architecture achieve their effects, using materials, technique, style, and composition. [HA, SE]

**ART HISTORY: ASIAN ART**

**ART 225**  
**Fall**  
5 Credits  
55 hours of lecture  
Survey of the visual arts and architecture of India, China, and Japan. Topics include why art and architecture exist, and how they function in society; how religion, culture, artistic tradition, and patronage create, support, and influence art and architecture; how art and architecture achieve their effects, using materials, technique, style, and composition. [HA, SE]

**TOPICS IN NON-WESTERN ART**

**ART 226**  
**Winter**  
1 – 9 Credits  
99 hours of lecture  
Survey of the visual arts and architecture of a selected non-western culture. Topics include why art and architecture exist, and how they function in society; how religion, culture, artistic tradition, and patronage create, support, and influence art and architecture; how art and architecture achieve their effects, using materials, technique, style, and composition. Repeatable for up to 9 variable credits. [HA, SE]

**WOMEN IN ART**

**ART 250**  
5 Credits  
55 hours of lecture  
Historical survey exploring themes in women’s art and challenges women artists faced as professionals within their respective cultures; in-depth study of women artists working in Western traditions.

**PAINTING I**

**ART 257**  
**Fall Winter**  
4 Credits  
22 hours of lecture  
44 hours of lab  
Introduction to materials and methods of oil and/or acrylic painting. Includes color theory, canvas stretching, and painting from still-life and portrait. Prerequisite: ART 103. [HB, SE]

**PAINTING II**

**ART 258**  
**Fall Winter**  
4 Credits  
22 hours of lecture  
44 hours of lab  
Continued work with acrylic and oil painting. Emphasis on line, color and pattern as expressive elements. Weekly group discussions. Prerequisite: ART 257. [HB, SE]
PAINTING III
ART 259 Fall Winter 4 Credits
22 hours of lecture 44 hours of lab
Continuation of ART 258. Continued development of problem-solving techniques related to composition and a variety of subjects. Prerequisite: ART 258. [HB, SE]

WATERCOLOR I
ART 260 Summer Spring 4 Credits
22 hours of lecture 44 hours of lab
Introduction to materials and methods of watercolor painting techniques. Topics include color theory, vocabulary, and composition; working in realistic and abstract styles. Activities include in-class critique and discussion. Prerequisite: ART 260. [HB, SE]

WATERCOLOR II
ART 261 4 Credits
22 hours of lecture 44 hours of lab
Intermediate level exploration of watercolor painting. Continued development of skills in color mixing and composition with an emphasis on fostering content and a personal creative voice through the material. Activities include in-class critique and discussion. Prerequisite: ART 260. [HB, SE]

WATERCOLOR III
ART 262 Summer Spring 4 Credits
22 hours of lecture 44 hours of lab
Advanced level exploration of watercolor painting, with emphasis on developing one’s own visual language through the material, experimentation and innovation with wet media and its expressive potential; student-initiated research and the creation of a unique body of work suitable for portfolio presentation. Activities include in-class critique and discussion. Prerequisite: ART 261. [HB, SE]

PUBLICATION PRODUCTION
ART 270 Fall Winter 1 – 9 Credits
66 hours of lecture 66 hours of lab
Design and production skills for publications, intended for Phoenix staff, graphic design students and others interested in the publications field. Topics include: Adobe InDesign for layout, preparing for printing, editing, proofing, creating promotional materials, working with printers, budgeting, managing the project and working with a team. Includes field trip. Prerequisite: Consent of Instructional Unit.

PUBLICATION DESIGN
ART 271 Fall Winter Spring 4 Credits
22 hours of lecture 44 hours of lab
Graphic design principles as applied to the discipline of editorial publications. Topics include an exploration of publication formats, designing for target audience groups, page layout, adapting material for online delivery, and culminates with an individual book project with a heavy emphasis on interpreting original content into sequential visual form. Course may be taken concurrently with ART 270 Publication Production. Prerequisite: A grade of “C” or better in ART 174.

GRAPHIC DESIGN STUDIO II
ART 273 Fall Winter Spring 4 Credits
22 hours of lecture 44 hours of lab
Continuation of ART 173 with focus on layout, composition, messaging, technical considerations and functional constraints for various types of communication design disciplines such as editorial design, advertising and persuasive design, branding and identity. Topics include ethical considerations related to graphic design such as sustainability, public service, consumerism, global diversity and copyright issues. Prerequisite: A grade of “C” or better in ART 115, 172 and CGT 100.
GRAPHIC DESIGN STUDIO III  
ART 274  Fall Winter Spring 4 Credits  
22 hours of lecture  44 hours of lab  
Third of three applied-design studio courses, with focus on longer-term projects based on real-world communication design problems with the goal of preparing the student for professional practice. Goal includes portfolio-quality graphic design work such as a personal identity and self-promotional package. Recommended concurrent enrollment with ART 215 – Portfolio Development. Prerequisite: A grade of “C” or better in ART 273.

GALLERY PREPARATION  
ART 278  Fall Winter Spring 1 – 6 Credits  
33 hours of lecture  66 hours of lab  
Various aspects of presenting art exhibits, including the care, handling and installation of artwork, arranging fixtures, lighting, exhibition layout design, writing press material, and other professional practices. Repeatable for up to 6 credits. Written consent of Instructional Unit required.

SELECTED TOPICS  
ART 280  Summer Fall Winter Spring 1 – 5 Credits  
33 hours of lecture  
Course focuses on selected topics in art. Topics vary and course theme and content change to reflect new topics. Because the course varies in content, it is repeatable for credit for different topics. [SE]

SPECIAL PROJECTS  
ART 290  Summer Fall Winter Spring 1 – 6 Credits  
Opportunity to plan, organize and complete special projects approved by the department. Prerequisite: Consent of Instructional Unit. [HB]

WELDED SCULPTURE THEORY I  
ART 295  Fall Winter Spring 1 Credit  
11 hours of lecture  
Background for students to begin to develop their own language of form. Through the use of a slide/lecture format, students will learn about contemporary sculpture. Discussions include design problems relating to the fabrication of a welded sculpture. Concurrent enrollment in WELD 120 required. [HB]

WELDED SCULPTURE THEORY II  
ART 296  Fall Winter Spring 1 Credit  
11 hours of lecture  
The design and fabrication of non-representational sculpture. Students will view slides of contemporary work and visit local sculpture sites to improve their understanding of the language of form. The MIG welding process as a sculptural tool will be explored. Concurrent enrollment WELD 121 required. Prerequisite: ART 295. [HB]

WELDED SCULPTURE THEORY III  
ART 297  Fall Winter Spring 1 Credit  
11 hours of lecture  
The design and fabrication of non-representational sculpture. Students will view slides of contemporary work and visit local sculpture sites to improve their understanding of the language of form. The MIG welding process as a sculptural tool will be explored. Concurrent enrollment in WELD 122 required. Prerequisite: ART 296. [HB]

Astronomy  
INTRO TO ASTRONOMY  
ASTR& 101  Fall Winter Spring 5 Credits  
44 hours of lecture  22 hours of lab  
Survey of astronomy designed primarily for non-science majors. Includes study of the sun, solar system, stellar evolution, galaxies and cosmology. Evening observation sessions required. Formerly ASTR 101. [NS,SE]
Automotive Technology

SAFETY, BASICS AND ELECTRIC
AUTO 108  Summer Fall Winter Spring  8 Credits
66 hours of lecture  44 hours of lab
Study of shop safety; technical introduction to dealerships and vehicles (TPORT); study of basic electrical components and systems with emphasis on troubleshooting by application of concepts (Toyota 623). Prerequisite: Eligibility for DVED 023, READ 100 and ENGL 097 and consent of Instructional Unit. [GE]

BRAKES
AUTO 109  Summer Fall Winter Spring  7 Credits
44 hours of lecture  66 hours of lab
Continuing study of shop safety; study of servicing drum, disk, ABS brakes, and traction control: operation, construction, parts, identification, diagnosis and repair procedures (Toyota 552). Prerequisite: Grade of “C” or better in AUTO 108 or consent of Instructional Unit. [GE]

AUTOMOTIVE BASICS
AUTO 110  Fall  15 Credits
110 hours of lecture  110 hours of lab
Technical introduction to dealerships and vehicles (Toyota 021). Basic electrical components and systems with emphasis on troubleshooting by application of concepts (Toyota 623). Servicing drum, disc and ABS brake systems and safety (Toyota 553). Prerequisite: Eligibility for DVED 023, READ 100, and ENGL 097 and consent of Instructional Unit. [GE]

CHASSIS SYSTEMS
AUTO 120  Winter  15 Credits
110 hours of lecture  110 hours of lab
Continuing study of chassis systems: shop safety; (Toyota 553) ABS brakes and traction control: operation, construction, parts identification, diagnosis, and repair procedures; (Toyota 652) automotive electrical components and systems: body electrical problems using a 6-step troubleshooting plan; (Toyota 453) steering and suspension systems: operation, construction, parts identification, diagnosis, alignment and repair procedures (Toyota 453). Prerequisite: Grade of “C” or better in AUTO 110 or consent of Instructional Unit. [GE]

ENGINE PERFORMANCE
AUTO 130  Spring  15 Credits
110 hours of lecture  110 hours of lab
Emphasis on engine performance operation, construction, parts, identification, diagnosis, and repair procedures. Basic emission, fuel injection, computer system diagnosis (Toyota 852), and shop safety. Prerequisite: Grade of “C” or better in AUTO 120 or consent of Instructional Unit. [GE]

CHASSIS SYSTEMS
AUTO 141  Summer Fall Winter Spring  1 – 15 Credits
110 hours of lecture  110 hours of lab
Continuing study of chassis systems: shop safety; (Toyota 553) ABS brakes and traction control: operation, construction, parts identification, diagnosis and repair procedures; (Toyota 652) automotive electrical components and systems: body electrical problems using a 6-step troubleshooting plan; (Toyota 453) steering, and suspension systems: operation, construction, parts identification, diagnosis, alignment and repair procedures. Prerequisite: AUTO 108 or 110. [GE]

ENGINE PERFORMANCE
AUTO 142  Summer Fall Winter Spring  1 – 15 Credits
110 hours of lecture  110 hours of lab
Study of engine performance: shop safety: with emphasis on engine performance operation, construction, parts identification, diagnosis, and repair procedures. (Toyota 852) EFI and TCCS engine control systems: fuel injection system, emission systems and computer system diagnosis. Prerequisite: AUTO 108 or 110. [GE]
COOPERATIVE WORK EXPERIENCE
AUTO 199  Fall Winter Spring  1 – 5 Credits 165 hours of clinical
Supervised work experience in an approved job. Completion of specific learning objectives and employer evaluation. Completion of, or concurrent enrollment in, HDEV 195, 198, or 200 required. Prerequisite: Consent of Instructional Unit. [GE]

DRIVE TRAINS AND ENGINES
AUTO 210  Fall  1 – 15 Credits
110 hours of lecture  110 hours of lab
Mechanical drive train units. Fundamentals of clutches, standard transmissions, differentials, and transaxles. Diagnosis, repair, and rebuilding procedures (Toyota 302), engine operation, construction and parts identification, and shop safety. Prerequisite: A grade of “C” or better in AUTO 130 and passing scores on two ASE exams to include A6 or consent of Instructional Unit.

ADVANCED POWER TRAINS
AUTO 220  Winter  15 Credits
110 hours of lecture  110 hours of lab
Fundamentals of torque converters, automatic transmissions, automatic transaxles and final drives. Operation, components, diagnosis, repair, and rebuilding procedures (Toyota 274). Advanced electrical systems, operation, construction, parts identification, diagnosis, repair procedures of engine, transmission, brake, suspension, cruise control, air conditioning and body control computers, and shop safety. Prerequisite: Grade “C” or better in AUTO 210 or consent of instructional unit. [GE]

ADVANCED CHASSIS SYSTEMS
AUTO 230  Spring  15 Credits
110 hours of lecture  110 hours of lab
Advanced topics of engine performance (Toyota 256), air conditioning (Toyota 752), ABS brake systems, and advanced suspension systems. Operation, components, rebuilding procedures, construction, parts identification, advanced diagnosis, and repair procedures of engine performance, brake, suspension, air conditioning and body control computers, and shop safety. Prerequisite: Grade of “C” or better in AUTO 220 or consent of Instructional Unit. [GE]

MANUAL TRANSMISSIONS, AXLES AND ENGINES
AUTO 240 Summer Fall Winter Spring  1 – 15 Credits
110 hours of lecture  110 hours of lab
Study of mechanical drive train systems. (Toyota 302) Fundamentals of clutches, manual transmissions, manual transaxles, transfer cases and differentials with emphasis on diagnosis, repair, and rebuilding procedures. Study of engine repair operations, construction, parts identification, diagnosis, with emphasis on rebuilding procedures, and shop safety. Prerequisite: AUTO 108 or 110. [GE]

AUTOMATIC TRANSMISSIONS AND ADVANCED ELECTRICAL
AUTO 241 Summer Fall Winter Spring  1 – 15 Credits
110 hours of lecture  110 hours of lab
Study of automatic transmissions: shop safety: (Toyota 274) automatic transmissions: fundamentals of torque converters, automatic transmissions, automatic transaxles & final drive, operation components, diagnosis, repair, & rebuilding procedures. Study of advanced electrical concepts (Toyota 852) engine control systems: operation, construction, parts identification, diagnosis, & repair procedures with emphasis on DVOM & lab scope use. Prerequisite: AUTO 108 or 110. [GE]

A/C AND ADVANCED CHASSIS SYSTEMS
AUTO 242 Summer Fall Winter Spring  1 – 15 Credits
110 hours of lecture  110 hours of lab
Continuing study of advanced topics of electrical and engine performance: shop safety: (Toyota 256) with emphasis on evaporative control systems, SRS systems and accessories. Heating and air conditioning systems with emphasis on (Toyota 752) air conditioning and automatic temperature control: operation, components, recharging procedures, construction, and parts identification. Prerequisite: AUTO 108 or 110. [GE]
SELECTED TOPICS
AUTO 280   1 – 8 Credits
88 hours of lecture
Selected topics in Auto. Topics vary and course theme and content change to reflect new topics. Because the course varies in content, it is repeatable for credit. Specific topics are listed in the quarterly class schedule. [GE]

SPECIAL PROJECTS
AUTO 290   Fall Winter Spring   1 – 3 Credits
For automotive majors only. Opportunity to plan, organize and complete special projects approved by the department. Prerequisite: Consent of Instructional Unit. [GE]

Baking – Culinary Arts

BAKING LAB
BAK 110 Fall 10 Credits
220 hours of lab
Practical work experience in fundamentals of professional baking. Includes the production of a variety of doughnuts, sweet-rolls, breads, cookies, pastries, pies and cake making and finishing. Concurrent enrollment in BAK 111 required. [GE]

BAKING THEORY
BAK 111 Fall 5 Credits
55 hours of lecture
Materials used in baking and how they relate to one another in the mixing, processing and baking of specific products. Concurrent enrollment in BAK 110 required. [GE]

BAKING LAB
BAK 112 Winter 10 Credits
220 hours of lab
Practical work experience in fundamentals of professional baking. Includes the production of a variety of doughnuts, sweet-rolls, breads, cookies, pastries, pies and cake making and finishing. Concurrent enrollment in BAK 113 required. [GE]

BAKING THEORY
BAK 113 Winter 5 Credits
55 hours of lecture
Materials used in baking and how they relate to one another in the mixing, processing and baking of specific products. Concurrent enrollment in BAK 112 required. [GE]

BAKING LAB
BAK 114 Spring 10 Credits
220 hours of lab
Practical work experience in fundamentals of professional baking. Includes the production of a variety of doughnuts, sweet-rolls, breads, cookies, pastries, pies and cake making and finishing. Concurrent enrollment in BAK 115 required. [GE]

BAKING THEORY
BAK 115 Spring 5 Credits
55 hours of lecture
Materials used in baking and how they relate to one another in the mixing, processing and baking of specific products. Concurrent enrollment in BAK 114 required. [GE]

BAKING LAB
BAK 116 Summer 10 Credits
220 hours of lab
Practical work experience in the fundamentals of professional baking. Includes the production of a variety of doughnuts, sweet rolls, breads cookies, pastries, pies, and cake making and finishing. Concurrent enrollment in BAK 117 required. [GE]
BAKING THEORY
BAK 117  Summer  5 Credits
55 hours of lecture
Lectures covering the materials used in baking, how they relate to each other in the mixing and processing of specific products. Lectures include lab demonstrations of each topic. Concurrent enrollment in BAK 116 required. [GE]

BEGINNING CAKE DECORATING
BAK 120  Fall Winter Spring  3 Credits
22 hours of lecture  22 hours of lab
Practical exercises covering cake set-up, filling, trimming, and icing. Basic flower construction including design layout, script borders, cut-out designs, and color wheel. [GE]

INTERMEDIATE CAKE DECORATING
BAK 122  Fall Winter Spring  3 Credits
22 hours of lecture  22 hours of lab
Practical exercises covering cake set-up, filling, trimming, and icing. The making and designing of a variety of flowers and borders. Script, stencils, piping, gel transfers, design perspective, image projection, and the use of air brushes. [GE]

ADVANCED CAKE DECORATING
BAK 124  Fall Winter Spring  3 Credits
22 hours of lecture  22 hours of lab
Wedding cake set-up and construction. Borders for wedding cakes. Make orchids and other flowers to compliment special design cakes. Piping of comic-type figures. [GE]

PASTRY ART
BAK 126  Winter  3 Credits
22 hours of lecture  22 hours of lab
Basic course for the beginning pastry chef. Topics include custards, ice creams, specialty sauces, meringues, pate choux, Bavaarians, candies, holiday desserts, and individual plated desserts. [GE]

COOPERATIVE WORK EXPERIENCE
BAK 199  Summer Fall Winter Spring  1 – 5 Credits
165 hours of clinical
Supervised work experience in an approved program-related job. Completing specific learning objectives and gaining valuable industry knowledge enhances choice of future employment opportunities. Completion of, or concurrent enrollment in, HDEV 195, 198, or 200 required. Prerequisite: Consent of Instructional Unit. [GE]

BAKERY MANAGEMENT LAB
BAK 210  Fall  10 Credits
220 hours of lab
Practical instruction in bakery management, working at various baking stations. Concurrent enrollment in BAK 211 required. Prerequisite: Three quarters of BAK 110, 112, 114, or 116. [GE]

BAKERY MANAGEMENT THEORY
BAK 211  Fall  5 Credits
55 hours of lecture
Introduction and group discussions regarding management and merchandising of a bakery. Concurrent enrollment in BAK 210 required. Prerequisite: Three quarters of BAK 111, 113, 115, or 117. [GE]

BAKERY MANAGEMENT LAB
BAK 212  Winter  10 Credits
220 hours of lab
Practical instruction in bakery management, working at various baking stations. Concurrent enrollment in BAK 213 required. Prerequisite: Three quarters of BAK 110, 112, 114, or 116. [GE]
BAKERY MANAGEMENT THEORY
BAK 213  Winter  5 Credits
55 hours of lecture
Introduction and group discussions regarding management and merchandising of a bakery. Concurrent enrollment in BAK 212 required. Prerequisite: Three quarters of BAK 111, 113, 115, or 117. [GE]

BAKERY MANAGEMENT LAB
BAK 214  Spring  10 Credits
220 hours of lab
Practical instruction in bakery management, working at various baking stations. Concurrent enrollment in BAK 215. Prerequisite: Three quarters of BAK 110, 112, 114, or 116. [GE]

BAKERY MANAGEMENT THEORY
BAK 215  Spring  5 Credits
55 hours of lecture
Introduction and group discussions regarding management and merchandising of a bakery. Concurrent enrollment in BAK 214. Prerequisite: Three quarters of BAK 111, 113, 115 or 117. [GE]

BAKERY MANAGEMENT LAB
BAK 216 Summer  10 Credits
220 hours of lab
Practical instruction in bakery management, working at various baking stations. Concurrent enrollment in BAK 217 required. Prerequisite: Three quarters of BAK 110, 112, 114, or 116. [GE]

BAKERY MANAGEMENT THEORY
BAK 217  Spring  5 Credits
55 hours of lecture
Introduction and group discussions regarding management and merchandising of a bakery. Concurrent enrollment in BAK 216 required. Prerequisite: Three quarters of BAK 111, 113, 115 or 117. [GE]

SPECIAL PROJECTS
BAK 290  Summer Fall Winter Spring  1 – 12 Credits
Opportunity to plan, organize and complete individualized special projects approved by the department. [GE]

Biology

BIOLOGY PRACTICUM
BIOL 011  Summer Fall Winter Spring  1 – 10 Credits
220 hours of lab
Laboratory work for selected biology courses. Concurrent enrollment in BIOL& 251, 252, or 253 required.

SURVEY OF BIOLOGY
BIOL& 100  Summer Fall Winter Spring  5 Credits
44 hours of lecture  33 hours of lab
Overview of basic concepts and issues in biology including the cellular basis of life, metabolism, principles of inheritance, evolution and diversity. Strong emphasis on the process of scientific inquiry using critical thinking and communication abilities. This course is intended for non-biology majors and fulfills the laboratory science requirements or as a recommended course for other biology courses. English writing skills are highly recommended. Required for psychology majors. Students may not receive credit for both BIOL& 100, BIOL 105 and AG/BIOL 175. Formerly BIOL 104. [NS, SE]

ENVIRONMENTAL BIOLOGY
BIOL 101  Fall Winter Spring  5 Credits
44 hours of lecture  33 hours of lab
Overview of basic concepts and issues related to the interaction between humans and their environment. Topics include population growth, loss of biodiversity, global climate change, ozone depletion, energy consumption and
various types of pollution. This course is intended for non-majors and fulfills the laboratory science distribution requirement. It is also required for WSU-Vancouver Environmental Science/Regional Planning majors. [NS, SE]

**INTRODUCTION TO WILDLIFE**
BIOL 139  Fall Winter Spring  3 Credits
33 hours of lecture
Wildlife conservation and management in the U.S. and throughout the world. Examines the social and political aspects of wildlife conservation and management, challenges to management of biodiversity, wildlife population management, and ecosystem management. [NS, SE]

**MAMMALS OF THE NORTHWEST**
BIOL 140  Fall Winter  3 Credits
33 hours of lecture
Important mammals of the Pacific Northwest. Their identification, classification, life histories, ecology, current status, and management. [NS, SE]

**BIRDS OF THE PACIFIC NORTHWEST**
BIOL 141  Winter  3 Credits
33 hours of lecture
Important Birds of the Pacific Northwest. Their identification, classification, life histories, ecology, current status, and management. [NS, SE]

**FRESHWATER FISHES OF THE PACIFIC NORTHWEST**
BIOL 142  Fall Spring  3 Credits
33 hours of lecture
Important fishes of the Pacific Northwest. Identification, classification, and basic biology of freshwater fishes of the Pacific Northwest. Introduction to fishery management concepts. Overview of factors affecting salmon in the Columbia River Basin. [NS, SE]

**INTRODUCTION TO FORESTRY**
BIOL 143  Spring  3 Credits
33 hours of lecture
A forest management course including the structure and function of trees, soils, forest ecology, forest insects and diseases, timber management, fire management, and forest economy. Class will occasionally meet off campus and a Saturday field trip is required. [NS, SE]

**REPTILES & AMPHIBIANS OF THE PACIFIC NW**
BIOL 145  Spring  3 Credits
33 hours of lecture
Introduction to the biology, ecology, evolution, and geographic distribution of Pacific Northwest reptiles and amphibians. [NS, SE]

**SURVEY OF BIODIVERSITY**
BIOL 146  Fall  2 Credits
22 hours of lecture
Survey of the major of organisms including animals, plants, fungi, protozoa, bacteria, archaea and prions. Students may not receive credit for both BIOL 217 and BIOL 146. [NS, SE]

**MARINE BIOLOGY**
BIOL 150  Fall  5 Credits
33 hours of lecture  44 hours of lab
The marine environment (physical and chemical properties), its plants, bacteria, animal life (vertebrates, invertebrates), ecosystems, fisheries and pollution. [NS, SE]
HUMAN BIOLOGY
BIOL 164 Summer Fall Winter Spring 4 Credits
44 hours of lecture
The structure and function of the human body as it relates to homeostasis, health, disease and the environment. Concepts to be covered include human organization, processing, transporting, integration/coordination, reproduction, genetic, and evolution/ecology. Can be used as a science distribution requirement. Concurrent enrollment in BIOL 165 recommended. Formerly BIOL 160. [NS, SE]

HUMAN BIOLOGY LAB
BIOL 165 Summer Fall Winter Spring 1 Credit
33 hours of lab
Laboratory study of the structure and function of the human body as it relates to homeostasis, health, disease, and the environment. Concurrent enrollment in, or completion of BIOL 164 required. Formerly BIOL 161. [NS, SE]

HUMAN GENETICS
BIOL 167 Fall Spring 3 Credits
33 hours of lecture
Introduction to a variety of genetics topics, including nature versus nurture, forensic sciences, patterns of inheritance, pedigree analysis, diseases, genetically modified organisms, gene therapy, cloning, and eugenics. Course will also focus on realized and/or potential impacts on society. Formerly BIOL 162.

HUMAN GENETICS LABORATORY
BIOL 168 Fall Winter Spring 2 Credits
11 hours of lecture  33 hours of lab
An introductory course that explores a variety of genetics topics through hands-on activities, simulations, presentation, and discussions. Activities may include DNA extraction, restriction enzyme digestions, electrophoresis, recombinant DNA, bacterial transformation, polymerase chain reaction (PCR) mutagenesis, genetically modified foods, antibiotic resistance, genetic crosses, genetic mapping, population genetics, and DNA databases. Prerequisite: A grade of “B-” or better in BIOL& 100 or BIOL 164 or BIOL 167 or consent of Instructional Unit.

BIOETHICS
BIOL 180 Fall Winter Spring 3 Credits
33 hours of lecture
Study of biological science and ethics. Ethical principles and theories are used in solving bioethical dilemmas. Concepts studied include genetic engineering, inherited disorders, cloning, physician assisted suicide, allocation of health resources, organ donation, and environmental ethics. [HA, NS, SE]

COOPERATIVE WORK EXPERIENCE
BIOL 199 Summer Fall Winter Spring 1 – 5 Credits
165 hours of clinical
Supervised work experience in an approved job. Completion of specific learning objectives and employer evaluation. Completion of, or concurrent enrollment in, HDEV 195, 198, or 200 required. Prerequisite: Consent of Instructional Unit. [GE]

FIELD STUDIES IN BIOLOGY
BIOL 208 Winter Spring 1 – 10 Credits
22 hours of lecture  286 hours of lab
For students interested in biology. An ecological approach with a diversity of habitats being visited (marine in winter, Great Basin Desert and marsh lands in spring). Credits for BIOL 208 are accumulated for each trip with a total of 15 credits possible for all trips. Prerequisite: Completion of a 100- or 200- level biology course, or consent of instructional unit. [NS, SE]

MAJORS ECOLOGY/EVOLUTION
BIOL& 221 Fall Winter 5 Credits
44 hours of lecture  33 hours of lab
First course of three introductory courses for life science majors. Covers Mendelian genetics, evolution, adaption,
speciation, biodiversity, and ecology. Prerequisite: Completion of or concurrent enrollment in CHEM& 139 or 121 or 141. Formerly BIOL 201. [NS, SE]

**MAJORS CELL/MOLECULAR**

**BIOL& 222**  
Winter Spring  
5 Credits  
44 hours of lecture  
33 hours of lab  
Second course of three introductory courses for life science majors. Includes organic chemistry, cell structure, DNA structure and replication, gene expression, cell division, organismal development, molecular genetics and biotechnology. Prerequisite: Completion of BIOL& 221 with a grade of “C” or better. Formerly BIOL 202. [NS, SE]

**MAJORS ORGANISMAL PHYS**

**BIOL& 223**  
Summer Spring  
5 Credits  
44 hours of lecture  
33 hours of lab  
Third course of three introductory courses for life science majors. Covers the physiology of major animal and plant organ systems. Prerequisite: Completion of BIOL& 221 with a grade of “C” or better. Formerly BIOL 203. [NS, SE]

**FLOWERING PLANTS OF THE PACIFIC NORTHWEST**

**BIOL 224**  
Spring  
5 Credits  
44 hours of lecture  
33 hours of lab  
Identification and ecology of local wildflowers through the use of taxonomic keys, preparation of specimens and field trips to study native species in their habitats. For forestry, wildlife, recreation, botany and non-biology majors interested in learning to recognize local wildflowers. A Saturday field trip is required. [NS, SE]

**HUMAN A & P I**

**BIOL& 251**  
Fall Winter Spring  
4 Credits  
33 hours of lecture  
33 hours of lab  
The structure and function of the human body. How it can adjust to changes in the internal and external environment. For students in Nursing, Dental Hygiene, and other related life science fields (Pre-Chiropracty, Pre-Optometry, etc) or as a life science for non-biology majors. Terminology, cell, protein synthesis, DNA replication, tissues, integumentary system, skeletal system, articular system, muscular system, nervous system, endocrine system, reproductive system, circulatory system, digestive system, respiratory system, and urinary system. Electrolyte balance. National standardized final exam. Concurrent enrollment in BIOL 011 for one credit and BIOL 251L required. Prerequisite: A grade of “C” or better in BIOL& 100 or BIOL 164/165, or BIOL& 221 or CHEM& 121 or 141 or consent of Instructional Unit. Formerly BIOL 231. [NS, SE]

**HUMAN A & P II**

**BIOL& 252**  
Summer Winter Spring  
4 Credits  
33 hours of lecture  
33 hours of lab  
The structure and function of the human body. How it can adjust to changes in the internal and external environment. For students in Nursing, Dental Hygiene, and other related life science fields (Pre-Chiropracty, Pre-Optometry, etc) or as a life science for non-biology majors. Terminology, cell, protein synthesis, DNA replication, tissues, integumentary system, skeletal system, articular system, muscular system, nervous system, endocrine system, reproductive system, circulatory system, digestive system, respiratory system, and urinary system. Electrolyte balance. National standardized final exam. Concurrent enrollment in OL 011, for one credit and BIOL 252L required. Prerequisite: A grade of “C” or better in BIOL 251 or written consent of Instructional Unit. Formerly BIOL 232. [NS, SE]

**HUMAN A & P III**

**BIOL& 253**  
Summer Fall Spring  
4 Credits  
33 hours of lecture  
33 hours of lab  
The structure and function of the human body. How it can adjust to changes in the internal and external environment. For students in Nursing, Dental Hygiene, and other related life science fields (Pre-Chiropracty, Pre-Optometry, etc.) or as a life science for non-biology majors. Terminology, cell, protein synthesis, DNA replication, tissues, integumentary system, skeletal system, articular system, muscular system, nervous system, endocrine system, reproductive systems, circulatory system, digestive system, respiratory system, and urinary system. Electrolyte balance.
National standardized final exam. Concurrent enrollment in BIOL 011 for one credit and BIOL 253L required. Prerequisite: A grade of "C" of better in BIOL 252 or consent of Instructional Unit. Formerly BIOL 233. [NS, SE]

MICROBIOLOGY
BIOL& 260 Summer Fall Winter Spring 5 Credits
44 hours of lecture 33 hours of lab
History of microbiology and a survey of organisms included in the study of microbiology with emphasis on bacteria. Physiology, morphology, genetics, growth and reproduction of bacteria. Experiments stress lab techniques and organisms that are a factor in clinic and hospital environments. Prerequisite: CHEM& 121 or 141. Formerly BIOL 240. [NS, SE]

HUMAN CADAVER DISSECTION
BIOL 275 Fall Winter Spring 1 – 6 Credits
22 hours of lecture 132 hours of lab
Dissection of the muscular, circulatory, nervous, digestive and reproductive systems. [SE]

SELECTED TOPICS
BIOL 280 1 – 5 Credits
55 hours of lecture
Selected topics in Biology. Topics vary, and course contents change to reflect new topics. Because the course varies in content it is repeatable for credit for different topics. [SE]

SPECIAL PROJECTS
BIOL 290 Fall Winter Spring 1 – 5 Credits
Opportunity to plan, organize, and complete special projects approved by department. Prerequisite: Written consent of Instructional Unit. [SE]

Business Administration

BASIC ACCOUNTING PROCEDURES
BUS 028 Summer Fall Winter 3 Credits
33 hours of lecture
Introduction to the fundamental bookkeeping functions of the double-entry accounting process to prepare financial information for a business or organization. Topics including the basic accounting equation, preparation of business and financial transactions, journalizing, posting, making adjustments, preparing the worksheet, and preparing financial statements from the worksheet.

BUS 029 Winter Spring 3 Credits
33 hours of lecture
A continuation of BUS 028, with focus on accounting in a merchandising business. Topics include the valuation of inventories, depreciation, tax reports, payroll accounting, and the preparation of financial statements and special journals. Prerequisite: BUS 028.

ACCOUNTING APPLICATIONS
BUS 036 Spring 3 Credits
33 hours of lecture
Accounting procedures applied to business simulations. Includes payroll, depreciation of fixed assets, budgeting, maintaining sales and purchase records and preparing financial statements. Prerequisite: BUS 029 or consent of Instructional Unit.

INTRODUCTION TO BUSINESS
BUS& 101 Fall Winter Spring 5 Credits
55 hours of lecture
Learn about the business functions of management, human resources, marketing, law, computers, accounting,
finance, production, small business and international business. Credit not allowed for both BUS& 101, BUS 101 and MGMT 100. Formerly BUS 101. [SE]

CUSTOMER SERVICE
BUS 110  Fall  3 Credits
33 hours of lecture
Introduction to customer-centered business organization. Topics include the principles and practices of customer relations, the history of consumerism and customer relations departments, and methods to develop internal/external customer service skills, including identifying and responding to their needs, improving skills in providing information, dealing with conflict situations, and developing a positive customer relations climate.

SMALL BUSINESS MANAGEMENT
BUS 115  Summer Fall Winter Spring  3 Credits
33 hours of lecture
Strategic and managerial considerations in starting, building, and maintaining a small business. Purchase, location, and layout of a new business along with controlling finances, purchasing, personnel, inventory management, pricing, and the legal environment.

MERCHANDISING MANAGEMENT
BUS 116  Winter  3 Credits
33 hours of lecture
Introduction to merchandising management. Topics include retail buying and merchandising functions, negotiation techniques, management of incoming/outgoing merchandise and inventory, mathematics of merchandising, analysis of vendor performance, sales forecasting, and creating a merchandising plan.

ADVERTISING
BUS 117  Spring  3 Credits
33 hours of lecture
Introduction to advertising. Topics include the problems faced by advertisers and their agencies, along with the policies and procedures for solutions in the development of advertising objectives and strategies, selection of media, determination of budgeting methods, and preparation of copy and layout for effective results. Credit not allowed for both BUS 117 and BUS 217.

COMPUTERIZED ACCOUNTING
BUS 130  Spring  3 Credits
33 hours of lecture
Computerized accounting techniques in the basic areas of financial accounting, including the processes of analyzing, recording, reporting and interpreting accounting data in a business environment. A systems approach with real world applications of the general ledger, accounts receivable, accounts payable, purchasing, cash receipts, accounting for sales, payroll, and month and year-end closing for both a service and a merchandising business. Quickbooks software is utilized in this course. Prerequisite: BUS 028 and 029 or ACCT& 201 (or BUS 231). [GE]

HUMAN RESOURCE MGMT FOR THE SMALL BUSINESS
BUS 132  Winter  1 Credit
11 hours of lecture
Human resource management for the moderately small business. Topics include hiring, training, and employee performance review.

FEASIBILITY PLAN
BUS 133  Fall  1 Credit
11 hours of lecture
Learn how to create a feasibility plan. An introduction to the concepts of building a feasibility plan. The purpose for which feasibility plans are developed, audiences, format design, updating, and presenting will be topics of discussion. The importance of maintaining flexibility and advantages of computer usage are demonstrated. Previous business or business planning experience may be useful but is not required. Emphasis is on building familiarity with creation, refinement, research, and techniques used, goals to be achieved, through use of a “hands-on” interactive
approach to feasibility plans. [GE]

**BUSINESS PLAN**

BUS 135  
Spring  
3 Credits

33 hours of lecture

An introduction to building a business plan that incorporates a promotional plan. Plan purpose, audience, design, format, and presentation will be considered. Previous business planning experience useful but not required. Plans will incorporate a “hands-on” interactive approach. [GE]

**PERSONAL FINANCE**

BUS 160  
Fall Winter Spring  
5 Credits

55 hours of lecture

Buying insurance (life, health, property, and auto), buying and financing a home, minimizing Federal income tax, borrowing, saving, and investing. [GE]

**PERSONAL INVESTMENTS**

BUS 171  
Fall Winter Spring  
2 Credits

22 hours of lecture

Classification and analysis of various kinds of securities, managing a sound investment program, and mechanics of the stock exchange. [GE]

**COOPERATIVE WORK EXPERIENCE**

BUS 199  
Summer Fall Winter Spring  
1 – 5 Credits

165 hours of clinical

Up to 5 credits for supervised work training in an approved job. Completion of, or concurrent enrollment in BTEC 147 or HDEV 195, 198, or 200 required. Prerequisite: Completion of one class with a “C” or better in Business, Economics or Management. Consent of Instructional Unit required. [GE]

**BUSINESS LAW**

BUS& 201  
Summer Fall Winter Spring  
5 Credits

55 hours of lecture

Practical applications of the law of contracts, agency, employment, real and personal property, and bailments in the business world and in one’s personal affairs. Legal reasoning and illustrative case problems. Prerequisite: Sophomore standing or consent of Instructional Unit. Formerly BUS 224. [SE]

**DESCRIPTIVE STATISTICS**

BUS 203  
Fall Winter  
3 Credits

33 hours of lecture

Application of statistics to practical business problems. Includes summarizing and presenting data in tables and graphs, calculating and using common descriptive statistics, determining probabilities and using the binomial, Poisson, and normal probability distributions. All business majors intending to complete a Clark AA degree must take BUS 203. All other majors may take BUS 203 or MATH 203. Knowledge of Excel highly recommended. Prerequisite: MATH 095 or equivalent or consent of Instructional Unit. [Q, SE]

**INFERENTIAL STATISTICS**

BUS 204  
Winter Spring  
3 Credits

33 hours of lecture

Application of statistics to practical business and economic problems. Includes sampling, point and interval estimates, hypothesis testing using the normal, t, and chi-square distributions, analysis of variance, correlation, and simple and multiple regression. All business majors must have completed BUS 203 with a “C” or better if intending to complete a Clark AA degree. All other majors must have completed BUS 203 or MATH 203 with a “C” or better. Knowledge of Excel recommended. Prerequisite: Completion of BUS 203 or MATH 203 with a “C” or better or consent of Instructional Unit. [Q, SE]
BUSINESS COMMUNICATIONS
BUS 211  Fall Winter Spring  3 Credits
33 hours of lecture
Developing proficiency in written and oral communications appropriate for business by composing, organizing, and editing documents such as letters, reports, memos, emails, and presentations from a variety of business cases and managerial interviews. Emphasis on team work, collaboration, diversity, intercultural communication, and the delivery of oral presentations, using specialized software. Same as ENGL 212. Prerequisite: ENGL& 101 (or ENGL 101) or consent of Instructional Unit. [SE]

PRINCIPLES OF ADVERTISING
BUS 217  Spring  5 Credits
55 hours of lecture
Historic, social, environmental and legal aspects of advertising. The client, agency and consumer. Strategies for marketing, research, positioning and advertising. Development of the media plan and types of media. Creative strategy and execution. Credit not allowed for both BUS 117 and BUS 217. [GE]

PROFESSIONAL SELLING
BUS 251  Fall  3 Credits
33 hours of lecture
Introduction to personal selling concepts for the relationship era of business. Focus on selling stages, including prospecting, qualifying, developing rapport, overcoming objections, closing techniques, and following up with customer service. Focus on personal, retail, and organizational selling. [GE]

PRINCIPLES OF MARKETING
BUS 260  Spring  5 Credits
55 hours of lecture
Introduction to concepts of marketing, with practical emphasis on the research, evaluation, and segmentation of markets. Focus on behavior of consumer and organizational buyers. Activities include developing a marketing plan to include product planning, pricing, promoting, and placement. [GE]

SELECTED TOPICS
BUS 280  Fall Winter Spring  1 – 5 Credits
55 hours of lecture
The course focuses on selected topics in Business. Topics vary, and course theme and content change to reflect new topics. Because the course varies in content, it is repeatable for credit for different topics. Individual topics are listed in the quarterly class schedules. [GE]

SPECIAL PROJECTS
BUS 290  Summer Fall Winter Spring  1 – 5 Credits
Opportunity to plan, organize and complete special projects approved by the department. Prerequisite: Consent of Instructional Unit. [GE]

Business Mathematics
FUNDAMENTALS OF BUSINESS MATHEMATICS
MATHB 065  Summer Fall Winter Spring  5 Credits
55 hours of lecture
Application of mathematics to common business situations. Emphasis is on practical applications and problem-solving skills for the business professional as well as the consumer and investor. Prerequisite: A grade of "C" or better in DVED 023 or recommending score on the placement test or consent of Instructional Unit.
Business Technology

SPEED AND ACCURACY BUILDING
BTEC 010  Summer Fall Winter Spring  1 – 3 Credits
11 hours of lecture  44 hours of lab
Emphasis will be placed on correct techniques and appropriate drills to improve speed and accuracy. Prerequisite: BTEC 102 or consent of Instructional Unit.

PROFESSIONAL SPELLING & PROOFREADING SKILLS
BTEC 082  Summer Fall Winter Spring  1 – 2 Credits
22 hours of lecture
Building basic proofreading skills through the development of spelling and vocabulary.

APPLIED OFFICE ENGLISH
BTEC 087  Fall Winter Spring  3 Credits
33 hours of lecture
Review and develop fundamental skills in dictionary use, spelling, business vocabulary, editing, word usage, grammar, sentence structure, and punctuation. Provides practice in basic writing skills for business letters and memorandums. Prerequisite: DVED 094 or recommending score on the college writing skills placement test for ENGL 097.

KEYBOARDING
BTEC 100  Summer Fall Winter Spring  1 – 3 Credits
11 hours of lecture  44 hours of lab
Introduction to the keyboard, development of speed and accuracy, and basic keyboarding applications, including business letters, memos, tables, and reports. Keyboarding courses (BTEC 101 and 190) are taught as individualized instruction through self-paced study. Students register for BTEC 100. At the end of the quarter, registration will automatically be changed to the appropriate course(s). A student earns from 1 to 3 credits in a course depending on the number of lessons and tests successfully completed. [GE]

BEGINNING KEYBOARDING
BTEC 101  Summer Fall Winter Spring  1 – 3 Credits
11 hours of lecture  44 hours of lab
Introduction to keyboard, development of speed and accuracy and basic keyboarding applications – simple letters, memos, tables, and reports. For students who have had no previous keyboarding instruction. Register for BTEC 100. At the end of the quarter, registration will automatically be changed to the appropriate course(s). This course is taught on microcomputers. [GE]

DOCUMENT FORMATTING
BTEC 102  Summer Fall Winter Spring  1 – 3 Credits
11 hours of lecture  44 hours of lab
Business letters, tables, electronic forms, use of templates, and report keyboarding on a production basis. Further development of speed and accuracy. Continuous enrollment, flexible times, individual program. Prerequisite: BTEC 101, or 190, and BTEC 122 or consent of Instructional Unit. [GE]

BEGINNING COMPUTER FUNDAMENTALS
BTEC 105  Summer Fall Winter Spring  3 Credits
33 hours of lecture
Introduction to basic computer skills. Topics include computer components, terminology, and skills to manage files/folders, send and receive email, create documents using word processing, make simple spreadsheets, and locate information on the Internet. For students with little or no prior computer experience. [GE]

BUSINESS ENGLISH
BTEC 107  Winter  5 Credits
55 hours of lecture
Develop proficiency in the language skills necessary for business writing. Strong emphasis placed on grammar,
punctuation, sentence structure, capitalization, subject/verb agreement, and editing. Prerequisite: BTEC 087 or recommending score on the college writing skills placement test for ENGL& 101.

**APPLICATION ESSENTIALS: WORD**

BTEC 116  
Summer Fall Winter Spring  1 Credit
11 hours of lecture
Fundamentals of common business applications using MS Windows and MS Word, and using Windows to manage files/folders and giving students hands-on experience in word processing. Basic Word features, basic word processing skills and MLA document formatting will be covered.

**APPLICATION ESSENTIALS: EXCEL**

BTEC 117  
Summer Fall Winter Spring  1 Credit
11 hours of lecture
Fundamentals of common business applications using MS Windows and MS Excel, and using Windows to manage files/folders and giving students hands-on experience in spreadsheets. Basic Excel features, basic spreadsheet skills and common formulas and functions will be covered.

**APPLICATION ESSENTIALS: POWERPOINT**

BTEC 118  
Summer Fall Winter Spring  1 Credit
11 hours of lecture
Fundamentals of common business applications using MS Windows and MS Excel, and using Windows to manage files/folders and giving students hands-on experience in spreadsheets. Basic Excel features, basic spreadsheet skills and common formulas and functions will be covered.

**WORD FOR BUSINESS**

BTEC 122  
Fall Winter Spring  5 Credits
55 hours of lecture
Producing letters, memos, and tables using fonts, tabs, tables, numbered and bulleted text, thesaurus, and grammar-check. Reports and longer documents will be created using columns, page numbers, footnotes, endnotes, headers, and footers. Form letters using mailing lists, envelopes, mailing labels, and standard paragraphs will be assembled. Styles, flyers and newsletters with graphics are included. [GE]

**INTRODUCTION TO WORD**

BTEC 125  
Fall Spring  3 Credits
33 hours of lecture
Create, format, edit, save and print documents using fonts, numbered and bulleted text, tables, columns, thesaurus, grammar-check. Create reports and longer documents using columns, page numbers, footnotes, endnotes, headers and footers. Assemble form letters using mailing lists, envelopes, mailing labels, and standard paragraphs. Use styles to create flyers and newsletters with graphics. BTEC 100 or keyboarding speed of 30 wpm recommended. Application software is Microsoft Word. [GE]

**FILING AND RECORDS MANAGEMENT**

BTEC 131  
Fall Winter  3 Credits
33 hours of lecture
Principles and procedures of records storage and control including record cycle, microrecords, and electronic files. Selection of equipment and supplies. Practice in using indexing rules, coding, and filing for alphabetic, numeric, geographic, and subject filing systems. [GE]

**10-KEY CALCULATOR**

BTEC 135  
Fall Winter Spring  1 Credit
5 hours of lecture  10 hours of lab
Ten-key by touch using a business-size electronic calculator. Training on operational features of modern business calculators incorporating business applications. [GE]
BUSINESS TECHNOLOGY SEMINAR
BTEC 140  Summer  2 Credits
22 hours of lecture
Problems, methods, procedures, and human relations related to on-the-job work experience in business. Concurrent enrollment in BTEC 199. Prerequisite: Written consent of Instructional Unit required. [GE]

BUSINESS TECHNOLOGY SEMINAR
BTEC 141  Fall  2 Credits
22 hours of lecture
Problems, methods, procedures, and human relations related to on-the-job work experience in business. Concurrent enrollment in BTEC 199. Prerequisite: Written consent of Instructional Unit required. [GE]

BUSINESS TECHNOLOGY SEMINAR
BTEC 143  Winter  2 Credits
22 hours of lecture
Problems, methods, procedures, and human relations related to on-the-job work experience in business. Concurrent enrollment in BTEC 199 required. Prerequisite: Consent of Instructional Unit. [GE]

BUSINESS TECHNOLOGY SEMINAR
BTEC 145  Spring  2 Credits
22 hours of lecture
Problems, methods, procedures, and human relations related to on-the-job work experience in business. Concurrent enrollment in BTEC 199 required. Prerequisite: Consent of Instructional Unit. [GE]

PROFESSIONAL SELF-DEVELOPMENT
BTEC 147  Fall Winter Spring  2 Credits
22 hours of lecture
Professional concepts applied to individuals in the business world in relating to themselves, the companies they represent, and the public they serve. For employed or prospective employees who wish to improve their professional relations and growth potential. [GE]

COMPUTER APPLICATIONS ESSENTIALS
BTEC 149  Summer Fall Winter Spring  3 Credits
33 hours of lecture
Fundamentals of common business applications using MS Windows and MS Office. An overview using Windows to manage files/folders and giving students hands-on experience in word processing, spreadsheet, presentation, and database software. [GE]

COMPUTER BUSINESS APPLICATIONS
BTEC 150  Summer Fall Winter Spring  5 Credits
55 hours of lecture
Introduction to creating business projects with MS Windows and MS Office that emphasize critical thinking and problem-solving skills. Assignments include managing files/folders, creating and formatting Word documents, Excel workbooks, PowerPoint presentations, and Access databases, as well as integrated Office applications; researching and writing an MLA report and, in teams, creating and giving a presentation based on research. [GE]

INTERMEDIATE MICROCOMPUTER BUSINESS APPL
BTEC 152  5 Credits
55 hours of lecture
Continuation of BTEC 150, featuring the advanced functions of Microsoft Office software (word processing, spreadsheets, databases, presentations, e-mail, and schedules). Using a set of business related projects, students will work with the advanced features of Microsoft Office through demonstration, tutorials, case assignments, team work, and lecture. Prerequisite: BTEC 150. [GE]
INTRODUCTION TO OFFICE PUBLISHING TOOLS
BTEC 155  Fall Winter Spring  3 Credits
33 hours of lecture
Introduction to Microsoft Publisher. Focus on creating, saving, printing, and/or publishing flyers, newsletters, Web sites, and various business publications and forms; also applying graphics and publishing standards.

WEB PAGE INTRODUCTION:
BTEC 160  Winter Spring  3 Credits
33 hours of lecture
Introduction to Microsoft Expression Web tools and beginning HTML. Create, save, and print Web pages, use interactive forms on the Web, manage websites, and use Web graphics.

POWERPOINT PRESENTATION
BTEC 165  Fall Winter Spring  3 Credits
33 hours of lecture
Create and deliver electronic business presentations using Microsoft PowerPoint incorporating ethics in infographics. Develop presentation skills using text, graphics, charts, clip art, scanned objects, and embedding or linking media for print, sales presentations, and interoffice electronic communications. Previous experience with Windows environment using Word or Excel is recommended. Same as GRCP 105. Credit not allowed for both BTEC 165 and GRCP 105.

INTRODUCTION TO EXCEL
BTEC 169  Fall Winter Spring  3 Credits
33 hours of lecture
Skills to create, edit, format, and print spreadsheets, tables, graphs and charts using Microsoft Excel; skills to create and edit formulas and simple functions; skills to create, sort, and filter a worksheet databases; skills to PivotTables, templates, and manage multiple worksheets and workbooks. Prior experience with keyboard and/or ten-key by touch and logical thinking are extremely helpful. [GE]

EXCEL FOR BUSINESS
BTEC 170  Fall Winter Spring  3 Credits
33 hours of lecture
Advanced Microsoft Excel skills including creating, editing, and printing professional workbooks, using advanced formulas and charts, auditing and validating worksheet data, and solving complex problems with Excel. Integrating Excel with other office applications and understanding how technology is critical to solving business problems. An introduction to VBA, macros, and making an application in Excel. Prerequisite: BTEC 169 and MATH 065 or equivalent score on COMPASS placement test or consent of Instructional Unit.

ACCESS FOR BUSINESS
BTEC 175  Fall Winter Spring  3 Credits
33 hours of lecture
Introductory and intermediate skills for Microsoft Access for people who use and maintain Access databases. Topics include creation of tables, queries, forms and subforms, reports and subreports, and macros using both design view and wizards. Introduction to special fields such as memos, OLE and drop-down menus within the tables and forms; and using validation rules and referential integrity to insure the data is 'clean.' The course does assume knowledge of Microsoft Windows. Also offered as CTEC 180.

REFRESHER KEYBOARDING
BTEC 190 Summer Fall Winter Spring  1 – 3 Credits
11 hours of lecture  44 hours of lab
Review of keyboard and basic typing applications, development of speed and accuracy. For students who have not typed for several years and need a review. Continuous enrollment, flexible time, individualized program. Satisfactory completion meets prerequisite for BTEC 122, Document Formatting. Register in BTEC 100. Registration will automatically be changed at the end of the quarter. This course is taught on a microcomputer. [GE]
COOPERATIVE WORK EXPERIENCE
BTEC 199  Fall Winter Spring  1 – 3 Credits
99 hours of clinical
Supervised on-the-job work experience in an approved job in the local community with specific learning objectives and employer evaluation. See Cooperative Education Work Experience description in College Life and Services section of the catalog for more information. Consent of Instructional Unit and concurrent enrollment in accompanying seminar course required. 9 credits maximum.

ADMINISTRATIVE PROCEDURES
BTEC 211  Spring  5 Credits
55 hours of lecture
Overview of current office procedures to equip students with the tools to solve a variety of problems in the changing business world using Microsoft applications. Complete simulated exercises requiring critical thinking, understanding of multicultural relations, and advanced office practices in preparation to work successfully in various office situations.

E-COMMERCE: INTRO TO BUSINESS ON THE WEB
BTEC 212  Spring  3 Credits
33 hours of lecture
Introduction to e-commerce including the evolution of electronic commerce, business-to-business and business-to-customer e-commerce, creating a Web presence, commerce infrastructure and software choices, security and encryption issues, and electronic payment systems. Requires a group project to write a business plan for an online entity. Prior computer class (BTEC 149 or 150), BUS 101, and familiarity with a Web browser recommended. [GE]

SELECTED TOPICS
BTEC 280  1 – 3 Credits
33 hours of lecture
The course focuses on selected topics in Business Technology. Topics vary, and course theme and content change to reflect new topics. Because the course varies in content, it is repeatable for credit for different topics. Individual topics are listed in the quarterly class schedules. [GE]

SPECIAL PROJECTS
BTEC 290  Summer Fall Winter Spring  1 – 5 Credits
Opportunity to plan, organize and complete special projects approved by the faculty of the department. Prerequisite: Consent of Instructional Unit. [GE]

Business Technology Medical Office

MATH FOR MEDICAL OFFICE ADMINISTRATORS
BMED 040  Fall Winter Spring  1 Credit
11 hours of lecture
Covers basic mathematical concepts related to administrative responsibilities in the medical office. Prerequisite: Qualifying score on the college numerical skills placement for MATH 030 or higher or consent of Instructional Unit.

SURVEY OF HEALTH CARE DELIVERY
BMED 100  Fall Winter  3 Credits
33 hours of lecture
A broad overview of the health care delivery system in the United States. Topics relate to hospital ownership and organization, long-term care facilities, home health agencies, hospices, mental health treatment facilities, ambulatory care and diagnostic centers, and social service agencies; topics related to the medical staff, educational preparation of health care professionals, and medical ethics; the roles of federal and state government in health care, Medicare, Medicaid, and other forms of health care financing. Emphasis on encouraging the student to become an informed consumer, aware of potential problems and frustrations of being a patient.
MEDICAL TERMINOLOGY I
BMED 110  
33 hours of lecture
Introduction to medical word building with common medical roots, prefixes and suffixes. Study of terms related to the body as a whole, as well as terms related to human anatomy, pathology, diagnostic tests, clinical procedures, and abbreviations associated with each body system. Medical Terminology I covers the following body systems: digestive, urinary, reproductive, nervous, and cardiovascular. Course work will include spelling and pronunciation of terms. [GE]

MEDICAL TERMINOLOGY II
BMED 111  
33 hours of lecture
Continuation of Medical Terminology I, BTEC 110. Study of common medical roots, prefixes and suffixes and terms related to human anatomy, physiology, pathology, diagnostic tests, clinical procedures, and abbreviations associated with each body system. Medical Terminology II covers the following body systems: respiratory, blood, lymphatic, immune, musculoskeletal, integumentary, sense organs (eyes and ears), endocrine, as well as psychiatry. Course work will include spelling and pronunciation of terms. Prerequisite: BTEC 111. [GE]

INTRODUCTION TO THE STUDY OF DISEASE
BMED 112  
55 hours of lecture
Introduction to the general mechanisms of systemic disease including etiology, prognosis, signs and symptoms. Etiology focus will include infectious mechanisms, hereditary contributions, external physical agents and auto immune conditions. Discussion of differences between disease and illness. Topics include basic principles of pharmacology, overview of common therapies, laboratory and diagnostic tests. Concurrent enrollment in BMED 111. Prerequisite: A grade of “C” or better in BMED 110 and BIOL 164/165.

MEDICAL OFFICE ADMINISTRATIVE PROCEDURES
BMED 115  
55 hours of lecture  22 hours of lab
Introduction to the principles, procedures and practice standards of the administrative medical assistant. Study includes: medical reception, telephone reception, appointment scheduling, patient information management, medical record content, quality improvement methods, purchasing office equipment, billing, collecting, medical office accounting, banking procedures, office management, coordination of meetings, and making travel arrangements. The course involves prioritizing work, time management and working as a team member on team projects. Concepts of administrative medical assisting are presented in the class and students will have the opportunity to demonstrate mastery of the competencies. Completion of or concurrent enrollment in BMED 110 required or consent of Instructional Unit. [GE]

MEDICAL REIMBURSEMENT
BMED 129  
55 hours of lecture
Overview of inpatient, outpatient health, insurance plans, revenue cycles, health insurance claims, health insurance terminology, reimbursement methodologies for professional services, completion of CMS/1500 and UB-04 billing forms. Topics include compliance issues, fraud and abuse/HIPAA issues, processing various perspective payment systems. Concurrent enrollment in BMED 111. Prerequisite: BMED 110.

MEDICAL CODING – CPT/HCPCS
BMED 130  
44 hours of lecture
Introduction to coding in ambulatory settings using HCPCS (Health Care Financing Common Procedure Coding System). Common practices, insurance company restraints, and other problems are discussed in relation to coding using HCPCS and ICD-9-CM for records in hospital ambulatory settings, physicians’ offices, long-term care, hospice and home health care. Practice in coding from workbook and assigned exercises is emphasized. Coding from selected records from different settings will be performed. Prerequisite: Completion of, or concurrent enrollment in, BIOL 164 or HEOC 100 and BMED 110 or consent of Instructional Unit. [GE]
MEDICAL CODING ICD-9-CM/ICD-10
BMED 132  Winter  5 Credits
55 hours of lecture
Introduction to use of the ICD-9-CM and ICD-10 (International Classification of Disease, 9th & 10th Edition, Clinical Modification) coding system as it is used in inpatient, ambulatory and long term care. Content and purposes of indexes and registers are reviewed. Implications of diagnostic related groups (DRGs) and other prospective payment systems and their relationships to coding assignments and financing of health care, theory and practice are provided in coding problem solving and data quality content and measures. Prerequisite: A grade of “C” or better in BMED 111.

INTERMEDIATE MEDICAL CODING
BMED 133  Summer Spring  5 Credits
55 hours of lecture
Coding systems used in hospitals, physicians’ offices and long-term care sites. Emphasis on ICD-9-CM (International Classification of Diseases, 9th Edition, Clinical Modification) and CPT (Current Procedure Terminology). Topics include content and purposes of disease and procedure indexes, as well as the purposes of abstracting from patient medical records; implications of diagnostic related groups (MS-DRGs) and ambulatory payment classifications (APCs) and their relationship to coding assignment and financing of hospital care; relationships of coding assignment and financing of physician office care; coding problem solving and measures for data quality and compliance. Class activities include coding practice using actual patient records and ICD-9-CM/CPT encoder. Prerequisite: A grade of “C” or better in BMED 129, BMED 130 and BMED 132, or consent of Instructional Unit.

MEDICAL OFFICE SEMINAR
BMED 134  Fall Winter  1 Credit
11 hours of lecture
Overview of student success strategies, library resources, the health care delivery system in the United States and the various employment opportunities in medical office occupations including discussion of job requirements and responsibilities. [GE]

THERAPEUTIC COMM SKILLS FOR HEALTH PROF
BMED 137  Spring  3 Credits
33 hours of lecture
Techniques for encouraging a therapeutic and helping relationship with the client/patient. Includes an overview of the psychosocial development of a person, from birth to death. [GE]

LEGAL ASPECTS OF THE MEDICAL OFFICE
BMED 138  Fall Winter Spring  2 Credits
22 hours of lecture
Introduction to medical law, ethics and bioethics. Topics will include: ethics and bioethics in the practice of medicine, professional codes of ethics, an introduction to law, legal guidelines and the practice of medicine including professional liability, public duties, consents, advance directives, anatomy of a malpractice case, legal aspects of medical records, confidentiality, security of patient information and the release of patient information, patient access to their own medical records, and responding to subpoena duces tecum of medical records. [GE]

CMA EXAMINATION REVIEW SEMINAR
BMED 139  Summer Winter  1 Credit
11 hours of lecture
Review of Medical Assistant administrative and clinical competencies including anatomy and physiology, medical terminology and legal aspects. Discussion of studying and test taking techniques to prepare for Medical Assistant Certification examination. Concurrent enrollment in BMED 166 or consent of Instructional Unit required. Prerequisite: BMED 110, 111, 163, 164, BIOL 160. [GE]

LEGAL ASPECTS OF HEALTH INFORMATION
BMED 140  Fall Winter  2 Credits
22 hours of lecture
Introduction to legal concepts with particular focus on healthcare providers and records generated in the practice
of medicine, including administration of law, legal and court structure and function, and managing the release of patient information. Topics include liability of hospital and providers of care as well as current pertinent legislation, legal status of medical staff, laws relating to bioethical issues.

**MEDICAL OFFICE CLINICAL PROCEDURES I**
BMED 163  Winter  6 Credits
44 hours of lecture  44 hours of lab
Principles of medical office clinical procedures including preparing a patient for assisting a physician with examinations, procedures, and components of patient history. Covers charting, vital signs, sterile setups, universal blood precautions and methods of asepsis and sterilization. Topics also include techniques in patient interviewing and education. Lab provides the opportunity for practice and to demonstrate proficiency in procedures. Concurrent enrollment in BTEC 111 required. Prerequisite: BTEC 110 and BIOL& 164 (or BIOL 160), or the consent of the Instructional Unit. [GE]

**MEDICAL OFFICE CLINICAL PROCEDURES II**
BMED 164  Spring  6 Credits
44 hours of lecture  44 hours of lab
Continuation of Medical Office Clinical Procedures I covering medical office clinical procedures including methods of collecting blood, processing specimens, equipment preparation and operation, electrocardiography, medication administration, medical and surgical asepsis. The lab provides an opportunity to practice procedures and demonstrate proficiency. Concurrent enrollment in BTEC 164L. Prerequisite: BTEC 163. [GE]

**MEDICAL ASSISTANT DIRECTED PRACTICE**
BMED 166  Summer  6 Credits
11 hours of lecture
Supervised medical assistant experience in a health care facility. Provides students with the opportunity to apply knowledge and skill in performing administrative and clinical procedures and in developing professional attitudes for interacting with other professionals and consumers. Written consent of Instructional Unit required. Prerequisite: BTEC 115 and 164 and consent of the Instructional Unit. [GE]

**HEALTH INFORMATION PROCEDURES**
BMED 222  Spring  5 Credits
44 hours of lecture  22 hours of lab
Introduction to health information procedures, principles and practice standards associated with medical record department and health unit coordinator responsibilities. The course explores the licensing, regulation, and accreditation of health care facilities, hospital organization, patient registration, health care statistics, medical record content, medical record assembly, analysis and coding. Course will introduce ICD-9-CM and CPT coding and a review other medical classification and nomenclatures. Health Unit Coordinator responsibilities will be introduced with focus on transcription of physician orders. Prerequisite: BTEC 040. [GE]

**BEGINNING MEDICAL TRANSCRIPTION**
BMED 223  Winter Spring  2 Credits
44 hours of lab
Machine transcription of medical reports corresponding with the anatomy and terminology studied in BTEC 110, BTEC 111, and either HEOC 100 or BIOL 160. Practice includes transcription of history and physical examination, consultations, radiology reports, pathology reports, operation reports, autopsies and discharge summaries. Practice will also include proofreading documents for accuracy. Correct format of reports and proper use of references are emphasized. Prerequisite: Completion of, or concurrent enrollment in BTEC 111 and either BTEC 101 or 190, and either HEOC 100 or BIOL& 164 (or BIOL 160). [GE]

**ADVANCED MEDICAL TRANSCRIPTION**
BMED 224  Spring  3 Credits
66 hours of lab
Machine transcription of medical reports corresponding with the anatomy and terminology studied in BTEC 110, BTEC 111, and either HEOC 100 or BIOL 160. Practice includes transcription of history and physical examination, consultations, radiology reports, pathology reports, operation reports, autopsies and discharge summaries. The
The course provides additional transcription practice for students who have completed Beginning Medical Transcription, BTEC 223, by transcribing advanced reports. Correct format of reports and proper use of references is emphasized. Prerequisite: BTEC 223. [GE]

**DIRECTED PRACTICE**

**BMED 225**

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Supervised learning in a clinic, medical center, or other health care facility, practicing medical office administrative responsibilities. Prerequisite: Consent of Instructional Unit. [GE]

**DIRECTED PRACTICE**

**BMED 226**

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Supervised learning in a clinic, medical center, or other health care facility, practicing medical office administrative responsibilities. Prerequisite: Consent of Instructional Unit. [GE]

**SELECTED TOPICS**

**BMED 280**

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The course focuses on selected topics in Business Technology. Topics vary, and course theme and content change to reflect new topics. Because the course varies in content, it is repeatable for credit for different topics. Individual topics are listed in the quarterly class schedules. [GE]

**SPECIAL PROJECTS**

**BMED 290**

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Opportunity to plan, organize and complete special projects approved by the faculty of the department. Prerequisite: Consent of Instructional Unit. [GE]

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**Chemistry**

**SKILLS FOR HEALTH CHEMISTRY**

**CHEM 050**

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Prepares students for CHEM& 121-131, for health occupations fields. Unit-factor method in problem solving. Topics include mathematical operations used in chemistry, measurements, density, conversion factors, chemical symbols and terminology, and selected chemical concepts. Prerequisite: Eligibility for MATH 093, 095 or equivalent.

**CHEMICAL INSTRUMENTATION**

**CHEM 107**

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Theory, operation and use of basic laboratory instrumentation. Instruments covered may include infrared spectroscopy, gas-liquid chromatography, atomic absorption spectroscopy, ultraviolet/visible spectroscopy, nuclear magnetic resonance spectroscopy, thin layer chromatography, and PH measurements. Prerequisite: A grade of “C” or better in CHEM& 242 (or CHEM 212) or consent of Instructional Unit.

**CHEMICAL CONCEPTS WITH LAB**

**CHEM& 110**

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<td>44 hours of lecture</td>
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Introductory chemistry course to fulfill the General Education Science with Laboratory requirement, intended for non-science majors who will not take additional chemistry. Focus on unit factor and equation problem solving skills as related to chemical concepts, also stoichiometry and stoichiometric problem solving skills. Topics include the structure of the atom, chemical reactions, and chemical and physical properties to describe matter.
INTRO TO CHEMISTRY: PRE-HEALTH
CHEM& 121 Summer Fall Winter Spring  5 Credits
44 hours of lecture  22 hours of lab
Topics in general chemistry applicable to students seeking a 2-year degree in the health-occupations fields. Unit-factor method is applied to problem solving. Topics covered include units of measurement, atomic structure, chemical bonding, energy, the mole concept, nomenclature of inorganic compounds, writing and balancing equations, properties of gases, solutions and colloids, reaction rates and equilibrium, acids, bases and salts, radiation and health. Completion of elementary algebra recommended. Prerequisite: A grade of “C” or better in CHEM 050 and eligibility for MAT 093/095; or Eligibility for MAT 111. Formerly CHEM 111. [NS,SE]

INTRO TO ORGANIC/BIOCHEM
CHEM& 131 Fall Spring  5 Credits
55 hours of lecture  44 hours of lab
Aspects of organic and biochemistry emphasizing how chemicals affect functioning of the human body. Applicable to students seeking a 2-year degree in the health-occupations fields. Topics covered include aliphatic and aromatic compounds, alcohols, ethers, amines, aldehydes, ketones, carboxylic acids and their derivatives, carbohydrates and carbohydrate metabolism, lipids and lipid metabolism, proteins and protein metabolism, enzymes and hormones, nucleic acids and the chemistry of heredity, body fluids and the human circulation system and nutrition. Prerequisite: Grade of “C” or better in CHEM& 121. Formerly CHEM 112. [NS,SE]

GENERAL CHEMISTRY PREPARATION
CHEM& 139 Summer Fall Spring  4 Credits
44 hours of lecture
For students who lack the necessary background in applied mathematics and chemistry to enroll in the CHEM& 141-142-143 sequence for science and engineering majors. Scientific methods of measurement, theory of atomic structure, properties of elements and compounds, the periodic table, naming compounds and balancing chemical equations, properties of solutions, and properties of gases are covered. Prerequisite: A grade of “C” or better in MAT 093, 095 or equivalent or consent of Instructional Unit. Formerly CHEM 100. [GE, SE]

GENERAL CHEMISTRY I
CHEM& 141 Fall Winter  4 Credits
44 hours of lecture
First of a 3-quarter sequence designed for science and engineering majors. Applications of the scientific method by correlating theory with experimental observation. Topics include systems of measurement, atomic structure, chemical bonding and shape, stoichiometric calculations, properties of gases, nomenclature of inorganic compounds, and writing and balancing equations. Students must also have completed a full year of high school chemistry or CHEM& 139 with a “C” or better. Students will be required to show proof of previous chemistry the first day of class. Concurrent enrollment in CHEM& 151, or consent of Instructional Unit. Prerequisite: Eligibility for MAT 111 and a grade of “C” or better in CHEM& 139 or equivalent, or proof of successful completion of 1-year of high school chemistry within the past 3 years as verified by unit or college advisor.

GENERAL CHEMISTRY II
CHEM& 142 Winter Spring  4 Credits
44 hours of lecture
Second of a 3-quarter sequence designed for science and engineering majors. Applications of the scientific method by correlating theory with experimental observation. Topics include properties of liquids and solids, solutions, equilibria, reaction kinetics, acid-base theories, ionic equilibria and an introduction to organic chemistry. Concurrent enrollment in CHEM& 152, or consent of Instructional Unit. Prerequisite: A grade of “C” or better in CHEM& 141 and CHEM& 151.

GENERAL CHEMISTRY III
CHEM& 143 Summer Spring  4 Credits
44 hours of lecture
Third of a three-quarter sequence designed for science and engineering majors. Applications of the scientific method by correlating theory with experimental observation. Topics include ionic equilibria, thermodynamics,
nuclear chemistry, electrochemistry, transition metal chemistry, and applications of all chemical concepts to the elements on the periodic table. Concurrent enrollment in CHEM& 153 is recommended. Prerequisite: A grade of “C” or better in CHEM& 142 and CHEM& 152.

GENERAL CHEMISTRY LABORATORY I
CHEM& 151  Fall Winter  1 Credit
33 hours of lab
First of a 3-quarter lab sequence designed for science and engineering majors, to coincide with CHEM& 141 General Chemistry I. Applications of the scientific method by correlating theory with experimental observation. Topics include systems of measurement, observing and affecting chemical reactions, energy considerations, chemical behavior of aqueous systems, the nature of chemical bonding, gas laws, graphing techniques, using technological interfaces to collect and manipulate data, and mathematical calculations to support chemical observations. Students must register for CHEM& 141, or consent of Instructional Unit.

GENERAL CHEMISTRY LABORATORY II
CHEM& 152  Winter Spring  1 Credit
33 hours of lab
Second of a 3-quarter lab sequence designed for science and engineering majors, to coincide with CHEM& 142 General Chemistry II. Applications of the scientific method by correlating theory with experimental observation. Topics include phenomena of solid and liquid states, colligative properties of aqueous and non-aqueous systems, reaction kinetics, general equilibria, acid/base equilibria, graphing techniques, using technological interfaces to collect and manipulate data, and mathematical calculations to support chemical observations. Concurrent enrollment in CHEM& 142, or consent of Instructional Unit. Prerequisite: A grade of “C” or better in CHEM& 141 and CHEM& 151, or consent of Instructional Unit.

GENERAL CHEMISTRY LABORATORY III
CHEM& 153  Summer Spring  2 Credits
11 hours of lecture  33 hours of lab
Third of a 3-quarter lab sequence to coincide with CHEM& 143 General Chemistry III for science and engineering majors. Applications of the scientific method by correlating theory with experimental observation. Topics include chemical and ionic equilibria, acid-base theories of aqueous solutions and selected principles of electrochemistry, gravimetric analysis, coordination chemistry, volumetric analysis, inorganic synthesis, and the statistical handling of data. Completion of or concurrent enrollment in CHEM& 143 with a grade of “C” or better. Prerequisite: A grade of “C” or better in CHEM& 142 and CHEM& 152, or consent of Instructional Unit.

COOPERATIVE WORK EXPERIENCE
CHEM 199  Summer Fall Winter Spring  1 – 5 Credits
165 hours of clinical
Supervised work experience in an approved job. Completion of specific learning objectives and employer evaluation. Completion of, or concurrent enrollment in, HDEV 195, 198, or 200 required. Prerequisite: Consent of Instructional Unit. [GE]

ORGANIC CHEMISTRY I
CHEM& 241  Fall  4 Credits
44 hours of lecture
First of a 3-quarter sequence designed for science and engineering majors, or students seeking a career in the health professions. Topics include mechanistic approach applied to hydrocarbons and alkenes, spectroscopic methods, molecular orbitals, hybridization, resonance, acid/base theory, nomenclature, structure and reactivity, kinetic and thermodynamic theories of reactions. Concurrent enrollment in CHEM& 251 is required, or consent of Instructional Unit. Prerequisite: A grade of “C” or better in CHEM& 143, or consent of Instructional Unit. [NS,SE]

ORGANIC CHEMISTRY II
CHEM& 242  Winter  4 Credits
44 hours of lecture
Second of a 3-quarter sequence designed for science and engineering majors, or students seeking careers in the health professions. Topics include organic synthesis and mechanistic approach applied to polar molecules; topics
may include alcohols, ethers, organometallic compounds, aromatic systems, aldehydes and ketones. Concurrent enrollment in CHEM& 252 is required, or consent of Instructional Unit. Prerequisite: A grade of “C” or better in CHEM& 241 and CHEM& 251, or consent of Instructional Unit.

**ORGANIC CHEMISTRY III**
CHEM& 243  Spring  4 Credits
44 hours of lecture
Third of a 3-quarter sequence designed for science and engineering majors, or students seeking careers in the health professions. Topics include mechanistic and synthetic approach applied to polar molecules; topics may include reactions of carboxylic acids and derivatives, dicarbonyl compounds, amines, conjugated systems, polymer systems and an introduction to biomolecules. Prerequisite: A grade of “C” or better in CHEM& 242 and CHEM& 252, or consent of Instructional Unit.

**ORGANIC CHEMISTRY LABORATORY I**
CHEM& 251  Fall  1 Credit
44 hours of lab
First of a 3-quarter laboratory sequence designed for science and engineering majors, or students seeking a career in the health professions. Focus on basic organic laboratory techniques such as recrystallizations, melting points, distillations, reflux, extractions, chromatography, and spectroscopy; laboratory notebook-keeping skills and scientific writing methods. Concurrent enrollment in CHEM& 241, or consent of Instructional Unit. Prerequisite: A grade of “C” or better in CHEM& 143 and CHEM& 152, or consent of Instructional Unit.

**ORGANIC CHEMISTRY LABORATORY II**
CHEM& 252  Winter  1 Credit
44 hours of lab
Second of a 3-quarter laboratory sequence designed for science and engineering majors, or students seeking a career in the health professions. Focus on organic laboratory techniques, spectroscopic characterization of molecules, and introduction to synthetic techniques, including multi-step syntheses and handling moisture- or air-sensitive compounds. Concurrent enrollment in CHEM& 242, or consent of Instructional Unit. Prerequisite: A grade of “C” or better in CHEM& 241 and CHEM& 251, or consent of Instructional Unit.

**ORGANIC CHEMISTRY LABORATORY III**
CHEM& 253  Spring  2 Credits
11 hours of lecture  44 hours of lab
Third of a 3-quarter sequence designed for science and engineering majors, or students seeking careers in the health professions. Advanced synthetic techniques, project-based experiments and identification. CHEM& 253 replaces CHEM 214 (beginning in Spring 2009). Prerequisite: A grade of “C” or better in CHEM& 242 and CHEM& 252, or consent of Instructional Unit.

**SPECIAL PROJECTS**
CHEM 290 Summer Fall Winter Spring  1 – 6 Credits
Opportunity to plan, organize and complete special projects approved by the department. Prerequisite: Consent of Instructional Unit. [GE]

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**Chinese**

**CHINESE I**
CHIN& 121  5 Credits
55 hours of lecture
First of a three-quarter sequence in elementary Mandarin Chinese. Emphasis on listening/speaking skills, with additional practice in reading/writing. Course intended for students with little or no previous experience in studying Chinese.
## Communication Studies (Speech)

### INTRO TO MASS MEDIA

**CMST& 102**  
3 Credits  
33 hours of lecture  
Survey of major communication media, print through satellite, their primary functions and social impact. Formerly CMST 120. [HA, SE]

### INTRODUCTION TO BROADCASTING

**CMST 130**  
3 Credits  
33 hours of lecture  
Examination of the broadcasting system; the social and economic forces that shape it and its end product, programming. Analysis of the rights and responsibilities of broadcasters. [SE]

### COMPETITIVE SPEAKING AND DEBATE

**CMST 171**  
Fall  
3 Credits  
33 hours of lecture  
For students interested in intercollegiate speech/debate competition. Emphasis on debate/persuasive speaking, attention given to other forms of speech events and tournament management. Prerequisite: A grade of “C” or better in CMST& 220 (or CMST 101), or consent of Instructional Unit. [HB, SE]

**CMST 172**  
Winter  
3 Credits  
33 hours of lecture  
For students interested in intercollegiate speech/debate competition. Emphasis on informative speaking and interpretive reading. Attention given to debate and other forms of speech events. Prerequisite: A grade of “C” or better in CMST& 220 (or CMST 101), or consent of Instructional Unit. [HB, SE]

**CMST 173**  
Spring  
3 Credits  
33 hours of lecture  
For students interested in intercollegiate speech/debate competition. Emphasis on audience analysis and other forms of forensics activities. Prerequisite: A grade of “C” or better in CMST& 220 (CMST 101) or consent of Instructional Unit. [HB, SE]

### COOPERATIVE WORK EXPERIENCE

**CMST 199**  
1 – 5 Credits  
Supervised work experience in an approved job. Completion of specific learning objectives and employer evaluation. Completion of, or concurrent enrollment in HDEV 195, 198 or 200 required. Prerequisite: Consent of Instructional Unit. [GE]

### INTERPERSONAL COMMUNICATION

**CMST& 210**  
Summer Fall Winter Spring  
5 Credits  
55 hours of lecture  
Person-to-person communication emphasizing theoretical principles and their application. How self-concept, perception, verbal and non-verbal attributes and attitudes influence communication within the family, between friends, and at work. [C, SE, HA]

### ORAL COMMUNICATION IN BUSINESS

**CMST 212**  
3 Credits  
33 hours of lecture  
Principles and practices of speech communication at work. Face-to-face and person-to-group interactions common to organizations and work settings. Credit not allowed for both MGMT 108 and CMST 212. [SE]
INTERCULTURAL COMMUNICATION
CMST 216  Summer Fall Winter Spring  5 Credits
55 hours of lecture
Examination of the impact of culture on communication. Analysis of patterns of communications which affect the ability to establish clear understanding and effective interpersonal relationships. Skills to improve communication across cultural boundaries. [HA, SE]

PUBLIC SPEAKING
CMST& 220  Summer Fall Winter Spring  5 Credits
55 hours of lecture
Introduction to speechmaking based primarily on a traditional public speaking approach. Aids students in developing theoretical understanding and practical application of oral communication skills. Techniques in controlling speech anxiety, how to structure and organize information to present to a variety of audiences; and physical and vocal delivery skills. [C, HA, SE]

SMALL GROUP COMMUNICATION
CMST& 230  Summer Fall Winter Spring  5 Credits
55 hours of lecture
Small group communication emphasizing theoretical principles and their application, enabling students to become more comfortable and competent participants in the group communication process. Emphasis will be on the study and application of the dynamics of group development, problem solving methodologies, and the use of power, including leadership and conflict. Formerly titled CMST 201. Credit not allowed for both CMST 201 and CMST& 230. [C, SE, SS, HA]

INTRODUCTION TO PERSUASION THEORY
CMST 240  5 Credits
55 hours of lecture
A survey of the evaluation of the concepts and techniques of persuasive public address, from the early Greek period through contemporary theorists. A non-public speaking course with the emphasis and focus on the understanding and analysis of persuasive oral discourse. [HA, SE]

WRITING FOR TELEVISION AND FILM
CMST 250  3 Credits
33 hours of lecture
Film and television scriptwriting with emphasis on commercial, dramatic and news formats. Prerequisite: A grade of “C” or better in ENGL& 101 (or ENGL 101). [SE]

COMPETITIVE SPEAKING AND DEBATE
CMST 271  Fall  3 Credits
33 hours of lecture
For students interested in intercollegiate speech/debate competition. Emphasis given to advanced and independent studies in debate and persuasive speaking. Attention given to style. Students will manage the Clark College forensics tournament. Prerequisite: A grade of “C” or better in CMST 171, 172 or 173, or consent of Instructional Unit. [HB, SE]

COMPETITIVE SPEAKING AND DEBATE
CMST 272  Winter  3 Credits
33 hours of lecture
For students interested in intercollegiate speech/debate competition. Emphasis given to advanced and independent studies in informative speaking and interpretive reading. Attention given to style. Prerequisite: A grade of “C” better in CMST 171, 172 or 173, or consent of Instructional Unit. [HB, SE]

COMPETITIVE SPEAKING AND DEBATE
CMST 273  Spring  3 Credits
33 hours of lecture
For students interested in intercollegiate speech/debate competition. Attention given to advanced and independent
audience analysis and other forensics activities. Prerequisite: A grade of “C” or better in CMST 171, 172 or 173, or consent of Instructional Unit. [HB, SE]

**SELECTED TOPICS**
CMST 280 5 Credits
55 hours of lecture
The course focuses on selected topics in Communication Studies. Topics vary, and course theme and content change to reflect new topics. Because the course varies in content, it is repeatable for credit for different topics. Individual topics are listed in the quarterly class schedule. [SE]

**SPECIAL PROJECTS**
CMST 290 1 – 5 Credits
Opportunity to plan, organize and complete special projects approved by the department. Prerequisite: Consent of Instructional Unit. [GE]

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**Computer Aided Design and Drafting Technology**

**CADD ORIENTATION**
CADD 101 Fall Winter 1 Credit
22 hours of lab
Combination of off-campus field trips to a variety of businesses and on-campus test-drives of several core CADD software applications seen on the field trips. Focus on exposure and orientation to core CADD software applications, and development of an educational plan.

**CADD CAREERS**
CADD 102 Winter Spring 1 Credit
22 hours of lab
Combination of off-campus field trips to a variety of businesses and on-campus test-drives of several core CADD software applications seen on the field trips. Focus on exposure and orientation to core CADD software applications beyond CADD 101 and development of a career plan. Prerequisite: A grade of “C” or better in CADD 101.

**BASIC SKETCHUP**
CADD 110 4 Credits
16 hours of lecture 55 hours of lab
Basic operations of the current version of SketchUp. Topics include screen features, drawing and editing 3D objects, using and applying material to surfaces, opening and saving files, and using AutoCAD drawing file data. Recommended for anyone comfortable using a PC.

**BASIC RHINOCEROS**
CADD 120 4 Credits
16 hours of lecture 55 hours of lab
Basic operation of 3D surface modeling software (Rhinoceros) of interest to students in Engineering, CAD, Art, and GRCP. Creating and editing curves, surfaces, solids, set-up textures, and lighting effects. Includes the rendering of 3D objects. Recommended for anyone comfortable using a PC. [GE]

**BASIC MICROSTATION**
CADD 130 4 Credits
16 hours of lecture 55 hours of lab
Basic operations of the current version of MicroStation. Covers screen features, command terminology, drawing and editing objects, working with 2D and 3D, using reference files, opening and saving drawing files, and printing. Recommended for anyone comfortable using a PC.

**BASIC AUTOCAD**
CADD 140 Summer Fall Winter Spring 4 Credits
16 hours of lecture 55 hours of lab
Basic operations of the current version of AutoCAD. Covers screen features, drawing and editing objects, working
with 2D and 3D, using both model space and layouts, opening and saving files, and using templates. Recommended for anyone comfortable using a PC. [GE]

**ARCHITECTURAL DRAFTING 1 W/AUTOCAD**  
CADD 141  
4 Credits  
16 hours of lecture 55 hours of lab  
Beginning foundations of architectural drafting coupled with intermediate level AutoCAD. Architectural drafting topics include terminology, symbology, typical multi-sheet drawing set for a residence with elevations, site plan, foundation plan, floor plan, roof plan, and related basic residential construction processes. AutoCAD topics include layer management, plotting and plot styles, and using xrefs. Prerequisite: A grade of “C” or better in ENGR 113, and either ENGR 140 or CADD 140.

**CIVIL DRAFTING 1 WITH AUTOCAD**  
CADD 143  
4 Credits  
16 hours of lecture 55 hours of lab  
Beginning foundations of civil drafting coupled with intermediate level AutoCAD. Civil drafting topics include terminology, symbology, survey data, contours, and profiles. AutoCAD topics include layer management, plotting and plot styles, and using xrefs. Prerequisite: A grade of “C” or better in ENGR 113, and either ENGR 140 or CADD 140.

**MECHANICAL DRAFTING 1 WITH AUTOCAD**  
CADD 144  
4 Credits  
16 hours of lecture 55 hours of lab  
Beginning foundations of mechanical drafting coupled with intermediate level AutoCAD. Mechanical drafting topics include terminology, symbology, fasteners, tolerancing, and related manufacturing processes. AutoCAD topics include layer management, plotting and plot styles, and using xrefs. Prerequisite: A grade of “C” or better in ENGR 113, and either ENGR 140 or CADD 140.

**AUTOCAD ARCHITECTURE**  
CADD 145  
4 Credits  
16 hours of lecture 55 hours of lab  
Basic operations of the current version of AutoCAD Architecture (formerly Architectural Desktop), as used in architectural design and drafting. Topics include screen features, drawing and editing 3D objects, using sheets and views, file management, and using pre-existing AutoCAD drawing file data. Prerequisite: A grade of “C” or better in ENGR 140 (or ENGR 114) or CADD 140.

**BASIC SOLIDWORKS**  
CADD 150  
4 Credits  
16 hours of lecture 55 hours of lab  
Parametric solids modeling with SolidWorks, covering the breadth of the software at a basic level. Create part, assembly, and drawing files, including design tables and multiple configurations. Recommended for anyone comfortable using a PC. [GE]

**MECHANICAL DRAFTING 1 WITH SOLIDWORKS**  
CADD 154  
4 Credits  
16 hours of lecture 55 hours of lab  
Mechanical drafting using SolidWorks. Focus on detailed control in annotating and producing drawings of parts and assemblies. Includes components in mechanical print reading. Prerequisite: A grade of “C” or better in ENGR 113, and either ENGR 150 or CADD 150.

**INTERMEDIATE SOLIDWORKS – TOP DOWN DESIGN**  
CADD 155  
4 Credits  
16 hours of lecture 55 hours of lab  
System design using SolidWorks in the context of an assembly. Focus on complex modeling of parts and assemblies. Prerequisite: CADD 150 or ENGR 150.
INTRODUCTION TO CAM
CADD 160   2 Credits
11 hours of lecture  22 hours of lab
Introduction to CAM software for CNC machine operation. Recommended for anyone comfortable using a PC. [GE]

BASIC REVIT
CADD 170   4 Credits
16 hours of lecture  55 hours of lab
Basic operations of the current version of Revit, as used in architectural design and drafting. Topics include screen features, drawing and editing 3D objects, using sheets and views, file management, and using pre-existing Auto-CAD drawing file data. Recommended for anyone comfortable using a PC.

COOPERATIVE WORK EXPERIENCE
CADD 199 Summer Fall Winter Spring 1 – 5 Credits
Supervised work experience in an approved job. Completion of specific learning objectives and employer evaluation. Prerequisite: Consent of instructional unit and completion of or concurrent enrollment in HDEV 195, 198 or 200 required. [GE]

PRESENTATION GRAPHICS
CADD 207 Spring 4 Credits
16 hours of lecture  55 hours of lab
Use of AutoCAD graphics in MS Word documents, lighting and rendering, and explores importation of CAD files into other graphics packages such as Studio 3D MAX. Prerequisite: A grade of “C” or better in CADD 144, CADD 143, CADD 144 or CADD 154. [GE]

ARCHITECTURAL DRAFTING 2
CADD 210 3 Credits
11 hours of lecture  44 hours of lab
Continuance of architectural drafting from CADD 141, with a focus on refinement and using industry standards. Create a drawing set for a residential structure, with review by local professionals. Prerequisite: A grade of “C” or better in CADD 141.

AUTOCAD CUSTOMIZATION
CADD 214 Spring 3 Credits
11 hours of lecture  44 hours of lab
Customizing buttons and toolbars, using AutoLISP to create new AutoCad commands. Introduction to custom dialog boxes. Prerequisite: A grade of “C” or better in CADD 141, CADD 143 or CADD 144. [GE]

CIVIL DRAFTING 2
CADD 230 3 Credits
11 hours of lecture  44 hours of lab
Continuance of civil drafting from CADD 143, with a focus on refinement and using industry standards. Create a drawing set for a residential subdivision, with review by local professionals. Prerequisite: A grade of “C” or better in CADD 143.

MECHANICAL DRAFTING 2
CADD 240 3 Credits
11 hours of lecture  44 hours of lab
Continuance of mechanical drafting from CADD 144 and/or CADD 154, with a focus on refinement and using industry standards. Create a drawing set for a residential subdivision, with review by local professionals. Prerequisite: A grade of “C” or better in CADD 144 or CADD 154.

SELECTED TOPICS
CADD 280 Fall Winter Spring 1 – 5 Credits
55 hours of lecture
Course focuses on selected topics in EMET. Topics vary, and course theme and content change to reflect new topics. Because the course varies in content, it is repeatable for credit for different topics. [GE]
SPECIAL PROJECTS
CADD 290 Fall Winter Spring 1 – 6 Credits
Opportunity to plan, organize and complete special projects approved by the department. Prerequisite: Consent of instructional unit. [GE]

CADD CAPSTONE PRACTICUM
CADD 299 88 hours of lab 5 Credits
Capstone project to expand knowledge by studying selected CADD topics in selected major area of study (architectural, civil, mechanical, or other) and producing a comprehensive portfolio-documented project. Projects must be pre-approved by the instructor. Prerequisite: Consent of Instructional Unit.

Computer Graphics Technology

GRAPHIC DESIGN TECHNOLOGY I
CGT 100 4 Credits
22 hours of lecture 44 hours of lab
Introduction to the technical tools and procedures used in the graphic design profession. Topics include Mac operating system, file formats, raster/vector graphics, font management, color models, resolution, scanning, digital imaging, copyright, tone and color correction. Hands-on experience with computer graphics and page layout software to learn skills necessary to complete projects in graphic design studio courses.

PHOTOSHOP RASTER GRAPHICS
CGT 101 4 Credits
22 hours of lecture 44 hours of lab
Fundamentals of digital imaging using Adobe Photoshop. Focus on software tools and techniques to capture, correct, create and combine images for print and web. Topics include input devices, resolution, tone and color correction, retouching, painting, drawing, image manipulation, compositing, automation, graphic formats, design and reproduction considerations.

ILLUSTRATOR VECTOR GRAPHICS
CGT 102 3 Credits
22 hours of lecture 22 hours of lab
Fundamentals of vector drawing using Adobe Illustrator. Focus on software tools and techniques to draw, trace, transform and combine graphics for print and web. Topics include drawing tools, path editing, shape manipulation, blending, shading, object layering, typography, graphic formats, design and reproduction considerations.

INDESIGN PAGE LAYOUT
CGT 103 4 Credits
22 hours of lecture 44 hours of lab
Fundamentals of page layout using Adobe InDesign. Focus on software tools and techniques to combine text and graphics into visual layouts for print communications. Topics include document design, color and typographic principles, copyfitting, spatial organization, visual hierarchy, file and font management, prepress issues, marketing and printing considerations.

WEB MULTIMEDIA CONTENT I
CGT 104 4 Credits
22 hours of lecture 44 hours of lab
Introduction to content development strategies used to create and combine multimedia elements for web presentation or mobile communication. Focus on conceptual and visual design, user, client and marketing considerations. Activities include using technologies to produce static and interactive media, motion graphics, 2D animation, integrated audio and visual, and dynamic interfaces.
**USER EXPERIENCE DESIGN**  
CGT 105   3 Credits  
22 hours of lecture  22 hours of lab  
Investigation into the field of usability and interaction design. Focus on strategies and best practices to better understand how to create successful user experiences for web presentation or mobile communication. Topics include usability, interactivity, user research, testing scenarios, navigational models, information architecture and interface design. Students will design and conduct usability testing.

**SOCIAL MEDIA EXPLORATION**  
CGT 106   3 Credits  
22 hours of lecture  22 hours of lab  
Exploration of current practices in the use of social media and internet resources for professional development, networking, collaboration, communication, marketing and advertising. Focus on the strengths, roles and issues of various social media tools. Activities include developing and implementing a social media strategy for personal branding and professional networking.

**COOPERATIVE WORK EXPERIENCE**  
CGT 199   1 – 5 Credits  
165 hours of clinical  
Supervised work experience in an approved job. Completion of specific learning objectives and employer evaluation. Completion of, or concurrent enrollment in HDEV 195, 198 or 200 required. Prerequisite: Consent of Instructional Unit.

**GRAPHIC DESIGN TECHNOLOGY II**  
CGT 200   4 Credits  
22 hours of lecture  44 hours of lab  
Further study of the technical tools and procedures used in the graphic design profession. Topics include digital workflow, prepress and reproduction requirements, preflight, file submission, font licensing, color management, proofing, paper stock, printing processes and quality issues. Hands-on experience with computer graphics and page layout software to learn skills necessary to complete projects in graphic design studio courses. Prerequisite: A grade of “C” or better in CGT 100.

**WEB VIDEO PRODUCTION**  
CGT 201   4 Credits  
22 hours of lecture  44 hours of lab  
Fundamentals of video production for web delivery. Focus on all aspects of the video production workflow from concept to capture to multimedia integration and post-production processing. Topics include conceptual design, storytelling, video shooting techniques, non-linear editing, sound editing, media formats, compression and publishing for web presentation. Prerequisite: A grade of “C” or better in CGT 101 or CGT 100.

**WEB MULTIMEDIA CONTENT II**  
CGT 204   4 Credits  
22 hours of lecture  44 hours of lab  
Further study with content development strategies used to create and combine multimedia elements for web presentation or mobile communication. Focus on conceptual and visual design, user, client and marketing considerations. Topics include advanced use of integrated media technologies, scripting techniques, animation or motion-based strategies, content embedding, dynamic interaction and testing. Prerequisite: A grade of “C” or better in CGT 104.

**WEB DESIGN I**  
CGT 205   4 Credits  
22 hours of lecture  44 hours of lab  
Fundamentals of web design and site development. Focus on web authoring standards, tools and techniques to conceive, design, produce and publish websites. Topics include client and marketing analysis, information architecture, conceptual and visual design, workflow and team process, coding, content integration and website testing. Prerequisite: A grade of “C” or better in CTEC 122 and CGT 101.
WEB DESIGN II
CGT 206   4 Credits
22 hours of lecture  44 hours of lab
Further study in web design and site development. Focus on web authoring trends and strategic methodology to
better understand how to extend website functionality and value. Topics include strategies such as cross platform
and browser compatibility, content management, search engine optimization, site statistics, accessibility, project
management and maintenance planning. Prerequisite: A grade of "C" or better in CGT 205.

EMERGING WEB TECHNOLOGIES
CGT 207   3 Credits
22 hours of lecture  22 hours of lab
Exploration and practical examination of emerging web technologies. Focus on exploring, discussing, and research-
ing how evolving and influential technologies are changing the web landscape. Activities include engaging issues
and formulating theories relevant to these technologies. Prerequisite: A grade of “C” or better in CGT 205 or
consent of Instructional Unit.

PROFESSIONAL PRACTICES
CGT 214   3 Credits
22 hours of lecture  22 hours of lab
Practical experience and understanding of the business of design and freelancing. Emphasis on professional prac-
tices and processes. Instructor-supervised professional project development working with clients to design print
and web-based communications. May include industry field trips, interviews, research, online or in-person events
and team-based projects. Prerequisite: Consent of Instructional Unit.

CAPSTONE PRACTICUM
CGT 240   3 Credits
11 hours of lecture  44 hours of lab
An opportunity to extend your knowledge through the study of selected topics in your major area of study and to
produce a comprehensive portfolio project. Projects must be pre-approved with the instructor. Prerequisite: Con-
sent of Instructional Unit.

SELECTED TOPICS
CGT 280   1 – 5 Credits
55 hours of lecture
The course focuses on selected topics in Computer Graphics Technology. Topics vary, and course theme and con-
tent change to reflect new topics. Because the course varies in content, it is repeatable for credit for different topics.
Individual topics are listed in the quarterly class schedules. Prerequisite: Consent of Instructional Unit.

SPECIAL PROJECTS
CGT 290   1 – 3 Credits
Opportunity to plan, organize and complete special projects approved by the department. Prerequisite: Consent of
Instructional Unit.

Computer Science

COMPUTER SCIENCE I C++
CS& 131  Spring  5 Credits
55 hours of lecture
Introduction to the C++ programming language. Emphasis on object-oriented programming (OOP) design prin-
ciples and their implementation in C++, addressing issues of reusability, efficiency, and style. Prerequisite: A grade
of “C” or better in CSE 121 or CTEC 125, or consent of Instructional Unit. [SE]

COMPUTER SCIENCE I JAVA
CS& 141  Fall  5 Credits
55 hours of lecture
Introduction to the Java programming language. Emphasis on object-oriented design and development of portable,
multithreaded, event-driven software. Prerequisite: A grade of “C” or better in CSE 121 or CTEC 125, or consent of Instructional Unit. [SE]

**ENGINEERING AND COMPUTER SCIENCE ORIENTATION**

CSE 101  Fall  1 Credit
22 hours of lab
Orientation for students interested in Engineering and Computer Science. Topics include exposure to Engineering and Computer Science educational/career opportunities and challenges, with emphasis on effective planning, communication, teamwork appropriate to these career fields. Credit not allowed for both CSE 101 and ENGR 101.

**INTRO TO ELECTRICAL/COMPUTING**

CSE 120  Summer Fall Winter Spring  5 Credits
44 hours of lecture  33 hours of lab
Introduction to electrical/computer science and engineering processes, principles, problem-solving techniques, and contemporary tools. Applies in-class learning to hands-on projects and explores current industry trends and implications. Prerequisite: MATH 103.

**INTRODUCTION TO C**

CSE 121  Summer Fall Winter Spring  5 Credits
Introduction to the C programming language. Emphasis on program design, verification, and testing. Programming related concepts in computer science will be covered. Prerequisite: A grade of “C” or better in MATH& 151 (MATH 113), ENGR 120, CSE 120, ENGR 109 (ENGR 111) or CTEC 121; or consent of Instructional Unit. [SE]

**INTRODUCTION TO DATA STRUCTURES**

CSE 222  Fall  5 Credits
55 hours of lecture
Fundamentals of data structures and advanced programming techniques used in high-level languages such as C. Topics: trees, heaps, hash tables, sorting, searching, recursion, and algorithm analysis. Prerequisite: A grade of “C” or better in CSE 121 or CTEC 125, or consent of Instructional Unit. [SE]

**DATA STRUCTURES & OBJECT-ORIENTED PROGRAMMING**

CSE 223  Spring  5 Credits
55 hours of lecture
Study of data structures and the analysis of algorithms, object-oriented programming, concurrency, memory management. Prerequisite: A grade of “C” or better in CSE 222 or CTEC 222, and MATH 205 and MATH& 152 (MATH 211). [SE]

**PROGRAMMING TOOLS**

CSE 224  Winter  5 Credits
55 hours of lecture
Study of tools and techniques that facilitate programming and debugging, including debuggers, profilers, and scripting. Prerequisite: A grade of “C” or better in CSE 222 or CTEC 222, or consent of Instructional Unit. [SE]

**SPECIAL PROJECTS**

CSE 290  Summer Fall Winter Spring  1 – 5 Credits
Opportunity to plan, organize, and complete special projects approved by the department. Prerequisite: Consent of Instructional Unit.
and Computer Science educational/career opportunities and challenges, with emphasis on effective planning, communication, teamwork appropriate to these career fields. Credit not allowed for both CSE 101 and ENGR 101.

**INTRO TO ELECTRICAL/COMPUTING**

CSE 120  
**Summer Fall Winter Spring**  
5 Credits  
44 hours of lecture  
33 hours of lab  
Introduction to electrical/computer science and engineering processes, principles, problem-solving techniques, and contemporary tools. Applies in-class learning to hands-on projects and explores current industry trends and implications. Prerequisite: MATH 103.

**INTRODUCTION TO C**

CSE 121  
**Summer Fall Winter Spring**  
5 Credits  
55 hours of lecture  
Introduction to the C programming language. Emphasis on program design, verification, and testing. Programming related concepts in computer science will be covered. Prerequisite: A grade of “C” or better in MATH& 151 (MATH 113), ENGR 120, CSE 120, ENGR 109 (ENGR 111) or CTEC 121; or consent of Instructional Unit. [SE]

**INTRODUCTION TO DATA STRUCTURES**

CSE 222  
**Fall**  
5 Credits  
55 hours of lecture  
Fundamentals of data structures and advanced programming techniques used in high-level languages such as C. Topics: trees, heaps, hash tables, sorting, searching, recursion, and algorithm analysis. Prerequisite: A grade of “C” or better in CSE 121 or CTEC 125, or consent of Instructional Unit. [SE]

**DATA STRUCTURES & OBJECT-ORIENTED PROGRAMMING**

CSE 223  
**Spring**  
5 Credits  
55 hours of lecture  
Study of data structures and the analysis of algorithms, object-oriented programming, concurrency, memory management. Prerequisite: A grade of “C” or better in CSE 222 or CTEC 222, and MATH 205 and MATH& 152 (MATH 211). [SE]

**PROGRAMMING TOOLS**

CSE 224  
**Winter**  
5 Credits  
55 hours of lecture  
Study of tools and techniques that facilitate programming and debugging, including debuggers, profilers, and scripting. Prerequisite: A grade of “C” or better in CSE 222 or CTEC 222, or consent of Instructional Unit. [SE]

**SPECIAL PROJECTS**

CSE 290  
**Summer Fall Winter Spring**  
1 – 5 Credits  
Opportunity to plan, organize, and complete special projects approved by the department. Prerequisite: Consent of Instructional Unit.

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**Computer Technology**

**INTRODUCTION TO COMPUTING**

CTEC 100  
**Summer Fall Winter Spring**  
3 Credits  
33 hours of lecture  
Overview of computer information systems. Introduces computer hardware, communications, systems, and human resources, exploring their integration and application in society. Extensive coverage of terminology. Class constitutes a general introduction to computer systems and how they are used. [SE]

**COMPUTING ESSENTIALS**

CTEC 101  
2 Credits  
22 hours of lecture  
Introduction to basic skills and problem solving involved with computer hardware, operating systems, and application programs with a special emphasis on conventions and skills universal to a variety of computing settings and
skills which promote portability between systems and applications. Provides an overview of key skills in a variety of operating system environments and digital interactive settings. Skills and topics include: essential interactions in major operating system environments, basic hardware components of a personal computer system, an overview of file formats and management with an emphasis on backup and portable document strategies, basic interactions in e-mail and worldwide web including how to document and save web pages, and a survey of the purposes of various types of application programs. [GE]

**INTRODUCTION TO WINDOWS**

CTEC 102  
Summer Fall Winter Spring  3 Credits  
33 hours of lecture  
Introduction to the Windows GUI environment. Topics covered include: Windows startup, desktop and resource management, troubleshooting and Windows utilities. Work with graphics, perform object linking and embedding, and develop familiarity with the resources in Network Neighborhood. [GE]

**INTRODUCTION TO MAC/OS**

CTEC 103  Fall Winter Spring  3 Credits  
33 hours of lecture  
Introduction to the Macintosh operating system. Course emphasizes the feel and function of the Macintosh, conveying the Macintosh as a visual environment. Visual cues and identification of the concepts that make a Macintosh unique will be stressed. [GE]

**PC SUPPORT CUSTOMER SERVICE SKILLS**

CTEC 104  3 Credits  
33 hours of lecture  
Communication skills for working in a technical environment. Topics covered: professional ethics and behavior, health and safety issues, and developing a service attitude. [GE]

**COMMAND LINE ESSENTIALS FOR WINDOWS AND UNIX**

CTEC 110  Fall Winter Spring  3 Credits  
33 hours of lecture  
Preparation to interact with either a Windows System Command Prompt or a UNIX or UNIX-like Shell Prompt as a knowledgeable end-user. Prerequisite: Eligibility for ENGL 098.

**INTERNET RESEARCH AND LIVING ONLINE**

CTEC 115  Fall Winter Spring  2 Credits  
22 hours of lecture  
Introduction to global networking and the Internet from the student users' perspective, emphasizing basic skills required to do research and participate as members of the Internet community. Topics include network fundamentals, strategies for locating, analyzing and evaluating information, electronic mail, Internet-based communities, social, legal and ethical issues regarding Internet interactions.

**BEGINNING PROGRAMMING**

CTEC 120  2 Credits  
22 hours of lecture  
Introduction to programming concepts central to designing and writing elementary programs using the Alice programming language. Emphasis on problem solving skills; programming assignments require substantial time to complete. Prerequisite: Eligibility for ENGL& 101 and MATH 095.

**INTRO TO PROGRAMMING & PROBLEM SOLVING**

CTEC 121  Fall Winter Spring  5 Credits  
55 hours of lecture  
Fundamental concepts related to designing and writing computer programs and procedures. Topics covered include: problem-solving techniques, program design, coding, debugging, testing and documentation. The course stresses concepts common to all programming. Prerequisite: Eligibility for ENGL& 101 and a grade of “C” or better in MATH 095. CTEC 120 recommended. [SE]
HTML FUNDAMENTALS
CTEC 122
33 hours of lecture
Introduction to website development through the mastery of the fundamentals of HTML, XHTML, and CSS coding for web pages. Intended to give the student the basic skills required to hand-code web pages from scratch. A four-page website will be developed. Topics include: text editors, essential elements, images, links, lists, forms, tables, and CSS-based page layout. Prerequisite: Eligibility for ENGL& 101 and MATH 095.

VISUAL BASIC .NET I
CTEC 124
55 hours of lecture
Introduction to designing, creating, and debugging Microsoft Windows applications using Visual Basic .Net. Concepts of object oriented programming, user-interface design, and data access are covered. Focuses on developing applications in the Visual Studio.Net environment. Prerequisite: A grade of “C” or better in CTEC 121, or consent of Instructional Unit. [SE]

INTRODUCTION TO WEB SCRIPTING
CTEC 126
55 hours of lecture
Introduction to using scripting to add functionality to HTML documents (Web pages). Includes an overview of current scripting languages and techniques. Prerequisite: A grade of “C” or better in CTEC 121 and CTEC 122. [GE]

INTRODUCTION TO PHP
CTEC 127
44 hours of lecture
Introduction to PHP, a server-side scripting language offering tools for dynamic website development, to create features like shopping carts, login authentication, and database lookups. Topics include HTML/PHP integration, the syntax of PHP, methods of structuring a dynamic website, and how to integrate databases. Prerequisite: A grade of “C” or better in CTEC 121 and CTEC 122. [GE]

INTRODUCTION TO UNIX
CTEC 140
Fall Winter Spring
55 hours of lecture
An introduction to the structure and use of the UNIX operating system. Topics covered include: file management, common utilities, and (basic) shell programming. Prerequisite: A grade of “C” or better in MATH 090 or 091, or consent of Instructional Unit. [GE]

UNIX SYSTEM ADMINISTRATION
CTEC 141
55 hours of lecture
Fundamental concepts, ideas and practices of administrating the UNIX operating system. Topics include account management, file systems, startup and shutdown, printing, security, backups, configuration, optimization and basic networking. Prerequisite: A grade of “C” or better in CTEC 140, or consent of Instructional Unit. [GE]

UNIX POWER TOOLS
CTEC 143
55 hours of lecture
Continuing skills development using various basic UNIX tools in the shell environment; building on skills developed in prerequisite courses, students learn about shell scripts, sed, awk, and regular expressions; preparation for using UNIX or UNIX-like system power tools. Prerequisite: A grade of “C” or better CTEC 121 and CTEC 140, or consent of Instructional Unit. [GE]
INTRO TO LOCAL AREA NETWORKS
CTEC 150  Fall Winter Spring  3 Credits
33 hours of lecture
Introduction to the terminology, applied concepts and basic operations of local area network systems. Focus on interactions with Windows network servers and peer to peer workstations.

INTRODUCTION TO ACCESS
CTEC 180  Fall Winter Spring  3 Credits
33 hours of lecture
Introductory and intermediate skills for Microsoft Access for people who use and maintain Access databases. Topics include creation of tables, queries, forms and subforms, reports and subreports, and macros using both design view and wizards. Introduction to special fields such as memos, OLE and drop-down menus within the tables and forms; and using validation rules and referential integrity to insure the data is ‘clean’.

INTRODUCTION TO DATABASE DESIGN USING ACCESS
CTEC 181  Fall Winter Spring  5 Credits
55 hours of lecture
Database design for those who need to design, create, and maintain databases. Presents the information level database design concepts relative to any relational database structure (DBMS), and then focuses on the physical level design of a database using MS Access as the DBMS. Topics covered are: Intro to DB Management, The Relational Model Database Normalization Design Methodology, and Creation of Tables, Queries, Forms, Reports and Macros using MS Access. This is a beginning course and requires no prior experience in database design or Access. It does assume prior knowledge or MS Windows. [GE]

COOPERATIVE WORK EXPERIENCE
CTEC 199 Summer Fall Winter Spring 1 – 5 Credits
Supervised work experience in an approved job. Completion of specific learning objectives and employer evaluation. Prerequisite: Consent of Instructional Unit and completion of or concurrent enrollment in HDEV 195, 198 or 200 required. [GE]

PC HELP DESK WORK EXPERIENCE
CTEC 200  Fall Winter Spring  1 – 5 Credits
11 hours of lecture
Work experience for Microcomputer Support Specialist students. Students will work at the CTEC Help Desk. Days and times are arranged to meet the students’ scheduling needs. Students earning the MCSS degree or MCSS certification are required to sign up for at least 3 credits and will be expected to work 3 hours per week at the Help Desk. Prerequisite: A grade of “C” or better in CTEC 104, or consent of Instructional Unit. [GE]

A+PC OPERATING SYSTEM TECHNOLOGIES
CTEC 201  Fall Winter Spring  5 Credits
55 hours of lecture
Intermediate course in technical topics related to computer operating system fundamentals. Covers installation, configuration and upgrading operating systems. Includes diagnosing problems and general troubleshooting skills. Basic network capabilities of operating systems are covered. Designed to help prepare students for A+ hardware certification exam. Prerequisite: A grade of “C” or better in CTEC 104, or consent of Instructional Unit. [GE]

A+ ESSENTIALS
CTEC 210  Fall Winter Spring  6 Credits
66 hours of lecture
Technical topics related to computer hardware and operating system fundamentals as defined by COMP-TIA A+ certification. Includes identification and installation of hardware; installation, configuration and upgrading operating systems; diagnosing problems and general troubleshooting skills; and basic network capabilities of operating systems. Prerequisite: A grade of “C” or better in CTEC 110.
DESKTOP SUPPORT ESSENTIALS
CTEC 220  Fall Spring  5 Credits
55 hours of lecture
Introduction to skills and knowledge necessary to support end users by providing direct, front-line, corporate and home end-user support as defined by the Microsoft Desktop Support Technician certification (MCDST). Topics include troubleshooting, hardware and software basics, and elements of desktop support for different versions of MS Windows. Prerequisite: A grade of “C” or better in CTEC 210 or consent of Instructional Unit.

INTERMEDIATE VISUAL BASIC
CTEC 224  5 Credits
55 hours of lecture
Intermediate course in Visual Basic Programming. Topics include: Custom controls, error handling and debugging, interface design, graphics and multimedia, working with databases and Windows API functions. Prerequisite: A grade of “C” or better in CTEC 123, or consent of Instructional Unit. [SE]

C# .NET
CTEC 226  Spring  5 Credits
55 hours of lecture
Fundamental concepts of designing and writing C# (“C-sharp”) computer programs. Topics covered include: problem solving techniques, forms and object-oriented program design, coding, debugging, testing and documentation. Emphasizes understanding and use of Visual Studio Integrated Development Environment (IDE). Prerequisite: A grade of “C” or better in CTEC 123, or consent of Instructional Unit. [SE]

ADVANCED PHP
CTEC 227  4 Credits
44 hours of lecture
Introduction to advanced coding methods in PHP: XML integration, developing classes, application structures, portability, CVS, security, database connectivity, and the use of advanced features such as image manipulation; emphasis on Internet research for problem solving. Prerequisite: A grade of “C” or better in CTEC 127, or consent of Instructional unit. [GE]

INTRODUCTION TO NETWORK SECURITY
CTEC 230  Fall Winter Spring  5 Credits
55 hours of lecture
Introduction to concepts and fundamentals of network security; topics include attacks, identify theft, and viruses. Focus on activities showing ways hackers enter networks and how security technologies work. Network+ Certification satisfies the prerequisite of CTEC 151. Prerequisite: A grade of “C” or better in DNET 121 or CTEC 151, or consent of Instructional Unit. [GE]

UNIX NETWORK ADMINISTRATION & SECURITY
CTEC 240  5 Credits
55 hours of lecture
Skills development for configuring and administering a TCP/IP network. Topics include configuring basic networking, client services, file sharing services, major network services, cryptography, user, file, and network security, and other relevant topics. Prerequisite: A grade of “C” or better in CTEC 141, or consent of Instructional Unit. [GE]

SCRIPTING WITH PERL
CTEC 241  5 Credits
55 hours of lecture
Introduction to the Perl language in the Unix environment. Topics include text processing, report generation, system administration tasks, and CGI scripting for interactive web pages. Projects emphasize hands-on, practical applications of the language. Previous programming experience and knowledge of basic HTML strongly recommended. Prerequisite: A grade of “C” or better in CTEC 140, or consent of Instructional Unit. [GE]
MANAGING WINDOWS SERVER 2003 ENVIRONMENT
CTEC 271   5 Credits
55 hours of lecture
Provides students with the knowledge and skills to manage accounts and resources in a Microsoft Windows Server
TM 2003 environment; covers tasks for managing users, computer, and group accounts; managing access to
network resources; managing printers; managing an organizational unit in a network based on Active Directory
TM directory service; and implementing Group Policy to manage users and computers. Network+ Certification
satisfies the prerequisite of CTEC 151. A+ Certification satisfies the prerequisite of CTEC 201. This course (along
with CTEC 272) will help prepare student for Microsoft Certification Exam #70-290. Concurrent enrollment in
CTEC 272 or consent of Instructional Unit. Prerequisite: A grade of “C” or better in CTEC 151 and CTEC 201,
consent of Instructional Unit. [GE]

SELECTED TOPICS
CTEC 280 Summer Fall Winter Spring  1 – 6 Credits
66 hours of lecture
Varying topics. May be repeated for credit. Prerequisite: Consent of instructional unit. [GE]

DATABASE IMPLEMENTATION USING ACCESS
CTEC 281   5 Credits
55 hours of lecture
Instruction in advanced database applications and Microsoft extensions. Topics include Visual Basic for applica-
tions, Data Access objects, OLE controls, creation of add-ins, security implementation, database replication for
synchronization, accessing, external data sources, and managing client/server issues. Prerequisite: A grade of “C” or
better in CTEC 181 and CTEC 123, consent of Instructional Unit. [GE]

PROGRAMMING WITH SQL
CTEC 282   5 Credits
55 hours of lecture
SQL language and syntax. Design, installation, and maintenance of the SQL database as a programmatic datasource
using Microsoft SQL Server 7.0. Includes programming techniques that integrate SQL Server 7.0 with the Micro-
soft Active X Data Objects (ADO) and Data Management Objects (DMO) COM libraries. Prerequisite: A grade
of “C” or better in CTEC 181 and CTEC 224, or consent of Instructional Unit. [GE]

SPECIAL PROJECTS
CTEC 290 Summer Fall Winter Spring  1 – 5 Credits
Opportunity to plan, organize, and complete special projects approved by the department. Prerequisite: Consent of
instructional unit. [GE]

CAPSTONE EXPERIENCE
CTEC 295 Summer Fall Winter Spring  1 – 3 Credits
33 hours of lecture
Capstone experience for CTEC degree and certificate, to assess and refine final skill set. Focus on developing
and engaging in learning experiences to demonstrate and expand workplace skills and abilities. Development of
employment-package resources and job-acquisition strategies. Prerequisite: Consent of Instructional Unit.

Construction Technology

BLUEPRINT READING
CNST 106 Fall Winter  3 Credits
33 hours of lecture
Construction blueprint reading for residential and light commercial. [GE]

JOB ESTIMATING AND SCHEDULING
CNST 108 Winter Spring  3 Credits
33 hours of lecture
Bid preparation activities from initial receipt of drawings and specifications, to the final submission of the bid
to project owner. Scheduling of subcontractors to complete the project. Prerequisite: CNST 106 or consent of Instructional Unit. [GE]

**CONSTRUCTION TECHNOLOGY I**
CNST 111  Fall  6 Credits
66 hours of lecture
Basic concepts and theories of residential and commercial construction. Including design, finance, construction (general, mechanical, specialty), and marketing. [GE]

**CONSTRUCTION TECHNOLOGY I LAB**
CNST 112  Fall  6 Credits
132 hours of lab
Application of the concepts and theories presented in CNST 111. Concurrent enrollment in CNST 111 required. [GE]

**CONSTRUCTION TECHNOLOGY II**
CNST 121  Winter  6 Credits
66 hours of lecture
Basic concepts and theories of residential and commercial construction including design, finance, construction (general, mechanical, specialty), and marketing. Prerequisite: CNST 111. [GE]

**CONSTRUCTION TECHNOLOGY II LAB**
CNST 122  Winter  6 Credits
132 hours of lab
Application of the concepts and theories presented in CNST 121. Concurrent enrollment in CNST 121 required. Prerequisite: CNST 112. [GE]

**CONSTRUCTION TECHNOLOGY III**
CNST 131  Spring  6 Credits
66 hours of lecture
Basic concepts and theories of residential and commercial construction including design, finance, construction (general, mechanical, specialty), and marketing. Prerequisite: CNST 121. [GE]

**CONSTRUCTION TECHNOLOGY III LAB**
CNST 132  Spring  6 Credits
132 hours of lab
Application of the concepts and theories presented in CNST 131. Concurrent enrollment in CNST 131 required. Prerequisite: CNST 132. [GE]

**COOPERATIVE WORK EXPERIENCE**
CNST 199  Summer Fall Winter Spring  1 – 5 Credits
165 hours of clinical
Supervised work experience in an approved job. Completion of specific learning objectives and employer evaluation. Completion of, or concurrent enrollment in, HDEV 195, 198, or 200 required. Prerequisite: Consent of Instructional Unit.

**CONSTRUCTION TECHNOLOGY IV**
CNST 211  Fall  6 Credits
66 hours of lecture
Basic concepts and theories of residential and commercial construction including design, finance, construction (general, mechanical, specialty), and marketing. Prerequisite: CNST 131. [GE]

**CONSTRUCTION TECHNOLOGY IV LAB**
CNST 212  Fall  6 Credits
132 hours of lab
Application of the concepts and theories presented in CNST 211. Concurrent enrollment in CNST 211 required. Prerequisite: CNST 132. [GE]
CONSTRUCTION TECHNOLOGY V
CNST 221 Winter 6 Credits
66 hours of lecture
Basic concepts and theories of residential and commercial construction including design, finance, construction (general, mechanical, specialty), and marketing. Concurrent enrollment Lab required. Prerequisite: CNST 211. [GE]

CONSTRUCTION TECHNOLOGY V LAB
CNST 222 Winter 6 Credits
132 hours of lab
Application of the concepts and theories presented in CNST 221. Concurrent enrollment in CNST 221 required. Prerequisite: CNST 212. [GE]

CONSTRUCTION TECHNOLOGY VI
CNST 231 Spring 6 Credits
66 hours of lecture
Basic concepts and theories of residential and commercial construction including design, finance, construction (general, mechanical, specialty), and marketing. Prerequisite: CNST 221. [GE]

CONSTRUCTION TECHNOLOGY VI LAB
CNST 232 Spring 6 Credits
132 hours of lab
Application of the concepts and theories presented in CNST 231. Concurrent enrollment in CNST 231 required. Prerequisite: CNST 222. [GE]

SPECIAL PROJECTS
CNST 290 Summer Fall Winter Spring 1 – 5 Credits
Opportunity to plan, organize and complete special projects approved by the department. Prerequisite: Consent of Instructional Unit. [GE]

CPR
COMMUNITY CPR
CPR 031 Summer Fall Winter Spring 0 Credits
4 hours of lecture
Basic heart saver course includes one rescuer, obstructed airway, and manikin practice. Infant resuscitation may be included. Upon completion student will receive a Heart saver card from the American Heart Association.

HEALTHCARE PROVIDER CPR
CPR 032 Summer Fall Winter Spring 0 Credits
5 hours of lecture
CPR for healthcare professionals or students currently enrolled in a healthcare program. Not appropriate for the lay public. American Heart Association certification awarded for successful completion. Includes written and practical test over prudent heart living, one and two person CPR, use of the AED, adult, child and infant CPR including conscious and unconscious obstructed airway. Class held at the NW Regional Training Center, 11606 NE 66th Circle, Vancouver, WA 98662.

CHILD CARE CPR
CPR 033 0 Credits
6 hours of lecture
Pediatric CPR – specifically designed for parents and child care providers. Focus is on home safety, infant and child CPR. This course fulfills the state licensing requirement for child care providers.
Criminal Justice

INTRODUCTION TO CRIMINAL JUSTICE
CJ& 101  Fall Winter  5 Credits
55 hours of lecture
Philosophy and history of criminal justice. Interrelations of police, courts, and corrections. Discussion of career opportunities and qualifications for various careers in criminal justice. Prerequisite: SOC& 101 (SOC 101) or PSYC& 100 (PSYC 101). [SE, SS]

INTRODUCTION TO CORRECTIONS
CJ& 105  Winter  3 Credits
33 hours of lecture
An overview of local, state and federal correctional agencies. The historical development of correctional policies and practices. The exploration of debates surrounding the role and effectiveness of criminal sentences, institutional procedures, technological developments, special populations, etc. [SE, SS]

CUSTOMIZED JOB SKILLS TRAINING
CJST 050  0 Credits
11 hours of lecture
Specific job skills training targeted to the hiring needs of identified employer partners.

CUSTOMIZED JOB SKILLS TRAINING
CJST 051  0 Credits
11 hours of lecture
Specific job skills training targeted to the hiring needs of identified employer partners.

CUSTOMIZED JOB SKILL TRAINING
CJST 052  0 Credits
11 hours of lecture
Specific job skills training targeted to the hiring needs of identified employer partners.

Dental Hygiene

DENTAL HYGIENE COMPETENCIES LAB
DH 013 Summer Fall Winter Spring  1 Credit
22 hours of lab
Application of concepts and topics presented in DH 111, 112, 113, 114, 211, 212, and 213. Continued development of skills and techniques related to dental hygiene competencies. Concurrent enrollments in DH 111, 112, 113, 114, 211, 212 or 213 required.

DENTAL ANATOMY
DH 101 Fall  3 Credits
33 hours of lecture
Anatomy, embryology, and histology of the human dentition and surrounding oral structures as they apply to the practice of dental hygiene. Emphasis on tooth development and associated vocabulary, tooth identification and differentiation, and tooth numbering systems. Prerequisite: Consent of the Dental Hygiene Program. [GE]

HEAD AND NECK ANATOMY
DH 102 Winter  3 Credits
33 hours of lecture  6 hours of lab
Embryological, histological and anatomical development of the head and neck as it applies to the practice of dental hygiene. [GE]
ORAL HEALTH EDUCATION
DH 103  Spring  2 Credits
22 hours of lecture
Development of skills essential to the dental health educator and dental health resource person. Concepts of teaching, learning and motivation for groups and individuals. [GE]

INTRODUCTION TO DENTAL MATERIALS/ASSISTING
DH 104 Summer Spring  3 Credits
22 hours of lecture  22 hours of lab
Introduction to properties and manipulation of basic restorative materials including resin, bases, liners, varnishes, cements, and sealants. Introduction to four-handed chairsides assistive, study model preparation and pit and fissure sealant application. Clinical practice through assisting in restorative situations. [GE]

CLINICAL DENTAL HYGIENE TECHNIQUES I
DH 111  Fall  6 Credits
33 hours of lecture  66 hours of lab
Basic theory and pre-clinical practice at the introductory level in patient assessment, care planning, management, and periodontal therapy, which includes prevention and control of oral disease, and proper safety and infection control procedures. Prerequisite: Consent of the Dental Hygiene Program. [GE]

CLINICAL DENTAL HYGIENE TECHNIQUES II
DH 112  Winter  5 Credits
17 hours of lecture  77 hours of lab
Clinical practice at the introductory level in patient assessment, care planning, management, and periodontal therapy, which includes preventative and control of oral disease, and proper safety and infection control procedures. Prerequisite: DH 111 and Consent of the Dental Hygiene Program. [GE]

CLINICAL DENTAL HYGIENE TECHNIQUES III
DH 113  Spring  5 Credits
17 hours of lecture  77 hours of lab
Clinical practice at the introductory and development levels in patient assessment, care planning, management, and periodontal therapy, which includes prevention and control of oral disease, and proper safety and infection control procedures. Prerequisite: DH 112 and Consent of the Dental Hygiene Program. [GE]

CLINICAL DENTAL HYGIENE TECHNIQUES IV
DH 114 Summer  4 Credits
89 hours of lab
Clinical practice at the introductory and development levels in patient assessment, care planning, management, and periodontal therapy, which includes prevention and control of oral disease, and proper safety and infection control procedures. Concurrent enrollment in DH 114L required. Prerequisite: DH 113 and Consent of the Dental Hygiene Program.

ORAL RADIOLOGY I
DH 122  Winter  3 Credits
22 hours of lecture  22 hours of lab
Radiographic theory, equipment, patient safety, and techniques for exposing, processing, and mounting dental radiographs. Prerequisite: Consent of the Dental Hygiene Program. [GE]

ORAL RADIOLOGY II
DH 123  Spring  1 Credit
22 hours of lab
Second in a series on radiographic theory application and radiographic image interpretation. Continued experience in exposing, processing and mounting, and critiquing dental radiographs. Prerequisite: DH 122 and consent of the Dental Hygiene program. [GE]
ORAL RADIOLOGY III  
DH 124 Summer 2 Credits  
22 hours of lecture  
Third in a series on radiographic theory application and image interpretation. Includes principles of radiation biology, quality assurance, radiation health and protection. Introduction of principles of contemporary panoramic radiographic techniques and comprehensive analysis of panoramic images. Prerequisite: A grade of “C” or better in DH 123 and DH 143.

RESTORATIVE DENTISTRY I  
DH 134 Summer 2 Credits  
11 hours of lecture 22 hours of lab  
Introduction to restorative techniques with emphasis on placement of amalgam and clinical experience with sealant application. Prerequisite: Consent of the Dental Hygiene Program. [GE]

ORAL MEDICINE  
DH 141 Fall 2 Credits  
22 hours of lecture  
Introduction to the evaluation of medical/dental histories in preparation for dental hygiene treatment. Includes the most commonly encountered oral and systemic diseases. [GE]

GENERAL AND ORAL PATHOLOGY  
DH 143 Summer Spring 3 Credits  
33 hours of lecture  
Fundamentals of oral pathology including the inflammatory processes, tumor development, metabolic pathways and developmental disturbances. Prerequisite: Consent of Instructional Unit. [GE]

ETHICS AND THE PROFESSION  
DH 152 Winter 1 Credit  
11 hours of lecture  
Basic ethical principles, ethical problem solving methods, the Principles of Ethics of the American Dental Hygienist Association, and Washington State Laws applicable to the practice of dental hygiene. These elements will enable the student to apply professional attitudes and judgements when treating clinical patients. [GE]

CLINICAL DENTAL HYGIENE TECHNIQUES IV SEM  
DH 154 Summer 1 Credit  
11 hours of lecture  
Clarification and elaboration of topics related to the student’s most current clinical skills and experiences. Techniques for treating patients with special needs and importance of providing these patients with complete dental care. [GE]

LOCAL ANESTHESIA & PAIN CONTROL IN DENTISTRY  
DH 163 Spring 3 Credits  
44 hours of lecture 6 hours of lab  
Integration of anatomy, physiology, pharmacology, and emergency procedures as they relate to the administration of local anesthesia. Laboratory sessions to develop competency in administering and anesthetic are required. [GE]

PERIODONTICS I  
DH 171 Fall 3 Credits  
22 hours of lecture 22 hours of lab  
Introduction to histological and clinical characteristics of normal and diseased periodontium. Introduction to tooth accumulated materials and preventive oral aids. [GE]

CARIOLOGY  
DH 172 Winter 2 Credits  
22 hours of lecture  
Presentation of cause, progression, and prevention of dental caries with an emphasis on fluoride. [GE]
NITROUS OXIDE SEDATION  
DH 174  Summer  1 Credit  
8 hours of lecture  4 hours of lab  
Exploration of nitrous oxide sedation as it applies to the practice of dentistry and dental hygiene. Emphasis on patient evaluation, pharmacodynamics, and administration methods and safety issues. Minimum of three clinical patient inductions and recoveries required. Meets multi state licensure requirements for the provisions of nitrous oxide and includes 10 hours of lecture, 3 clinical, and 1 hour written final for a total of 14 hours. Prerequisite: Consent of the Dental Hygiene Program.

PHARMACOLOGY I  
DH 181  Fall  1 Credit  
11 hours of lecture  
Introduction to the classification, pharmacodynamics, dosages, and therapeutic effects of drugs most commonly encountered or prescribed by the dental office. Topics include drugs of abuse, autonomic nervous system, gastrointestinal, respiratory, vitamin, and minerals. Prerequisite: Acceptance into the dental hygiene program.

PHARMACOLOGY II  
DH 182  Fall  1 Credit  
11 hours of lecture  
Continuation of the classification, pharmacodynamics, dosages and therapeutic effects for drugs most commonly encountered or prescribed by the dental office. Topics include antimicrobial, antifungal, and antiviral medications, opioid and non-opioid analgesics, and cardiovascular medications. Prerequisite: DH 181.

PHARMACOLOGY III  
DH 183  Fall  1 Credit  
11 hours of lecture  
Continuation of the classification, pharmacodynamics, dosages, and therapeutic effects for drugs most commonly encountered or prescribed by the dental office. Topics include endocrine, psychotherapeutic, sedative/hypnotic, anti-anxiety, anticonvulsants, ophthalmic, anti-neoplastic, immune function, anti-Parkinson, and Alzheimer’s disease medications. Prerequisite: DH 182.

COOPERATIVE WORK EXPERIENCE  
DH 199  Summer Fall Winter Spring  1 – 5 Credits  
165 hours of clinical  
Supervised work experience in an approved job. Completion of specific learning objectives and employer evaluation. Completion of, or concurrent enrollment in, HDEV 195, 198, or 200 required. Prerequisite: Consent of Instructional Unit. [GE]

DENTAL PUBLIC HEALTH I  
DH 201  Fall  2 Credits  
11 hours of lecture  44 hours of lab  
A systematic approach to the prevention and control of dental disease and the promotion of oral health through organized community efforts. Practical application of public health techniques in the assessment of the community to establish what types of oral health programs are needed. [GE]

DENTAL PUBLIC HEALTH II  
DH 202  Winter  2 Credits  
11 hours of lecture  44 hours of lab  
Continuation of Dental Public Health I. Advanced application of public health concepts to plan, implement and evaluate oral health programs that prevent and control dental disease and promote oral health for a designated population. [GE]
DENTAL PUBLIC HEALTH III
DH 203  Spring  1 Credit
22 hours of lab
Continuation of Dental Public Health II. Implementation and evaluation of oral health programs at a variety of community settings. Formerly titled "Community Dental Health II". [GE]

CLINICAL DENTAL HYGIENE TECHNIQUES V
DH 211  Fall  9 Credits
198 hours of lab
Clinical practice at the development level in patient assessment, care planning, management, and periodontal therapy, which includes prevention and control of oral disease, and proper safety and infection control procedures. Concurrent enrollment in DH 211L required. Prerequisite: DH 211 and Consent of the Dental Hygiene Program. [GE]

CLINICAL DENTAL HYGIENE TECHNIQUES VI
DH 212  Winter  9 Credits
198 hours of lab
Clinical practice at the development and competent levels in patient assessment, care planning, management, and periodontal therapy, which includes prevention and control of oral diseases, and proper safety and infection control procedures. Concurrent enrollment in DH 212L required. Prerequisite: DH 211 and Consent of the Dental Hygiene Program. [GE]

CLINICAL DENTAL HYGIENE TECHNIQUES VII
DH 213  Spring  10 Credits
220 hours of lab
Clinical practice at the competent level in patient assessment, care planning, management, and periodontal therapy, which includes prevention and control of oral disease, and proper safety and infection control procedures. Concurrent enrollment in DH 213L required. Prerequisite: DH 212 and Consent of the Dental Hygiene Program. [GE]

RESTORATIVE DENTISTRY II
DH 231  Fall  5 Credits
22 hours of lecture  66 hours of lab
Laboratory practice in expanded duties as allowed by Washington State Law. Emphasis on placement of amalgam and composite restorations. Prerequisite: DH 134 and Consent of the Dental Hygiene Program. [GE]

RESTORATIVE DENTISTRY III
DH 232  Winter  4 Credits
66 hours of lecture  11 hours of lab
Clinical and laboratory practice in expanded duties as allowed by Washington State law; restorative dentistry and associated procedures, dental analgesia, local anesthetic, current dental material evaluation and product selection for use in clinical practice. Prerequisite: DH 231 and Consent of the Dental Hygiene Program. [GE]

RESTORATIVE DENTISTRY IV
DH 233  Spring  3 Credits
11 hours of lecture  44 hours of lab
Further perfection of skills and mastery of clinical and laboratory practice in expanded duties as allowed by Washington State law. Completion of restorative capstone project, encompassing depth and breadth of knowledge acquired from supportive course work. Prerequisite: DH 172, 103, 104, 134, 231, 232 and Consent of the Dental Hygiene Program. [GE]

CLINICAL DENTAL HYGIENE TECHNIQUES V SEMINAR
DH 251  Fall  1 Credit
11 hours of lecture
Expansion of academic, behavioral, and clinical skills necessary for the performance of patient treatment and related activities, through an in-depth independent research project. [GE]
**CLINICAL DENTAL HYGIENE TECHNIQUES VI SEM**  
DH 252 Winter 1 Credit  
11 hours of lecture  
Expansion of advanced academic, behavioral and clinical skills necessary for the performance of patient treatment and related activities in clinical practice. Research, development and presentation of a table clinic will be the focus of the course. [GE]

**CLINICAL DENTAL HYGIENE TECHNIQUES VII SEM**  
DH 253 Spring 1 Credit  
11 hours of lecture  
Development of professional and team skills to be utilized when working in the dental hygiene field. Resume preparation and interviewing techniques. [GE]

**ETHICS AND PRACTICE MANAGEMENT**  
DH 263 Spring 1 Credit  
11 hours of lecture  
Legal and ethical issues related to dental hygiene. Topics include professional and patient relationships, professional associations, state dental hygiene practice acts, career alternatives and lifelong learning. [GE]

**PERIODONTICS II**  
DH 271 Fall 2 Credits  
22 hours of lecture  
Root morphology and the etiological factors of periodontal diseases. Topics include: host response to, oral structures affected by, the classifications of gingival and periodontal diseases. Current methods and diagnostic aids used to assess and evaluate periodontal disease in a patient will be presented. [GE]

**PERIODONTICS III**  
DH 272 Winter 2 Credits  
22 hours of lecture  
Subjects covered this quarter will be treatment modalities of periodontal disease to include root planing, antimicrobials, lasers, and surgical procedures; HIV and periodontitis, reevaluation and maintenance procedures for the periodontal involved patient. Prerequisite: DH 271 or consent of Instructional Unit. [GE]

**SELECTED TOPICS**  
DH 280 Summer Fall Winter Spring 1 – 5 Credits  
55 hours of lecture  
Selected topics in dental hygiene. Topics vary and course theme and content change to reflect new topics. Because the course varies in content, it is repeatable for credit. Specific topics are listed in the quarterly class schedule.

**SPECIAL PROJECTS**  
DH 290 Summer Fall Winter Spring 1 – 15 Credits  
Opportunity to plan, organize and complete special projects approved by the department. Prerequisite: Consent of Instructional Unit. [GE]

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**Developmental Education**

**MATH BASICS I**  
DVED 021 Summer Fall Winter Spring 5 Credits  
55 hours of lecture  
Study and application of basic math concepts: addition, subtraction, multiplication, division, fractions, decimals. Prerequisite: Recommending score on ASSET placement test or consent of Instructional Unit.

**MATH BASICS II**  
DVED 023 Summer Fall Winter Spring 5 Credits  
55 hours of lecture  
Analysis and application of basic math concepts and operations emphasizing ratio and proportions, percents, mea-
surements, and simple equations. Prerequisite: A grade of “C” or better in DVED 021 or consent of Instructional Unit.

**ENGLISH BASICS**  
**DVED 094**  
55 hours of lecture  
Emphasis on writing more fluently, clearly, and correctly. Students build skills through exercises in grammar, writing responses to assigned readings, and planning, organizing, drafting, and revising paragraphs. In-class and out-of-class paragraphs are required. Prerequisite: Recommending score on the College writing skills placement test or consent of Instructional Unit.

**SELECTED TOPICS**  
**DVED 099**  
1 – 5 Credits  
55 hours of lecture  
Various topics, themes, content in Developmental Education and Reading. Because the content varies, this course is repeatable for credit for different topics.

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**Diesel Technology**

**DETROIT DIESEL ELECTRONIC CONTROLS**  
**DIES 093**  
33 hours of lecture  
A study of Detroit diesel electronic controls (DDEC). Basic system component functions and identification, proper trouble shooting procedures, use of specialized trouble shooting tools and equipment.

**CUMMINS ENGINES**  
**DIES 096**  
33 hours of lecture  
Specialized training in Cummins engine theory, troubleshooting, tune-up, maintenance, repair, and safety.

**GENERATOR SETS**  
**DIES 097**  
33 hours of lecture  
Maintenance, troubleshooting, and repair of generator sets. Safety and theory of operation.

**CAT ENGINES**  
**DIES 099**  
33 hours of lecture  
Specialized training in Caterpillar engine theory, tune-up, troubleshooting, maintenance, repair, and safety.

**DIESEL FUNDAMENTALS**  
**DIES 111**  
55 hours of lecture  
Introduction to diesel engine construction and principles of operation. Basics of physics and engineering as related to operation of diesel engines. Basic shop tools and safety. [GE]

**DIESEL PROCEDURES**  
**DIES 112**  
55 hours of lecture 110 hours of lab  
Disassembly, inspection, assembly, and adjustment of various diesel engines used in highway and off-highway vehicles. Concurrent enrollment in DIES 111 recommended. [GE]

**DIESEL ENGINES/FUEL SYSTEMS**  
**DIES 113**  
55 hours of lecture  
Repair, adjustment and testing procedures for diesel engines, components and systems. Introduction to fuel systems
used and electronic controls used on modern diesel engines. Concurrent enrollment in DIES 114 recommended. [GE]

**DIESEL PROCEDURES**

DIES 114  Winter  10 Credits
55 hours of lecture  110 hours of lab
Test, adjust, and diagnostics of engines and maintenance practices. Concurrent enrollment in DIES 113 recommended. [GE]

**DRIVE TRAINS**

DIES 115  Spring  5 Credits
55 hours of lecture
Principles of operation and basic construction of drive train components used in on- and off-highway equipment. Concurrent enrollment in DIES 116 recommended. [GE]

**DIESEL PROCEDURES**

DIES 116  Spring  10 Credits
55 hours of lecture  110 hours of lab
Disassembly, inspection, assembly, and adjustments of drive train components. Concurrent enrollment in DIES 115 recommended. [GE]

**WHEEL ALIGNMENT**

DIES 118  Spring  3 Credits
22 hours of lecture  22 hours of lab
Automobile chassis, suspension assemblies, steering systems, wheel balancing, wheel alignment, steering, geometry, headlight aiming and safety. [GE]

**BASIC ELECTRICAL**

DIES 120  Fall  3 Credits
22 hours of lecture  22 hours of lab
Introduction to basic electrical fundamentals needed by technicians to diagnose and repair vehicle electrical systems. Concurrent enrollment in DIES 112.

**ELECTRONIC ENGINE MANAGEMENT SYSTEMS**

DIES 121  Winter  3 Credits
22 hours of lecture  22 hours of lab
Introduction to electronic engine management systems and emission technology. Concurrent enrollment in DIES 114. Prerequisite: A grade of “C” or better in DIES 120.

**ELECTRONIC VEHICLE CONTROL SYSTEMS**

DIES 122  Spring  3 Credits
22 hours of lecture  22 hours of lab
Introduction to electronic controls used in diesel and heavy equipment. Concurrent enrollment in DIES 116. Prerequisite: A grade of “C” or better in DIES 120.

**INDUSTRIAL HYDRAULICS**

DIES 135  Winter  3 Credits
33 hours of lecture
Hands-on experience in recognizing, using, and troubleshooting hydraulic pumps, valves, motors, filters, hoses, piping, and fittings in hydraulic systems. [GE]

**COOPERATIVE WORK EXPERIENCE**

DIES 199  Fall Winter Spring  1 – 5 Credits
165 hours of clinical
Supervised work experience in an approved job. Completion of specific learning objectives and employer evaluation. Completion of, or concurrent enrollment in, HDEV 195, 198, or 200 required. Prerequisite: Consent of Instructional Unit. [GE]
ELECTRICAL/ELECTRONIC SYSTEMS
DIES 221  Fall  5 Credits
55 hours of lecture
Charging, starting, lighting, and control circuits and components used on heavy equipment and highway trucks. Concurrent enrollment in DIES 222 recommended. [GE]

DIESEL PROCEDURES
DIES 222  Fall  6 Credits
33 hours of lecture  66 hours of lab
Repair and maintenance of diesel and heavy equipment. Students will participate in customer repair projects. Concurrent enrollment in DIES 221 recommended. [GE]

HYDRAULIC SYSTEMS
DIES 223  Winter  5 Credits
55 hours of lecture
Theory and principles of operation of mobile hydraulic systems. Concurrent enrollment in DIES 224 recommended. [GE]

DIESEL PROCEDURES
DIES 224  Winter  10 Credits
55 hours of lecture  110 hours of lab
Repair and maintenance of diesel and heavy equipment. Students will participate in customer repair projects. Concurrent enrollment in DIES 223 recommended. Prerequisite: DIES 222 or consent of Instructional Unit. [GE]

BRAKES, STEERING, AND SUSPENSION
DIES 225  Spring  5 Credits
55 hours of lecture
Hydraulic and air brake systems, steering and suspension used on highway trucks, and heavy equipment. Concurrent enrollment in DIES 226 recommended. [GE]

DIESEL PROCEDURES
DIES 226  Spring  10 Credits
55 hours of lecture  110 hours of lab
Repair and maintenance of diesel and heavy equipment. Students will participate in customer repair projects. Concurrent enrollment in DIES 225 recommended. Prerequisite: DIES 224 or consent of Instructional Unit. [GE]

SELECTED TOPICS
DIES 280 Summer Fall Winter Spring 1 – 5 Credits
55 hours of lecture
The course focuses on selected topics in Diesel. Topics vary, and course theme and content change to reflect new topics. Because the course varies in content, it is repeatable for credit for different topics. Individual topics are listed in the quarterly class schedule. [GE]

SPECIAL PROJECTS
DIES 290 Fall Winter Spring 1 – 5 Credits
Opportunity to plan, organize and complete special projects approved by the department. Prerequisite: Consent of Instructional Unit required. [GE]

Digital Imaging
PATHOPHYSIOLOGY FOR MEDICAL IMAGING
DIMAG 250  3 Credits
33 hours of lecture
Disease etiology and cultural implications; the physiologic effects of disease on body systems and the role of Diagnostic Imaging in diagnosis and treatment.
COMPUTED TOMOGRAPHY CLINICAL PRACTICUM
DIMAG 271   4 Credits
132 hours of clinical
Clinical Practicum for those seeking ARRT certification in Computed Tomography (CT). This course may be repeated if student does not attain enough competencies to qualify for the ARRT exam during one rotation. Prerequisite: Currently enrolled in or completion of DIMAG 275 and employed as an RT or CNMT or consent of Instructional Unit.

COMPUTED TOMOGRAPHY PHYSICS AND INSTRUMENTATION
DIMAG 275  Winter   3 Credits
33 hours of lecture
Advanced course for those seeking training in Computed Tomography. Open only to those currently registered as Radiologic Technologists or Nuclear Medicine Technologists through ARRT or CNMT. Prerequisite: Currently licensed RTs or CNMTs or permission of Instructional Unit.

MAGNETIC RESONANCE PHYSICS AND INSTRUMENTATION
DIMAG 276  Winter   3 Credits
33 hours of lecture
Introduction to the basic physics of Magnetic Resonance Imaging (MRI) in Diagnostic Imaging. Emphasis on preparation for the ARRT registry in Magnetic Resonance examination. Prerequisite: RT, RDMS, CNMT.

CROSS SECTIONAL ANATOMY FOR IMAGING PROFESSIONAL
DIMAG 279  Fall   3 Credits
33 hours of lecture
Sectional human anatomy of the body in various planes of section using all Diagnostic Imaging modalities. Emphasis on the abdominopelvic cavity and the brain using CT and MRI.

COMPUTED TOMOGRAPHY REGISTRY REVIEW
DIMAG 296   1 Credit
11 hours of lecture
An advanced course for those seeking certification and training in Computed Tomography. Comprehensive review of all major areas indicated on the ARRT CT examination outline. Open to currently working and registered Radiologic Technologists or Nuclear Medicine Technologists with ARRT or CNMT certification.

Drama
INTRO TO THEATRE
DRMA& 101  Fall Winter Spring   3 Credits
33 hours of lecture
Overview of theatre. Roles of the actor, director, designers, and playwrights. Evolution of theatre through the ages. [HA, SE]

ACTING I – DRAMA
DRMA 140  Fall Winter Spring   4 Credits
33 hours of lecture   22 hours of lab
Techniques and principles of acting. [HB, SE]

ACTING II – THEATRE
DRMA 141  Winter   4 Credits
33 hours of lecture   22 hours of lab
Continuation of DRMA 140. Emphasis on scene study, characterization, and period styles of acting. Prerequisite: DRMA 140 (or THEA 140). [HB, SE]
**ACTING III – TELEVISION**  
DRMA 142  Fall Winter Spring 3 Credits  
22 hours of lecture  22 hours of lab  
Techniques for television and film performance. Basic production realities relevant to actors. Students will perform before the cameras and, when possible, work behind them. Prerequisite: A grade of “C” or better in DRMA 140 (or THEA 140). [HB, SE]  

**CHILDREN’S THEATRE I**  
DRMA 143  Spring 5 Credits  
22 hours of lecture  66 hours of lab  
College students performing for children. Examine, produce, perform, and tour a play for children. Performances styles for children, touring scenery techniques, and tour management. Formerly THEA 143. [HB, SE]  

**CHILDREN’S THEATRE II**  
DRMA 144  Spring 5 Credits  
22 hours of lecture  66 hours of lab  
College students performing for children. Examine, produce, perform, and tour a play for children. Performance styles for children, touring scenery techniques, and tour management. Prerequisite: DRMA 143 (or THEA 143). [HB, SE]  

**CHILDREN’S THEATRE III**  
DRMA 145  Spring 5 Credits  
22 hours of lecture  66 hours of lab  
College students performing for children. Examine, produce, perform, and tour a play for children. Performance styles for children, touring scenery techniques and tour management. Prerequisite: DRMA 144 (or THEA 144). [HB, SE]  

**BASIC STAGECRAFT**  
DRMA 150  Fall 4 Credits  
22 hours of lecture  22 hours of lab  
Principles and techniques of scenery construction and painting. Students will also learn the use of shop tools. [HB, SE]  

**STAGE MAKE-UP**  
DRMA 152  Winter 3 Credits  
33 hours of lecture  
Design and application of stage make-up. Formerly THEA 152. [HB, SE]  

**PLAY PRODUCTION AND PERFORMANCE I**  
DRMA 171  Fall Winter Spring 2 Credits  
44 hours of lab  
Practical experience with varied aspects of actual theatrical production. Acting, directing, scene construction, lighting, makeup and publicity. Class will begin the third week of the quarter. [HB, SE]  

**PLAY PRODUCTION AND PERFORMANCE II**  
DRMA 172  Fall Winter Spring 2 Credits  
44 hours of lab  
Practical experience with varied aspects of actual theatrical production. Acting, directing, scene construction, lighting, makeup and publicity. Class will begin the third week of the quarter. Prerequisite: DRMA 171 (or THEA 171). [HB, SE]  

**PLAY PRODUCTION AND PERFORMANCE III**  
DRMA 173  Fall Winter Spring 2 Credits  
44 hours of lab  
Practical experience with varied aspects of actual theatrical production. Acting, directing, scene construction, lighting, makeup and publicity. Class will begin the third week of the quarter. Prerequisite: DRMA 172 (or THEA 172). [HB, SE]
<table>
<thead>
<tr>
<th>Course Title</th>
<th>Credits</th>
<th>Schedule</th>
<th>Description</th>
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</thead>
<tbody>
<tr>
<td><strong>COOPERATIVE WORK EXPERIENCE</strong></td>
<td>1 – 5</td>
<td>Fall Winter Spring</td>
<td>165 hours of clinical work experience in the community, completion of specific learning objectives and employer evaluation. Completion of, or concurrent enrollment in, HDEV 195, 198, or 200 required. Prerequisite: Consent of Instructional Unit. [GE]</td>
</tr>
<tr>
<td><strong>IMPROVISATION FOR LIFE AND THEATER</strong></td>
<td>4</td>
<td></td>
<td>33 hours of lecture 22 hours of lab Introduction to theater improvisation techniques for the stage as well as business, educational, and therapeutic settings. Topics cover role plays, theater games, ice breakers, and storytelling. Activities include lecture, demonstration, exercise, and performance. Students both lead and participate in these activities. Students build skills in creativity, spontaneity, facilitation, collaboration, performance, problem-solving, and positive, whole-brained thinking. No acting or improv experience necessary.</td>
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<tr>
<td><strong>CHILDREN’S THEATRE IV</strong></td>
<td>5</td>
<td>Spring</td>
<td>22 hours of lecture 66 hours of lab Study, produce and perform a play for children. Performance styles for children, touring scenery techniques and tour management. Prerequisite: DRMA 145 (or THEA 145). [HB, SE]</td>
</tr>
<tr>
<td><strong>CHILDREN’S THEATRE V</strong></td>
<td>5</td>
<td>Spring</td>
<td>22 hours of lecture 66 hours of lab Study, produce and perform a play for children. Performance styles for children, touring scenery techniques and tour management. Prerequisite: DRMA 243 (or THEA 243). [HB, SE]</td>
</tr>
<tr>
<td><strong>CHILDREN’S THEATRE VI</strong></td>
<td>5</td>
<td>Spring</td>
<td>22 hours of lecture 66 hours of lab Study, produce and perform a play for children. Performance styles for children, touring scenery techniques and tour management. Prerequisite: DRMA 244 (or THEA 244). [HB, SE]</td>
</tr>
<tr>
<td><strong>STAGE LIGHTING DESIGN</strong></td>
<td>3</td>
<td>Spring</td>
<td>33 hours of lecture Techniques and principles of stage and TV lighting design. Use of instruments and light control systems with a special emphasis on computerized light control. [HB, SE]</td>
</tr>
<tr>
<td><strong>PLAY PRODUCTION AND PERFORMANCE IV</strong></td>
<td>2</td>
<td>Fall Winter Spring</td>
<td>44 hours of lab Practical experience with varied aspects of actual theatrical production. Acting, directing, scene construction, lighting, makeup and publicity. Class will begin the third week of the quarter. Prerequisite: DRMA 173 (or THEA 173). [HB, SE]</td>
</tr>
<tr>
<td><strong>PLAY PRODUCTION AND PERFORMANCE V</strong></td>
<td>2</td>
<td>Fall Winter Spring</td>
<td>44 hours of lab Practical experience with varied aspects of actual theatrical production. Acting, directing, scene construction, lighting, makeup and publicity. Class will begin the third week of the quarter. Prerequisite: DRMA 271 (or THEA 271). [HB, SE]</td>
</tr>
</tbody>
</table>
PLAY PRODUCTION AND PERFORMANCE VI
DRMA 273 Fall Winter Spring 2 Credits
44 hours of lab
Practical experience with varied aspects of actual theatrical production. Acting, directing, scene construction, lighting, makeup and publicity. Class will begin the third week of the quarter. Prerequisite: DRMA 272 (or THEA 272). [HB, SE]

SELECTED TOPICS
DRMA 280 Summer 1 – 3 Credits
33 hours of lecture
Varying topics in theatre, as listed in the quarterly class schedule. May be repeated for credit. [SE]

SPECIAL PROJECTS
DRMA 290 Fall Winter Spring 1 – 5 Credits
Opportunity to plan, organize and complete special projects approved by the department in the areas of stage direction, scene lighting, costume design, make-up design, production or theatre history. Prerequisite: Consent of Instructional Unit. [GE]

Early Childhood Education

CHILD DEVELOPMENT: BIRTH TO SIX
ECE 100 Summer Fall Winter Spring 3 Credits
33 hours of lecture
Online course in child growth and development from birth to age six years, including physical, emotional, cultural, cognitive, and creative age-related changes. Application to early childhood programs in centers and homes. [GE]

SCIENCE AND MATHEMATICS FOR YOUNG CHILDREN
ECE 102 Spring 3 Credits
33 hours of lecture
Explores the theories, issues and applications of science and math concepts in activities and environments for preschool aged children. Investigates the strategies of teaching through the discovery and use of science and math curriculums in their surroundings. [GE]

CHILD NUTRITION, HEALTH AND SAFETY
ECE 103 Fall 3 Credits
33 hours of lecture
Nutrition, health and safety information for parents, teachers, and others interested in young children. Promoting good eating habits, wholesome foods and menu planning for preschool and day care groups. Creating safe and healthy environments at home and at school. Childhood diseases. [GE]

INDIVIDUALIZED INSTRUCTION I
ECE 105 Winter 2 Credits
22 hours of lecture
Theories and practices for inclusive early childhood education programs. Explores personal perceptions of disabilities and commonly held biases and the impact of environmental influences on ability. Prerequisite: EDUC& 203 (or ECE 104). [GE]

INDIVIDUALIZED INSTRUCTION II
ECE 106 Spring 2 Credits
11 hours of lecture 22 hours of lab
Theories and practices for inclusive early childhood programs. Documents a student’s interests, strengths, and needs and develops an inclusion plan that supports those areas. Prerequisite: ECE 105. [GE]
EARLY CHILDHOOD EDUCATION WORKSHOPS
ECE 111  Fall Spring  1 – 3 Credits
33 hours of lecture
In-service and special topic seminars for those currently working with groups of young children. Each 3-week session is offered for one credit. Students may take any or all of the sessions. A maximum of six credits of ECE 111 may be applied to major area requirements for a degree in Early Childhood Education. [GE]

CURRICULUM AND GUIDANCE FOR SCHOOL-AGERS
ECE 112  Winter  4 Credits
44 hours of lecture
An overview of curriculum and programming for school-agers. Topics include environmental planning and organization, developmentally appropriate practices, guidance practices and the dynamics involved i.e., societal and family culture, documentation, emergent inclusive, and culturally responsive curriculum, the Project Approach, group games, and summer programming. NO onsite lab required for this course; observations conducted at off-site community locations.

ENVIRONMENTS FOR CHILDREN
ECE 114 Summer Fall  3 Credits
33 hours of lecture
Planning physical space appropriate to children's cognitive, physical, and socio-emotional development. Develop an understanding of the role of environments on children's learning and behavior including schedules, materials, room arrangement, and center-based learning. Incorporating diversity through the environment. [GE]

LITERATURE AND STORYTELLING FOR CHILDREN
ECE 116 Spring 3 Credits
33 hours of lecture
An overall look at the role storytelling and literature play in the development of the young child. Focuses on how storytelling and literature impact literacy, aesthetic development, cultural development, as well as how they support the whole child. Includes resources in the community, delivery techniques and how to select appropriate books and literature. [GE]

INTRODUCTION TO EARLY CHILDHOOD EDUCATION
ECE 121 Fall Winter  4 Credits
33 hours of lecture 22 hours of lab
History, philosophy, research, current trends and issues in early education. Developmentally appropriate practices in programs for children aged birth through 6 years. Two hours per week participation in the Early Childhood Education Laboratory School. One observation in an outside agency. [SE]

EARLY CHILDHOOD PROGRAM REG & BEST PRACT
ECE 123 Spring  2 Credits
22 hours of lecture
Overview of the minimum licensing requirements for ECE programs in the State of Washington as well as recommended best practices as set by the National Association for the Education of Young Children and other professional organizations. Includes application of the Americans With Disabilities Act to programs and practices. Covers recognition and reporting of child maltreatment. [GE]

GUIDING BEHAVIOR OF YOUNG CHILDREN
ECE 124 Summer Fall Winter  3 Credits
33 hours of lecture
Developing observational and interpretive skills in the guidance of young children. Specific approaches and guidance techniques. Focus on communication and negotiation skills. Curriculum planning from a developmental multicultural perspective. [GE]
ISSUES & TRENDS IN EARLY CHILDHOOD EDUCATION
ECE 131 Summer 3 Credits
33 hours of lecture
History, philosophy, research, current trends, and issues in early education. Developmentally appropriate practices in programs for children, birth through 6 years. One outside observation required in an early childhood program. Statewide, on-line only. Credit not allowed for both ECE 121 and 131. [GE]

OBSERVATION, DOCUMENTATION AND RECORDING
ECE 132 Summer Winter 3 Credits
33 hours of lecture
Introduction to age appropriate observation techniques for individual and groups of children in the early learning years, including methods of observations, collecting data, assessment tools and authentic assessment and the issues and trends of data collection in Early Childhood Education.

REFLECTIVE PRACTICES IN EARLY LEARNING
ECE 133 Summer Fall Winter 3 Credits
33 hours of lecture
A comprehensive overview and theoretical exploration of perspectives regarding multiple contexts including race, culture, ethnicity, language, class, gender, sexual orientation, atypical and typical abilities. Focus on biases that may impact learners’ work as reflective practitioners working with children and families. Focus on effective anti-bias strategies. Meets General Education transfer requirements.

ADMINISTRATION OF EARLY LEARNING PROGRAMS
ECE 134 Fall 3 Credits
33 hours of lecture
An overview of components necessary for child care personnel (family child care providers and center directors) to open, operate, and manage early learning programs that meet licensing, accreditation and other quality standards with a focus on program administration and operations.

PARTNERSHIPS WITH FAMILIES IN EARLY CARE & EDUC
ECE 135 Fall 3 Credits
33 hours of lecture
Developing effective partnerships with families in early care and education programs. Topics include family-centered theories and practices related to welcoming families and building relationships, communicating, working through conflicts, honoring diversity, family involvement and support, and parent education.

PROGRAMS FOR INFANTS AND TODDLERS
ECE 136 Winter 4 Credits
44 hours of lecture
Principles and theories of infant and toddler implications for curriculum. Focus on responsive learning environment approach that supports infant-toddler growth and total well-being. Includes care-giving practices, the schedule, the routines, the furnishings, and materials.

CHILD DEVELOPMENT: PRENATAL THROUGH AGE EIGHT
ECE 137 Spring 5 Credits
55 hours of lecture
Introduction to the physical, racial, ethnic, cultural, emotional, social, cognitive, and creative development of children from conception through eight years old. This course is designed for those who are majoring in Early Childhood Education or Education.

CHILD DEVELOPMENT: SCHOOL AGE THROUGH ADOLESCENCE
ECE 138 Fall 5 Credits
55 hours of lecture
Introduction to the physical, racial, ethnic, cultural, emotional, social, cognitive, creative development of children in middle childhood through adolescence years. This course is designed for those who are majoring in Early Childhood Education or Education.
### COOPERATIVE WORK EXPERIENCE
ECE 199  
Summer Fall Winter Spring  
1 – 5 Credits

165 hours of clinical

Supervised work experience in an approved job. Completion of specific learning objectives and employer evaluations. Completion of, or concurrent in, HDEV 195, 198, or 200 required. Prerequisite: ECE 121, 209 and 210, and consent of Instructional Unit. [GE]

### CHILD AND FAMILY
ECE 202  
Summer Spring  
3 Credits

33 hours of lecture

An ecological perspective of the family and the socialization of children. Areas of focus include an examination of family structures, historical and economic perspectives, stressors, family dynamics and multiple perspectives of culture with ensuing impacts on families participating in early childhood programs. [GE]

### EARLY LANGUAGE FACILITATION
ECE 208  
Winter  
2 Credits

22 hours of lecture

A comprehensive overview of early speech and language development. Theoretical exploration of language acquisition in the context of psychosocial, socio-cultural, biosocial, and cognitive development. [GE]

### LEARNING EXPERIENCES FOR YOUNG CHILDREN I
ECE 209  
Spring  
3 Credits

33 hours of lecture

Explore curriculum planning processes with a special focus on an environmental approach using observations of children's play and knowledge of child development. Areas of study include the self, social development, dramatic play, literacy and art. Concurrent enrollment in ECE 210 required. Prerequisite: Completion of, or concurrent enrollment in ECE 124. [GE]

### LEARNING EXPERIENCES FOR YOUNG CHILDREN I LAB
ECE 210  
Spring  
3 Credits

66 hours of lab

Lab experience in Early Childhood Education Laboratory School. Plan, implement and analyze plans in relation to relevant topics in ECE 209. Concurrent enrollment in ECE 209 required. Prerequisite: Completion of, or concurrent enrollment in, ECE 124. [GE]

### LEARNING EXPERIENCES FOR YOUNG CHILDREN II
ECE 211  
Fall  
3 Credits

33 hours of lecture

Further develop curriculum planning processes with a special emphasis on scheduling and project approach planning using observations of children's play and knowledge of child development. Areas of study include science, math, group experiences, music/movement, and outdoors. Conduct case studies and provide peer support and feedback. Concurrent enrollment in ECE 212 required. Prerequisite: ECE 209, or consent of Instructional Unit. [GE]

### LEARNING EXP FOR YOUNG CHILDREN II LAB
ECE 212  
Fall  
3 Credits

66 hours of lab

Lab experience in Early Childhood Education Laboratory School. Plan, implement and analyze plans in relation to relevant topics in ECE 211. Concurrent enrollment in ECE 211 required. Prerequisite: ECE 210, or consent of Instructional Unit. [GE]

### LEARNING EXPERIENCES FOR YOUNG CHILDREN III
ECE 213  
Winter  
3 Credits

33 hours of lecture

Further develop curriculum planning processes with special emphasis on emergent and integrated thematic approaches while applying knowledge of multiple intelligences. Areas of study include parent/teacher relationships, teacher development stages, staff communication and relationships. In-depth study of individual and cultural
diversity as related to knowledge of child development. Concurrent enrollment in ECE 214 required. Prerequisite: ECE 211, or consent of Instructional Unit. [GE]

**LEARNING EXP FOR YOUNG CHILDREN III LAB**
ECE 214  
Winter  
66 hours of lab  
Lab experiences in Early Childhood Education Laboratory School. Plan, implement and analyze plans in relation to relevant topics in ECE 213. Concurrent enrollment in ECE 213 required. Prerequisite: ECE 212, or consent of Instructional Unit. [GE]

**EARLY CHILDHOOD SEMINAR**
ECE 215  
Spring  
22 hours of lecture  
Seminar on professionalism, ethics and issues in teaching and administration. Concurrent enrollment in ECE 199, 15 hours per week required as field placement for students in teaching degree program. Prerequisite: ECE 214, or consent of Instructional Unit. [GE]

**SELECTED TOPICS**
ECE 280  
Fall Winter Spring  
33 hours of lecture  
Selected topics in Early Childhood Education as listed in the quarterly class schedule. May be repeated for credit. [GE]

**SPECIAL PROJECTS**
ECE 290  
Fall Winter Spring  
1 – 3 Credits  
Opportunity to plan, organize and complete special projects approved by the department. Prerequisite: Consent of Instructional Unit. [GE]

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**Economics**

**INTRODUCTION TO ECONOMICS**
ECON 101  
Fall Winter Spring  
33 hours of lecture  
Survey of economics. Key topics include current economic issues and processes related to ways individuals, groups, and whole societies produce, distribute, and utilize economic resources. This course is good preparation for the advanced Microeconomics and Macroeconomics courses. Credit not allowed for both Economics 101 and Economics 110.

**ECONOMIC GEOGRAPHY**
ECON 107  
Spring  
55 hours of lecture  
Broad patterns, courses, and consequences of interrelationships between economic and geographic forces, processes, and resources. Location of economic activity, population dynamics, strategic resources, global economic flashpoints, patterns/consequences of regional integration. Same as GEOG 107. Credit not allowed for both ECON 107 and GEOG 107. [SE, SS]

**INTRODUCTION TO THE GLOBAL ECONOMY**
ECON 110  
55 hours of lecture  
Introduction to economic concepts and their use in the global economy. Topics include basic microeconomics and macroeconomics, international trade, balance of payments, exchange rates, international institutions, energy, war, and terrorism. Intended for economics and non-economics majors. This course is an alternative for Economics 101, with additional topics including in-depth study of international economic issues. Credit not allowed for both Economics 101 and Economics 110. [SE, SS]
THE ECONOMIES OF THE PACIFIC RIM
ECON 111  Fall  5 Credits
55 hours of lecture
The events and people shaping the last 150 years of Asia-Pacific economics and history. Relate these to the shape of the Pacific Basin relationships. Economic resources and interdependence in the Pacific Basin, the United States in the Pacific, the collisions between the East and West, the changing attitudes toward power, authority, democracy, tradition and progress. [SE, SS]

THE ECONOMIES OF THE AMERICAS
ECON 112  Winter  5 Credits
55 hours of lecture
The economies and cultural characteristics of the nations of the United States. Gain an integrated perspective and greater appreciation of the nations which comprise Central and South America, a diverse region which encompasses great wealth and extreme poverty, small and large nations, democratic and totalitarian traditions, and complex multi-cultural heritage. [SE, SS]

INTERNATIONAL ECONOMICS
ECON 120  Spring  3 Credits
33 hours of lecture
International economics, for both economics majors and non-economic majors, emphasizes the fundamental economic concepts for understanding today’s global economy. Topics include the basic concepts and tools of international economic analysis, including trade, trade policy, trading blocs, protectionism, exchange rate determination, managing currencies, multi-national corporations, labor, developing countries, and the environment. Prerequisite: A grade of “C” or better in ECON 101. [SE, SS]

MICRO ECONOMICS
ECON& 201  Winter Spring  5 Credits
55 hours of lecture
Essential market processes, structures, issues, and variables governing how individuals, firms and governmental entities allocate resources, produce and distribute goods and services, determine prices, evaluate trade-offs and effectively compete and grow. Prerequisite: ECON 101 or MATH 095 or consent of Instructional Unit. [SE, SS]

MACRO ECONOMICS
ECON& 202  Fall Winter  5 Credits
55 hours of lecture
Broad economic principles, issues, structures, processes, and variables governing the dynamics of the United States and global economies. Problems of economic organization, market processes, role of government in the economy and society, money and banking processes and issues, measurement and determination of economic aggregates, fiscal and monetary policies, economic growth and development and international trade. Prerequisite: ECON 101 or MATH 095 or consent of Instructional Unit. [SE, SS]

SELECTED TOPICS
ECON 280  Fall Winter  1 – 5 Credits
55 hours of lecture
Focus on selected topics in Economics. Because the course varies in theme and content, it is repeatable for credit.

SPECIAL PROJECTS
ECON 290  Summer Fall Winter Spring  1 – 5 Credits
Opportunity to plan, organize and complete special projects approved by the department. Prerequisite: Consent of Instructional Unit. [GE]
Education

COOPERATIVE WORK EXPERIENCE
EDUC 199  Fall Winter Spring  1 – 5 Credits
165 hours of clinical
Supervised work experience in education. Completion of specific learning objectives and employer evaluation. Completion of, or concurrent enrollment in, HDEV 195, 198, or 200 required. Prerequisite: Consent of Instructional Unit. [GE]

INTRODUCTION TO EDUCATION
EDUC& 201  Fall Winter Spring  3 Credits
33 hours of lecture
Overview of education as a discipline, a philosophy, and a profession. Recommended for future teachers and paraprofessionals. Concurrent enrollment in EDUC 210 required. [SE]

EXCEPTIONAL CHILD
EDUC& 203  Fall  3 Credits
33 hours of lecture
Introduction to various topics regarding children with special needs and exploration of concepts of inclusion and individualized instruction. [GE]

INTRODUCTORY FIELD EXPERIENCE
EDUC 210  Fall Winter Spring  3 Credits
11 hours of lecture  44 hours of lab
Orientation to teaching and life in the American system of schooling. Supervised volunteer field experience with a weekly, one-hour seminar. Concurrent enrollment in EDUC& 201 required. [GE]

Electronics Technology

PROFESSIONAL DEVELOPMENT FOR TECHNICIANS
ELEC 100  Fall  3 Credits
22 hours of lecture  22 hours of lab
Development of skills required for successful job placement and career development in technical occupations. Topics will include resume writing, effective job search techniques, interviewing skills, professional attitudes, business ethics, leadership development, and creating and posting an on-line résumé. [GE]

DC FUNDAMENTALS
ELEC 101  Fall Winter  6 Credits
11 hours of lecture  44 hours of lab
Fundamentals of DC circuits with emphasis on algebraic analysis of resistive networks. Includes hands on experience in DC circuit construction, measurement and troubleshooting. Prerequisite: A grade of “C” or better in ENGL 098 or equivalent placement score, MATH 090 or higher. [GE]

AC FUNDAMENTALS
ELEC 102  Fall Winter  6 Credits
44 hours of lecture  44 hours of lab
Fundamentals of AC resistive, capacitive and inductive networks with emphasis placed on methods of analysis and circuit characteristics. Includes hands on experience in AC circuit construction, measurement and troubleshooting. Prerequisite: A grade of “C” or better in ELEC 101 and ENGL 098 or equivalent placement score and MATH 090 or higher. [GE]
INTRODUCTION TO MICROCOMPUTERS
ELEC 111  Winter Spring  3 Credits
11 hours of lecture  44 hours of lab
Introduction to personal computer hardware and system software. Operating systems, PC subsystems including video displays and adapters, disk drives, I/O, and memory expansion. Basic troubleshooting techniques. [GE]

SEMICONDUCTORS I
ELEC 121  Spring  6 Credits
44 hours of lecture  44 hours of lab
Fundamentals and applications of diodes, transistors and special purpose semiconductor devices. Includes hands on experience in semiconductor circuit construction, measurement and trouble shooting. Prerequisite: A grade of “C” or better in ELEC 102 or consent of Instructional Unit. [GE]

COOPERATIVE WORK EXPERIENCE
ELEC 199 Summer Fall Winter Spring  1 – 5 Credits
165 hours of clinical
Supervised work experience in an approved job. Completion of specific learning objectives and employer evaluation. Consent of Instructional Unit required. [GE]

DIGITAL PRINCIPLES II
ELEC 210  Spring  6 Credits
44 hours of lecture  44 hours of lab
Examines the theory and characteristics of more advanced digital integrated circuits including flip-flops, counters, shift registers, multiplexers, memories, and analog to digital and digital to analog converters. Emphasis is placed on digital devices, circuits and systems in practical applications, and on troubleshooting digital circuits and systems. Prerequisite: A grade of “C” or better in ELEC 209 or concurrent enrollment in ELEC 209 or consent of Instructional Unit. [GE]

PNEUMATICS/HYDRAULICS/VACUUM
ELEC 215 Fall  3 Credits
11 hours of lecture
Theory and principles of basic fluid power, as applied to hydraulic, pneumatic, and vacuum systems. Opportunity to learn fluid power’s control and uses, the nomenclature of design, component selection, and the effect on the operation and function of the system. Lecture and demonstrations will be presented. Concurrent enrollment in ELEC 215L required. [GE]

INTRO TO STATISTICAL PROCESS CONTROL
ELEC 240 Fall  5 Credits
55 hours of lecture
Introduction to the foundations of statistics, basics of statistical control, acceptance sampling, types of control charts, manufacturing applications and strategies. Prerequisite: Grade of “C” or better in MATH 099 or eligibility for 100 level Math classes. [GE]

SELECTED TOPICS
ELEC 280 Summer Fall Winter Spring  1 – 6 Credits
66 hours of lecture
Course focuses on selected topics in Electronics. Topics vary, and course theme and content change to reflect new topics. Because the course varies in content, it is repeatable for credit for different topics. [GE]

SPECIAL PROJECTS
ELEC 290 Fall Winter Spring  1 – 3 Credits
Opportunity to plan, organize and complete special projects approved by the department. Prerequisite: Consent of Instructional Unit. [GE]
Emergency Medical Technician (EMT)

**EMERGENCY MEDICAL TECHNICIAN – BASIC**
EMT 103   10 Credits

66 hours of lecture  66 hours of lab

120 hours of training in emergency procedures and 10 hours of in-hospital observation. Each lesson provides for supervised practice of skills taught in that lesson. As required by the DOT, this course is under the supervision of a physician and lay-coordinator. Meets the requirements of State EMT certification. Must be 18 years of age and have proof of current Healthcare Provider Level CPR (CPR 032) or acquire within the first two weeks of the course. Immunizations must be up-to-date. Students must purchase text available at Clark College Bookstore. Bring text to class. [GE]

Engineering

**HP GRAPHING CALCULATOR**
ENGR 080   1 Credit

11 hours of lecture

Basic and advanced calculator function. Graphing matrices, statistics, conversions, programming and directories are included. Additional topics are covered as required. Developed to help students become more proficient using their HP calculators. Prerequisite: “C” or better in MATH 030. [SE]

**ENGINEERING AND COMPUTER SCIENCE ORIENTATION**
ENGR 101  Fall Winter Spring 1 Credit

22 hours of lab

Orientation for students interested in Engineering and Computer Science. Topics include effective planning, communication, teamwork, and exposure to Engineering and Computer Science educational/career opportunities and challenges. Credit not allowed for both ENGR 101 and CSE 101.

**INTRODUCTION TO DESIGN**
ENGR& 104  Fall Winter Spring 5 Credits

33 hours of lecture  44 hours of lab

Introduction to the engineering method of problem solving through guided Engineering design projects. Focus on developing group skills, understanding the effects of different learning styles, producing strategies for innovation, and fostering creativity in problem solving.

**INTRO TO AEROSPACE ENGINEERING**
ENGR 107  Spring 2 Credits

11 hours of lecture  22 hours of lab

Introduction to general aerospace industry topics: lift, drag, propulsion, performance, stability and control, design, and testing. Includes a team approach to design activities such as paper aircraft design and high powered rocket construction. Prerequisite: ENGR& 104 (or ENGR 110) or consent of Instructor. [SE]

**INTRODUCTION TO ENGINEERING**
ENGR 109  Fall Winter Spring 5 Credits

55 hours of lecture

Introduction to the engineering profession: its branches, principles, and practices. Engineering problem-solving, methods of analysis and design, and an introduction to engineering fundamentals. Prerequisite: MATH 103 or equivalent, and completion of, or concurrent enrollment in MATH 111 or equivalent. [SE]

**ENGINEERING SKETCHING AND VISUALIZATION**
ENGR 113  Fall Winter Spring 2 Credits

11 hours of lecture  22 hours of lab

Engineering communication and graphics through freehand sketching. Visualization and development of orthographic theory, scales, and lettering. Prerequisite: A grade of “C” or better in MATH 095.
GEOMETRIC DIMENSIONING AND TOLERANCING
ENGR 115   2 Credits
11 hours of lecture  22 hours of lab
Basics of geometric dimensioning and tolerancing: what it is and why use it, GDT symbols and their use, maximum and least material conditions, datums, and geometric characteristics. AutoCAD will be used to dimension drawings using GDT. Prerequisite: A grade of “C” or better in ENGR 113 and either ENGR 140 or ENGR 150. [SE]

INTRO TO ELECTRICAL/COMPUTER SCI & ENGINEERING
ENGR 120  Fall  5 Credits
44 hours of lecture  33 hours of lab
Introduction to electrical engineering, computer science and engineering processes, principles, problem-solving techniques, and contemporary tools. Application of in-class learning to hands-on projects and exploration of current industry trends and implications. Prerequisite: A grade of “C” or better in MATH 103.

FIELD SURVEY I
ENGR 121  Fall  5 Credits
33 hours of lecture  44 hours of lab
Basic theory of surveying, measurement and calculation. Topics include: measurement and determination of boundaries, areas, and shapes; location through traversing techniques; error theory; compass adjustments; public land system; use of programmable calculators; and principles of measurements of distances, elevation and angles. Concurrent enrollment in ENGR 121 lab required. Prerequisite: A grade of “C” or better in MATH& 151 (or MATH 113).

BASIC AUTOCADD
ENGR 140  Fall Winter Spring  4 Credits
16 hours of lecture  55 hours of lab
Basics of AutoCAD, using current version of the software: screen features, drawing and editing objects, working with 2D and 3D, using both model space and layouts, opening and saving files, and using templates. Recommended for anyone comfortable using a PC. [SE]

BASIC SOLIDWORKS
ENGR 150  Summer Fall Winter Spring  4 Credits
16 hours of lecture  55 hours of lab
Parametric solids modeling with SolidWorks, covering the breadth of the software at a basic level. Create part, assembly, and drawing files, including design tables and multiple configurations. Recommended for anyone with good computer skills. [SE]

COOPERATIVE WORK EXPERIENCE
ENGR 199  Summer Fall Winter Spring  1 – 5 Credits
165 hours of clinical
Supervised work experience in an approved job. Completion of specific learning objectives and employer evaluation. Completion of, or concurrent enrollment in, HDEV 195, 198, or 200. Prerequisite: Consent of Instructional Unit. [GE]

ELECTRICAL CIRCUITS
ENGR& 204  Fall  5 Credits
44 hours of lecture  22 hours of lab
Basic concepts of AC and DC electrical circuits. Analyze and design voltage and current relationships for series and parallel RLC circuit. Use of Kirchhoff’s laws, Thevenin/Norton theorems, Operational Amplifier circuits, and Step/Natural/Steady-State circuit response. Use of test and measurement equipment in a laboratory setting. Prerequisite: MATH& 152 (or MATH 211).

STATICS
ENGR& 214  Fall Winter  5 Credits
55 hours of lecture
Solution of two and three dimensional vector systems using vector algebra notation and free-body diagrams.
Friction, centroids, moment of inertia, radius of gyration, and loads involved in structures, machines, and trusses. Prerequisite: MATH& 152 (or MATH 211). [SE]

**AUTOCAD CUSTOMIZATION**
ENGR 214 Spring 3 Credits
11 hours of lecture 44 hours of lab
Advanced AutoCAD development. Customization and programming AutoLISP. Prerequisite: ENGR 114 or consent of Instructional Unit. [SE]

**DYNAMICS**
ENGR& 215 Winter Spring 5 Credits
55 hours of lecture
Kinematics and kinetics of particles, systems of particles and rigid bodies. Force/acceleration, work/energy and impulse/momentum problem solving techniques will be applied to two and three dimensional systems. Prerequisite: ENGR& 214 and MATH 152 or (ENGR 211 and MATH 211). [SE]

**MATERIALS SCIENCE**
ENGR 221 Spring 5 Credits
55 hours of lecture
Basic structure and properties of materials. Phase equilibrium and transformations. Mechanical properties, electronic structure, thermal, electrical, and magnetic properties. Prerequisite: CHEM& 142 (or CHEM 132). [SE]

**THERMODYNAMICS**
ENGR& 224 Spring 5 Credits
55 hours of lecture
Explores the fundamentals of thermodynamics. Investigates the thermodynamic properties of matter with emphasis on ideal and real gases and introduces the concepts of heat and work. Defines the first and second laws of thermodynamics and explores their impact with examples. Uses thermodynamic cycles to apply the concepts of learned and relates the principles to applications. Prerequisite: MATH 211 and PHYS 201. [SE]

**MECHANICS OF MATERIALS**
ENGR& 225 Spring 5 Credits
55 hours of lecture
Concepts of stress and strain for deformable objects. Axial, torsional and bending loading, combined loadings. Column loading and stability with other applied topics. Prerequisite: ENGR 211 or ENGR& 214, and MATH 211 or MATH& 152. [SE]

**MANUFACTURING PROCESSES**
ENGR 239 5 Credits
33 hours of lecture 44 hours of lab
Introduction to manufacturing processes, emphasizing methods and practices used when machining, welding, and fabricating metals and related materials. [SE]

**DIGITAL LOGIC DESIGN**
ENGR 250 Fall 5 Credits
44 hours of lecture 33 hours of lab
Digital logic design, testing and implementation, including Boolean Algebra, Karnaugh map and design of logic circuits to solve practical problems using sequential/combinational/synchronous/asynchronous circuits, application of standard SSI/MSI/LSI logic systems, design/test/implement development cycle and Hardware Description Language (HDL). Cannot receive credit for both ENGR 237 and ENGR 250. Prerequisite: A grade of “C” or better in ENGR 120 (or CSE 120).

**ELECTRICAL CIRCUITS AND SIGNALS**
ENGR 252 Winter 5 Credits
44 hours of lecture 33 hours of lab
Continuation of Electrical Circuits. Analysis and design of RLC circuits in sinusoidal steady state, complex-
frequency domain of linear and lumped parameter circuits, active/passive filter circuits, poly phase and two-port circuits. Application of Fourier series, Fourier transforms and computer tools in circuit analysis. Prerequisite: ENGR& 204 (or ENGR 251). [SE]

**SIGNALS AND SYSTEMS**  
ENGR 253  Spring  5 Credits  
44 hours of lecture  33 hours of lab  
Concepts and applications in signal processing and linear system theory. Utilization of Fourier Analysis in both continuous and discrete time signals and systems. Role of sampling and the process of reconstructing a continuous-time signal from its samples and basics of communication systems. Application of Laplace transform and Z-transform. Prerequisite: ENGR 252.

**DIGITAL SYSTEMS AND MICROPROCESSORS**  
ENGR 270  Winter  5 Credits  
44 hours of lecture  33 hours of lab  
Continuation of the Digital Design sequence. Covering synchronous/asynchronous state machines, shift registers, arithmetic circuits and devices, microprocessor internal and system architecture, design and subsystem interfacing, assembly language, and programmable logic devices, design for test, documentation standards, and use of computer-based tools. Prerequisite: A grade of “C” or better in ENGR 250. [SE]

**SELECTED TOPICS**  
ENGR 280  Fall Winter Spring  1 – 5 Credits  
55 hours of lecture  
The course focuses on selected topics in Engineering. Topics vary, and course theme and content change to reflect new topics. Because the course varies in content, it is repeatable for credit for different topics. [SE]

**SPECIAL PROJECTS**  
ENGR 290  Fall Winter Spring  1 – 6 Credits  
Opportunity to plan, organize and complete special projects approved by the department. Prerequisite: Consent of Instructional Unit. [GE]

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**English**

**WRITING FUNDAMENTALS**  
ENGL 097  Summer Fall Winter Spring  3 Credits  
33 hours of lecture  
Emphasis on writing complete, correct sentences and unified, coherent, well-developed paragraphs. Short essays and selected readings assigned. Students build skills through pre-writing, drafting, revising, and editing. In-class and out-of-class essays required. Prerequisite: Recommending score on the College writing skills placement test for ENGL 097.

**WRITING FUNDAMENTALS**  
ENGL 098  Summer Fall Winter Spring  5 Credits  
55 hours of lecture  
Emphasis on expository writing and increasing control of grammar and mechanics. Skills include summarizing and writing essays. Students develop skills through pre-writing, drafting, revising, and editing. In-class and out-of-class essays required. Prerequisite: A grade of “C” or better in ENGL 097, or recommending score on the College writing skills placement test for ENGL 098.

**ENGLISH COMPOSITION I**  
ENGL& 101  Summer Fall Winter Spring  5 Credits  
55 hours of lecture  
Exposition and argument, emphasizing critical thinking in response to electronic and print texts. Focus on exploring, developing, and communicating ideas in a voice appropriate to the audience. Students strengthen skills through pre-writing, drafting, revising, and editing. In-class and out-of-class essays required. Prerequisite: A grade
of “C” or better in ENGL 098 taken at 5 credits or recommending score on the writing skills placement test for ENGL 101. [C, SE]

**ENGLISH COMPOSITION II**
ENGL& 102  Summer Fall Winter Spring  5 Credits
55 hours of lecture
Continued studies in exposition and argument emphasizing the research paper. Focus on analysis and synthesis of electronic and print texts in the context of supporting the writer’s ideas with appropriate documentation. Students refine skills through pre-writing, drafting, revising, and editing. Prerequisite: A grade of “C” or better in ENGL 101. [C, SE]

**ADVANCED ENGLISH COMPOSITION**
ENGL 103  3 Credits
33 hours of lecture
Emphasis on composing essays on complex ideas of cultural importance. Assignments based on reading and research in art, science, philosophy, and politics. Prerequisite: ENGL& 102 (or ENGL 102). [C, SE]

**ENGLISH GRAMMAR**
ENGL 105  Spring  5 Credits
55 hours of lecture
Description and analysis of the structure of English language, using traditional grammar and syntax. Designed to fulfill the grammar requirement for English majors seeking Washington State teacher certification in English. [SE]

**WRITING ABOUT FILM**
ENGL 108  3 Credits
33 hours of lecture
Focus on writing effective research essays analyzing international films. Emphasis on the composition process and the development of writing skills and evaluation sources, including prewriting, drafting, revising, editing, and documenting. Introduction to film terminology and techniques and the major approaches used in writing essays about films, including film history, national cinemas, genres, auteurs, and formalism, and ideological studies. Prerequisite: A grade of “C” or better in ENGL& 101.

**WRITING ABOUT THE SCIENCES**
ENGL 109  Fall Winter Spring  5 Credits
55 hours of lecture
Continued studies in writing expository essays, focusing on topics in the life sciences and physical sciences. Emphasis on critical reading of published scientific research and appropriate use of peer-reviewed journals to support the writer’s ideas. Expanding academic writing skills of pre-writing, drafting, revising, editing, and documenting. Prerequisite: A grade of “C” or better in ENGL& 101 (or ENGL 101).

**COMPOSITION FOR LITERATURE**
ENGL 110  5 Credits
55 hours of lecture
Continued studies in writing essays of exposition and argument emphasizing the interpretation of literature, with focus on critical reading of literary texts using theories and appropriate use of documented sources to support the writer’s ideas. Expanding academic writing skills of pre-writing, drafting, revising, editing, and documenting. Prerequisite: ENGL& 101 (ENGL 101).

**CREATIVE WRITING**
ENGL 121  Fall  3 Credits
33 hours of lecture
Students may restrict themselves to writing poetry, short stories, plays or may choose to work in several forms. Helps students determine what they will say and how they will say it. Prerequisite: A grade of “B” or better in ENGL 098, a grade of “C” or better in ENGL 099, or recommending score on the college writing skills placement test for ENGL& 101 (ENGL 101). [HB, SE]
CREATIVE WRITING
ENGL 122  Winter  3 Credits
33 hours of lecture
Students may write poetry, short stories, plays or may choose to work in several forms. Helps students determine what they will say and how they will say it. Prerequisite: A grade of “B” or better in ENGL 098, a grade of “C” or better in ENGL 099, or recommending score on the college writing skills placement test for ENGL& 101 (or ENGL 101). [HB, SE]

CREATIVE WRITING
ENGL 123  Spring  3 Credits
33 hours of lecture
Students may write poetry, short stories, plays or may choose to work in several forms. Helps students determine what they will say and how they will say it. Prerequisite: A grade of “B” or better in ENGL 098, a grade of “C” or better in ENGL 099, or a recommending score on the college writing skills placement test for ENGL& 101 (or ENGL 101). [HB, SE]

FICTION WRITING
ENGL 125  Fall Winter Spring  3 Credits
33 hours of lecture
Fundamentals of writing fiction with an emphasis on short fiction. Writing workshop format. Develops skills for critiquing student fiction and introduces publication strategies. Completion of ENGL 101 recommended, but not required.

POETRY WRITING
ENGL 126  Spring  3 Credits
33 hours of lecture
Class discussion of student work, development of tools for self-criticism, and strategies for getting poetry published. [HB, SE]

INTRODUCTION TO LITERATURE
ENGL 130  Fall Winter Spring  3 Credits
33 hours of lecture
An introduction to poetry, fiction, and dramatic literature, and to the language and principles of literary analysis. [HA, SE]

INTRODUCTION TO POETRY
ENGL 131  Fall Winter Spring  3 Credits
33 hours of lecture
Study of poetry, poetic forms, and the language and principles of literary analysis. [HA, SE]

INTRODUCTION TO DRAMATIC LITERATURE
ENGL 132  Fall Winter Spring  3 Credits
33 hours of lecture
Study of drama as both literature and theater, from historical, philosophical and artistic perspectives. [HA, SE]

INTRODUCTION TO FICTION
ENGL 133  Fall Winter Spring  3 Credits
33 hours of lecture
Study of fiction in both short story and novel form, including classic and contemporary examples. Introduction to the language and principles of literary analysis. [HA, SE]

INTRODUCTION TO TECHNICAL WRITING
ENGL 135  Fall Winter Spring  5 Credits
55 hours of lecture
Introduction to principles for developing work-world documents, with emphasis on writing business letters, memorandums, resumes, instructions, summaries, proposals, and informal reports. For students of all scientific, technical,
WOMEN IN LITERATURE
ENGL 140  Spring  3 Credits
33 hours of lecture
Study of fiction, nonfiction, poetry, and drama written by women reflecting the female experience. [HA, SE]

SCIENCE FICTION AND FANTASY
ENGL 143  Fall  3 Credits
33 hours of lecture
Study of speculative fiction from fantasy to hard science with attempts to define its particular qualities and place in modern literature. [HA, SE]

DETECTIVE FICTION
ENGL 145  3 Credits
33 hours of lecture
Introduction to detective fiction, its typical styles and techniques, its interactive nature, and its capacity for social critique. Topics include early detective authors and the evolution of the popular image of the detective in American and British cultures.

INTRODUCTION TO CLASSICAL MYTHOLOGY
ENGL 150  Winter  3 Credits
33 hours of lecture
Study of significant world myths, including their sources and literary expressions. [HA, SE]

THE BIBLE AS LITERATURE
ENGL 152  3 Credits
33 hours of lecture
Study of the varied genres of Biblical literature from literary, historical, and cultural perspectives. [HA, SE]

INTRODUCTION TO THE NOVEL
ENGL 156  Winter Spring  3 Credits
33 hours of lecture
Study of the novel from historical, artistic, and thematic perspectives. Introduction to the language and principles of literary analysis.

COOPERATIVE WORK EXPERIENCE
ENGL 199  1 – 5 Credits
165 hours of clinical
For students interested in careers that emphasize writing, co-op work experience offers credit for supervised work in writing-related jobs. Completion of, or concurrent enrollment in, HDEV 195, 198, or 200 required. Prerequisite: Consent of Instructional Unit. [GE]

BUSINESS COMMUNICATIONS
ENGL 212  Fall Winter Spring  3 Credits
33 hours of lecture
Developing proficiency in written and oral communications appropriate for business by composing, organizing, and editing letters, reports, memos, emails, and presentations from a variety of business cases and managerial interviews. Emphasis on team work, collaboration, diversity, intercultural communication, and the delivery of oral presentations, using specialized software. Same as BUS 211. Prerequisite: ENGL& 101 (ENGL 101) or consent of Instructional Unit. [GE, SE]

TECHNICAL WRITING
ENGL& 235  5 Credits
55 hours of lecture
Study of advanced writing skills for typical work-world documents in a business/technical environment, with em-
emphasis on document format, audience analysis, correspondence, formal and informal reports, research, and documentation. Prerequisite: A grade of "C" or better in ENGL& 101 or ENGL 135.

### INTRODUCTION TO QUEER LITERATURE

**ENGL 254  Winter 3 Credits**

33 hours of lecture

An introductory survey of literature relevant to the gay, lesbian, bisexual, and trans communities and their historical predecessors from pre-modern times to the present. Prerequisite: College level reading and writing recommended.

### WORLD LITERATURE

**ENGL 260  Fall 3 Credits**

33 hours of lecture

An introductory survey of literature relevant to the gay, lesbian, bisexual, and trans communities and their historical predecessors from pre-modern times to the present. Prerequisite: College level reading and writing recommended.

### WORLD LITERATURE

**ENGL 261  Winter 3 Credits**

33 hours of lecture

Masterpieces of the Ancient World through the fourteenth century. Literature is read within its historical and cultural setting. Eligibility for ENGL& 101 (or ENGL 101) recommended. [HA, SE]

### WORLD LITERATURE

**ENGL 262  Spring 3 Credits**

33 hours of lecture

Masterpieces of world literature from the nineteenth century through the contemporary period. Literature is read within its historical and cultural settings. Eligibility for ENGL& 101 (or ENGL 101) recommended. [HA, SE]

### BRITISH LITERATURE

**ENGL 264  Fall 3 Credits**

33 hours of lecture

Classics of British literature from the eighth to the seventeenth century. Literature is read within its historical and cultural settings. Eligibility for ENGL& 101 (or ENGL 101) recommended. [HA, SE]

### BRITISH LITERATURE

**ENGL 265  Winter 3 Credits**

33 hours of lecture

Classics of British literature from the seventeenth to the nineteenth century. Literature is read within its historical and cultural setting. Eligibility for ENGL& 101 (or ENGL 101) recommended. [HA, SE]

### BRITISH LITERATURE

**ENGL 266  Spring 3 Credits**

33 hours of lecture

Classics of British literature from the nineteenth century to the present. Literature is read within its historical and cultural settings. Eligibility for ENGL& 101 (or ENGL 101) recommended. [HA, SE]

### AMERICAN MULTIETHNIC LIT

**ENGL 267  3 Credits**

33 hours of lecture

Survey of American multiethnic writing from Civil Rights era to the present. Emphasis on writings as a “window” to American ethnic experience, culture, and history within larger American historical contexts, encouraging students to develop understanding of political, social, and historic climate as it helps shape and is shaped by literature.

### AMERICAN LITERATURE

**ENGL 268  Fall 3 Credits**

33 hours of lecture

Survey of American writing from the colonial period to the Civil War. Literature is read within its historical and cultural setting. Eligibility for ENGL& 101 (or ENGL 101) recommended. [HA, SE]
AMERICAN LITERATURE
ENGL 269  Winter  3 Credits
33 hours of lecture
Survey of American writing from the Civil War through World War I. Literature is read within its historical and cultural setting. Eligibility for ENGL& 101 (ENGL 101) recommended. [HA, SE]

AMERICAN LITERATURE
ENGL 270  Spring  3 Credits
33 hours of lecture
Survey of American writing from World War I to the present. Literature is read within its historical and cultural setting. Eligibility for ENGL& 101 (ENGL 101) recommended. [HA, SE]

INTRODUCTION TO SHAKESPEARE
ENGL 272  Winter Spring  3 Credits
33 hours of lecture
Readings of selected tragedy, comedy and historical plays of Shakespeare. Eligibility for ENGL& 101 (ENGL 101) recommended. [HA, SE]

FICTION WRITING
ENGL 275  Fall Winter Spring  3 Credits
33 hours of lecture
Fundamentals of writing fiction with an emphasis on short fiction. Writing workshop format. Develops skills for critiquing student fiction and introduces publication strategies. Completion of ENGL 101 recommended, but not required.

POETRY WRITING
ENGL 276  Spring  3 Credits
33 hours of lecture
Continuation of ENGL 126. Further development of the principles of writing and marketing poetry. Prerequisite: ENGL 126. [HB, SE]

SELECTED TOPICS
ENGL 280   1 – 3 Credits
33 hours of lecture
Course focuses on selected topics in English. Topics vary, and course theme and content change to reflect new topics. Because the course varies in content, it is repeatable for credit for different topics. [SE]

SPECIAL PROJECTS
ENGL 290   1 – 5 Credits
Opportunity to plan, organize, and complete special projects approved by the department. Prerequisite: Consent of Instructional Unit. [GE]

English as a Non-Native Language

CULTURE IN THE USA
ENL 030  Fall Winter Spring  1 Credit
11 hours of lecture
Orientation to SW Washington life and to American college life. Activities include the written and the unwritten rules of communication and sharing cultures. Prerequisite: Qualifying score on ENL placement test or consent of ENL Department or International Advising.

COMPUTER LITERACY FOR ENL STUDENTS
ENL 033  Fall Winter Spring  1 Credit
11 hours of lecture
Introduction to Internet, word processing and e-mail. Prerequisite: Qualifying score on ENL placement test or consent of ENL Department or International Advising.
GRAMMAR 3
ENL 053  Fall Winter Spring  3 Credits
33 hours of lecture
Intermediate grammar course focusing on the application and correct use of grammar when speaking and writing fairly simple academic English. Prerequisite: A grade of "C" or better in ENL 072 or qualifying score on ENL placement test or consent of ENL Department or International Advising.

GRAMMAR 4
ENL 054  Fall Winter Spring  3 Credits
33 hours of lecture
Intermediate grammar course focusing on the application and correct use of English grammar when communicating complex thoughts in writing or in spoken form. Prerequisite: A grade of "C" or better in ENL 053 or qualifying score on ENL placement or consent of ENL Department or International Advising.

GRAMMAR 5
ENL 055  Fall Winter Spring  3 Credits
33 hours of lecture
Continuation of ENL 054. Advanced study of English grammar and its structure with emphasis on application. Prerequisite: A grade of "C" or better in ENL 054 or qualifying score on ENL placement test or consent of ENL Department or International Advising.

READING, LISTENING AND SPEAKING ENGLISH I
ENL 061  Fall Winter Spring  6 Credits
44 hours of lecture  44 hours of lab
Pronunciation practice, listening comprehension, reading and oral discussion of fairly simple material in English. Activities include reading simple material and engaging in simple conversations in English. Prerequisite: Qualifying score on ENL placement test or consent of ENL Department or International Advising.

READING, LISTENING AND SPEAKING ENGLISH 2
ENL 062  Fall Winter Spring  6 Credits
44 hours of lecture  44 hours of lab
Pronunciation practice, listening comprehension, reading and oral discussion of more complex material in English. Practice asking questions, comprehending and offering information, and reading more complex academic material. Prerequisite: A grade of "C" or better in ENL 061 or qualifying score on ENL placement test or consent of ENL Department or International Advising.

READING, ORAL AND STUDY SKILLS
ENL 063  Fall Winter Spring  6 Credits
66 hours of lecture
Developing reading, vocabulary, oral, and study skills needed to perform simple academic tasks in English. Prerequisite: A grade of "C" or better in ENL 062 or qualifying score on ENL placement test or consent of ENL Department or International Advising.

READING, ORAL AND RESEARCH SKILLS
ENL 064  Fall Winter Spring  6 Credits
66 hours of lecture
Developing reading, vocabulary, oral, and basic research skills needed to complete more complex academic tasks in English. Prerequisite: A grade of "C" or better in ENL 063 or qualifying score on ENL placement test or consent of ENL Department or International Advising.

GRAMMAR AND COMPOSITION I
ENL 071  Fall Winter Spring  6 Credits
44 hours of lecture  44 hours of lab
Basic vocabulary, simple sentence structures, and grammar appropriate to develop them, with emphasis on writing solid, clear simple sentences. Prerequisite: Qualifying score on ENL placement test or consent of ENL Department or International Advising.
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<tr>
<th>Course Title</th>
<th>Code</th>
<th>Credits</th>
<th>Fall</th>
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<tr>
<td>GRAMMAR AND COMPOSITION 2</td>
<td>ENL 072</td>
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<td>44 hours of lecture</td>
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<td>Vocabulary, simple and more complex sentence structures, and grammar appropriate to develop them, with emphasis on writing clear, solid complex sentences. Prerequisite: A grade of “C” or better in ENL 071 or qualifying score on ENL placement test or consent of ENL Department or International Advising.</td>
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<td>COMPOSITION 3</td>
<td>ENL 073</td>
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<td>33 hours of lecture</td>
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<td>Intermediate course focusing on the written structure of the English language at the sentence and paragraph levels. Prerequisite: A grade of “C” or better in ENL 072 or qualifying score on ENL placement test or consent of ENL Department or International Advising.</td>
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<td>33 hours of lecture</td>
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<td>Intermediate course focusing on the written structure of the English language at the five-paragraph essay level. Prerequisite: A grade of “C” or better in ENL 073 or qualifying score on ENL placement test or consent of ENL Department or International Advising.</td>
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<td>55 hours of lecture</td>
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<td>Adapted to the student’s needs in such areas as: essay development, usage of appropriate vocabulary and idioms, and development of the research paper. Depending on progress shown, student may mainstream to an English composition class at the end of the quarter after instructor’s approval. Prerequisite: A grade of “C” or better in ENL 074 or qualifying score on ENL placement test or consent of ENL Department or International Advising.</td>
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<td>INTERMEDIATE WRITING AND APPLIED GRAMMAR</td>
<td>ENL 081</td>
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<td>44 hours of lecture</td>
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<td>Skill building through exercises in grammar, writing responses to assigned readings, and planning, organizing, drafting, and revising sentences and paragraphs. Particular emphasis on correction and practice of sentence-level grammar. Intended for non-native English writers. Concurrent enrollment in Reading 081 and ENL 082 are strongly recommended for any student; concurrent enrollment required for international program students to maintain credit level unless alternatives are approved by International Programs office. Prerequisite: TOEFL iBT 32-39, TOEFL Paper 400-429, IELTS Level 4, Compass ESL 65-79, Compass Writing 13-33/Reading 31-52, or SLEP 42; or permission of department.</td>
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<td>INTERMEDIATE ORAL COMMUNICATION</td>
<td>ENL 082</td>
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<td>44 hours of lecture</td>
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<td>Focus on appropriate oral communication skills both inside and outside the classroom. Pronunciation and grammar accuracy as well as fluency will be developed. Intended for non-native English speakers. Concurrent enrollment required in READ 081 and ENL 081 for international program students or approval by International Programs office. Prerequisite: TOEFL iBT 32-39, TOEFL Paper 400-429, IELTS Level 4, Compass ESL 65-79, Compass Writing 13-33/Reading 31-52 or SLEP 42; or permission of department.</td>
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<td>ADVANCED WRITING AND APPLIED GRAMMAR</td>
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<td>Skills developed through exercises in grammar, writing responses to assigned readings, and planning, organizing, drafting, and revising paragraphs and basic essays. Particular emphasis on correction and practice of sentence-level grammar. Intended for non-native English writers. Concurrent enrollment in READ 083 and ENL 092 required for international students or approval by International Programs office. Prerequisite: A grade of “C” or better in</td>
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ADDITIONAL ORAL COMMUNICATION
ENL 092  3 Credits
33 hours of lecture
Focus on appropriate oral communication skills for college-level classes. Pronunciation and grammar accuracy as
well as fluency will be developed. Intended for non-native English speakers. Concurrent enrollment required for
international program students or approval by International Programs office. Prerequisite: A grade of “C” or better
in ENL 081 or DVED 094; or TOEFL iBT 40-48, or TOEFL Paper 430-459, or IELTS Level 4.5, STEP-Eiken
Gr. 2, or Compass ESL 80-91, or Compass Writing 34-48; or permission of department.

UPPER ADVANCED GRAMMAR
ENL 100  3 Credits
33 hours of lecture
Grammar review and application to writing expository essays and informative summaries. Intended for non-native
English writers. Topics include writing and editing complex sentences using appropriate language and academic
style. Students must also enroll in ENGL 098; concurrent enrollment in ENGL 098 and ENL 100 required for
international program students or approval by International Programs office. Prerequisite: A grade of “C” or better
in ENL 091 or ENGL 097; one of the following entry scores: TOEFL iBT 49-60, TOEFL Paper 460-499, IELTS
Level 5, Compass ESL 92-100, or Compass Writing 49-77; or permission of department.

COLLEGE GRAMMAR SUPPORT
ENL 101  3 Credits
33 hours of lecture
Grammar review and application to writing persuasive essays, informative summaries, and critiques of college-level
academic articles. Intended for non-native English writers. Topics include writing and editing complex sentences
using appropriate language and academic style. Students must be enrolled in ENGL& 101; concurrent enrollment
in ENGL& 101 and ENL 101 required for international program students in Level D or approval by International
Programs office. Prerequisite: A grade of “C” or better in ENGL 098; or TOEFL iBT 61-67, or TOEFL Paper 500-519,
or IELTS Level 5.5, or SLEP 53+; or Compass Writing 78+ and Compass Reading below 74.

ESL 002 EDUCATIONAL INTERVIEWING LEVELS 1-3
ESL 002 Summer Fall Winter Spring 1 Credit
11 hours of lecture
For new ESL students only; assessing new students in basic skills and learning styles; identifying barriers to their
student success; helping students understand Clark College and Basic Education. Designed for lower level limited
English proficient students.

ESL EDUCATIONAL INTERVIEWING LEVELS 4-6
ESL 003 Summer Fall Winter Spring 1 – 2 Credits
22 hours of lecture
For new ESL students only; assessing new students in basic skills and learning styles; identifying barriers to their
student success; helping students understand Clark College and Basic Education.

ESL I-BEST EDUCATIONAL INTERVIEWING
ESL 004 Summer Fall Winter Spring 1 – 1 Credit
11 hours of lecture
For new ESL I-BEST students only; assessing new students in basic skills and learning styles; identifying barriers
to their student success in transitioning to IBEST programs; helping students understand Clark College and the
I-BEST program.

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ESL SPECIAL TOPICS
ESL 005 Summer Fall Winter Spring 1 – 10 Credits
88 hours of lecture 44 hours of lab
Variable topics in ESL and content to reflect the selected topics. Because the course varies in content, it is repeatable for credit for different topics. Individual topics are listed in the quarterly class schedule.

ESL PROJECT BASED LEARNING
ESL 006 Summer Fall Winter Spring 6 Credits
66 hours of lecture
Developing English Language Basic Skills in listening, speaking, reading, and writing, based on the Washington State Learning Standards, in a multi-level, multi-subject classroom. Exploring real-world problems and challenges. Focus on all four skills: reading, writing, listening and speaking; learning and practicing English through direct English instruction and through working on projects that are based on students’ needs as assessed by instructor and students together; helping students to communicate effectively in family, community, and workplace situations.

ESL LISTENING AND SPEAKING, LEVEL I
ESL 011 Summer Fall Winter Spring 6 Credits
66 hours of lecture
ESL level 1 students will learn to comprehend the gist of short, face-to-face oral communications spoken at slower rates on familiar topics concerning family, community and work with a low level of ease through frequent use of repetition or rephrasing. Students completing this course will be able to speak well-rehearsed words and phrases in familiar, highly structured settings, with limited comprehensibility. Prerequisite: CASAS placement test score of 180 or below.

ESL READING AND WRITING, LEVEL I
ESL 012 Summer Fall Winter Spring 6 Credits
66 hours of lecture
ESL level 1 students will learn to slowly and with some effort comprehend words in short, simple texts to accomplish simple, well-defined, structured reading activities. Students completing this course will be able to write individual words, simple phrases and very simple sentences slowly, but with some effort and errors, to accomplish highly structured writing activities in familiar, comfortable settings. Prerequisite: CASAS placement test score of 180 or below.

ESL KEYBOARDING/WORD PROCESSING
ESL 016 Summer Fall Winter Spring 1 – 2 Credits
44 hours of lab
Introduction to computer skills and applications in the context of reading comprehension, writing strategies and writing techniques within the Washington State Adult Learning Standards.

ESL BEGINNING PRONUNCIATION LEVELS 1-2
ESL 017 Summer Fall Winter Spring 2 Credits
22 hours of lecture
Strengthen pronunciation skills for ESL students in accordance with Washington ESL Adult Learning Standard. To speak so others can understand, ESL students should: Determine the purpose for communication. Organize and relay information to effectively serve the purpose, context, and listener. Pay attention to conventions of oral English communication, including grammar, word choice, register, pace, and gesture in order to minimize barriers to listener’s comprehension. Use multiple strategies to monitor the effectiveness of the communication. Instruction is targeted according to ESL Levels 1-2.

ESL PRONUNCIATION LEVELS 3-4
ESL 018 Summer Fall Winter Spring 2 Credits
22 hours of lecture
Strengthen pronunciation skills for ESL students in accordance with Washington ESL Adult Learning Standard. To speak so others can understand, ESL students should: Determine the purpose for communication. Organize and relay information to effectively serve the purpose, context, and listener. Pay attention to conventions of oral English communication, including grammar, word choice, register, pace, and gesture in order to minimize barriers...
to listener’s comprehension. Use multiple strategies to monitor the effectiveness of the communication. Instruction is targeted according to ESL Levels 3-4. Concurrent enrollment in ESL Levels 3-4.

**ESL PRONUNCIATION LEVELS 5-6**
ESL 019 Summer Fall Winter Spring 2 Credits
22 hours of lecture
Strengthen pronunciation skills for ESL students in accordance with Washington ESL Adult Learning Standard: To speak so others can understand. ESL students should: Determine the purpose for communicating. Organize and relay information to effectively serve the purpose, context, and listener. Pay attention to conventions of oral English communication, including grammar, word choice, register, pace, and gesture in order to minimize barriers to listener’s comprehension. Use multiple strategies to monitor the effectiveness of the communication. Instruction is targeted according to ESL Levels 5-6. Concurrent enrollment in ESL Levels 5-6.

**READING, SPEAKING AND ADULT NUMERACY**
ESL 020 Fall Winter Spring 2 Credits
22 hours of lecture
Development of appropriate reading and speaking strategies for participating in discussions regarding adult numeracy presented within the Washington State Adult Learning Standards: topics include arithmetic, word problems, simple geometry, and algebra. Concurrent enrollment in ESL levels 2 or above. Prerequisite: ESL 022.

**ESL LISTENING AND SPEAKING, LEVEL II**
ESL 021 Summer Fall Winter Spring 6 Credits
66 hours of lecture
ESL level 2 students will learn to comprehend the gist of simple, face-to-face oral communications completing highly structured tasks with pre-taught vocabulary, slow speech, and visual aids on familiar topics concerning family, community and work with some level of ease through frequent use of repetition or rephrasing. Students completing this course will be able to speak well-rehearsed phrases and simple sentences in familiar, highly structured settings, with occasional hesitation and inaccuracy. Prerequisite: ESL 011 and 012 or CASAS placement score of 181 to 190.

**ESL READING AND WRITING, LEVEL II**
ESL 022 Summer Fall Winter Spring 6 Credits
66 hours of lecture
ESL level 2 students will learn to slowly comprehend words in small blocks of simple texts with some repetition and errors to independently accomplish simple, well-defined, structured reading activities. Students completing this course will be able to write simple sentences to independently accomplish highly structured writing activities in a few familiar, comfortable settings. Prerequisite: ESL 011 and 012 or CASAS placement score of 181 to 190.

**READING, SPEAKING AND THE AMERICAN CITIZENSHIP**
ESL 030 Fall Winter Spring 2 Credits
11 hours of lecture 22 hours of lab
Development of appropriate reading and speaking strategies to actively participate in various aspects of Civics and the US citizenship process; topics include presenting information and effectively responding to questions using knowledge and application of the Washington State Adult Learning Standards.

**ESL LISTENING AND SPEAKING, LEVEL III**
ESL 031 Summer Fall Winter Spring 6 Credits
66 hours of lecture
ESL level 3 students will learn to listen for structured, well-defined purposes to maintain personal conversations, acquire information or complete basic transactions in-person or in short telephone conversations with simplified language through frequent use of clarification strategies, using short, sometimes inaccurate utterances and a high level of visual or verbal support. Students completing this course will be able to speak with relative ease with some inaccuracies or non-standard speech in familiar one-on-one settings. Prerequisite: ESL 021 and 022 or CASAS placement test score of 191 to 202.
ESL READING AND WRITING, LEVEL III
ESL 032  Summer Fall Winter Spring  6 Credits
66 hours of lecture
ESL level 3 students will learn to comprehend small blocks of simple texts slowly but easily with few errors to independently accomplish simple, well-defined, structured reading activities. Students completing this course will be able to write several simple sentences on familiar topics, with some effort but with few errors, to independently accomplish simple, well-defined, structured writing activities in a few familiar, comfortable settings. Prerequisite: ESL 021 and 022 or CASAS placement test score of 191 to 202.

ESL LISTENING AND SPEAKING, LEVEL IV
ESL 041  Summer Fall Winter Spring  6 Credits
66 hours of lecture
ESL level 4 students will learn to comprehend and respond to most basic background information, everyday transaction and simple routine tasks, but have difficulty understanding full details on less familiar topics. Students completing this course will be able to speak fluently and relatively accurately in familiar contexts with a moderately high level of support. Their speaking will usually be understood by a skilled, supportive listener. Prerequisite: ESL 031 and 032 or CASAS placement test score of 203 to 213.

ESL READING AND WRITING, LEVEL IV
ESL 042  Summer Fall Winter Spring  6 Credits
66 hours of lecture
ESL level 4 students will learn to quickly and accurately read and comprehend words and word groups in multiple pages of simple text in familiar contexts to independently accomplish simple well-defined, structured reading and writing activities in a few familiar settings. Students completing this course will be able to write short, structured paragraphs on familiar topics with some effort but with few errors. Prerequisite: ESL 031 and 032 or CASAS placement test score of 203 to 213.

ESL LISTENING AND SPEAKING, LEVEL V
ESL 051  Summer Fall Winter Spring  6 Credits
66 hours of lecture
ESL level 5 students will learn to comprehend relatively unstructured, moderate-length conversations and presentations in somewhat complex, unfamiliar situations with non-adjusted language understanding some main ideas, and details. Students completing this course will be able to speak fluently and accurately in some unfamiliar contexts with some support. Their speaking will generally be understood by a skilled, supportive listener. Prerequisite: ESL 041 and 042 or CASAS placement test score of 214 to 220.

ESL READING AND WRITING, LEVEL V
ESL 052  Summer Fall Winter Spring  6 Credits
66 hours of lecture
ESL level 5 students will learn to read and comprehend a variety of texts at an appropriate pace and with good comprehension to independently accomplish structured reading activities in a variety of familiar settings. Students completing this course will be able to write simple narrative, informative, or expressive texts of a few short paragraphs and steps with some effort, but with few errors to independently accomplish well-defined, structured writing activities for varied audiences in familiar settings. Prerequisite: ESL 041 and 042 or CASAS placement test score of 214 to 220.

ESL LEVEL 6A LISTENING AND SPEAKING
ESL 061  Summer Fall Winter Spring  6 Credits
66 hours of lecture
ESL level 6A students will learn to function relatively independently in many social and work situations comprehending relatively unstructured conversations requiring integration of some data sources with limited need for guidance. Students completing this course will be able to speak fluently and accurately in most contexts with minimal support. Their speaking will sometimes be understood by an unskilled, unsupportive listener. Prerequisite: ESL 051 and 052 or CASAS placement test score of 221 to 227.
ESL LEVEL 6A READING AND WRITING
ESL 062 Summer Fall Winter Spring 6 Credits
66 hours of lecture
ESL level 6A students will learn to read and comprehend multipart texts at an appropriate pace with enough comprehension to independently accomplish structured, fairly complex reading activities in a variety of familiar and a few novel settings. Students completing this course will be able to write a variety of texts including some complex sentence structures and multiple paragraphs with few errors for a variety of purposes independently accomplishing structured writing in familiar and a few novel settings. Prerequisite: ESL 051 and 052 or CASAS score of 221 to 227.

ESL LEVEL 6B LISTENING AND SPEAKING
ESL 063 Summer Fall Winter Spring 6 Credits
66 hours of lecture
ESL level 6B students will learn to function independently in most social and work situations and comprehend relatively complex and unstructured oral input at normal speed integrating and summarizing several data sources with limited need for guidance and few errors. Students completing this course will be able to speak fluently and accurately with most familiar and unfamiliar audiences with minimal support. Student speech can generally be understood by an unsupportive, unskilled listener despite student lack of full comfort and ease. Prerequisite: ESL 061 and 062 or CASAS placement test score of 228 to 235.

ESL LEVEL 6B READING AND WRITING
ESL 064 Summer Fall Winter Spring 6 Credits
66 hours of lecture
ESL level 6B students will learn to read and comprehend dense or multipart texts at an appropriate pace and with good comprehension to independently accomplish structured, complex reading activities in a variety of familiar and some novel settings. Students completing this course will be able to write a variety of texts including more complex sentence structures and multiple paragraphs easily with few errors for a wide variety of purposes independently accomplishing structured, fairly complex writing in a variety of familiar and some novel settings. Prerequisite: ESL 061 and 062 or CASAS placement test score 228 to 235.

LANGUAGE STANDARDS FOR COLLEGE TRANSITIONS
ESL 065 Summer Fall Winter Spring 6 Credits
66 hours of lecture
Development of academic skills and appropriate language strategies to successfully transition into degree and certification programs, using knowledge and application of the Washington State Adult Learning Standards; focus on academics and cultural values/issues (ie., active listening and participation, assertiveness, etc.) integral to a successful academic experience.

I-BEST SUPPORT
ESL 071 1 – 6 Credits
66 hours of lecture
Provides Basic Skills students extra instruction and support for success in their I-BEST designated classes. Reviews important concepts and vocabulary introduced during I-BEST classes. Provide opportunities to develop culturally unfamiliar customer service and interaction skills needed to be successful in I-BEST occupations. Prerequisite: Admission into an I-BEST program.

MEDICAL LANGUAGE FOR ESL
ESL 072 3 Credits
33 hours of lecture
Introduction to basic medical terminology for non-native speakers of English to support transition into HEOC 125, a basic required course for Clark College Health Occupation Programs. Concurrent enrollment in ESL 073 and 074. Prerequisite: CASAS score of 214 or more or instructor permission.

INTRO TO HEALTH OCCUPATIONS FOR ESL
ESL 073 2 Credits
22 hours of lecture
Introduction to health careers for non-native speakers of English to support a transition into Clark College Health
Occupation Programs. Concurrent enrollment in ESL 072 and 074. Prerequisite: CASAS score of 214 or more or instructor permission.

**MEDICAL LANGUAGE SUPPORT FOR ESL**

**ESL 074**   7 Credits
77 hours of lecture
Introduction to health occupations and some basic medical terminology for non-native speakers of English to support transition into Clark College Health Occupation Programs. Concurrent enrollment in ESL 072 and 073.

**ESL SELECTED TOPICS**

**ESL 080**   1 – 10 Credits
110 hours of lecture
Course will focus on selected ESL topics. Course theme and content will change to reflect the new topic. Because of the variations, this course is repeatable for credit for different topics.

**INTERMEDIATE WRITING AND APPLIED GRAMMAR**

**ESL 081**   4 Credits
44 hours of lecture
Skill building through exercises in grammar, writing responses to assigned readings, and planning, organizing, drafting, and revising sentences and paragraphs. Particular emphasis on correction and practice of sentence-level grammar. Intended for non-native English writers. Concurrent enrollment in ESL 082 is strongly recommended for any student. Prerequisite: Successful completion of ESL Level 4; CASAS scores of 214-220; or permission of ESL Department.

**INTERMEDIATE ORAL COMMUNICATION**

**ESL 082**   4 Credits
44 hours of lecture
Focus on appropriate oral communication skills both inside and outside the classroom. Pronunciation and grammar accuracy as well as fluency will be developed. Intended for non-native English speakers. Concurrent enrollment in ESL 081 is strongly recommended. Prerequisite: Successful completion of ESL Level 4; CASAS scores of 214-220; or permission of ESL Department.

**ADVANCED WRITING AND APPLIED GRAMMAR**

**ESL 091**   4 Credits
44 hours of lecture
Skills developed through exercises in grammar, writing responses to assigned readings, and planning, organizing, drafting, and revising paragraphs and basic essays. Particular emphasis on correction and practice of sentence-level grammar. Intended for non-native English writers. Concurrent enrollment in ESL 092 strongly recommended. Prerequisite: A grade of “C” or better in ESL 081, successful completion of ESL Level 5, CASAS scores of 221-235, or permission of ESL Department.

**ADVANCED ORAL COMMUNICATION**

**ESL 092**   3 Credits
33 hours of lecture
Focus on appropriate oral communication skills for college-level classes. Pronunciation and grammar accuracy as well as fluency will be developed. Intended for non-native English speakers. Concurrent enrollment in ESL 091 strongly recommended.

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**Environmental Science**

**INTEGRATED ENVIRONMENTAL SCIENCE**

**ENVS 109**   Winter Spring   5 Credits
33 hours of lecture 44 hours of lab
Introduction to scientific inquiry using the foundations of physical, earth and life sciences. Focus on developing the
skills to answer basic questions about scientific phenomena through scientific investigations and the ability to assist and guide others through this process. Designed for non-science majors and addressing the curriculum needs of early childhood educators. Prerequisite: A grade of “C” or better in MATH 030.

**MODELING ENERGY DYNAMICS IN EVERYDAY LIFE**  
ENVS 135  
33 hours of lecture  
Introduction to models of energy dynamics. Students will develop and interpret models of annual energy use and cost using real data related to home lighting, home heating and food consumption. Models will be used to analyze cost/benefit of alternatives. Prerequisite: A grade of “C” or better in MATH 095. [NS, SE]

**INTRO TO ENVIRONMENTAL SYSTEMS**  
ENVS 211  
33 hours of lecture  
First of a three-course sequence in Environmental Science. Introduction to environmental topics including environmental modeling and problem solving, sustainability, the scientific method, biodiversity, ecosystem organization, energy flow, material cycling, population growth, natural selection, island biogeography, ecological succession, and resource management.

**FIELD STUDIES IN ENVIRONMENTAL SCIENCE**  
ENVS 218  
22 hours of lecture  
Learning field techniques for research in environmental science, interacting with scientists and others working in the field, and participating in the collection of research data. Topics include the interactions between scientists and other land managers in our natural environments. Projects vary depending on student interest and current work in the field area visited. Prerequisite: 5 credits in any Environmental Science, Geology or BIOL 101, 140, 141, 142, 143, 145, 150, 208, 221, 222, 223, 224 or BIOL& 100 with a grade of “C” or better, or consent of Instructional Unit.

**ENVIRONMENTAL SCIENCE: PROBLEM SOLVING**  
ENVS 221  
33 hours of lecture  
Second of a three-course sequence in Environmental Science. Introduction to applied techniques in environmental science including: environmental sampling design and measurement, environmental assessment and mitigation, and environmental modeling and problem solving. Prerequisite: A grade of “C” or better in ENSC 201.

**ENVIRONMENTAL POLITICS**  
ENVS 231  
55 hours of lecture  
Examines the relationship between industrial civilization and the natural environment by exploring underlying ecological philosophies and the economic and political processes by which environmental decisions are made. Emphasis on critical thinking and evaluating alternative points of view.

**SPECIAL PROJECTS**  
ENVS 290  
Opportunity to plan, organize, and complete special projects approved by the department. Prerequisite: Consent of Instructional Unit.

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**Family Life – Parent & Child**

**PARENT/BABY WORKSHOP**  
FLPC 004  
11 hours of lecture  
Learning activities, music and movement, parenting topics and guided interaction between parent and baby.
PARENT/TODDLER WORKSHOP
FLPC 014   1 Credit
11 hours of lecture
Learning activities to enhance development. Sensory/motor experiences, parenting topics and guided interaction between parent and child.

PRESCHOOL ENRICHMENT
FLPC 031   Fall  1 Credit
6 hours of lecture  11 hours of lab
Activities to encourage creativity and creative thinking in preschool children. Parent attends orientation class and children’s lab class for 4 sessions. Child attends weekly. Contact department 992-2393 before enrolling.

PRESCHOOL ENRICHMENT
FLPC 032  Winter  1 Credit
6 hours of lecture  11 hours of lab
Activities to encourage creativity and creative thinking in preschool children. Parent attends orientation class and children’s lab class for 4 sessions. Child attends weekly. Contact department 992-2393 before enrolling.

PRESCHOOL ENRICHMENT
FLPC 033  Spring  1 Credit
6 hours of lecture  11 hours of lab
Activities to encourage creativity and creative thinking in preschool children. Parent attends orientation class and children’s lab class for 4 sessions. Child attends weekly. Contact department 992-2393 before enrolling.

PRESCHOOL WORKSHOP
FLPC 034   1 Credit
11 hours of lecture
For children aged 2 1/2 to 5. Learning and play activities for children. Parents gain skills by aiding in the preschool classroom. Child development, cognitive and social development.

PRESCHOOL ENRICHMENT WORKSHOPS
FLPC 044   1 Credit
11 hours of lecture
Activities to encourage creativity and creative thinking in preschool children.

INDEPENDENT LIVING
FLPC 080   Spring  3 Credits
33 hours of lecture
Provides foster parents with the knowledge and skills necessary to assess the readiness of, and prepare adolescents for, independent living.

PARENT AND INFANT
FLPC 101   Fall  1 – 2 Credits
22 hours of lecture
Parent participation class for parents and their babies, newborn to walking. Includes discussions on infant development, child care practices, and parenting techniques. Guided interaction between parent and baby. Activities to stimulate baby’s development. Contact department before enrolling, 992-2393.

PARENT AND INFANT
FLPC 102  Winter  1 – 2 Credits
22 hours of lecture
Parent participation class for parents and their babies, newborn to walking. Includes discussions on infant development, child care practices, and parenting techniques. Guided interaction between parent and baby. Activities to stimulate baby’s development. Contact department before enrolling, 992-2393.
PARENT/INFANT
FLPC 103  Spring  1 – 2 Credits
22 hours of lecture
Parent participation class for parents and their babies, newborn to walking. Includes discussions on infant development, child care practices, and parenting techniques. Guided interaction between parent and baby. Activities to stimulate baby's development. Contact department before enrolling, 992-2393.

PARENT/TODDLER
FLPC 111  Fall  1 – 2 Credits
22 hours of lecture
Toddlers ages 12-33 months attend classes one morning per week from 9:30-11:30 with their parent/caregivers. Classroom teachers design age appropriate learning experiences for the children and opportunities for parents to support their child's growing need for independence and exploration. Each interactive class includes a discussion time for parents with a family life instructor on topics such as child growth and development, guidance techniques, toilet learning, safety, health and nutrition and development activities. Two hours per week. Call 992-2393 to enroll.

PARENT/TODDLER
FLPC 112  Winter  1 – 2 Credits
22 hours of lecture
Toddlers ages 12-33 months attend classes one morning per week from 9:30-11:30 with their parent/caregivers. Classroom teachers design age appropriate learning experiences for the children and opportunities for parents to support their child's growing need for independence and exploration. Each interactive class includes a discussion time for parents with a family life instructor on topics such as child growth and development, guidance techniques, toilet learning, safety, health and nutrition and development activities. Two hours per week. Call 992-2393 to enroll.

PARENT/TODDLER
FLPC 113  Spring  1 – 2 Credits
22 hours of lecture
Toddlers ages 12-33 months attend classes one morning per week from 9:30-11:30 with their parent/caregivers. Classroom teachers design age appropriate learning experiences for the children and opportunities for parents to support their child's growing need for independence and exploration. Each interactive class includes a discussion time for parents with a family life instructor on topics such as child growth and development, guidance techniques, toilet learning, safety, health and nutrition and development activities. Two hours per week. Call 992-2393 to enroll.

PARENT/TODDLER
FLPC 114  Summer  1 – 2 Credits
22 hours of lecture
Toddlers ages 12-33 months attend classes one morning per week from 9:30-11:30 with their parent/caregivers. Classroom teachers design age appropriate learning experiences for the children and opportunities for parents to support their child's growing need for independence and exploration. Each interactive class includes a discussion time for parents with a family life instructor on topics such as child growth and development, guidance techniques, toilet learning, safety, health and nutrition and development activities. Two hours per week. Call 992-2393 to enroll.

PARENT EDUCATION FOR CHILD CARE PARENTS
FLPC 121  Fall  1 Credit
6 hours of lecture  11 hours of lab
Parent involvement and education for parents with children enrolled in the Child and Family Studies child care program. Children attend 2-5 times per week. Student/parents have variable options for participation including orientation, classroom involvement, parenting workshops, classroom meetings, book clubs, brown bag lunch lectures and service learning projects related to the subjects of child development, parenting, classroom curriculum and community building. Call 992-2393 to enroll.
PARENT EDUCATION FOR CHILD CARE PARENTS
FLPC 122  Winter  1 Credit
6 hours of lecture  11 hours of lab
Parent involvement and education for parents attending the Child and Family Studies child care center. Children attend 2-5 times per week. Student/parents have variable options for participation including orientation, classroom involvement, parenting workshops, classroom meetings, book clubs and service learning projects related to the subjects of child development, parenting and classroom curriculum and community building. Contact 992-2393 to enroll.

PARENT EDUCATION FOR CHILD CARE PARENTS
FLPC 123  Spring  1 Credit
6 hours of lecture  11 hours of lab
Parent involvement and education for parents attending the Child and Family Studies child care center. Children attend 2-5 times per week. Student/parents have variable options for participation including orientation, classroom involvement, parenting workshops, classroom meetings, book clubs and service learning projects related to the subjects of child development, parenting and classroom curriculum and community building. Call 992-2393 to enroll.

PARENT EDUCATION FOR CHILD CARE PARENTS
FLPC 124  Summer  1 Credit
6 hours of lecture  11 hours of lab
Parent involvement and education for parents with children enrolled in the Child and Family Studies child care program. Children attend 2-5 times per week. Student/parents have variable options for participation including orientation, classroom involvement, parenting workshops, classroom meetings, book clubs, brown bag lunch lectures and service learning projects related to the subjects of child development, parenting, classroom curriculum and community building. Call 992-2393 to enroll.

PARENT PARTICIPATION PRESCHOOL
FLPC 131  Fall  1 – 3 Credits
11 hours of lecture  44 hours of lab
Parent participation pre-school at Clark College offers children and their family members an opportunity to learn and grow together. Children from 33 months to 5 years of age are enrolled and attend 2-3 times per week. Parents participate in the classroom and learn about child development, facilitating children’s learning and creating a parent support group. Parenting classes are offered that provide opportunity to learn about effective guidance, parenting strategies, child development and community building. Call 992-2393 to enroll. Fees may be paid in three payments. 1st payment due at registration.

PARENT PARTICIPATION PRESCHOOL
FLPC 132  Winter  1 – 3 Credits
11 hours of lecture  44 hours of lab
Parent participation pre-school at Clark College offers children and their family members an opportunity to learn and grow together. Children from 33 months to 5 years of age are enrolled and attend 2-3 times per week. Parents participate in the classroom and learn about child development, facilitating children’s learning and creating a parent support group. Parenting classes are offered that provide opportunity to learn about effective guidance, parenting strategies, child development and community building. Call 992-2393 to enroll. Fees may be paid in three payments. 1st payment due at registration.

PARENT PARTICIPATION PRESCHOOL
FLPC 133  Spring  1 – 3 Credits
11 hours of lecture  44 hours of lab
Parent participation pre-school at Clark College offers children and their family members an opportunity to learn and grow together. Children from 33 months to 5 years of age are enrolled and attend 2-3 times per week. Parents participate in the classroom and learn about child development, facilitating children’s learning and creating a parent support group. Parenting classes are offered that provide opportunity to learn about effective guidance, parenting strategies, child development and community building. Call 992-2393 to enroll. Fees may be paid in three payments. 1st payment due at registration.
PARENT PARTICIPATION PRESCHOOL
FLPC 134  Summer  1 – 3 Credits
11 hours of lecture  44 hours of lab
Parent participation pre-school at Clark College offers children and their family members an opportunity to learn and grow together. Children from 33 months to 5 years of age are enrolled and attend 2-3 times per week. Parents participate in the classroom and learn about child development, facilitating children's learning and creating a parent support group. Parenting classes are offered that provide opportunity to learn about effective guidance, parenting strategies, child development and community building. Call 992-2393 to enroll. Fees may be paid in three payments. 1st payment due at registration.

PARENT COOPERATIVE PRESCHOOL
FLPC 135  Fall  1 – 3 Credits
11 hours of lecture  44 hours of lab
Preschool experiences for children. Practice in parenting skills. Parents serve as aides to the teacher in the classroom 4-5 times a quarter, work on committees, and attend monthly meetings. Children 2 1/2 – 6 participate in 2 1/2 hour classes. Contact department before enrolling, 992-2393. Credit varies with amount of parent participation.

PARENT COOPERATIVE PRESCHOOL
FLPC 136  Winter  1 – 3 Credits
11 hours of lecture  44 hours of lab
Preschool experiences for children. Practice in parenting skills. Parents serve as aides to the teacher in the classroom 4-5 times a quarter, work on committees, and attend monthly meetings. Children 2 1/2 – 6 participate in 2 1/2 hour classes. Contact department before enrolling, 992-2393. Credit varies with amount of parent participation.

PARENT COOPERATIVE PRESCHOOL
FLPC 137  Spring  1 – 3 Credits
11 hours of lecture  44 hours of lab
Preschool experiences for children. Practice in parenting skills. Parents serve as aides to the teacher in the classroom 4-5 times a quarter, work on committees, and attend monthly meetings. Children 2 1/2 – 6 participate in 2 1/2 hour classes. Contact department before enrolling, 992-2393. Credit varies with amount of parent participation.

EARLY INTERVENTION PARENT/CHILD PARTICIPATION
FLPC 141  Fall  1 Credit
6 hours of lecture  11 hours of lab
A participation class for parents/caregivers of children with developmental delays, ages birth to 36 months. This is a class designed to support parents/caregivers to meet the needs of their child through play and caretaking activities in the child's natural environment. Parents participate in the evaluation of their child's abilities and challenges and have learning opportunities through group meetings with other families receiving early intervention services as well as the activities in the overall Child and Family Studies program. This course is designed to provide learning opportunities in areas including child and family development, guidance techniques, developing appropriate expectations, health as well as specific information related to their child's needs.

EARLY INTERVENTION PARENT/CHILD PARTICIPATION
FLPC 142  Winter  1 Credit
6 hours of lecture  11 hours of lab
A participation class for parents/caregivers of children with developmental delays, ages birth to 36 months. This is a class designed to support parents/caregivers to meet the needs of their child through play and caretaking activities in the child's natural environment. Parents participate in the evaluation of their child's abilities and challenges and have learning opportunities through group meetings with other families receiving early intervention services as well as the activities in the overall Child and Family Studies program. This course is designed to provide learning opportunities in areas including child and family development, guidance techniques, developing appropriate expectations, health as well as specific information related to their child's needs.
EARLY INTERVENTION PARENT/CHILD PARTICIPATION
FLPC 143  Spring  1 Credit
6 hours of lecture  11 hours of lab
A participation class for parents/caregivers of children with developmental delays, ages birth to 36 months. This is a class designed to support parents/caregivers to meet the needs of their child through play and caretaking activities in the child's natural environment. Parents participate in the evaluation of their child's abilities and challenges and have learning opportunities through group meetings with other families receiving early intervention services as well as the activities in the overall Child and Family Studies program. This course is designed to provide learning opportunities in areas including child and family development, guidance techniques, developing appropriate expectations, health as well as specific information related to their child's needs.

EARLY INTERVENTION PARENT/CHILD PARTICIPATION
FLPC 144  Summer  1 Credit
6 hours of lecture  11 hours of lab
A participation class for parents/caregivers of children with developmental delays, ages birth to 36 months. This is a class designed to support parents/caregivers to meet the needs of their child through play and caretaking activities in the child's natural environment. Parents participate in the evaluation of their child's abilities and challenges and have learning opportunities through group meetings with other families receiving early intervention services as well as the activities in the overall Child and Family Studies program. This course is designed to provide learning opportunities in areas including child and family development, guidance techniques, developing appropriate expectations, health as well as specific information related to their child's needs.

RAISING A RESPONSIBLE CHILD
FLPC 150  2 Credits
22 hours of lecture
Basic Dreikurs study-discussion group for parents of both pre- and elementary schoolers, with emphasis on child discipline and improving parent-child relationships. Alternatives to reward and punishment. Handling struggles for attention and power.

FAMILY CARE PROGRAMS
FLPC 151  3 Credits
33 hours of lecture
Training for parents providing child care in their homes. Child development and discipline, health, safety, nutrition and curriculum activities.

FOSTER CARE PARENTING I
FLPC 153  Fall  5 Credits
44 hours of lecture  22 hours of lab

SYSTEMATIC TRAINING FOR EFFECTIVE PARENTING
FLPC 156  2 Credits
22 hours of lecture
A practical approach to parent-child relations. Learn how to communicate effectively and avoid discipline problems.

PARENT EFFECTIVENESS TRAINING
FLPC 160  2 Credits
22 hours of lecture
Learn to relate on an equal basis with others, children and adults, with a “no lose” conflict method. Training in active listening and honest, open communication skills, with a full expression of feelings, needs, and values.
SINGLE PARENT SURVIVAL
FLPC 161  Fall  1 Credit
11 hours of lecture

SINGLE PARENT SURVIVAL
FLPC 162  Winter  1 Credit
11 hours of lecture

SINGLE PARENT SURVIVAL
FLPC 163  Spring 1 Credit
11 hours of lecture

PARENTING WORKSHOPS
FLPC 164  1 Credit
11 hours of lecture
Seminars on a variety of parenting topics including guidance, creativity, development, relationships, enrichment activities for children and health and nutrition.

FATHER/CHILD WORKSHOP
FLPC 168  1 Credit
11 hours of lecture
Enhancing father-child relations through guided activities and lecture/discussion. Father and child attend together. Workshop on varying topics based on age of children participating. Contact 699-0179 before enrolling.

PARENT AND CHILD
FLPC 171  Fall  1 – 2 Credits
22 hours of lecture
Parent participation preschool for working parents and their 2 1/2 to 6-year-old children. Establish nurturing relationships with children and provide opportunities for the development of competence and individuality. Contact department before enrolling, 992-2393.

PARENT AND CHILD
FLPC 172  Winter  1 – 2 Credits
22 hours of lecture
Parent participation preschool for working parents and their 2 1/2 to 6-year-old children. Establish nurturing relationships with children and provide opportunities for the development of competence and individuality. Contact department before enrolling, 992-2393.

PARENT AND CHILD
FLPC 173  Spring  1 – 2 Credits
22 hours of lecture
Parent participation preschool for working parents and their 2 1/2 to 6-year-old children. Establish nurturing relationships with children and provide opportunities for the development of competence and individuality. Contact department before enrolling, 992-2393.
PARENT EDUCATION FOR PARENTS WITH SIBLINGS
FLPC 181  Fall Winter Spring  3 Credits
22 hours of lecture  22 hours of lab

FAMILY LIVING SKILLS
FLPC 184  Fall  1 – 2 Credits
11 hours of lecture  22 hours of lab
Explore alternatives to everyday challenges of parenting and home management. Contact department before enrolling, 992-2393.

FAMILY LIVING SKILLS
FLPC 185  Winter  1 – 2 Credits
11 hours of lecture  22 hours of lab
Explore alternatives to everyday challenges of parenting and home management. Contact department before enrolling, 992-2393.

FAMILY LIVING SKILLS
FLPC 186  Spring  1 – 2 Credits
11 hours of lecture  22 hours of lab
Explore alternatives to everyday challenges of parenting and home management. Contact department before enrolling, 992-2393.

PRINCIPLES OF CHILD GUIDANCE
FLPC 268  2 Credits
22 hours of lecture
Effecting family relationships through principles of child management. Theory and practical applications, lecture-demonstrations of family counseling techniques. Parent and child groups.

SELECTED TOPICS
FLPC 280  Fall Winter Spring  2 Credits
22 hours of lecture
Special topics in Women’s Studies: Creative Parenting. An in-depth look at ways to nurture children while nurturing the parent. How to combine work, school and family making creative choices.

First Aid and CPR

FIRST AID AND HEALTH CARE PROVIDER CPR
FACPR 032  Summer Fall Winter Spring  1 Credit
5 hours of lecture
First aid and cardiopulmonary resuscitation, for health care providers as required by the Washington Occupation and Health Act. Designed specifically for health care providers.

Fitness Trainer

FITNESS TRAINER SEMINAR
FT 101  Fall  1 Credit
11 hours of lecture
Career exploration course focusing on gaining insight into the roles, professional duties, and responsibilities of fitness/health professionals across the fitness industry.
<table>
<thead>
<tr>
<th>Course Title</th>
<th>Term</th>
<th>Credits</th>
<th>Hours</th>
<th>Description</th>
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</thead>
<tbody>
<tr>
<td><strong>FUNDAMENTALS OF FITNESS</strong></td>
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<tr>
<td>FT 150</td>
<td>Summer</td>
<td>3</td>
<td>33 lecture</td>
<td>Basic principles of exercise science, exercise prescription and risk management for the fitness professional.</td>
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<td><strong>FITNESS CENTER SKILLS</strong></td>
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<tr>
<td>FT 151</td>
<td>Winter</td>
<td>2</td>
<td>44 lab</td>
<td>Develop skills related to exercise techniques and instruction focusing on cardio machines, weight machines and basic free weights.</td>
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<td><strong>FLEXIBILITY, POSTURE AND CORE</strong></td>
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<tr>
<td>FT 152</td>
<td>Spring</td>
<td>2</td>
<td>44 lab</td>
<td>Develop skills related to exercise assessment, technique and instruction focusing on flexibility, posture and core.</td>
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<tr>
<td><strong>EXERCISE TECHNIQUES</strong></td>
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<tr>
<td>FT 153</td>
<td>Fall</td>
<td>2</td>
<td>44 lab</td>
<td>Develop skills related to exercise techniques and instruction focusing on running/sprinting form, introduction to plyometrics, and the use of body weight, dumbbells, elastic tubing, and stability balls for resistance training.</td>
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<td><strong>POWER DEVELOPMENT</strong></td>
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<td>FT 154</td>
<td>Winter</td>
<td>2</td>
<td>44 lab</td>
<td>Develop skills related to exercise technique and instruction focusing on power, speed, agility and quickness. Prerequisite: A grade of “C” or better in FT 151.</td>
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<td><strong>GROUP FITNESS INSTRUCTOR</strong></td>
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<tr>
<td>FT 155</td>
<td>Summer</td>
<td>2</td>
<td>44 lab</td>
<td>Develop skills related to exercise technique and instruction focusing on group exercise training to music. Concurrent enrollment in FT 150, or completion of FT 260 and FT 220 with a grade of “C” or better.</td>
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<td><strong>NUTRITION FOR FITNESS</strong></td>
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<td>FT 200</td>
<td>Winter</td>
<td>3</td>
<td>33 lecture</td>
<td>Develop strategies for encouraging nutritious eating and weight management. Discuss eating disorders. Explore performance nutrition and supplementation. Acquire a variety of diet and analysis tools to use with clients within the scope of practice for the personal trainer. Prerequisite: A grade of “C” or better in HLTH 100 and MATH 090 or 091.</td>
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<td><strong>WELLNESS COACHING</strong></td>
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<tr>
<td>FT 210</td>
<td>Fall</td>
<td>3</td>
<td>22 lecture</td>
<td>22 hours of lab</td>
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<tr>
<td><strong>FACILITY MANAGEMENT</strong></td>
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<td>FT 220</td>
<td>Winter</td>
<td>3</td>
<td>33 lecture</td>
<td>CPR/AED and First Aid specific to a health club setting. Liability, safety, facility layout, repair, and maintenance will also be explored. Upon successful completion of this course, students will receive their Lay Responder certification from the American Red Cross.</td>
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</tbody>
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FITNESS TESTING
FT 230  Fall  3 Credits
11 hours of lecture  44 hours of lab
Methods of assessment of client health, fitness, nutrition, and exercise behavior. Developing skills for assessing blood pressure, body composition, cardio-respiratory fitness, flexibility, and muscular strength/endurance. Prerequisite: A grade of “C” or better in HPE 258 and MATH 090 or 091. [GE]

STRUCTURAL KINESIOLOGY
FT 250  Fall  3 Credits
22 hours of lecture  22 hours of lab
Overview of anatomical and mechanical bases of human movement. Prerequisite: A grade of “C” or better in FT 151. [GE]

EXERCISE PHYSIOLOGY
FT 251  Fall  4 Credits
44 hours of lecture
Study of physiological responses and adaptations of the body to exercise: topics include principles related to disease prevention, the cardio-respiratory system, neuromuscular system, environmental stress, supplementation, nutrition, metabolism, body composition, and weight management. Prerequisite: A grade of “C” or better in BIOL 164/165 or BIOL & 253 (or BIOL 160/161 or BIOL 233). [GE]

EXERCISE PRESCRIPTION I – HEALTHY POPULATIONS
FT 260  Winter  5 Credits
44 hours of lecture  22 hours of lab
Designing client-centered fitness plans intended to help apparently healthy clients achieve their health and fitness goals in a safe and effective manner. Prerequisite: A grade of “C” or better in ENGL& 101 or ENGL 135 (or ENGL 101 or 111), FT 210 and FT 251. [GE]

EXERCISE PRESCRIPTION II – SPECIAL POPULATIONS
FT 261  Spring  5 Credits
55 hours of lecture
Designing individualized fitness plans to help clients with special needs achieve their health and fitness goals in a safe and effective manner. Prerequisite: A grade of “C” or better in FT 260. [GE]

EXERCISE PRESCRIPTION III – PERFORMANCE TRAINING
FT 262  Spring  4 Credits
22 hours of lecture  44 hours of lab
Emphasizes endurance and resistance training methodology. Lifting techniques, and teaching methods for body building/sculpting, power lifting, and Olympic lifting are addressed. Technical, tactical and conditioning aspects of endurance training focus on swimming, bicycling, running and cardio machines. Prerequisite: A grade of “C” or better in FT 260. [GE]

PROFESSIONAL ASPECTS OF FITNESS TRAINING
FT 270  Winter  3 Credits
33 hours of lecture
Focuses on personal training as a business: business planning, marketing, customer service, work ethic, management systems, resume development and interviewing skills. [GE]

FITNESS TRAINING INTERNSHIP
FT 275  Spring  4 Credits
132 hours of clinical
Experience hands-on fitness training at one or more approved worksites. Prerequisite: A grade of “C” or better in FT 220. [GE]
SPECIAL TOPICS
FT 280 1 – 5 Credits
55 hours of lecture
Varying topics in the Fitness Training Industry, as listed in the quarterly class schedule. May be repeated for credit. [GE]

SPECIAL PROJECTS
FT 290 Summer Fall Winter Spring 1 – 5 Credits
Opportunity to plan, organize, and complete special projects approved by the department. Prerequisite: Consent of Instructor.

FINAL SKILL ASSESSMENT
FT 299 Spring 1 Credit
22 hours of lab
Comprehensive assessment of Fitness Trainer AAS degree student learning outcomes. Students must pass this course at 70% or better to earn their AA-Fitness Trainer from Clark College. Prerequisite: A grade of “C” or higher for FT 260.

Food – Culinary Arts

FOOD SERVICE
FOOD 102 Fall 4 Credits
88 hours of lab
Line and line backup, serving methods, portion control, and cash register training. [GE]

FOOD SERVICE
FOOD 103 Winter 4 Credits
88 hours of lab
Continuation of FOOD 102, with greater emphasis on particular line positions and their interactions with the whole line’s purpose. [GE]

FOOD SERVICE
FOOD 104 Spring 4 Credits
88 hours of lab
Continuation of FOOD 103 with further emphasis on line positions and an analysis of customer relations. [GE]

FOOD SERVICE
FOOD 105 Summer 4 Credits
88 hours of lab
Serving under banquet, catering, fast food and take-out conditions. Preparation and clean up. [GE]

COOKING THEORY
FOOD 111 Fall 5 Credits
55 hours of lecture
Theory including equipment safety, kitchen methods, soups, stocks, and salads. Concurrent enrollment in FOOD 112 required. [GE]

FOOD PRODUCTION
FOOD 112 Fall 4 Credits
88 hours of lab
Sanitation, safety, entrees, casseroles, fruit, and quick breads. Careers in the food industry. Concurrent enrollment in FOOD 111 required. [GE]
COOKING THEORY
FOOD 113 Winter 5 Credits
55 hours of lecture
Theory including sanitation, safety, entrees, casseroles, fruit, quick breads, and careers in the food industry. Also includes garde manger (food decoration). Concurrent enrollment in FOOD 114 required. [GE]

FOOD PRODUCTION
FOOD 114 Winter 4 Credits
88 hours of lab
Continuation of FOOD 112. Production cooking and management related to topics covered in FOOD 113. Concurrent enrollment in FOOD 113 required. [GE]

COOKING THEORY
FOOD 115 Spring 5 Credits
55 hours of lecture
Theory including safety, sanitation, vegetable preparation, desserts, and job interviewing. Concurrent enrollment in FOOD 116 required. [GE]

FOOD PRODUCTION
FOOD 116 Spring 4 Credits
88 hours of lab
Continuation of FOOD 114. Production cooking and management related to topics covered in FOOD 115. Concurrent enrollment in FOOD 115 required. [GE]

COOKING THEORY
FOOD 117 Summer 5 Credits
55 hours of lecture
Problems involved in preparation for banquets, catering, fast food and take-out food services. Concurrent enrollment in FOOD 118 required. [GE]

FOOD PRODUCTION
FOOD 118 Summer 4 Credits
88 hours of lab
Banquet, catering, deli and fast food. Concurrent enrollment in FOOD 117 required. [GE]

KITCHEN SET-UP
FOOD 120 Fall 2 Credits
44 hours of lab
Opening up a kitchen, inventoring food, setting-up food stations, turning on all equipment, pre-planning the day’s activities, and breakfast cooking. [GE]

KITCHEN SET-UP
FOOD 121 Winter 2 Credits
44 hours of lab
Continuation of FOOD 120 with further emphasis on efficient kitchen operations. Prerequisite: FOOD 120. [GE]

KITCHEN SET-UP
FOOD 122 Spring 2 Credits
44 hours of lab
Learning kitchen equipment set-up. Getting kitchen stations ready for the day’s food preparation. [GE]

KITCHEN SET-UP
FOOD 123 Summer 2 Credits
44 hours of lab
Setting-up a dining room and working with problems of pre-opening operations. [GE]
<table>
<thead>
<tr>
<th>COURSE</th>
<th>SEMESTERS</th>
<th>CREDITS</th>
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<tbody>
<tr>
<td><strong>FOOD DECORATION</strong></td>
<td>Summer Fall Winter Spring</td>
<td>3 Credits</td>
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<tr>
<td>FOOD 125</td>
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<tr>
<td>22 hours of lecture</td>
<td>22 hours of lab</td>
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<tr>
<td>Garnishing techniques with fruits and vegetables. Dessert garnishes and basic use of pastry bag and tips. [GE]</td>
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<tr>
<td><strong>ADVANCED GARDE MANGER</strong></td>
<td>Fall Winter Spring</td>
<td>3 Credits</td>
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<tr>
<td>FOOD 126</td>
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<tr>
<td>22 hours of lecture</td>
<td>22 hours of lab</td>
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<tr>
<td>Garnishing techniques with fruits and vegetables. Advanced melon and flower carving. Use of these and other items to create presentation pieces or centerpieces. [GE]</td>
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<tr>
<td><strong>HORS D’OEUVRES – PATES</strong></td>
<td>Fall Winter Spring</td>
<td>3 Credits</td>
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<tr>
<td>FOOD 127</td>
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<tr>
<td>22 hours of lecture</td>
<td>22 hours of lab</td>
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<tr>
<td>Basic preparation of pates and terrines and other related forcemeat preparation -- quenelles, galantines, ballotines, etc. Discussion of French terminology, especially pertaining to garde manger – selection, preparation, and presentation of hors d’oeuvres for entertaining. [GE]</td>
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<tr>
<td><strong>GUMPASTE FLOWERS</strong></td>
<td>Fall Winter Spring</td>
<td>3 Credits</td>
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<tr>
<td>FOOD 128</td>
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<tr>
<td>22 hours of lecture</td>
<td>22 hours of lab</td>
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<tr>
<td>Basics of preparing, handling, molding, and drying gumpaste (pastillage) flowers. [GE]</td>
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<tr>
<td><strong>ICE CARVING</strong></td>
<td>Fall Winter Spring</td>
<td>3 Credits</td>
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<tr>
<td>FOOD 130</td>
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<tr>
<td>22 hours of lecture</td>
<td>22 hours of lab</td>
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<tr>
<td>Basic ice carving and display techniques. Use of tools and templates. [GE]</td>
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<tr>
<td><strong>DINING ROOM THEORY</strong></td>
<td>Summer Fall Winter Spring</td>
<td>4 Credits</td>
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<tr>
<td>FOOD 131</td>
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<tr>
<td>44 hours of lecture</td>
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<tr>
<td>Theory and practice of restaurant table service including customer psychology, taking and filling orders, table setting, and styles of service. [GE]</td>
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<tr>
<td><strong>DINING ROOM PRODUCTION</strong></td>
<td>Summer Fall Winter Spring</td>
<td>5 Credits</td>
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<tr>
<td>FOOD 132</td>
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<tr>
<td>110 hours of lab</td>
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<tr>
<td>Organization and set-up of dining room prior to operation, stocking of “service” stations, and dining table set-up. [GE]</td>
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<tr>
<td><strong>DINING ROOM SERVICE</strong></td>
<td>Summer Fall Winter Spring</td>
<td>5 Credits</td>
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<tr>
<td>FOOD 133</td>
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<tr>
<td>110 hours of lab</td>
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<tr>
<td>Restaurant table service and practice including taking, writing and placing orders, customer seating and service, cash control, and special problems. [GE]</td>
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<tr>
<td><strong>SOUPS AND SAUCES</strong></td>
<td>Fall Winter Spring</td>
<td>3 Credits</td>
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<tr>
<td>FOOD 134</td>
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<tr>
<td>22 hours of lecture</td>
<td>22 hours of lab</td>
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<tr>
<td>Methods of making basic and advanced soups and sauces. [GE]</td>
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<tr>
<td><strong>WINE APPRECIATION</strong></td>
<td>Fall Winter Spring</td>
<td>3 Credits</td>
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<tr>
<td>FOOD 140</td>
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<tr>
<td>33 hours of lecture</td>
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<tr>
<td>History of wines: how they are made, aged, and stored, along with actual tasting sessions to educate the palate. [GE]</td>
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</tbody>
</table>
**MENU PLANNING**

FOOD 141

Fall Winter Spring

3 Credits

33 hours of lecture

Basic principles of nutrition and menu planning. [GE]

**COOPERATIVE WORK EXPERIENCE**

FOOD 199

Summer Fall Winter Spring

1 – 5 Credits

165 hours of clinical

Supervised work experience in a hospitality-related job. Completion of specific learning objectives and employer evaluation. Completion of, or concurrent enrollment in, HDEV 195, 198, or 200 required. Prerequisite: Consent of Instructional Unit. [GE]

**MANAGEMENT THEORY**

FOOD 223

Fall

5 Credits

55 hours of lecture

Purchasing, receiving, and inventorying of food supplies. Calculating labor-cost percentages. Concurrent enrollment in FOOD 240 required. Prerequisite: Consent of Instructional Unit. [GE]

FOOD 225

Winter

5 Credits

55 hours of lecture

Decorating with food, buffet set-ups, hors d'oeuvres, canapes, basic and gourmet food preparation including ice carving and tallow showpieces. Concurrent enrollment in FOOD 241 required. Prerequisite: Consent of Instructional Unit. [GE]

FOOD 227

Spring

5 Credits

55 hours of lecture

Menu analysis, restaurant security, job applications, resumes and interviews. Concurrent enrollment in FOOD 242 required. Prerequisite: Consent of Instructional Unit. [GE]

FOOD 229

Summer

5 Credits

55 hours of lecture

Advanced food preparation techniques and classical cooking information. Scheduling and layout for banquets and buffets. Concurrent enrollment in FOOD 243 required. Prerequisite: Consent of Instructional Unit. [GE]

**BEGINNING MEAT CUTTING**

FOOD 235

Fall Winter Spring

3 Credits

11 hours of lecture

44 hours of lab

Individualized study of meat-cutting techniques related to retail sales and commercial use. [GE]

**INTERMEDIATE MEAT CUTTING**

FOOD 236

Fall Winter Spring

3 Credits

11 hours of lecture

44 hours of lab

Study of meat-cutting techniques for beef, pork, poultry, and lamb. Brief overview of cooking techniques for the various cuts of meat. Prerequisite: FOOD 235. [GE]

**ADVANCED MEAT CUTTING**

FOOD 237

Fall Winter Spring

3 Credits

11 hours of lecture

44 hours of lab

To supply the students with the knowledge, technical skills and information necessary to manage all phases of meat and poultry cutting in a food service operation. Prerequisite: FOOD 235 and 236. [GE]
RESTAURANT MANAGEMENT
FOOD 240  Fall  8 Credits
176 hours of lab
Practical instruction in restaurant management by working at various management stations. Prerequisite: Consent of Instructional Unit. [GE]

RESTAURANT MANAGEMENT
FOOD 241  Winter  8 Credits
176 hours of lab
Practical instruction in restaurant management by working at various management stations. Prerequisite: FOOD 240 or consent of Instructional Unit. [GE]

RESTAURANT MANAGEMENT
FOOD 242  Spring  8 Credits
176 hours of lab
Practical instruction in restaurant management by working at various management stations. Prerequisite: FOOD 241 or consent of Instructional Unit. [GE]

RESTAURANT MANAGEMENT
FOOD 243  Summer  8 Credits
176 hours of lab
Practical instruction in restaurant management by working at various management stations. Prerequisite: FOOD 242 or consent of Instructional Unit. [GE]

ADVANCED KITCHEN SET-UP
FOOD 250  Fall  2 Credits
44 hours of lab
Staff management and early morning kitchen set-up. [GE]

ADVANCED KITCHEN SET-UP
FOOD 251  Winter  2 Credits
44 hours of lab
Organization and set-up of management stations. [GE]

ADVANCED KITCHEN SET-UP
FOOD 252  Spring  2 Credits
44 hours of lab
Organization and set-up of management stations. [GE]

ADVANCED KITCHEN SET-UP
FOOD 253  Summer  2 Credits
44 hours of lab
Organization and set-up of management stations. [GE]

SPECIAL PROJECTS
FOOD 290  Summer Fall Winter Spring  1 – 12 Credits
Opportunity to plan, organize and complete special projects approved by the department. Prerequisite: Consent of Instructional Unit. [GE]

Forensic Science
SURVEY OF FORENSIC SCIENCE
FSCI 101  Spring  3 Credits
33 hours of lecture
An introduction to the Forensic Sciences: crime scene analysis and recording, the crime laboratory, Forensic Medicine, Dentistry, Anthropology, Psychology, and other topics. [SE]
**SELECTED TOPICS: FORENSIC SCIENCE**

**FSCI 280**  
3 Credits  
33 hours of lecture  
Selected topics in the Forensic Sciences as listed in the quarterly schedule. May be repeated for credit. Prerequisite: None/or Law enforcement officers only for some topics. [SE]

**SPECIAL PROJECTS**

**FSCI 290**  
1 – 5 Credits  
Varying topics in the forensic sciences as listed in the quarterly class schedule. May be repeated for credit. Prerequisite: Consent of Instructional Unit. [GE]

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### French

**FRENCH I**  
FRCH& 121  
Summer Fall Winter Spring  
5 Credits  
55 hours of lecture  
Communicating in French with practice in listening, speaking, writing, and reading. [HA, SE]

**FRENCH II**  
FRCH& 122  
Fall Winter Spring  
5 Credits  
55 hours of lecture  
Continuation of FRCH& 121. [HA, SE]

**FRENCH III**  
FRCH& 123  
Winter Spring  
5 Credits  
55 hours of lecture  
Continuation of FRCH& 122. [HA, SE]

**CONVERSATIONAL FRENCH**  
FRCH 141  
3 Credits  
33 hours of lecture  
Intensive practice in French conversation. Discussion in pairs or small groups on topics of interest to those studying French-speaking societies. Prerequisite: Consent of Instructional Unit. Formerly FREN 141. Credit not allowed for both FREN 141 or FRCH 141. [HB, SE]

**STUDY ABROAD ORIENTATION**  
FRCH 150  
1 Credit  
11 hours of lecture  
Preparing students to travel with the Clark College study abroad program to a French-speaking country. Successful completion of the course required for students to participate in the travel abroad program. Application and acceptance into the study abroad program also required. Prerequisite: A grade of “C” or better or concurrent enrollment in FRCH& 121 or above; or consent of Instructional Unit.

**FRENCH IV**  
FRCH& 221  
Fall Winter Spring  
5 Credits  
55 hours of lecture  
Review of basic structures, expansion of conversation, and reading skills. [HA, SE]

**FRENCH V**  
FRCH& 222  
Fall Winter Spring  
5 Credits  
55 hours of lecture  
Review of basic structures, expansion of conversation, and reading skills. Prerequisite: FRCH& 221 or equivalent. [HA, SE]
FRENCH VI
FRCH& 223  Fall Winter Spring  5 Credits
55 hours of lecture
Review of basic structures, expansion of conversation, and reading skills. Prerequisite: FRCH& 222 or equivalent. [HA, SE]

SELECTED TOPICS
FRCH 280     1 – 5 Credits
55 hours of lecture
The course focuses on selected topics in French. Topics vary, and course theme and content change to reflect new topics. Because the course varies in content, it is repeatable for credit for different topics. Individual topics are listed in the quarterly class schedule. [SE]

SPECIAL PROJECTS
FRCH 290     1 – 5 Credits
Opportunity to plan, organize and complete special projects approved by the department. Prerequisite: Consent of Instructional Unit. [HA, GE]

General Education

SPECIAL TOPICS
GED 005     1 – 10 Credits
110 hours of lecture
Special interest topics at the GED level for students who qualify based upon CASAS Test scores. Topics vary and course may be repeated for credit for different topics.

GED WRITING FUNDAMENTALS
GED 011     Summer Fall Winter Spring  1 – 6 Credits
66 hours of lecture
Students performing at GED level will learn to write understandable and well-constructed multiple paragraphs easily and with few errors to independently accomplish well defined and structured writing activities for varied reasons (such as for personal expression, to inform, to persuade or to complete a task) and for audiences in a range of comfortable and familiar settings. Organization, transitions, punctuation and sentence structure skills are emphasized. This course can serve as preparation for the GED Writing Test or as refresher course for basic skills improvement. Prerequisite: Appropriate CASAS score.

GED MATH I
GED 021     Summer Fall Winter Spring  1 – 6 Credits
66 hours of lecture
Students will learn to read, write, interpret, and apply a wide variety of mathematical information such as the following: money/expenses/prices, percentages, decimals, fractions, patterns and formulas, units of measurement including fractional units, geometrical shapes including shapes containing a combination of common shapes, concept of volume, and ways to interpret, represent and draw implications from data (graphs, tables, and simple forms of statistical analysis). Prerequisite: ABE MATH 024 or appropriate CASAS placement score.

GED READING II
GED 032     Summer Fall Winter Spring  1 – 2 Credits
22 hours of lecture
Analysis of literature, science and social studies readings. Skills include distinguishing between fact and opinion, understanding elements of style and structure, interpreting charts and graphs, and increasing comprehension. Test taking skills taught and practiced. Last in a series of courses for improvement of basic skills in reading. This course serves as preparation for the GED Reading Tests in Literature, Science and Social Studies, or as a refresher course for basic skills improvement. Prerequisite: ABE 034 or recommending score on placement test.
GED READING: LITERATURE
GED 033 Summer Fall Winter Spring 1 – 2 Credits
22 hours of lecture
Developing and refining secondary level reading and test taking skills with literary texts. Uses of works of nonfiction, fiction, poetry, and drama to develop competencies in comprehension, application, analysis, synthesis, and evaluation of concepts; last in a series of courses in preparation for the GED Language Arts Reading Test and a refresher for basic skills reading improvement. Prerequisite: ABE 034 Reading or recommending score on CASAS pretest.

GED READING, SOCIAL STUDIES
GED 035 Summer Fall Winter 1 – 2 Credits
22 hours of lecture
Developing strong secondary reading and critical thinking skills with social studies materials. Exercises involve reading social studies passages and interpreting graphs, charts, maps, cartoons, diagrams, and photography. Content includes world history, civics and government, economics and geography, last in a series of courses in preparation for the GED Social Studies Test and a refresher for basic skills reading improvement. Prerequisite: ABE 044 Reading or recommending score on CASAS pretest.

GED READING: SCIENCE 037
GED 037 Summer Fall Winter Spring 1 – 2 Credits
22 hours of lecture
Developing strong secondary reading and critical thinking skills with scientific materials. Exercises involve reading scientific passages and interpreting graphs, charts, maps, and diagrams. Content includes earth and space science, life science, and physical science (physics and chemistry); the last in a series of courses in preparation for the GED Science Test, a refresher for basic skills reading improvement. Prerequisite: ABE 044 or recommending score on CASAS pretest.

I-BEST SUPPORT
GED 071 Fall Winter Spring 1 – 6 Credits
66 hours of lecture
Provides Basic Skills students extra instruction and support for success in their I-BEST designated classes. Reviews important concepts and vocabulary introduced during I-BEST classes. Provide opportunities to develop culturally unfamiliar customer service and interaction skills needed to be successful in I-BEST occupations. Prerequisite: Admission into an I-BEST program.

WRITING BASICS FOR GED
GED 094 Summer Fall Winter Spring 5 Credits
55 hours of lecture
Emphasis on writing more fluently, clearly, and correctly. Building skills through exercises in grammar, writing responses to assigned readings, and planning, organizing, drafting, and revising paragraphs. In-class and out-of-class paragraphs are required. Prerequisite: CASAS score of 240 or higher, or permission of instructor.

Geography

INTRODUCTION TO GEOGRAPHY
GEOG& 100 Fall Winter Spring 5 Credits
55 hours of lecture
Survey of our natural environment, Earth-Sun-Moon relationships, cartography, weather and climate, landforms, soils, oceans, and water and biotic resources. Also a survey of the countries and major features of the world.

WORLD PHYSICAL GEOGRAPHY
GEOG 101 Fall Winter Spring 5 Credits
55 hours of lecture
Survey of our natural environment. Earth-Sun-Moon relationships, cartography, weather and climate, landforms, soils, oceans, and water and biotic resources. Also a survey of the countries and major features of the world. [SE, SS]
ECONOMIC GEOGRAPHY  
GEOG 107  Winter  5 Credits  
55 hours of lecture  
Broad patterns, courses, and consequences of interrelationships between economic and geographic forces, processes, and resources. Location of economic activity, population dynamics, strategic resources, global economic flashpoints, patterns/consequences of regional integration. Same as ECON 107. Credit not allowed for both ECON 107 and GEOG 107. [SE, SS]

THE GEOPOLITICS OF THE MIDDLE EAST  
GEOG 220 Summer Spring  5 Credits  
55 hours of lecture  
Geo-political survey of the Middle East, including interrelationships between the physical, economic and political geography of this region, the impact of geography on politics and political issues within the nations of this region, the corresponding impact of politics and political issues on geography and on the lives of the people living in this region, as well as the resulting diversity of cultures, beliefs, perceptions, challenges and issues among the people of this region. This course will also examine the importance and impact of the Middle East on the rest of the world, as well as the impact and influence of the rest of the world on the Middle East. Credit not allowed for both GEOG 220 and POLS 220. [SE]

THE GEOPOLITICS OF AFRICA  
GEOG 221 Summer Spring  5 Credits  
55 hours of lecture  
Geo-political survey of Africa, including interrelationships between the physical, economic and political geography of this region, the impact of geography on politics and political issues within the nations of this region, the corresponding impact of politics and political issues on geography and on the lives of the people living in this region, as well as the resulting diversity of cultures, beliefs, perceptions, challenges and issues among the people of this region. This course will also examine the importance and impact of Africa on the rest of the world, as well as examine the impact and influence of the rest of the world on Africa. Credit not allowed for both GEOG 221 and POLS 221. [SE]

THE GEOPOLITICS OF CHINA, JAPAN & EAST ASIA  
GEOG 222 Summer Spring  5 Credits  
55 hours of lecture  
Geo-political survey of China, Japan and East Asia, including interrelationships between the physical, economic and political geography of this region, the impact of geography on politics and political issues within the nations of this region, the corresponding impact of politics and political issues on geography and on the lives of the people living in this region, as well as the resulting diversity of cultures, beliefs, perceptions, challenges and issues among the people of this region. This course will also examine the importance and impact of China, Japan and East Asia on the rest of the world, as well as examine the impact and influence of the rest of the world on China, Japan and East Asia. Credit not allowed for both GEOG 222 and POLS 222. [SE]

THE GEOPOLITICS OF SOUTH AND CENTRAL ASIA  
GEOG 223 Summer Spring  5 Credits  
55 hours of lecture  
Geo-political survey of South and Central Asia, including interrelationships between the physical, economic and political geography of this region, the impact of geography on politics and political issues within the nations of this region, the corresponding impact of politics and political issues on geography and on the lives of the people living in this region, as well as the resulting diversity of cultures, beliefs, perceptions, challenges and issues among the people of this region. This course will also examine the importance and impact of South and Central Asia on the rest of the world, as well as examine the impact and influence of the rest of the world on South and Central Asia. Credit not allowed for both GEOG 223 and POLS 223. [SE]

SELECTED TOPICS  
GEOG 280  1 – 5 Credits  
55 hours of lecture  
Course focuses on selected topics in Geography. Topics vary, and course theme and content change to reflect new topics. Because the course varies in content, it is repeatable for credit for different topics. [SE]
SPECIAL PROJECTS
GEOG 290 Winter Spring 1 – 5 Credits
Opportunity to plan, organize and complete special projects approved by the department. Prerequisite: Consent of Instructional Unit. [GE]

Geology

INTRO PHYSICAL GEOLOGY
GEOL& 101 Fall Winter Spring 5 Credits
33 hours of lecture 44 hours of lab
A dynamic earth, geologic time, origin and identification of minerals and rocks. Volcanoes, earthquakes and the structure of earth in light of plate tectonic theory. One day field trip required. [NS, SE]

INTRO TO GEOLOGY II: EARTH’s SURFACE PROCESSES
GEOL 102 Fall Winter Spring 5 Credits
33 hours of lecture 44 hours of lab
Plate tectonics and the origin of ocean basins and continents. Mass wasting, glaciation, streams, groundwater, deserts, shorelines and deep sea sediments. One day field trip required. [NS, SE]

HISTORICAL GEOLOGY
GEOL& 103 Spring 5 Credits
33 hours of lecture 44 hours of lab
Physical, chemical, and biologic evolution of the earth as determined from the rock record. Interpretation of ancient environments through stratigraphy and biostratigraphy. Plate tectonics, earth history, and fossil identification. Field trips required. Prerequisite: Five credits in GEOL or consent of Instructional Unit. [NS, SE]

NORTHWEST GEOLOGY
GEOL 109 Fall Winter Spring 5 Credits
55 hours of lecture
Geologic evolution of the Pacific Northwest emphasizing the development of the Cascades, Columbia River Plateau, Coast Ranges, Puget-Willamette Lowlands, San Juan Islands, High Lava Plains and the Okanogan Highlands. Field trips required. This class is a non-lab science. [NS, SE]

COOPERATIVE WORK EXPERIENCE
GEOL 199 Fall Winter Spring 1 – 3 Credits
99 hours of clinical
Supervised work experience in an approved job. Completion of specific learning objectives and employer evaluation. Completion of, or concurrent enrollment in, HDEV 195, 198, or 200 required. Prerequisite: Consent of Instructional Unit. [GE]

FIELD STUDIES IN GEOLOGY
GEOL 218 Spring 1 – 6 Credits
22 hours of lecture 88 hours of lab
Field trip program to study the geologic evolution of an area. Emphasis on interpretation of rocks and their structure. Duration, scope and field trip localities will vary. Food and personal gear provided by student. Maxivans provided for travel. Day hikes may be required. Prerequisite: Minimum of 10 credits in geology or consent of Instructional Unit. [NS, SE]

SPECIAL PROJECTS
GEOL 290 Fall Winter Spring 1 – 5 Credits
Opportunity to plan, organize and complete special projects approved by the department. Prerequisite: Consent of Instructional Unit. [GE]
German

GERMAN I
GERM& 121 Fall Winter Spring 5 Credits
55 hours of lecture
Oral and written communication in German. Use of basic vocabulary and structures to acquire information and to express personal interests, needs and opinions on familiar topics. Contemporary German culture. [HA, SE]

GERMAN II
GERM& 122 Fall Winter Spring 5 Credits
55 hours of lecture
Continuation of GERM& 121 with emphasis on developing the students’ ability to express themselves freely on familiar topics. [HA, SE]

GERMAN III
GERM& 123 Fall Winter Spring 5 Credits
55 hours of lecture
Continuation of GERM& 122 with emphasis on developing students’ ability to express themselves freely on familiar topics. [HA, SE]

BERLIN IN FILM AND LITERATURE
GERM 150 Summer 3 Credits
33 hours of lecture
Survey of Berlin during two centuries of recent history, using a critical exploration of literary, filmic, and artistic works on and of Berlin. Conducted in English, this course is open to all students and is mandatory before departure for students participating in the German Studies in Berlin Program. While open to the campus, this course is required for those students accepted into the German Studies in Berlin Program and will be offered in the summer prior to departure for Germany. Course will be conducted in English. There are no language prerequisites.

INTERNATIONAL COOPERATIVE WORK EXPERIENCE
GERM 199 Spring 1 – 10 Credits
330 hours of clinical
Summer cooperative work experience in a German-speaking country. Requires use of German language. Enroll in this course Spring quarter prior to participation abroad. Concurrent enrollment in GERM 140. Prerequisite: Consent of Instructional Unit.

GERMAN IV
GERM& 221 Fall Winter Spring 5 Credits
55 hours of lecture
Thematic approach to contemporary German culture and literature. Discussions and papers in German. Grammar review. [HA, SE]

GERMAN V
GERM& 222 Fall Winter Spring 5 Credits
55 hours of lecture
Thematic approach to contemporary German culture and literature. Discussions and papers in German. Grammar review. Prerequisite: GERM& 221 or equivalent. [HA, SE]

GERMAN VI
GERM& 223 Fall Winter Spring 5 Credits
55 hours of lecture
Thematic approach to contemporary German culture and literature. Discussions and papers in German. Grammar review. Prerequisite: GERM& 222 or equivalent. [HA, SE]
SELECTED TOPICS
GERM 280  1 – 5 Credits
55 hours of lecture
Course focuses on selected topics in German. Topics vary and course theme and content change to reflect new topics. Because the course varies in content, it is repeatable for credit for different topics. [SE]

SPECIAL PROJECTS
GERM 290  Fall Winter Spring  1 – 5 Credits
Opportunity to plan, organize and complete special projects approved by the department. Prerequisite: Consent of Instructional Unit. [HA, GE]

Health

FOOD AND YOUR HEALTH
HLTH 100  Summer Fall Winter Spring  2 Credits
22 hours of lecture
Explores the relationship between personal nutrition, high-level wellness and disease prevention. Promotes nutritional awareness, consumer concerns and emphasizes individual nutritional needs. [HE, SE]

HEALTH FOR ADULT LIVING
HLTH 101  Summer Fall Winter Spring  3 Credits
33 hours of lecture
Emphasizes the dynamics involved in pursuing high level wellness. Addresses human health issues, health related behavior change, assessing personal disease risk and healthy lifestyle promotion. [HE, SE]

ENVIRONMENTAL HEALTH
HLTH 103  Summer Fall Winter Spring  2 Credits
22 hours of lecture
Explores environmental threats to human health. Topics include hazards related to poverty: safe drinking water, sanitation, food safety, inadequate solid waste disposal, and occupational injuries. Problems of developed countries related to unsustainable consumption will also be addressed: pollution (air, water, soil), solid and hazardous wastes, emerging infectious diseases, deforestation, land degradation and climate. [HE, SE]

WEIGHT AND YOUR HEALTH
HLTH 104  Fall Winter Spring  2 Credits
22 hours of lecture
Study of what a healthy body weight is and methods for achieving it to improve body function and reduce disease risks; study of evidence for the cultural, psychological, physiological, and environmental influences on weight issues. [HE, SE]

ADULT CPR AND FIRST AID
HLTH 120  Summer Fall Winter Spring  1 Credit
11 hours of lecture
Introduction to adult CPR and general first aid skills that will prepare the student to recognize emergencies, make first aid decisions, and provide care. Upon successful completion of the course, students will receive Adult CPR and Standard First Aid certification. Does not meet AA distribution requirement. [GE]

ADULT, CHILD, AND INFANT CPR
HLTH 121  Summer Fall Winter Spring  1 Credit
11 hours of lecture
Introduction to adult, child and infant CPR skills that will prepare the student to recognize emergencies, make appropriate decisions, and provide emergency care. Upon successful completion of the course, students will receive Adult, Child and Infant CPR certification. [GE]
WILDERNESS FIRST AID
HLTH 122  
Summer  
2 Credits  
22 hours of lecture  
Foundation of first aid principles and skills necessary to respond to emergencies where immediate emergency medical services are not available, such as wilderness, remote environments, and urban disasters. Prerequisite: Proof of current Adult CPR/AED certification (bring to first class).

CO-OP WORK EXPERIENCE
HLTH 199  
1 – 3 Credits  
99 hours of clinical  
Supervised work experience in an approved job. Completion of specific learning objectives and employer evaluation. Completion of, or concurrent enrollment in, HDEV 195, 198, or 200 required. Prerequisite: Consent of Instructional Unit. [GE]

HUMAN SEXUALITY
HLTH 206  
Fall Winter Spring  
2 Credits  
22 hours of lecture  
Study of improved sexual health. Topics include intimacy, family planning, reproductive health, sexual orientation, gender norms, sexual victimization, sexual behaviors, and how society and history shape sexuality. [HE, SE]

WOMEN'S HEALTH
HLTH 207  
Fall Winter Spring  
2 Credits  
22 hours of lecture  
Examines the specific health concerns of women. Emphasis is placed on understanding the interplay between physical and emotional health as well as hormonal cycles, reproduction, nutrition, infectious disease, cancer and cardiovascular disease. [HE, SE]

MEN'S HEALTH
HLTH 208  
Fall Winter Spring  
2 Credits  
22 hours of lecture  
Examines health topics as they relate to men's physical and emotional health. Topics include nutrition, body image, masculinity, major diseases facing men, sexuality, sexually transmitted infections, alcohol and drug abuse, basic exercise planning, and stress management.

MULTICULTURAL HEALTH
HLTH 210  
Fall Winter Spring  
2 Credits  
22 hours of lecture  
Emphasis on multicultural diversity in health beliefs and practice. Class examines and contrasts alternative healing modalities with the western medical model. Cultural traditions of a wide variety of ethnic and racial groups are explored. [HE, SE]

HEALTHY AGING
HLTH 278  
Spring  
2 Credits  
22 hours of lecture  
Exploration of guidelines and behaviors associated with successful aging in the areas of physical, emotional, social, spiritual, intellectual and environmental wellness. Topics include ageism, age-associated changes to the body, the role genetics and lifestyle each play in healthy aging, and end of life health issues. [HE, SE]

SELECTED TOPICS
HLTH 280  
1 – 3 Credits  
33 hours of lecture  
Course focuses on selected topics in health. Topics vary, and course theme and content change to reflect new topics. Because the course varies in content, it is repeatable for credit for different topics. [SE]
SPECIAL PROJECTS
HLTH 290   1 – 5 Credits
Opportunity to plan, organize and complete special projects approved by the department. Prerequisite: Consent of Instructional Unit. [GE]

Health & Physical Education

INDUSTRIAL HEALTH AND FITNESS
HPE 220                               Summer
22 hours of lecture                    22 hours of lab
3 Credits
Study of health and fitness for those entering the workforce in industrial jobs. Includes workplace safety and First Aid/CPR skills. Health issues explored include nutrition, fitness, stress management, substance abuse, and disease prevention. Students will be eligible to receive CPR/First Aid certification. [GE]

FITNESS-WELLNESS
HPE 258                               Summer Fall Winter Spring
22 hours of lecture                    22 hours of lab
3 Credits
A foundation course that promotes a better life experience through knowledge of wellness and implementation of positive fitness practices. Emphasis is placed on overall wellness, behavior modification, fitness components, disease risk factors, nutrition, weight management, and stress management. Includes lecture and lab components. [HP, SE]

MIND BODY HEALTH
HPE 266                               Fall Winter Spring
22 hours of lecture                    22 hours of lab
3 Credits
An investigation of the integral relationship between mind and body and how that relationship manifests itself in health, illness, and promotion of healing. Philosophical and scientific foundations of mind/body health will be explored. Techniques such as self-awareness, relaxation, meditation, exercise, diet, biofeedback and visual imagery will be explored in lab. [HP, SE]

SELECTED TOPICS
HPE 280                               Fall Winter Spring
55 hours of lecture
1 – 5 Credits
Varying topics in Health Physical Education and sports, as listed in the quarterly class schedule. May be repeated for credit. [SE]

SPECIAL PROJECTS
HPE 290                               Fall Winter Spring
55 hours of lecture
1 – 5 Credits
Opportunity to plan, organize and complete special projects approved by the department. Prerequisite: Consent of Instructional Unit. [GE]

Health Occupations

MATH FOR MEDICATION ADMINISTRATION
HEOC 011                               Fall Winter Spring
11 hours of lecture
1 Credit
Mathematical concepts related to the metric system and calculating dosages for oral and injectable medications, and converting Fahrenheit to Celsius. Designed to prepare an individual for the safe preparation and administration of medications in a physician's office, clinic or emegi-center. Prerequisite: Qualifying score on the college numerical skills placement for MATH 030 or higher or consent of Instructional Unit.

MATH REVIEW FOR DENTAL HYGIENE
HEOC 012                               Spring
11 hours of lecture
1 Credit
Math refresher for Dental Hygiene students. Concurrent enrollment in DH 163 required.
BASIC CHEMICAL CONCEPTS
HEOC 030  Fall  2 Credits
22 hours of lecture
Basic structure of matter and its interaction at the atomic level. Chemical vocabulary, natural laws, physical properties, and the symbolism used in chemistry will be developed.

PHLEBOTOMY REMEDIATION
HEOC 080   1 Credit
6 hours of lecture  11 hours of lab
Provides additional laboratory practice of phlebotomy skills and reinforces material related to the clinical practice of phlebotomy. For students who earned a “B” in the lecture portion of HEOC 115 but were clinically incomplete in laboratory portion of the course and have their instructor’s recommendation for remediation. A grade of “B” or better is required in this course to be eligible for enrollment in HEOC 197 and 198 Phlebotomy Practicum and Seminar. Prerequisite: A grade of “B” or better in HEOC 115 lecture and departmental permission.

HEALTH CAREERS EXPLORATION
HEOC 090  Fall Spring  2 Credits
22 hours of lecture
For persons interested in exploring careers in health occupations. Includes an overview of job opportunities in a variety of medical fields, professional interviews, guest speakers, individualized interest testing and information related to health career programs available at Clark College and the greater metropolitan area.

BASIC CONCEPTS OF ANATOMY AND PHYSIOLOGY
HEOC 100 Summer Fall Winter Spring 3 Credits
33 hours of lecture
Introduction to basic anatomical and physiological concepts as they apply to the following health occupations: EMT, Pharmacy Tech, Medical Assisting, and Phlebotomy. Basic overview of all body systems including the respiratory, muscular, urinary, reproductive, digestive, cardiovascular, lymphatic, immune, nervous skeletal, integumentary and the senses. Concurrent enrollment is linked HEOC 101 lab. [GE]

BASIC CONCEPTS OF ANATOMY & PHYSIOLOGY LAB
HEOC 101 Summer Fall Winter Spring 1 Credit
22 hours of lab
Laboratory companion to HEOC 100. Activities which apply concepts taught in the lecture section to clinical practice. Designed especially for students enrolled in the Medical Assisting program. This course is for most Medical Office Programs, Phlebotomy and EMT 103. Concurrent enrollment in HEOC 100. [GE]

HEALTH CAREERS EXPLORATION
HEOC 102 Summer Fall Winter Spring 2 Credits
22 hours of lecture
Exploring careers in health occupations including an overview of job opportunities in a variety of medical fields; professional interviews; guest speakers; individualized interest testing and information related to health career programs available at Clark College and the greater metropolitan area.

PHLEBOTOMY EDUCATION
HEOC 115 Summer Winter  3 Credits
22 hours of lecture  22 hours of lab
Prepares student to perform skin and venipunctures, to obtain suitable laboratory specimens and to function as a member of the medical laboratory team. Includes laboratory practice. Prerequisite: BMED 110 and written consent of Health Occupations Advisor. [GE]

AIDS EDUCATION
HEOC 120 Summer Fall Winter Spring 1 Credit
11 hours of lecture
A comprehensive look at AIDS, etiology, epidemiology, clinical manifestations, treatment, transmission, testing,
legal, ethical and psychological issues. Fulfills Washington State Department of Licensing requirement for license renewal for persons governed by Chapter 18.130.RCW. [GE]

**MEDICAL VOCABULARY**
HEOC 125 Summer Fall Winter Spring 3 Credits
33 hours of lecture
Introduction to medical terminology and abbreviations, medical roots, prefixes and suffixes with emphasis on analysis and word building skills. Human anatomy and physiology will be related to their respective terms, combining forms, pathological conditions, clinical procedures and laboratory tests. Emphasis will be placed on spelling, pronunciation and abbreviations. [GE]

**PHARMACOLOGY FOR HEALTH ASSISTANTS**
HEOC 130 Winter Spring 3 Credits
33 hours of lecture
Introduction to the basics of medication administration including trade and generic names of prescription and over-the-counter medications commonly prescribed, medication classifications, routes of administration, dosages, effects and implications and appropriate methods of documentation. Prerequisite: BIOL 164 (or 160) or HEOC 100, BMED 110, consent of Health Occupations or Business Technology Advisor. [GE]

**LABORATORY PROCEDURES FOR THE MEDICAL OFFICE**
HEOC 160 Fall Spring 4 Credits
22 hours of lecture 44 hours of lab
Specimen collection and processing. Basic laboratory tests: blood count, microscopic urine tests; microbiology specimen handling (including gram smears and basic culture techniques) blood typing and prepared test kit use. Equipment use and maintenance. Re-agent storage and handling. Lab safety emphasized. Prerequisite: A grade of “C” or better in BTEC 163 or consent of the Health Occupation Advisor. [GE]

**PHLEBOTOMY CLINICAL EXPERIENCE**
HEOC 197 Fall Spring 4 Credits
132 hours of clinical
Supervised phlebotomy experience in a health care facility. Provides students with the opportunity to apply knowledge and skill in performing clinical procedures and in developing professional attitudes for interacting with other professionals and consumers. Concurrent enrollment in HEOC 198 is required. Prerequisite: Completion of HEOC 115 with a grade of “B” or better and consent of Instructional Unit.

**PHLEBOTOMY CLINICAL SEMINAR**
HEOC 198 Fall Spring 1 Credit
11 hours of lecture
Preparation for entry into the phlebotomy workplace. Includes discussion and practice focusing on professionalism, customer service, ethics, resume writing, and interviewing. Concurrent enrollment in HEOC 197 is required. Prerequisite: Completion of HEOC 115 with a grade of “B” or better and consent of Instructional Unit.

**COOPERATIVE WORK EXPERIENCE**
HEOC 199 Summer Fall Winter Spring 1 – 5 Credits
165 hours of clinical
Supervised work experience in an approved job. Completion of specific learning objectives and employer evaluation. Completion of, or concurrent enrollment in, HDEV 195, 198, or 200 required. Prerequisite: Consent of Instructional Unit. [GE]

**SELECTED TOPICS**
HEOC 280 Summer Fall Winter Spring 1 – 5 Credits
55 hours of lecture
Selected topics in Health Occupations. Topics vary and course theme and content change to reflect new topics. Because the course varies in content, it is repeatable for credit. Specific topics are listed in the quarterly class schedule. [GE]
SPECIAL PROJECTS
HEOC 290 Summer Fall Winter Spring 1 – 15 Credits
Learning contract with the student to meet specialized needs of the individual. Credit based upon the type of
learning activities planned. Credit not applicable toward a major at Clark College. Prerequisite: Consent of the
Science and Health Sciences Dean. [GE]

History

WORLD CIVILIZATIONS I
HIST& 126 Fall 5 Credits
55 hours of lecture
The beginnings of civilization, c. 3500 B.C. to the High Middle Ages, c. 950 A.D. Areas to be covered include the
ancient Near East, Egypt, India, China, Greece, Rome, and early medieval Europe. [SE, SS]

WORLD CIVILIZATIONS II
HIST& 127 Winter 5 Credits
55 hours of lecture
The High Middle Ages through the Late Middle Ages, the Renaissance and Reformation eras, the emergence of
ey early modern society, witchcraft, the Enlightenment, the formation of nation-states and continued historical development in Europe, China, India, Africa, the Near East, plus Central and South America. [SE, SS]

WORLD CIVILIZATIONS III
HIST& 128 Spring 5 Credits
55 hours of lecture
The French Revolution through modern times. Incorporated into this framework are the political, military, eco-
nomic, social, cultural and religious manifestations throughout the various regions of the world. [SE, SS]

UNITED STATES HISTORY I
HIST& 146 Summer Fall 5 Credits
55 hours of lecture
Pre-Columbian era, colonial settlements and foundations of American institutions, seeds of revolution, Confedera-
tion and Constitution, federalism and states’ rights, Jacksonian era. [SE, SS]

UNITED STATES HISTORY II
HIST& 147 Fall Winter 5 Credits
55 hours of lecture
Antebellum reform, Manifest Destiny, roots of Southern secession, Civil War and Reconstruction, rise of big busi-
ness and organized labor, immigration and assimilation, American Imperialism and Progressive reform movement.
[SE, SS]

UNITED STATES HISTORY III
HIST& 148 Winter Spring 5 Credits
55 hours of lecture
World War I, the Twenties, the Great Depression and the New Deal, World War II, the Cold War consensus, Viet-
nam and the Watergate era, and issues connected to the recent past. [SE, SS]

COOPERATIVE WORK EXPERIENCE
HIST 199 1 – 3 Credits
99 hours of clinical
Supervised work experience in an approved job. Completion of specific learning objectives and employer evalu-
ation. Completion of, or concurrent enrollment in, HDEV 195, 198, or 200 required. Prerequisite: Consent of
Instructional Unit.
PACIFIC NORTHWEST HISTORY
HIST& 214  Summer Spring  5 Credits
55 hours of lecture
Survey of the political, cultural, economic and social development of the Pacific Northwest with special emphasis on Washington State history. [SE]

WOMEN IN U.S. HISTORY
HIST& 215  Fall Spring  5 Credits
55 hours of lecture
The role of women in America from the Native American women up to today. Included within these parameters will be women's contributions and status within the family, the economy, the religious communities, the legal and political systems, and the culture. [SE]

NATIVE AMERICAN HISTORY
HIST& 219  Spring  5 Credits
55 hours of lecture
A survey of Native American history from the pre-Columbian era to the Twentieth century. Topics include Indian cultures, treaty making and breaking, Indian patriots, and law and Indian rights. [SE]

EAST ASIAN HISTORY
HIST 221  Fall Spring  5 Credits
55 hours of lecture
Survey of Far Eastern history from 1800 to the present. Primary emphasis will be placed on Far East – United States diplomacy and the emergence of the Far East in the modern world. [SE]

HISTORY OF GENOCIDE
HIST 231  3 Credits
33 hours of lecture
Examination of several incidences of genocide beginning with the extermination of the Herero of Namibia in the late 19th century; utilizing the definition of genocide developed by Raphael Lemkin and adopted by the United Nations; developing criteria for recognizing when and where genocide has occurred, based on reading and lectures; developing criteria to identify a genocide in the making; designing an action plan to extend the lessons of the course.

WOMEN IN HIST – PREHISTORY THRU FALL OF ROME
HIST 251  Fall  3 Credits
33 hours of lecture
A survey of the role of women within the family, the economy and the culture from prehistory through the Middle Ages. Included within these parameters are the origins and development of patriarchy, misogyny and the view of female inferiority, women's contributions to Eastern, Middle Eastern, and Judeo/Christian religious experiences, and how women's lifecycles affected their status within society. [SE, SS]

WOMEN IN HIST – MIDDLE AGES THRU PRE-INDUST AGE
HIST 252  Winter  3 Credits
33 hours of lecture
An overview of the roles women experienced within the family, the economy, religion and culture from the Middle Ages, circa 500 A.D., through the Pre-Industrial Age. Women in the Far East, Africa, Latin and South America, the Middle East and Europe will be surveyed to compare and contrast their life styles. [SE, SS]

WOMEN IN HISTORY – INDUST AGE TO MODERN TIMES
HIST 253  Spring  3 Credits
33 hours of lecture
The role and influence of women within society from the Industrial Age to modern times. Some of the areas to be explored: women's contributions and status within the economy, the arts and literature, the various religions, and the political structures. Within these centuries occurred such events and movements where women were either influenced by or influential on the Scientific Revolution, the Enlightenment, various revolutions in the world,
beginning of Feminism, and the long debate and process of women’s rights in voting, property ownership and areas of marriage and divorce. [SE, SS]

AFRICAN HISTORY
HIST 260   5 Credits
55 hours of lecture
Survey of the period from gathering/hunting societies through African independence, with focus on major events from an African perspective, including Africa’s discovery of Europe, and resistance to colonialism. Prior completion of HIST& 126, 127, or 128 (or HIST 101, 102 or 103) recommended.

AFRICAN-AMERICAN HISTORY
HIST 275   Fall  5 Credits
55 hours of lecture
Survey of the history of the African-American experience from 1619 to the present. [SE]

SELECTED TOPICS
HIST 280   Fall Winter Spring 1 – 5 Credits
55 hours of lecture
Selected topics in History as listed in the quarterly class schedule. May be repeated for credit. [SE]

HISTORY OF LATIN AMERICA
HIST 285   Winter  5 Credits
55 hours of lecture
Survey of Latin American history, examining social, economic, political, cultural and intellectual trends and developments from ancient civilizations to the present Latin America in transition. [SE]

SPECIAL PROJECTS
HIST 290   1 – 5 Credits
Opportunity to plan, organize and complete special projects approved by the department. Prerequisite: Consent of Instructional Unit.

Human Development

EFFECTIVE STUDY
HDEV 098   Summer Fall Winter Spring 2 Credits
22 hours of lecture
Learn effective study skills including goal setting, resource management, listening, note-taking, reading and test-taking skills. Appropriate for any student, particularly those working to improve basic skills and abilities necessary to move ahead to college level courses.

CAREER AND LIFE PLANNING
HDEV 100   Fall Winter Spring 3 Credits
33 hours of lecture
Examination of personal values, interests, personality preferences, skills and abilities for the purpose of determining career, educational and leisure activities. Introduction to career development theory, occupational information resources and decision-making strategies. Credit not allowed for both HDEV 100 and 101.

CAREER EXPLORATION
HDEV 101   Summer Fall Winter Spring 2 Credits
22 hours of lecture
Strategies for career choice and change: utilizing career assessment tools, personal preferences, and occupational resources to make informed career and educational decisions. Credit not allowed for both HDEV 100 and 101.
### NEW STUDENT ORIENTATION

**HDEV 102**  
Fall Winter Spring  
1 Credit  
11 hours of lecture  
Orientation to Clark College for new or returning students, focusing on making a successful transition to college life. Topics include goal setting, personal management skills, and developing an academic plan; introduction to Clark’s campus and student resources.

### ANGER AND CONFLICT MANAGEMENT

**HDEV 103**  
2 Credits  
22 hours of lecture  
Develop self-control and positive personal power. Learn about personal anger triggers, appropriate versus inappropriate anger, family dynamics, communication, assertiveness, and conflict management strategies. Learn to use anger instead of letting it use you! Does not fulfill any court-mandated anger management course requirement.

### SELF-ESTEEM

**HDEV 105**  
Fall Winter Spring  
2 Credits  
22 hours of lecture  
Guided experience in self-motivation, values clarification, and empathetic regard for others. Structured small groups. [GE]

### CULTURAL AND ACADEMIC FUNDAMENTALS

**HDEV 111**  
2 Credits  
22 hours of lecture  
Cross-cultural training and orientation program for all new international students at Clark College whose first language is not English and who have little or no exposure to the American college environment. Emphasis on American cultural behaviors in education settings, including guest speakers and an opportunity to visit college classes. This course is required of students who have been admitted as international students and who have not attended a college or university in the United States. Prerequisite: Admission to Clark College as an international student or consent of International Programs Office.

### MOTIVATION AND STUDY SKILLS

**HDEV 116**  
Summer Fall Winter Spring  
2 Credits  
22 hours of lecture  
Strategies for developing student behaviors and attitudes consistent with achieving success in college. Topics include campus resources to support student success; building effective study skills; developing skills for academic planning; time management and stress management. Appropriate for any student, particularly those working to improve basic skills and abilities necessary for higher level college courses. Credit not allowed for both HDEV 116 and 117.

### COLLEGE SUCCESS

**HDEV 117**  
Summer Fall Winter Spring  
3 Credits  
33 hours of lecture  
Strategies for successful student performance, including goal setting, academic planning, critical thinking and stress management. Focus on building effective academic skills of planning, memorizing, reading, note taking and test taking; identifying, utilizing, and evaluating campus resources and support services; fostering student responsibility for individual learning and behaviors promoting student achievement. College-level reading skills recommended. Credit not allowed for both HDEV 116 and HDEV 117.

### PRACTICAL REASONING AND DECISION MAKING

**HDEV 120**  
3 Credits  
33 hours of lecture  
Develop, analyze, evaluate and apply critical thinking to academic, career and personal pursuits. College level reading and eligibility for ENGL& 101 are strongly recommended.
RELATIONSHIPS
HDEV 123  Fall Spring  2 Credits
22 hours of lecture
Strategies for strengthening relationships of all types. Designed to help participants explore relationship patterns and styles; information and skill building to facilitate more successful and satisfying relationships both personally and professionally.

ASSERTIVENESS
HDEV 155  Summer Fall Winter Spring  3 Credits
33 hours of lecture
Teaches skills needed to achieve personal goals related to assertive behavior. Focuses on reducing emotional blocks and changing thoughts, feelings, and behavior to enable one to act in their own best interest and to express themselves in challenging situations without excessive anxiety or anger. Role play is used to demonstrate and practice skills. Recommended for both those who find it difficult to speak up and those who appear abrasive. [GE]

INTRO TO SERVICE LEARNING & CIVIC ENGAGEMENT
HDEV 175  Fall Winter Spring  2 Credits
22 hours of lecture
The concept of service learning and its potential for inspiring civic engagement and community-based problem solving. Effective democratic citizenship demands awareness, knowledge, involvement, problem solving, and leadership. Through the development of a Community Action Project, we will explore all of these factors and their contributions to the development of democratic citizenship. Note: 10 hour service project requirement.

STRESS MANAGEMENT
HDEV 186  Summer Fall Winter Spring  1 Credit
11 hours of lecture
Stress is an inevitable part of life affecting health, productivity, and relationships. Too little or too much stress can cause problems. Discover your unique reactions to stress and new options for handling stressful situations. [GE]

CAREER-RELATED WORKSHOP
HDEV 190  Fall Winter Spring  1 – 3 Credits
33 hours of lecture
Independent study in career exploration. Includes testing and course-work in self-assessment, and career research while consulting with a career counselor. One to three credits can be earned based upon the amount of course work completed. Students must have instructor permission to register after the fourth week of class. [GE]

WORKPLACE SUCCESS
HDEV 195  Summer Fall Winter Spring  1 Credit
11 hours of lecture
Learn how to analyze your current work experiences to increase your success and potential for advancement. Gain knowledge specific to your work demands, develop transferrable skills in human relations, information, and resource management. Satisfies the concurrent enrollment requirements for Co-op Work Experience. [GE]

PORTFOLIO DEVELOPMENT
HDEV 198  Summer Fall Winter Spring  1 Credit
11 hours of lecture
A career/employment portfolio will be developed, including a career goals statement, qualifications brief, resume, work samples, recommendations and references. Learn to effectively use the portfolio to achieve employment goals. Satisfies the concurrent enrollment requirement for co-op work experience. [GE]

COOPERATIVE WORK EXPERIENCE
HDEV 199  Summer Fall Winter Spring  1 – 5 Credits
165 hours of clinical
Supervised work experience in an approved job. Completion of specific learning objectives and employer evaluation. Concurrent enrollment in HDEV 195, 198 or 200 required. Prerequisite: Consent of Instructional Unit. [GE]
PROFESSIONAL DEVELOPMENT
HDEV 200  Fall Winter Spring  2 Credits
22 hours of lecture
Job search strategies and techniques using the latest techniques and technologies, will be discussed and practiced, including preparing an electronic resume for the Internet, e-mail and computer scanner. Various methods to conduct your personalized labor market research, prepare effective cover letters, and how to secure informational or employment interviews will be learned. Guest speakers from local business and industry to speak about etiquette and ethics in the work place. May satisfy concurrent enrollment for Co-op Work Experience. [GE]

PRIOR LEARNING ASSESSMENT
HDEV 211 Summer Fall Winter Spring  3 Credits
33 hours of lecture
Introduction to the process of preparing a portfolio that demonstrates and documents knowledge and skills equivalent to college-level learning acquired through other formal or informal learning methods, including work experience, community service, personal study, travel, or sponsored training. [GE]

SELECTED TOPICS
HDEV 280  1 – 3 Credits
33 hours of lecture
Variety of topics in human development as listed in the quarterly class schedule. May be repeated for credit. [GE]

SPECIAL PROJECTS
HDEV 290  1 – 5 Credits
Opportunity to plan, organize and complete special projects approved by department 15 credits maximum. Prerequisite: Consent of Instructional Unit.

Humanities

INTRO TO HUMANITIES
HUM& 101 Summer Fall Winter Spring  5 Credits
55 hours of lecture
Interdisciplinary exploration of the human experience and expression, which travels through multiple time periods and cultures to investigate art, philosophy, religion, politics, literature, and what it means to be "human". [HA, SE]

MUSIC, ART, THEATER AND YOU
HUM 102  1 – 3 Credits
33 hours of lecture
Here-and-now humanities class helping students acquire a first-hand experience in the variety of activities in art, music, and theater available in the area. Meeting with artists, visiting studios and galleries, and attending performances. [HA, SE]

POPULAR CULTURE
HUM 103  3 Credits
33 hours of lecture
Introduction to American Popular Culture using methodology and theory from various disciplines: music, television and cinema studies, sociology, communication studies, literature, anthropology, and history. Central questions will focus on the ways popular culture serves not simply as a reflection of a culture's beliefs and values, but also as a site of conversation between the various sub-groups that thrive in America. [HA]

INTRODUCTION TO CINEMA
HUM 152 Summer Fall Winter Spring  3 Credits
22 hours of lecture  22 hours of lab
Introductory course on the study of Film history, production techniques, aesthetics and social impact of the American film industry from early 1900's to present. [HA, SE]
BIOETHICS
HUM 180  Fall Winter Spring  3 Credits
33 hours of lecture
A study of biological science and ethics. Ethical principles and theories are used in solving bioethical dilemmas. Concepts studied include genetic engineering, inherited disorders, cloning, physician assisted suicide, allocation of health resources, organ donation, and environmental ethics. Credit not allowed for both BIOL 180 and HUM 180. [HA, NS, SE]

INTRO TO GAY, LESBIAN, BISEXUAL & TRANS STUDIES
HUM 210  5 Credits
55 hours of lecture
An interdisciplinary survey of lesbian, gay, bisexual, and trans issues in the sciences, social sciences, and humanities with an emphasis on the period from 1900 to the present in the United States. Introduction to the most compelling and problematic aspects of modern cultural representation of and discourse on sexual and gender identity. Prerequisite: College level reading and writing recommended. [HA, SE]

SELECTED TOPICS
HUM 280  1 – 5 Credits
55 hours of lecture
Selected topics in Humanities. Topics vary and course theme and content change to reflect new topics. This course may be repeated for credit. Specific topics are listed in the quarterly class schedule. [SE]

SPECIAL PROJECTS
HUM 290  Fall Winter Spring  1 – 5 Credits
Opportunity to plan, organize and complete special projects approved by the department. Prerequisite: Consent of Instructional Unit. [GE]

Industrial Technology – Electricity

BASIC NATIONAL ELECTRICAL CODE
ITEL 071  Fall  3 Credits
33 hours of lecture
Fundamentals of the electric code. Use of the code book and its application to dwellings, industry and commerce.

BASIC NATIONAL ELECTRICAL CODE
ITEL 072  Winter  3 Credits
33 hours of lecture
Continuation of ITEL 071. Use of the code book and its application to dwellings, industry, and commerce. Emphasis on NEC Articles 250 and 220.

BASIC NATIONAL ELECTRICAL CODE
ITEL 073  Spring  3 Credits
33 hours of lecture
Continuation of ITEL 072. Use of the code book and its application to dwellings, industry, and commerce. Emphasis on NEC Articles 430 and 220. Prerequisite: ITEL 072 or consent of Instructional Unit.

BASIC DC ELECTRICITY
ITEL 131  Fall  6 Credits
44 hours of lecture 44 hours of lab
Fundamentals of DC circuits, DC instruments, batteries and application mathematics needed to complete assignments. Prerequisite: MATH 090 or consent of Instructional Unit. [GE]
BASIC AC ELECTRICITY
ITEL 132  Winter  6 Credits
44 hours of lecture  44 hours of lab
Fundamentals of AC circuits, AC instruments, batteries and application mathematics needed to complete assignments. Prerequisite: ITEL 131. [GE]

DIGITAL ELECTRONICS
ITEL 133  Fall  5 Credits
44 hours of lecture  22 hours of lab
Applications of binary numbers and Boolean Algebra as related to combinational and sequential logic circuits employing logic gates, flip flops, counters, shift registers, encoders and decoders, multiplexers, displays, A/D and D/A converters. Prerequisite: ITEL 132 or consent of Instructional Unit. [GE]

ELECTRIC MOTORS AND CONTROLS
ITEL 141  Winter  5 Credits
44 hours of lecture  22 hours of lab
Fundamentals of modern industrial electric motor control devices including magnetic starters, overload protection devices, solid state devices, applications and troubleshooting. Prerequisite: ITEL 132 or consent of Instructional Unit. [GE]

BASIC SEMICONDUCTOR DEVICES
ITEL 142  Spring  5 Credits
44 hours of lecture  22 hours of lab
Fundamentals of solid state electronics including semiconductor devices, applications and troubleshooting. Prerequisite: ITEL 132 or consent of Instructional Unit. [GE]

INDUSTRIAL ELECTRONICS
ITEL 143  Spring  5 Credits
44 hours of lecture  22 hours of lab
Characteristics and applications of solid state devices used in industrial control circuits. Prerequisite: ITEL 142 or consent of Instructional Unit. [GE]

HIGH VOLTAGE SYSTEMS
ITEL 171  Spring  3 Credits
33 hours of lecture
Three phases and single phase distribution systems will be presented with special consideration for high voltage systems and sub-station application. [GE]

SPECIAL PROJECTS [GE]
ITEL 290  Fall Winter Spring  1 – 3 Credits
Opportunity to plan, organize and complete special projects approved by the department. Prerequisite: Consent of Instructional Unit. [GE]

Japanese

JAPANESE I
JAPN& 121  Fall Winter  5 Credits
55 hours of lecture
Primary emphasis on oral communication with additional practice in basic reading and writing. Not open to native speakers except with instructor's permission. [HA, SE]

JAPANESE II
JAPN& 122  Winter Spring  5 Credits
55 hours of lecture
Continuation of JAPN& 121. Not open to native speakers except with instructor's permission. Completion of JAPN& 121 or equivalent required. [HA, SE]
JAPANESE III
JAPN& 123  Fall Spring  5 Credits
55 hours of lecture
Continuation of JAPN& 122. Not open to native speakers except with instructor’s permission. Completion of JAPN& 122 or equivalent required. [HA, SE]

STUDY ABROAD ORIENTATION
JAPN 150  1 Credit
11 hours of lecture
Preparing students to travel with the Clark College study abroad program in Japan. Successful completion of this course required for students to participate in the travel abroad program. Application and acceptance into the study abroad program also required. Prerequisite: A grade of “C” or better or concurrent enrollment in JAPN& 122 or above; or consent of Instructional Unit.

JAPANESE READING AND WRITING
JAPN 151  1 Credit
11 hours of lecture
Reading and writing about various themes and topics in Japanese and English. Focus on manga; short literature, Japanese cultural readings, and letters from Japan. Instruction in English. No prior Japanese experience necessary.

JAPANESE READING AND WRITING
JAPN 152  1 Credit
11 hours of lecture
Continuation of reading and writing about various themes and topics in Japanese and English. Focus on manga, short literature, Japanese cultural readings, and letters from Japan. Instruction in English. No prior experience in Japanese necessary. Prerequisite: A grade of “C” or better in JAPN 151.

JAPANESE READING AND WRITING
JAPN 153  1 Credit
11 hours of lecture
Continuation of reading and writing about various themes and topics in Japanese and English. Focus on manga, short literature, Japanese cultural readings, and letters from Japan. Instruction in English. No prior experience in Japanese necessary. Prerequisite: A grade of “C” or better in JAPN 152.

JAPANESE SOCIETY
JAPN 171  Spring  3 Credits
33 hours of lecture
Structure of Japanese society and organizations. Emphasis on social obligation in the nature of one’s relations to others.

COOPERATIVE WORK EXPERIENCE
JAPN 199  Summer  1 – 8 Credits
264 hours of clinical
Summer cooperative work experience in Japan. Requires use of Japanese language. Enroll in this course Spring quarter prior to participation abroad. Prerequisite: Consent of Instructional Unit.

JAPANESE IV
JAPN& 221  Fall Winter Spring  5 Credits
55 hours of lecture
Continuation of First-Year Japanese: speaking, reading and writing with primary emphasis on oral communication. [HA, SE]

JAPANESE V
JAPN& 222  Fall Winter Spring  5 Credits
55 hours of lecture
Continuation of First-Year Japanese: speaking, reading and writing with primary emphasis on oral communication. Prerequisite: JAPN& 221 or equivalent. [HA, SE]
**JAPANESE VI**  
JAPN& 223  
Fall Winter Spring  
5 Credits

Continuation of First-Year Japanese: speaking, reading and writing with primary emphasis on oral communication. Prerequisite: JAPN& 222 or equivalent. [HA, SE]

**SELECTED TOPICS**  
JAPN 280  
Fall Winter Spring  
1 – 5 Credits

Course focuses on selected topics in German. Topics vary and course theme and content change to reflect new topics. Because the course varies in content, it is repeatable for credit for different topics. [SE]

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### Journalism

**INTRODUCTION TO JOURNALISM**  
JOUR 101  
Fall Winter  
5 Credits

Introduction to skills fundamental to journalism and newswriting, as well as an understanding of the role and significance of journalists and their work. Topics include the evolution in media and news today, ethical challenges, shifts in audience involvement and technological advances. Writing-intensive activities to master a clear, concise, accurate style. Prerequisite: ENGL& 101 (or ENGL 101) eligibility required. [SE]

**COLLEGE NEWSPAPER**  
JOUR 121  
Fall Winter Spring  
1 – 3 Credits

Real-world opportunity to practice skills and expand knowledge acquired in JOUR 101. Topics include reporting, writing, editing and producing The Independent, print & online versions. Focus on an understanding of and appreciation for accuracy, deadlines, and teamwork. Activities include lecture, lessons, quizzes and out-of-class reporting and writing assignments. Prerequisite: A grade of “C” or better in JOUR 101, or equivalent, or consent of Instructional Unit.

**COLLEGE NEWSPAPER**  
JOUR 122  
Fall Winter Spring  
1 – 3 Credits

To provide a realistic journalistic workshop, giving students an opportunity to learn about news judgment, making story assignments, news writing, feature writing, headline writing, news and feature photography, editing, and layout and design. Students learn to meet deadlines and work professionally with each other and with other departments and individuals on campus. Prerequisite: JOUR 121. [GE]

**COLLEGE NEWSPAPER**  
JOUR 123  
Fall Winter Spring  
1 – 3 Credits

To provide a realistic journalistic workshop, giving students an opportunity to learn about news judgment, making story assignments, news writing, feature writing, headline writing, news and feature photography, editing, and layout and design. Students learn to meet deadlines and work professionally with each other and with other departments and individuals on campus. Concurrent enrollment in a JOUR class required. Prerequisite: JOUR 122. Completion of JOUR 101 or concurrent enrollment recommended. [GE]

**COOPERATIVE WORK EXPERIENCE**  
JOUR 199  
Summer Fall Winter Spring  
1 – 5 Credits

Supervised work experience in newspaper or other journalism position. Completion of specific learning objectives and employer evaluation. Completion of, or concurrent enrollment in, HDEV 195, 198, or 200 required. Prerequisite: Consent of Instructional Unit. [GE]
ADVANCED NEWSWRITING
JOUR 201 Spring 3 Credits
33 hours of lecture
Continuation of JOUR 101. Focus on longer, more complex stories, including features and opinion writing. Students will complete a short research project. Prerequisite: JOUR 101. [GE]

COLLEGE NEWSPAPER
JOUR 221 Fall Winter Spring 1 – 5 Credits
55 hours of lecture
To provide a realistic journalistic workshop, giving students an opportunity to learn about news judgment, making story assignments, news writing, feature writing, headline writing, news and feature photography, editing, and layout and design. Students learn to meet deadlines and work professionally with each other and with other departments and individuals on campus. Prerequisite: JOUR 123. [GE]

COLLEGE NEWSPAPER
JOUR 222 Fall Winter Spring 1 – 3 Credits
33 hours of lecture
To provide a realistic journalistic workshop, giving students an opportunity to learn about news judgment, making story assignments, news writing, feature writing, headline writing, news and feature photography, editing, and layout and design. Students learn to meet deadlines and work professionally with each other and with other departments and individuals on campus. Prerequisite: JOUR 221. [GE]

COLLEGE NEWSPAPER
JOUR 223 Fall Winter Spring 1 – 3 Credits
33 hours of lecture
To provide a realistic journalistic workshop, giving students an opportunity to learn about news judgment, making story assignments, news writing, feature writing, headline writing, news and feature photography, editing, and layout and design. Students learn to meet deadlines and work professionally with each other and with other departments and individuals on campus. Prerequisite: JOUR 222. [GE]

NEWS EDITING
JOUR 272 Spring 3 Credits
33 hours of lecture
Basic editing skills. Emphasis on proofreading, clarity, trimming headlines. Basic modular layout, editor responsibilities and Associated Press Style. Prerequisite: ENGL 135 (or ENGL 111) or JOUR 101. [GE]

SELECTED TOPICS:
JOUR 280 Winter 1 – 3 Credits
33 hours of lecture
The course focuses on selected topics in Journalism. Topics vary, and course theme and content change to reflect new topics. Because the course varies in content, it is repeatable for credit for different topics. Individual topics are listed in the quarterly class schedule.

SPECIAL PROJECTS
JOUR 290 Summer Fall Winter Spring 1 – 5 Credits
Opportunity to plan, organize, and complete special projects approved by the department. Prerequisite: Consent of Instructional Unit. [GE]

Library

RESEARCH IN THE INFORMATION AGE
LIBR 105 1 – 3 Credits
33 hours of lecture
Survey of information research techniques. Students will learn to locate, analyze, and evaluate information. Students will develop search strategies and use a variety of information, resources including the Internet and other
computerized tools. Repeatable up to 3 credits. Prerequisite: Eligibility for ENGL& 101 (or ENGL 101) or consent of Department. [GE]

INTERNET RESEARCH AND LIVING ONLINE
LIBR 115 Fall Winter Spring 2 Credits
22 hours of lecture
Introduction to global networking and the Internet from the student users’ perspective, emphasizing basic skills required to do research and participate as members of the Internet community. Topics include network fundamentals, strategies for locating, analyzing and evaluating information, electronic mail, Internet-based communities, social, legal and ethical issues regarding Internet interactions.

Machining Technology

MECHANICAL BLUEPRINT READING
MACH 106 Winter 4 Credits
44 hours of lecture
Fundamentals of reading mechanical blueprints. Content includes detail and assembly drawings, dimensions and tolerances, title block, material lists, notes and revisions, matching specifications, and reading blueprints in specialized areas. [GE]

BASIC GENERAL MACHINING PROCESSES
MACH 111 Summer Fall Winter Spring 5 Credits
22 hours of lecture 66 hours of lab
Instruction and practical application in general shop safety, safe practices and dangers of a machine shop environment. Demonstrations of proper use of micrometers and measurement tools. Procedures for deburring parts. Types of drill bits and their uses. Drill bit sharpening. Use of bandsaws and bandsaw blade welders. [GE]

BASIC ENGINE LATHE PROCESSES II
MACH 112 Summer Fall Winter Spring 5 Credits
22 hours of lecture 66 hours of lab
Instruction and practical application of engine lathe nomenclature and safety. Calculate speeds and feeds for use with an engine lathe. Setup and operation of engine lathe for the basic operations of turning, facing and drilling. Prerequisite: A grade of “C” or better in MACH 111 or concurrent enrollment in MACH 111. [GE]

BASIC VERTICAL MILLING PROCESSES I
MACH 113 Summer Fall Winter Spring 5 Credits
22 hours of lecture 66 hours of lab
Instruction and practical application using nomenclature and safety for the vertical mill. Setup indicators and edge finders. Operations to include squaring of a work piece, drilling and reaming holes in various materials. Prerequisite: A grade of “C” or better in MACH 111 or concurrent enrollment in MACH 111. [GE]

BASIC MACHINING TECHNOLOGY PROCESSES
MACH 114 Winter 10 Credits
55 hours of lecture 110 hours of lab
Individual projects. Concurrent enrollment in MACH 113 required. Prerequisite: MACH 112 or consent of Instructional Unit. [GE]

BASIC MACHINING TECHNOLOGY PROCESSES
MACH 115 Spring 5 Credits
55 hours of lecture
Safety, milling process, do-all saw, and surface grinder. Use of The Machinist’s Handbook and trigonometry. Concurrent enrollment in MACH 116 required. Prerequisite: MACH 113 or consent of Instructional Unit. [GE]
<table>
<thead>
<tr>
<th>Course Title</th>
<th>Code</th>
<th>Semester</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>BASIC MACHINING TECHNOLOGY PROCESSES</td>
<td>MACH 116</td>
<td>Spring</td>
<td>10</td>
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<tr>
<td>55 hours of lecture</td>
<td>110 hours of lab</td>
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<tr>
<td>Individual projects. Concurrent enrollment in MACH 115 required. Prerequisite: MACH 114 or consent of Instructional Unit.</td>
<td>[GE]</td>
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<tr>
<td>BASIC SURFACE GRINDER PROCESSES I</td>
<td>MACH 121</td>
<td>Summer Fall Winter Spring</td>
<td>5</td>
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<tr>
<td>22 hours of lecture</td>
<td>66 hours of lab</td>
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<tr>
<td>Instruction and practice to safely use the surface grinders. Instruction of nomenclature for surface grinders. The use and care of handtools for inspection and setup of the surface grinder. Identify and safely use grinding wheels. Setup workpiece and grind material parallel. Prerequisite: MACH 111.</td>
<td>[GE]</td>
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<tr>
<td>BASIC ENGINE LATHE PROCESSES II</td>
<td>MACH 122</td>
<td>Summer Fall Winter Spring</td>
<td>5</td>
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<tr>
<td>22 hours of lecture</td>
<td>66 hours of lab</td>
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<tr>
<td>Instruction and practice to use engine lathe for turning material both concentric and straight, creating square shoulders, and facing a part. Drilling with the tailstock. Cutting external UNF and UNC threads. The use and care of taps. Prerequisite: MACH 111 and MACH 112.</td>
<td>[GE]</td>
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<tr>
<td>BASIC VERTICAL MILLING PROCESSES II</td>
<td>MACH 123</td>
<td>Summer Fall Winter Spring</td>
<td>5</td>
</tr>
<tr>
<td>22 hours of lecture</td>
<td>66 hours of lab</td>
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</tr>
<tr>
<td>Instruction and practical application using the vertical mill for drilling procedures, squaring of a workpiece, and reaming operations. Practice in machine setups to complete these operations. Prerequisite: MACH 111 and MACH 113.</td>
<td>[GE]</td>
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<tr>
<td>BASIC SURFACE GRINDER PROCESSES II</td>
<td>MACH 131</td>
<td>Summer Fall Winter Spring</td>
<td>5</td>
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<tr>
<td>22 hours of lecture</td>
<td>66 hours of lab</td>
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<tr>
<td>Instruction and practical application using the surface grinder to grind a workpiece flat and parallel, setup and operation to dress various shapes on grinding wheels. Prerequisite: MACH 111 and MACH 121.</td>
<td>[GE]</td>
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<tr>
<td>BASIC ENGINE LATHE PROCESSES III</td>
<td>MACH 132</td>
<td>Summer Fall Winter Spring</td>
<td>5</td>
</tr>
<tr>
<td>22 hours of lecture</td>
<td>66 hours of lab</td>
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<tr>
<td>Instruction and practical application using the engine lathe with four jaw chucks, cutting multiple start and acme threads. Use of formulas and different methods for cutting tapers. Prerequisite: MACH 111, MACH 112 and MACH 122.</td>
<td>[GE]</td>
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<tr>
<td>BASIC VERTICAL MILLING PROCESSES III</td>
<td>MACH 133</td>
<td>Summer Fall Winter Spring</td>
<td>5</td>
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<tr>
<td>22 hours of lecture</td>
<td>66 hours of lab</td>
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<tr>
<td>Instruction and practical application using the vertical milling machine with an indexing head. Application of form cutting tools, keyway cutters, and face milling. Prerequisite: MACH 111, MACH 113 and MACH 123</td>
<td>[GE]</td>
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<tr>
<td>RELATED MACHINING TECHNOLOGY</td>
<td>MACH 134</td>
<td>Summer</td>
<td>4</td>
</tr>
<tr>
<td>22 hours of lecture</td>
<td>44 hours of lab</td>
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<tr>
<td>Safety, set-up, and operation of the lathe, drill, mill, bench work and related theory.</td>
<td>[GE]</td>
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<tr>
<td>COOPERATIVE WORK EXPERIENCE</td>
<td>MACH 199</td>
<td>Summer Fall Winter Spring</td>
<td>1 – 5</td>
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<tr>
<td>165 hours of clinical</td>
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<tr>
<td>Supervised work experience in an approved job. Completion of specific learning objectives and employer evaluation. Completion of, or concurrent enrollment in, HDEV 195, 198, or 200 required. Prerequisite: Consent of Instructional Unit.</td>
<td>[GE]</td>
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ADVANCED SURFACE GRINDER PROCESSES III  
MACH 211  Summer Fall Winter Spring  5 Credits  
22 hours of lecture  66 hours of lab  
Instruction and practical application for the surface grinder using angle blocks and plates for grinding edges and vertical surfaces. Prerequisite: MACH 111, MACH 121, and MACH 131. [GE]

ADVANCED ENGINE LATHE PROCESSES IV  
MACH 212  Summer Fall Winter Spring  5 Credits  
22 hours of lecture  66 hours of lab  
Instruction and practical application of advanced engine lathe processes. Cutting of long workpieces using steady rests and follow rests. Prerequisite: MACH 111, MACH 112, MACH 122 and MACH 132. [GE]

ADVANCED CNC MILLING SETUP AND OPERATION  
MACH 213  Summer Fall Winter Spring  5 Credits  
22 hours of lecture  66 hours of lab  
Setup and operation of the Haas vertical mill. Creating and editing numerical control programs for Haas vertical mill. Prerequisite: MACH 111. [GE]

SURFACE GRINDER AND PROCESSES II  
MACH 221  Fall Winter Spring  5 Credits  
22 hours of lecture  66 hours of lab  
Using the surface grinder to produce angles and shapes with sine vises, angle plates and fixtures. Prerequisite: MACH 111, 121, 131, and 211. [GE]

CNC LATHE SETUP AND OPERATION  
MACH 222  Fall Winter Spring  5 Credits  
22 hours of lecture  66 hours of lab  
Instruction and practical application for the safe setup and operation of Okkuma CNC lathe. Produce and edit NC programs on the CNC lathe. Prerequisite: MACH 111. [GE]

CNC MILL MASTER CAM PROGRAMMING  
MACH 223  Fall Winter Spring  5 Credits  
22 hours of lecture  66 hours of lab  
Use cam software (Mastercam) to produce CNC programs for Haas vertical mill using 2-D and 3-D geometry. Prerequisite: MACH 111 or consent of Instructional Unit. [GE]

ADVANCED MACHINING TECHNOLOGY PROCESSES  
MACH 224  Winter  10 Credits  
55 hours of lecture  110 hours of lab  
Individual projects. Three to five industrial tours. CAM programming. Concurrent enrollment in MACH 223 required. Prerequisite: MACH 222 or consent of Instructional Unit. [GE]

ADVANCED MACHINING TECHNOLOGY PROCESSES  
MACH 225  Spring  5 Credits  
55 hours of lecture  
Use of The Machinery’s handbooks. Set-ups and application of profile, planer, electrical discharge and others, grinding machines in industry. Metric conversions and application for present and future machining. Concurrent enrollment in MACH 226 required. Prerequisite: MACH 223 or consent of Instructional Unit. [GE]

ADVANCED MACHINING TECHNOLOGY PROCESSES  
MACH 226  Spring  10 Credits  
55 hours of lecture  110 hours of lab  
Individual projects. Three to five industrial tours. Concurrent enrollment in MACH 225 required. Prerequisite: MACH 224 or consent of Instructional Unit. [GE]
**ADVANCED EDM PROCESSES**

MACH 231  Fall Winter Spring  5 Credits
22 hours of lecture  66 hours of lab
Instruction and practical application for setup and operation of the electrical discharge machine using overburn charts. Using manufacturer’s charts to determine electrode material. Prerequisite: MACH 111. [GE]

**ADVANCED CNC LATHE PROGRAMMING**

MACH 232  Fall Winter Spring  5 Credits
22 hours of lecture  66 hours of lab
Advanced CAM programming using Mastercam to produce CNC programs for Okkuma CNC lathe. Prerequisite: MACH 111 and MACH 222. [GE]

**ADVANCED MILLING 3D PROGRAMMING & MACHINING**

MACH 233  Fall Winter Spring  5 Credits
22 hours of lecture  66 hours of lab
Advanced CAM programming for the vertical mill using Mastercam to produce CNC programs by using solids and surfaces. Prerequisite: MACH 111 and MACH 222. [GE]

**ELEMENTARY METALLURGY**

MACH 235  Summer Fall Winter Spring  2 Credits
22 hours of lecture
Introduction to physical metallurgy, oriented towards the machinist trade. Covers destructive and non-destructive testing, steel manufacturing and its classification, identification methods, alloy steel, cast and wrought iron, heat treating. Concurrent enrollment in MACH 236 required. Cannot receive credit for MTEC 235 and WELD 235 and MACH 235. [GE]

**ELEMENTARY METALLURGY LAB**

MACH 236  Summer Fall Winter Spring  2 Credits
44 hours of lab
Application of concepts and topics covered in MACH 235, including metallography, heat treatment, and testing of materials. Concurrent enrollment in MACH 235 required. Cannot receive credit for MTEC 236 and WELD 236 and MACH 236. [GE]

**BASIC NUMERIC CONTROL**

MACH 251  Fall Winter Spring  3 Credits
33 hours of lecture
Writing and testing programs for the HAAS computer numerical control mill. [GE]

**CAM PROGRAMMING**

MACH 252  Fall Winter Spring  4 Credits
33 hours of lecture  22 hours of lab
Experience in writing programs using the MasterCam or GeoPath programming systems. Programs will be written for various Mills and Lathes. [GE]

**SELECTED TOPICS**

MACH 280  1 – 5 Credits
55 hours of lecture
Selected topics in Machining as listed in the quarterly class schedule. Repeatable for credit. Prerequisite: Consent of Instructional Unit.

**SPECIAL PROJECTS**

MACH 290  Summer Fall Winter Spring  1 – 6 Credits
Opportunity to plan, organize and complete special projects approved by the department. Prerequisite: Consent of Instructional Unit. [GE]
## Management

### THE BUSINESS ENVIRONMENT
MGMT 100 Summer Fall Winter Spring 5 Credits  55 hours of lecture
Overview of the business organization, including management, operations, marketing, finance and law. Topics include essential business concepts and the role of business in modern society; responding to the changing business environment, the unique challenges of small business, managing human and physical resources, and competing in a global economy. Credit not allowed for BUS& 101, BUS 101 and MGMT 100. [GE]

### PRINCIPLES OF MANAGEMENT
MGMT 101 Fall Winter Spring 3 Credits  33 hours of lecture
Introduction to management theory, functions, and topics to include diversity, leading change, decision making, and team work. Focus on practical applications, useful to both new and experienced managers. [GE]

### APPLIED MANAGEMENT SKILLS
MGMT 103 Fall 3 Credits  33 hours of lecture
Developing concepts and skills in employee motivation, communication, and supervisory leadership. Promoting effective relations and performance in the work group. Case discussions and role situations develop understanding of individual and group problems encountered by the supervisor. [GE]

### MOTIVATION AND PERFORMANCE
MGMT 106 Winter 3 Credits  33 hours of lecture
Review of motivational factors of human relations used to enhance motivation and interpersonal communications; focus on the ways motivation impacts the success or failure of organizations. [GE]

### SUPERVISORY COMMUNICATION I, WRITTEN
MGMT 107 Winter 3 Credits  33 hours of lecture
Review of writing mechanics covering grammar, punctuation, and sentence and paragraph structure. Students practice writing effective business letters, documentation, supervisory reports, office memoranda, and bulletins. [GE]

### CREATIVE PROBLEM SOLVING
MGMT 110 Winter 3 Credits  33 hours of lecture
Review of the creative and analytical thinking necessary for effective problem-solving in the workplace. Concepts include left/right brain thinking, stages in the creative process, habits that hinder thinking and producing ideas, the role of criticism, and effective communication of solutions. [GE]

### CONFLICT MANAGEMENT
MGMT 112 Fall Spring 2 Credits  22 hours of lecture
Study of the factors causing conflicts and ways to resolve them. Conflict with individuals and groups, conflict management styles, and win-win situations. [GE]

### HUMANIZING THE WORKPLACE
MGMT 113 Fall Spring 1 Credit  11 hours of lecture
Study of the importance of laughter and humor in the workplace to build human connections, improve individual and corporate health, kindle creativity, and establish a positive work environment. [GE]
SUPERVISOR AS A TRAINER COACH
MGMT 120  Spring  3 Credits
33 hours of lecture
Study of the supervisor’s role in the training and professional of employees. Topics include identifying training needs, selecting the appropriate type of training, distinguishing between training and coaching situations, and supporting employees to improve performance. Activities include practical training and coaching techniques. [GE]

LEADERSHIP PRINCIPLES
MGMT 122  Fall  3 Credits
33 hours of lecture
Developing practical leadership skills to influence the organizational performance for managers and non-managers. Topics include leadership roles and styles; the communication process; team building and group interactions; and organizational politics, power, and influence. Applications include leading in business, not-for-profit organizations, clubs, and social organizations. [GE]

TEAM BUILDING AND GROUP BEHAVIOR
MGMT 125  Spring  3 Credits
33 hours of lecture
Methods for creating, developing, and nurturing work groups and teams in the workplace to achieve organizational objectives. Focus on the effective roles of the supervisor and team members. Topics include group behavior for problem-solving, group learning, conflict resolution, and team interactions and communications. [GE]

PROJECT MANAGEMENT
MGMT 126  Winter Spring  3 Credits
33 hours of lecture
Introduction to current practices in successful project management and in creating a quality project plan. Case examples provide the opportunity for first-hand practice in developing the individual steps of a project cycle, using current software in project management. [GE]

HUMAN RESOURCES MANAGEMENT
MGMT 128  Fall Winter  3 Credits
33 hours of lecture
Developing an understanding of the functions and skills needed by supervisors concerning employment recruitment, selection and placement, staff planning and development, job descriptions and analysis, promotions, transfers, separations, wage and salary administration, and EEO requirements. [GE]

LEGAL ISSUES IN EMPLOYEE RELATIONS
MGMT 132  Spring  3 Credits
33 hours of lecture
Study of human resource topics such as employment law, hiring, discrimination, employment-at-will, drug testing, health insurance, unemployment, worker’s compensation, wages and hours; and civil rights. Focus on due process for both public and private employees, including labor relations and collective bargaining. [GE]

PRODUCTION AND OPERATIONS MANAGEMENT
MGMT 133  Spring  3 Credits
33 hours of lecture
Techniques for improving productivity and quality and reducing waste. Topics include measuring quality and productivity, process definition and control, problem-solving, continuous improvement, and personal productivity for the production and service environment. [GE]

COOPERATIVE WORK EXPERIENCE
MGMT 199  Summer Fall Winter Spring  1 – 5 Credits
165 hours of clinical
Up to 5 credits for supervised work training in an approved job. Completion of or concurrent enrollment in BTEC 147 or HDEV 195, 198, or 200 required. Prerequisite: Completion of one class with a “C” or better in Business, Economics, or Management. Written consent of Instructional Unit. [GE]
SELECTED TOPICS
MGMT 280
55 hours of lecture
Varying topics in supervisory management, as listed in the quarterly class schedule. May be repeated for credit. [GE]

SPECIAL PROJECTS
MGMT 290 Summer Fall Winter Spring
1 – 5 Credits
Opportunity to plan, organize and complete special projects approved by the department. Prerequisite: Consent of Instructional Unit. [GE]

Mathematics

PRE-ALGEBRA
MATH 030 Summer Fall Winter Spring
5 Credits
55 hours of lecture
An introduction to algebra, solving equations, the integers, fractions, decimals, ratios, proportions, percents, basic geometry, and measurement. Prerequisite: A grade of “C” or better in DVED 023 or recommending score on placement test.

MATHEMATICS FOR EARLY CHILDHOOD EDUCATORS
MATH 050 Spring
5 Credits
55 hours of lecture
Number and operation, algebra, geometry, data analysis, statistics, and probability, and measurement. For students planning to teach mathematics to 3- to 8-year-old children (Pre-kindergarten to Grade 3). Prerequisite: A grade of “C” or better in MATH 030 (Pre-Algebra) or recommending score on placement test.

FUNDAMENTALS OF BUSINESS MATHEMATICS
MATH 065 Fall Winter Spring
5 Credits
55 hours of lecture
Application of mathematics to common business situations. Emphasis is on practical applications and problem-solving skills for the business professional as well as the consumer and investor. Prerequisite: A grade of “C” or better in DVED 023 or recommending score on placement test or consent of Instructional Unit.

INTRODUCTION TO THE GRAPHING CALCULATOR
MATH 080 Fall Winter Spring
1 Credit
11 hours of lecture
Basic calculator functions, using memory keys, graphing and solving equations and inequalities, manipulating the graph viewing window, using the various calculator menus, operations on matrices, using programs. Prerequisite: A grade of “C” or better in MATH 030 or recommending score on placement test.

INDUSTRIAL MATHEMATICS
MATH 085 Fall Spring
5 Credits
55 hours of lecture
Mathematical calculations used in industry. Determining ratio and proportion, taper calculations, weights and measures, areas and volumes, circles, angles, triangles, percentages, and metric conversions. Prerequisite: A grade of “C” or better in DVED 023 or recommending score on placement test or consent of Instructional Unit.

ALGEBRA I
MATH 089 Summer Fall Winter Spring
5 Credits
55 hours of lecture
Numeric and algebraic expressions, linear equations and inequalities, the coordinate plane, functions, lines. Prerequisite: A grade of “C” or better in MATH 030 or recommending score on placement test.
ELEMENTARY ALGEBRA
MATH 090  Summer Fall Winter Spring  5 Credits
55 hours of lecture
Numeric and algebraic expressions, linear equations and inequalities, the coordinate plane, functions, lines, systems
of linear equations, integer exponents, polynomials. Designed for the student who is prepared to take algebra at an
accelerated pace. Prerequisite: A grade of “C” or better in MATH 030 or recommending score on placement test.

ALGEBRA II
MATH 091  Summer Fall Winter Spring  5 Credits
55 hours of lecture
A continuation of MATH 089. Systems of linear equations, integer exponents, polynomials, factoring, rational
expressions. Prerequisite: A grade of “C” or better in MATH 089 or MATH 090 or eligibility for MATH 095.

ALGEBRA III
MATH 093  Summer Fall Winter Spring  5 Credits
55 hours of lecture
A continuation of MATH 091. Radical expressions, rational exponents, quadratic equations, exponential and loga-
rithmic functions. Prerequisite: A grade of “C” or better in MATH 091.

INTERMEDIATE ALGEBRA
MATH 095  Summer Fall Winter Spring  5 Credits
55 hours of lecture
A continuation of MATH 090. Factoring, rational expressions, radical expressions, rational exponents, quadratic
equations, exponential and logarithmic functions. Designed for the student who is prepared to take algebra at an
accelerated pace. Prerequisite: A grade of “C” or better in MATH 090 or recommending score on placement test.

MAPLE SOFTWARE
MATH 096  Fall Winter Spring  1 Credit
11 hours of lecture
Interactive exploration of the features and applications of Maple, an algebraic and graphing software which will
be used in learning several courses in the Mathematics Division, from college algebra through differential equa-
tions. Does not fulfill computational requirement. Prerequisite: A grade of “C” or better in MATH 093 or 095, or
recommending score on placement test.

TECHNICAL MATHEMATICS I
MATH 098  Fall  3 Credits
33 hours of lecture
Algebra review, engineering calculator, graphing, geometry, units, significant digits, and scientific notation.
Designed for majors in Electronics, Manufacturing Technologies, and Data Networking and Telecommunications
Technologies. Prerequisite: A grade of “C” or better in MATH 90 or MATH 091, recommending score on place-
ment test or consent of Instructional Unit.

TECHNICAL MATHEMATICS II
MATH 099  Winter  3 Credits
33 hours of lecture
Trigonometry, logarithms, and complex numbers. Hand calculator with trigonometric capability required. De-
signed for majors in Electronics, Manufacturing Technologies and Data Networks and Telecommunication Tech-
nologies. NOTE: MATH 099 is not an acceptable prerequisite for any mathematics and manufacturing systems
maintenance Tech class at Clark College. Prerequisite: MATH 098 or recommending score on placement test or
consent of Instructional Unit.

COLLEGE TRIGONOMETRY
MATH 103  Summer Fall Winter Spring  5 Credits
55 hours of lecture
Trigonometric ratios, right angle trigonometry, law of sines, law of cosines, radian measure, trigonometric identities,
inverse trigonometric functions, trigonometric equations, graphs of trigonometric functions, polar coordinates, and
two-dimensional vectors. Prerequisite: A grade of “C” or better in MATH 093, or 095, or recommending score on placement test. [Q, SE]

### FINITE MATHEMATICS

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<tr>
<th>Course Code</th>
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<tr>
<td>MATH 105</td>
<td>Summer Fall Winter Spring</td>
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<td>55 hours of lecture</td>
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Set theory, graphs, linear programming, simplex method, matrices and linear systems, probability, and combinatorics. For students of business, social science or life science. Prerequisite: A grade of “C” or better in MATH 093 or 095, or recommending score on placement test. [Q, SE]

### MATH IN SOCIETY

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<tr>
<td>MATH&amp; 107</td>
<td>Summer Fall Winter Spring</td>
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<td>55 hours of lecture</td>
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Philosophy of mathematics and concepts of numerical relationships. Mathematical systems, logic, set theory, inductive and deductive reasoning, scientific attitudes, elementary properties of mathematics. Geometry and history of mathematics will be covered as time allows. For students who do not plan to take more mathematics. One field trip may be required. Prerequisite: A grade of “C” or better in MATH 093 or 095, or recommending score on placement test. [Q, SE]

### COLLEGE ALGEBRA

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<td>MATH 111</td>
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The functional approach including algebraic, logarithmic, and exponential functions. Inequalities, theory and systems of equations, matrices, conic sections, sequences and series. A challenging technical course primarily intended for those majoring in Mathematics, Physical Science or Engineering. It is a preparatory class for the four-term Calculus series. Prerequisite: A grade of “C” or better in MATH 093 or 095, or recommending score on placement test. [Q, SE]

### MATHEMATICS FOR ELEMENTARY TEACHERS

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<tr>
<td>MATH 120</td>
<td>Fall Winter</td>
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Sets, inductive and deductive logic, subsystems of the real number system, various numeration systems, and elementary number theory. For persons planning to become elementary teachers. Prerequisite: A grade of “C” or better in MATH 093 or 095, or recommending score on placement test. [Q, SE]

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<tr>
<td>MATH 121</td>
<td>Winter Spring</td>
<td>5</td>
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<td>55 hours of lecture</td>
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Continuation of MATH 120. The real number system and other mathematical systems, informal Euclidean geometry, measurement, metric units, area and volume, and coordinate geometry. Students are strongly encouraged to arrange a concurrent internship in an elementary school classroom. Prerequisite: A grade of “C” or better in MATH 120. [Q, SE]

### MATH FOR ELEMENTARY TEACHERS

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<td>55 hours of lecture</td>
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The first of a three-quarter sequence of courses designed for prospective elementary school teachers. Focus on problem solving, set theory, numeration systems, whole number arithmetic, and fractions. Prerequisite: A grade of “C” or better in MATH 093 or MATH 095, or recommending score on placement test.

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The second of a three-quarter sequence of courses designed for prospective elementary school teachers. Focus on geometric shapes, measurement, triangle congruence and similarity, coordinate geometry, transformations,
trigonometry and geometric problem solving. May be taken concurrently with MATH 124, the third course in the sequence. Prerequisite: A grade of “C” or better in MATH 122.

**MATH FOR ELEMENTARY TEACHERS**

**MATH 124**  
Winter Spring  
5 Credits  
55 hours of lecture

The third of a three-quarter sequence of courses designed for prospective elementary school teachers. Focus on integers, decimals, number theory; elementary statistics, combinatorics and probability; functions and their graphs. Study of data analysis and probability including problem solving techniques and concepts in algebra. May be taken concurrently with MATH 123, the second course in the sequence. Prerequisite: A grade of “C” or better in MATH 122.

**MODELING ENERGY DYNAMICS IN EVERYDAY LIFE**

**MATH 135**  
Spring  
3 Credits  
33 hours of lecture

Introduction to models of energy dynamics. Students will develop and interpret models of annual energy use and cost using real data related to home lighting, home heating and food consumption. Models will be used to analyze cost/benefit of alternatives. Credit not allowed for both MATH 135 and ENSC 135. Completion of BIOL& 101 recommended. Prerequisite: A grade of “C” or better in MATH 093 or 095, or recommending score on placement test. [Q, NS, SE]

**CALCULUS FOR LIFE SCIENCES**

**MATH 140** 6 Credits

Survey of differentiation and integration in one and multivariable contexts, with applications to problems in Biology and Environmental Science. Prerequisite: A grade of “C” or better in MATH 103 or 111, or recommending score on placement test. [Q, SE]

**BUSINESS CALCULUS**

**MATH& 148**  
Summer Fall Winter Spring  
5 Credits  
55 hours of lecture

Introductory calculus with applications for business, life sciences, and social sciences. Differential, integral, and elementary multivariate calculus. Credit allowed for only one of MATH 140, MATH 106 and MATH& 148. Prerequisite: A grade of “C” or better in MATH 105 or 111 or recommending score on placement test. [Q, SE]

**CALCULUS I**

**MATH& 151**  
Summer Fall Winter Spring  
5 Credits  
55 hours of lecture

Plane analytic geometry, functions, limits, continuity, the derivative, the integral, curve sketching, applications of the derivative. Credit not allowed for both MATH 113 and MATH& 151. Prerequisite: A grade of “C” or better in MATH 103 and 111, or recommending score on placement test. [Q, SE]

**CALCULUS II**

**MATH& 152**  
Summer Fall Winter Spring  
5 Credits  
55 hours of lecture

Continuation of MATH& 151. Trigonometric functions, exponents, logarithms, hyperbolic functions, methods of integration, and applications of the integral and indeterminate forms. Credit not allowed for both MATH 211 and MATH& 152. Prerequisite: A grade of “C” or better in MATH& 151 (MATH 113). [Q, SE]

**CALCULUS III**

**MATH& 153**  
Summer Fall Winter Spring  
5 Credits  
55 hours of lecture

Continuation of MATH& 152. Parametric equations, polar coordinates, conic sections, infinite series, and vectors in two and three dimensions. Credit not allowed for both MATH 212 and MATH& 153. Prerequisite: A grade of “C” or better in MATH& 152 (or MATH 211). [Q, SE]
COOPERATIVE WORK EXPERIENCE
MATH 199 1 – 5 Credits
165 hours of clinical
Supervised work experience in an approved job. Completion of specific learning objectives and employer evaluation. Completion of, or concurrent enrollment in, HDEV 195, 198, or 200 required. Prerequisite: Consent of Instructional Unit. [GE]

DESCRIPTIVE STATISTICS
MATH 203 Summer Fall Winter Spring 3 Credits
33 hours of lecture
Descriptive methods, probability, binomial and normal probability distributions are included among other statistical topics with applications to fields of science, engineering, business, social science, and education. Credit allowed for only one of MATH 203 or BUS 203. Prerequisite: A grade of “C” or better in MATH 093 or 095, or recommending score on placement test. [Q, SE]

INFERENTIAL STATISTICS
MATH 204 Summer Fall Winter Spring 3 Credits
33 hours of lecture
Estimation of parameters, tests of hypotheses, regression analysis, nonparametric statistics and analysis of variance are included in this continuation of MATH 203. Applications in science, engineering, business, social science and education. Credit allowed for only one of MATH 204 or BUS 204. Prerequisite: A grade of “C” or better in MATH 203 or BUS 203. [Q, SE]

DISCRETE MATHEMATICS
MATH 205 Winter 5 Credits
55 hours of lecture
Study of finite systems. Topics chosen from set theory, logic, relations, combinatorics, number systems, algorithms, graph theory, and automata. Credit not allowed for both MATH 205 and MATH 206. Prerequisite: A grade of “C” or better in MATH 111 or recommending score on placement test. [Q, SE]

LINEAR ALGEBRA
MATH 215 Fall 5 Credits
55 hours of lecture
Elementary linear algebra, geometrical vectors, matrices, determinants, linear equations, vector spaces, and linear transformations. Credit not allowed for both MATH 215 and MATH 216. Prerequisite: A grade of “C” or better in MATH& 152 (MATH 211). [Q, SE]

DIFFERENTIAL EQUATIONS
MATH 221 Winter Spring 5 Credits
55 hours of lecture
Elementary theory and applications of ordinary differential equations. Linear equations, linear systems, Laplace transforms, boundary value problems, series and iterative methods. Credit not allowed for both MATH 221 and MATH 241. Prerequisite: Concurrent enrollment in MATH& 254 (MATH 213) or a grade of “C” or better in MATH& 254 (MATH 213). [Q, SE]

CALCULUS IV
MATH& 254 Fall Winter Spring 5 Credits
55 hours of lecture
Continuation of MATH& 153. Solid analytic geometry, partial derivatives, multiple integrals, line and surface integrals. Prerequisite: A grade of “C” or better in MATH& 153 (or MATH 212). [Q, SE]

SELECTED TOPICS
MATH 280 1 – 5 Credits
55 hours of lecture
Selected topics in mathematics. Topics vary and course theme and content change to reflect new topics. Because the course varies in content, it is repeatable for credit. Individual topics are listed in the quarterly class schedules. [SE]
SPECIAL PROJECTS
MATH 290 1 – 5 Credits
Opportunity to plan, organize and complete special projects approved by the department. Prerequisite: Consent of Instructional Unit. [GE]

FUNDAMENTALS OF BUSINESS MATHEMATICS
MATHB 065 Summer Fall Winter Spring 5 Credits
55 hours of lecture
Application of mathematics to common business situations. Emphasis is on practical applications and problem-solving skills for the business professional as well as the consumer and investor. Prerequisite: A grade of “C” or better in DVED 023 or recommending score on the placement test or consent of Instructional Unit.

INDUSTRIAL MATHEMATICS
MATHI 085 Fall Winter Spring 5 Credits
55 hours of lecture
Mathematical calculations used in industry. Determining compression ratio, gear ratio, taper calculations, thread dimensions, weights and measures, and metric conversions. Credit allowed for only one of MATH 065 and 085. Prerequisite: A grade of “C” or better in DVED 023 or recommending score on placement test or consent of Instructional Unit.

TECHNICAL MATHEMATICS I
MATHI 098 Fall 3 Credits
33 hours of lecture
Algebra review, engineering calculator, graphing, geometry, units, significant digits, and scientific notation. Designed for majors in Electronics, Manufacturing Technologies, and Data Networking and Telecommunications Technologies. Prerequisite: Grade of “C” or better in MATH 090, recommending score on placement test or consent of Instructional Unit.

TECHNICAL MATHEMATICS II
MATHI 099 Winter 3 Credits
33 hours of lecture
Trigonometry, Logarithms, and complex numbers. Hand calculator with trigonometric capability required. Designed for majors in Electronics, Manufacturing Technologies and Data Networks and Telecommunication Technologies. NOTE: MATH 099 is not an acceptable prerequisite for any mathematics and manufacturing systems maintenance Tech class at Clark College. Prerequisite: MATH 098 or recommending score on College numerical skills placement test or consent of Instructional Unit.

Mechatronics

BASIC MEASUREMENT TOOLS
MTX 103 Fall 2 Credits
11 hours of lecture 22 hours of lab
Fundamentals of measurement tools. Topics include basic measurement, S.I. and U.S. customary measurement, precision measurement tools and dimensional gauging. Prerequisite: A grade of “C” or better in ELEC 101, 102, and 121; or concurrent enrollment in ELEC 101, 102, and 121; or consent of Instructional Unit.

BASIC HYDRAULICS
MTX 105 Fall 2 Credits
11 hours of lecture 22 hours of lab
Fundamentals of hydraulics. Topics include hydraulic power systems, hydraulic circuits, principles of hydraulic pressure and flow and various types of hydraulic valves. Prerequisite: A grade of “C” or better in ELEC 101, 102, and 121; or concurrent enrollment in ELEC 101, 102, and 121; or consent of Instructional Unit.
BASIC PNEUMATICS  
MTX 107  Fall  2 Credits  
11 hours of lecture  22 hours of lab  
Fundamentals of pneumatics. Topics include pneumatic power systems, basic pneumatic circuits principles of pneumatic pressure and flow and pneumatic speed control. Prerequisite: A grade of “C” or better in ELEC 101, 102, and 121; or concurrent enrollment in ELEC 101, 102, and 121; or consent of Instructional Unit.

ELECTRIC MOTOR CONTROL 1  
MTX 110  Fall  4 Credits  
22 hours of lecture  44 hours of lab  
Fundamentals of electric motor control. Topics include electrical safety, control transformers, overload protection, ladder logic, control relays, electronic sensors, and other topics related to the fundamental operation of electronic motor control. Prerequisite: A grade of “C” or better in ELEC 101, 102, and 121; or concurrent enrollment in ELEC 101, 102, and 121; or consent of Instructional Unit.

ELECTRICAL POWER DISTRIBUTION  
MTX 113  Fall  2 Credits  
11 hours of lecture  22 hours of lab  
Fundamentals of electrical power distribution as it relates to mechatronics. Topics include an introduction to raceways, conduit bending, rigid conduit, flexible conduit, conductors, disconnects, overcurrent protection, conduit sizing, and wire pulling techniques. Prerequisite: A grade of “C” or better in ELEC 101, 102, and 121; or concurrent enrollment in ELEC 101, 102, and 121; or consent of Instructional Unit.

MECHATRONICS 1  
MTX 117  Fall  2 Credits  
11 hours of lecture  22 hours of lab  
Fundamentals of mechatronics. Topics include automation operations, control systems, mechatronic safety, component adjustments, manual operation, pneumatic and electric pick and place. Prerequisite: A grade of “C” or better in ELEC 101, 102, and 121; or concurrent enrollment in ELEC 101, 102, and 121; or consent of Instructional Unit.

MECHANIC DRIVES 1  
MTX 120  Winter  3 Credits  
22 hours of lecture  44 hours of lab  
Introduction to mechanical drive systems. Topics include mechanical power transmission safety, machine installation, motor mounting, shaft speed measurement, torque and power measurement, v-belt, chain and spur gear drives and other topics as well. Advantages of each system type will be discussed and compared. Prerequisite: A grade of “C” or better in ELEC 101, 102, and 121; or concurrent enrollment in ELEC 101, 102, and 121; or consent of Instructional Unit.

PICK AND PLACE ROBOT  
MTX 123  Winter  2 Credits  
11 hours of lecture  22 hours of lab  
Fundamentals of the pick and place robot using the SMC system. Topics include pneumatic robotic systems, preventive maintenance and troubleshooting as well as pneumatic robot control. Prerequisite: A grade of “C” or better in ELEC 101, 102, and 121; or concurrent enrollment in ELEC 101, 102, and 121; or consent of Instructional Unit.

SERVO ROBOT  
MTX 125  Winter  3 Credits  
22 hours of lecture  22 hours of lab  
Introduction to the articulated arm servo robot using the SMC system. Topics include basic robot operation, teach point programming, PC software programming, application development, flexible manufacturing cells, quality control and production control. Prerequisite: A grade of “C” or better in ELEC 101, 102, and 121; or concurrent enrollment in ELEC 101, 102, and 121; or consent of Instructional Unit.
PIPING
MTX 127  Winter  2 Credits
11 hours of lecture  22 hours of lab
Fundamentals of piping. Topics include metal piping systems, metal piping installation, metal tubing systems and hoses. Prerequisite: A grade of “C” or better in ELEC 101, 102, and 121; or concurrent enrollment in ELEC 101, 102, and 121; or consent of Instructional Unit.

PROGRAMMABLE LOGIC CONTROLLERS 1
MTX 130  Winter  4 Credits
22 hours of lecture  44 hours of lab
Introduction to programmable logic controllers. Topics include basic programming of PLCs, PLC motor control methods, discrete I/O interfacing, event sequencing, timers, counters and program control instructions. Prerequisite: A grade of “C” or better in ELEC 101, 102, and 121; or concurrent enrollment in ELEC 101, 102, and 121; or consent of instructional Unit.

MECHANICAL DRIVES 2
MTX 150  Spring  2 Credits
11 hours of lecture  22 hours of lab
Intermediate concepts of mechanical drive systems. Topics include heavy-duty v-belts, v-belt selection and maintenance, synchronous belt drives, lubrication concepts, precision shaft alignment techniques and heavy duty chain drives. Advantages of each system type will be discussed and compared. Prerequisite: A grade of “C” or better in MTX 120 or consent of Instructional Unit.

DC DRIVES
MTX 153  Spring  4 Credits
22 hours of lecture  44 hours of lab
Introduction to DC drives. Topics include DC motion control, SCR control, DC spindle drives, DC axis drives and DC pulse width modulation drives. Prerequisite: A grade of “C” or better in ELEC 101, 102, and 121; or concurrent enrollment in ELEC 101, 102, and 121; or consent of instructional Unit.

AC DRIVES
MTX 155  Spring  4 Credits
22 hours of lecture  44 hours of lab
Introduction to AC drives: Topics include AC motion control, AC Vector drives, AC axis drives, general purpose AC drives and AC drive troubleshooting. Prerequisite: A grade of “C” or better in ELEC 101, 102, and 121; or concurrent enrollment in ELEC 101, 102, and 121; or consent of Instructional Unit.

ELECTRIC MOTOR CONTROL 2
MTX 165  Spring  4 Credits
22 hours of lecture  44 hours of lab
Introduction to electric motor control troubleshooting techniques. Techniques include control component, motor starter and systems troubleshooting methods. Related topics include various motor braking methods and power distribution. Prerequisite: A grade of “C” or better in MTX 110 or consent of Instructional Unit.

CO-OP WORK EXPERIENCE
MTX 199   1 – 5 Credits
165 hours of clinical
Work-based learning experience that enables students to apply specialized occupational theory, skills and concepts. Specific objectives are developed by the College and the employer. Prerequisite: Completion of, or concurrent enrollment in HDEV 105, 198 or 200 required. Consent of Instructional Unit.

FLOW PROCESS CONTROL
MTX 205  Fall  5 Credits
33 hours of lecture  44 hours of lab
Introduction to level/flow process control using the SMC system. Topics include process control concepts, safety, sight gauges, instrument tags, piping and instrumentation diagrams, loop controllers, final control elements, level
management, liquid level control, methods of automatic control as well as other concepts. Prerequisite: A grade of "C" or better in ELEC 101, 102, and 121; or concurrent enrollment in ELEC 101, 102, and 121; or consent of Instructional Unit.

**THERMAL PROCESS CONTROL**

**MTX 207  Winter  5 Credits**

33 hours of lecture  44 hours of lab

Introduction to thermal process control using the SMC system. Topics include process control concepts, safety, instrument tag fundamental, piping and instrumentation diagrams, thermal energy, basic temperature control elements, final control elements, temperature sensors, and temperature transmitters. Prerequisite: A grade of "C" or better in ELEC 101, 102, and 121; or concurrent enrollment in ELEC 101, 102, and 121; or consent of Instructional Unit.

**ELECTRO-FLUID POWER**

**MTX 210  Fall  4 Credits**

22 hours of lecture  44 hours of lab

Fundamentals of electro-fluid power. Topics include electrical control systems, basic control devices, power devices, control relays, sequencing, timer and pressure control and circuit applications. Prerequisite: A grade of "C" or better in ELEC 101, 102, and 121; or concurrent enrollment in ELEC 101, 102, and 121; or consent of Instructional Unit.

**MECHATRONICS 2**

**MTX 215  Winter  3 Credits**

22 hours of lecture  22 hours of lab

Intermediate concepts of mechatronics. Topics include robotic pick and place assembly, torquing/assembly, parts storage and multiple station control. Prerequisite: A grade of "C" or better in MTX 117 or consent of Instructional Unit.

**MECHATRONICS 3**

**MTX 217  Spring  5 Credits**

33 hours of lecture  44 hours of lab

Advanced concepts of manufacturing stations of the SMC system as it applies to mechatronics. Topics include flexible materials handling, robot workstations, inventory control, serial robot communications, PLC communications, barcode pallet tracking, manufacturing execution systems, manufacturing management and simulation, ethernet operation and applications. Prerequisite: A grade of "C" or better in MTX 215 or consent of Instructional Unit.

**WORKPLACE ORGANIZATION AND PRACTICES**

**MTX 220  Fall  2 Credits**

11 hours of lecture  22 hours of lab

Introduction to the enterprise system: topics include technology sectors, team concepts, product design, business presentation and business presentation software. Prerequisite: A grade of "C" or better in ELEC 101, 102, and 121; or concurrent enrollment in ELEC 101, 102, and 121; or consent of Instructional Unit.

**WORK TEAMS AND PRODUCT DESIGN**

**MTX 223  Fall  3 Credits**

22 hours of lecture  22 hours of lab

Intermediate concepts of the enterprise system. Topics include team development, team problem solving, product design analysis and engineering impacts. Prerequisite: A grade of "C" or better in ELEC 101, 102, and 121; or concurrent enrollment in ELEC 101, 102, and 121; or consent of Instructional Unit.

**SPEED CONTROL SYSTEMS**

**MTX 225  Winter  2 Credits**

11 hours of lecture  22 hours of lab

Introduction to speed control systems. Topics include variable frequency AC drives, VFD speed and torque, VFD acceleration, deceleration, braking, VFD fault diagnostics and troubleshooting as well as SCR motor control. Prerequisite: A grade of "C" or better in ELEC 101, 102, and 121; or concurrent enrollment in ELEC 101, 102, and 121; or consent of Instructional Unit.
MECHANICAL DRIVES 3
MTX 227  Spring  4 Credits
22 hours of lecture  44 hours of lab
Introduction to various bearing types as used in mechanical drive systems as well as advanced gear drives. Topics include plain bearings, ball bearings, roller bearings and anti-friction bearings, as well as gaskets and seals and advanced gear drives. Prerequisite: A grade of “C” or better in MTX 150 or consent of Instructional Unit.

LASER ALIGNMENT
MTX 230  Fall  2 Credits
11 hours of lecture  22 hours of lab
Introduction to the concept and proper practices of laser alignment. Topics include laser shaft alignment, including rough and precision alignment, soft foot correction and analysis. Prerequisite: A grade of “C” or better in ELEC 101, 102, and 121; or concurrent enrollment in ELEC 101, 102, and 121; or consent of Instructional Unit.

ADVANCED PROGRAMMABLE LOGIC CONTROLLERS
MTX 250  Winter  4 Credits
22 hours of lecture  44 hours of lab
Intermediate concepts of Programmable Logic Controls. Topics include analog input and output modules, analog scaling, network concepts, an introduction to Panelview and remote I/O concepts. Prerequisite: A grade of “C” or better in MTX 130, or equivalent, or consent of Instructional Unit.

ADVANCED HYDRAULICS
MTX 255  Spring  3 Credits
11 hours of lecture  44 hours of lab
Advanced concepts of hydraulics. Topics include hydraulic directional control valves, hydraulic cylinder applications, relief valves, check valves and accumulators. Prerequisite: A grade of “C” or better in MTX 105 or consent of Instructional Unit.

ADVANCED PNEUMATICS AND VACUUM
MTX 260  Spring  6 Credits
33 hours of lecture  66 hours of lab
Advanced concepts of pneumatics and vacuum concepts as well as troubleshooting as they apply to industry standards using the SMC training system. Topics include moving loads pneumatically, vacuum systems, air compressors, air preparation troubleshooting, troubleshooting pneumatic cylinders, motor and rotary actuator troubleshooting, vacuum system troubleshooting and other topics as well. Prerequisite: A grade of “C” or better in MTX 107, equivalent, or consent of Instructional Unit.

CAPSTONE
MTX 270  Spring  3 Credits
66 hours of lab
Integration of Mechatronics course concepts and skills. Activities include five weeks of lab time for a student team to create a manufacturing scenario using the SMC automated manufacturing equipment. Prerequisite: Consent of Instructional Unit.

PROJECT MANAGEMENT AND LEAN MANUFACTURING
MTX 285  Spring  2 Credits
11 hours of lecture  22 hours of lab
Introduction to project management within the enterprise system. Various topics include project management, lean manufacturing and industrial engineering systems. Prerequisite: A grade of “C” or better in ELEC 101, 102, and 121; or concurrent enrollment in ELEC 101, 102, and 121; or consent of Instructional Unit.

SPECIAL PROJECTS
MTX 290  1 – 5 Credits
Opportunity to plan, organize, and complete special projects approved by the department. Prerequisite: Consent of Instructional Unit.
ORGANIZATIONAL ENTREPRENEURSHIP
MTX 295  Spring 3 Credits
22 hours of lecture  22 hours of lab
Introduction to economics and marketing techniques applicable to the business enterprise. Topics include enterprise economics, marketing basics and entrepreneurship. Prerequisite: A grade of “C” or better in ELEC 101, 102, 121; or concurrent enrollment in ELEC 101, 102, and 121; or consent of Instructional Unit.

Medical Radiography

RADIOGRAPHIC SKILL ENHANCEMENT LAB I
MRAD 011  Summer Fall Winter Spring 1 Credit
22 hours of lab
Supervised lab experience for skill enhancement in radiographic positioning, evaluation of radiographic procedures, technique, and equipment for the first year medical radiography student. Concurrent enrollment in the Medical Radiography Program with a grade of “C” or better. Prerequisite: Admission in the Medical Radiography Program and consent of the Instructional Unit.

RADIOGRAPHIC SKILL ENHANCEMENT LAB II
MRAD 012  Summer Fall Winter Spring 1 – 5 Credits
88 hours of lab
Supervised lab experience for skill enhancement in radiographic positioning, evaluation of radiographic procedures, technique, and equipment for the second year medical radiography student. Concurrent enrollment in the Medical Radiography Program with a grade of “C” or better. Prerequisite: Admission in the Medical Radiography Program and consent of the Instructional Unit.

INTRODUCTION TO DIAGNOSTIC IMAGING
MRAD 050  Winter  3 Credits
33 hours of lecture
Introduction to basic aspects of the Diagnostic Imaging professions including work environment and expectations concerning dress, hygiene, attitude and behavior. CPR Training and an introduction to on-line course instruction are provided. Clinical site visitation required. This course is required for admission into the Medical Radiography program. Prerequisite: Completion of or concurrent enrollment in BIOL& 251, 252, or 252 (or BIOL 231, 232 or 233) or permission of Instructional Unit.

INTRODUCTION TO RADIOLOGIC TECHNOLOGY
MRAD 101  Fall Spring 3 Credits
33 hours of lecture
An orientation to the radiologic technology profession, imaging equipment, radiation safety, patient care and radiographic examinations, professional development, career advancement, and professional ethics and associations. Prerequisite: Completion of, or concurrent enrollment in BIOL& 251, 252, or 253 (BIOL 231, 232, or 233).

INTRODUCTION TO PATIENT CARE
MRAD 102  Winter  5 Credits
44 hours of lecture  22 hours of lab
Patient care aspects involved in being a Radiologic Technologist. Topics include: patient interactions, history taking, transfer techniques, immobilization, vital signs and oxygen, infection control, aseptic and non-aseptic techniques. The lecture for this course, quizzes, and other materials will be online and accessed through the course webpage. The class will be divided into two on-campus lab periods. Concurrent enrollment in the Medical Radiography Program with a grade of “C” or better. Prerequisite: Admission in the Medical Radiography Program and consent of the Instructional Unit.

IMAGE PROCESSING
MRAD 103  Winter  1 Credit
11 hours of lecture
Introduction to radiographic image processing using both traditional film and digital images. Topics for discussion
include darkroom chemistry, equipment, and procedures and computer hardware and software in the radiology lab. Concurrent enrollment in the Medical Radiography Program with a grade of “C” or better. Prerequisite: Admission in the Medical Radiography Program and consent of the Instructional Unit.

**RADIATION SAFETY AND RADIOBIOLOGY**

**MRAD 104**  
Winter  
2 Credits  
22 hours of lecture  
Introduction to proper procedures for working safely in the radiologic environment. Topics include: communication, radiation measurement, survey devices, conversion from traditional to systems international units, patient and radiographer protection, monitoring devices, safe operation of equipment, beam limitation, shielding, barriers, and fluoroscopic and mobile procedures. Concurrent enrollment in the Medical Radiography Program with a grade of “C” or better. Prerequisite: Admission in the Medical Radiography Program and consent of the Instructional Unit.

**RADIATION PHYSICS I**

**MRAD 108**  
Spring  
3 Credits  
22 hours of lecture  
22 hours of lab  
Focus on the fundamental principles of physics that underlie the use of radiation in diagnostic imaging. Using simplified math, and building on the concepts learned in Radiation Safety, develop a basic understanding of the production and control of X-radiation. Topics include: structure of atom, electromagnetic radiation, electrodynamics, electromagnetism, x-ray tube, x-ray production and interactions with matter. Hybrid course structure: some instruction will occur in the traditional classroom and some instruction will occur via the course website. Concurrent enrollment in the Medical Radiography Program with a grade of “C” or better. Prerequisite: Admission in the Medical Radiography Program and consent of the Instructional Unit.

**RADIATION PHYSICS II**

**MRAD 109**  
Summer  
4 Credits  
33 hours of lecture  
22 hours of lab  
Continuation of MRAD 108. The geometry of image formation and the radiographic qualities of density, contrast, detail and distortion. Topics include: radiographic equipment, controlling factors of density, contrast, detail and distortion, beam limiting devices and their impact on the image, grids, image receptors (analog and digital) and fundamentals of digital imaging. Includes heavy emphasis on solving problems involving radiographic qualities. This course will be structured as a hybrid course, with some instruction in the traditional classroom and some via the course website. Concurrent enrollment in the Medical Radiography Program with a grade of “C” or better. Prerequisite: Admission in the Medical Radiography Program and consent of the Instructional Unit.

**CLINICAL EXPERIENCE I**

**MRAD 121**  
Spring  
5 Credits  
165 hours of clinical  
First in a series of seven competency based clinical courses. Students orient to an assigned clinical education center and by instruction, observation, and experience, acquire the necessary skills to successfully image patients utilizing X-ray energy. Students will learn how to use the computer and PACS systems. Concurrent enrollment required in MRAD 108, 142, and 151. Concurrent enrollment in the Medical Radiography Program with a grade of “C” or better. Prerequisite: Admission in the Medical Radiography Program and consent of the Instructional Unit.

**CLINICAL EXPERIENCE II**

**MRAD 122**  
Summer  
8 Credits  
264 hours of clinical  
Second in a series of seven competency-based clinical experience courses. Students orient to an assigned clinical site and by instruction, observation, and experience, acquire the necessary skills to successfully image patients utilizing x-ray energy. Students will be assessed for maintenance of competency from previous clinical evaluations and experiences. Concurrent enrollment in the Medical Radiography Program with a grade of “C” or better. Prerequisite: Admission in the Medical Radiography Program and consent of the Instructional Unit.
CLINICAL EXPERIENCE III
MRAD 123  Fall  8 Credits
264 hours of clinical
Third in a series of seven competency-based experience courses. Students orient to an assigned clinical site and by instruction, observation, and experience, acquire the necessary skills to successfully image patients utilizing x-ray energy. Students will be assessed for maintenance of competency from previous clinical evaluations and experiences. Concurrent enrollment in the Medical Radiography Program with a grade of “C” or better. Prerequisite: Admission in the Medical Radiography Program and consent of the Instructional Unit.

RADIOGRAPHIC POSITIONING I
MRAD 141  Winter  5 Credits
44 hours of lecture  22 hours of lab
Introduction to basic radiographic positioning principles, terminology, pathology, and anatomy for radiographic purposes. Lecture discussion, demonstration and lab experiences will be used to present information on positioning and anatomy of the chest, abdomen and upper extremities. Projections studied will include cross-table images for trauma exams. Radiographic compliance, ICD coding, and ABN will be discussed. Concurrent enrollment in the Medical Radiography Program with a grade of “C” or better. Prerequisite: Admission in the Medical Radiography Program and consent of the Instructional Unit.

RADIOGRAPHIC POSITIONING II
MRAD 142  5 Credits
44 hours of lecture  22 hours of lab
Second in a five-course series that focuses on radiographic positioning principles, terminology, pathology, and anatomy for radiographic purposes. Lecture discussion, demonstration and lab experiences will be used to present information on positioning and anatomy of the shoulder, pelvic girdle, and lower limbs. Projections studied will include cross-table images for trauma exams. Radiographic compliance, ICD coding, and ABN will be discussed. Concurrent enrollment in the Medical Radiography Program with a grade of “C” or better. Prerequisite: Admission in the Medical Radiography Program and consent of the Instructional Unit.

RADIOGRAPHIC POSITIONING III
MRAD 143 Summer  5 Credits
44 hours of lecture  22 hours of lab
Third in a five-course series that focuses on radiographic positioning principles, terminology, pathology, and anatomy for radiographic purposes. Lecture discussion, demonstration and lab experiences will be used to present information on positioning and anatomy of the bony thorax, vertebral column, and sacrum and coccyx. Projections studied will include information on performing cross-table images for trauma exams. Concurrent enrollment in MRAD 143L. Prerequisite: Admission in the Medical Radiography Program and consent of the Instructional Unit.

IMAGE EVALUATION I
MRAD 151  Spring  2 Credits
22 hours of lecture
First of a four-course series of radiographic image critique involving images of the chest, abdomen, and upper extremities. Emphasis on the evaluation and critique of radiographic anatomy, exposure factors, positioning, and pathology. Concurrent enrollment in the Medical Radiography Program with a grade of “C” or better. Prerequisite: Admission in the Medical Radiography Program and consent of the Instructional Unit.

IMAGE EVALUATION II
MRAD 152  Summer  1 Credit
11 hours of lecture
Second in a four-course series of radiographic film critique involving images of the shoulder girdle, lower extremities, and pelvic girdle. Emphasis on the evaluation of radiographic anatomy, exposure factors, positioning, and pathology. Concurrent enrollment in the Medical Radiography Program with a grade of “C” or better. Prerequisite: Admission in the Medical Radiography Program and consent of the Instructional Unit.
MRAD 153  Fall  1 Credit
11 hours of lecture
Third of a four-course series of radiographic film critique involving images of the bony thorax, vertebral column, and sacrum and coccyx. Emphasis on the evaluation of radiographic anatomy, exposure factors, positioning, and pathology. Concurrent enrollment in the Medical Radiography Program with a grade of “C” or better. Prerequisite: Admission in the Medical Radiography Program and consent of the Instructional Unit.

MRAD 154  Winter  1 Credit
11 hours of lecture
Fourth of a four-course series of radiographic film critique involving images of the cranium, facial bones, and paranasal sinuses. Emphasis on the evaluation of radiographic anatomy, exposure factors, positioning, and pathology. Concurrent enrollment in the Medical Radiography Program with a grade of “C” or better. Prerequisite: Admission in the Medical Radiography Program and consent of the Instructional Unit.

MRAD 214  Fall  3 Credits
22 hours of lecture  22 hours of lab
Introduction to the pharmacological principles and practices in patient care for the medical imaging professional including administration of diagnostic contrast agents and/or intravenous medications; includes competency in venipuncture practice. Concurrent enrollment in the Medical Radiography Program with a grade of “C” or better. Prerequisite: Admission in the Medical Radiography Program and consent of the Instructional Unit.

MRAD 216  Winter  3 Credits
33 hours of lecture
Basic terms and manifestations of pathological conditions, trauma, classifications of diseases, genetics, and the healing process. Imaging procedures and radiographic appearance as well as interventional techniques appropriate for diseases common to each body system. Concurrent enrollment in the Medical Radiography Program with a grade of “C” or better. Prerequisite: Admission in the Medical Radiography Program and consent of the Instructional Unit.

MRAD 224  Winter  8 Credits
264 hours of clinical
Fourth in a series of seven competency-based clinical experience courses. Students orient to an assigned clinical education center and by instruction, observation, and experience, acquire the necessary skills to successfully image patients utilizing x-ray energy. Students will be assessed for maintenance of competency from previous clinical evaluations and experience. Concurrent enrollment in the Medical Radiography Program with a grade of “C” or better. Prerequisite: Admission in the Medical Radiography Program and consent of the Instructional Unit.

MRAD 225  Spring  8 Credits
264 hours of clinical
Fifth in a series of seven competency-based clinical experience courses. Students orient to an assigned clinical education center and by instruction, observation, and experience, acquire the necessary skills to successfully image patients utilizing x-ray energy. Students will be assessed for maintenance of competency from previous clinical evaluations and experiences. Concurrent enrollment in the Medical Radiography Program with a grade of “C” or better. Prerequisite: Admission in the Medical Radiography Program and consent of the Instructional Unit.

MRAD 226  Summer  12 Credits
363 hours of clinical
Sixth in a series of seven competency-based clinical experience courses. Students orient to an assigned clinical site and by instruction, observation, and experience, acquire the necessary skills to successfully image patients utilizing x-ray energy. Students will be assessed for maintenance of competency from previous clinical evaluations and experience.
CLINICAL EXPERIENCE VII
MRAD 227 Fall 12 Credits
363 hours of clinical
Seventh in a series of seven competency-based clinical experience courses. Students orient to an assigned clinical site and by instruction, observation, and experience, acquire the necessary skills to successfully image patients utilizing x-ray energy. Students will be assessed for maintenance of competency from previous clinical evaluations and experiences. Concurrent enrollment in the Medical Radiography Program with a grade of “C” or better. Prerequisite: Admission in the Medical Radiography Program and consent of the Instructional Unit.

RADIOGRAPHIC POSITIONING IV
MRAD 244 3 Credits
22 hours of lecture 22 hours of lab
Fourth in a five-course series that focuses on radiography positioning principles, terminology, pathology, and anatomy for radiographic purposes. Lecture discussion, demonstration and lab experiences will be used to present information on positioning and anatomy of conventional tomography, upper gastrointestinal system, lower gastrointestinal system, gallbladder and biliary ducts, urinary system, and surgical radiography. Projections studied will include cross-table images for trauma exams. Radiographic compliance, ICD coding, and ABN will be discussed. Concurrent enrollment in the Medical Radiography Program with a grade of “C” or better. Prerequisite: Admission in the Medical Radiography Program and consent of the Instructional Unit.

RADIOGRAPHIC POSITIONING V
MRAD 245 Fall 3 Credits
22 hours of lecture 22 hours of lab
Fifth in a five-course series that focuses on radiographic positioning principles, terminology, pathology, and anatomy for radiographic purposes. Lecture discussion, demonstration and lab experiences will be used to present information on positioning and anatomy of the cranium, facial bones and paranasal sinuses. Projections studied will include cross-table images for trauma exams. Radiographic compliance, ICD coding, and ABN will be discussed. Concurrent enrollment in the Medical Radiography Program with a grade of “C” or better. Prerequisite: Admission in the Medical Radiography Program and consent of the Instructional Unit.

PATHOPHYSIOLOGY FOR MEDICAL IMAGING
MRAD 250 Summer 3 Credits
33 hours of lecture
Etiology of disease and the impact on the human body including cultural implications. Physiologic effects of disease on body systems and the role of Diagnostic Imaging in diagnosis and treatment. Concurrent enrollment in MRAD 225 and 270. Prerequisite: A grade of “C” or better in MRAD 154, 216, 224 and 245 or consent of Instructional Unit.

RADIOGRAPHIC INFORMATION MANAGEMENT
MRAD 251 Spring 2 Credits
22 hours of lecture
Fundamentals of digital radiography, Radiology Information System (RIS), and Picture Archiving and Communication System (PACS), basic Medical Imaging Information systems, CR and DR Image acquisition, manipulation and quality control. Concurrent enrollment in the Medical Radiography Program with a grade of “C” or better. Prerequisite: Admission in the Medical Radiography Program and consent of the Instructional Unit.

RADIOBIOLOGY
MRAD 253 Spring 2 Credits
22 hours of lecture
Overview of the principles involving the interaction of radiation with living systems. Radiation effects on molecules, cells, tissues, and the body as a whole. Topics include: radiolysis of water, linear energy transfer, relative biologic effectiveness, acute radiation syndrome, effects on embryo and fetus, chromosomal aberrations, mutations, risk estimates, and carcinogenesis. Concurrent enrollment in the Medical Radiography Program with a grade of “C” or better. Prerequisite: Admission in the Medical Radiography Program and consent of the Instructional Unit.
ADVANCED MODALITIES
MRAD 255 Summer 1 Credit
11 hours of lecture
Introduction to CT, MRI, sonography, mammography, special fluoroscopic procedures and other advanced imaging modalities including angiography and interventional. Concurrent enrollment in the Medical Radiography Program with a grade of “C” or better. Prerequisite: Admission in the Medical Radiography Program and consent of the Instructional Unit.

LEADERSHIP AND MANAGEMENT
MRAD 270 Spring 1 Credit
11 hours of lecture
Introductory to leadership skills associated with patient care and management. Focus on supervision, delegation, conflict resolution, leadership styles, quality assurance, ethics, work environment, responsibility, accountability, collaboration and teamwork; as well as interviewing and resume training. Concurrent enrollment in the Medical Radiography Program with a grade of “C” or better. Prerequisite: Admission in the Medical Radiography Program and consent of the Instructional Unit.

MEDICAL RADIOGRAPHY REVIEW
MRAD 275 Fall 2 Credits
22 hours of lecture
Comprehensive review class to prepare students to sit for the American Registry of Radiologic Technologists (ARRT) certification examination: radiation protection, equipment operation and quality control, image production and evaluation, radiographic procedures, and patient care and education are covered in adherence with ARRT exam specifications. Concurrent enrollment in the Medical Radiography Program with a grade of “C” or better. Prerequisite: Admission in the Medical Radiography Program and consent of the Instructional Unit.

CROSS SECTIONAL ANATOMY FOR IMAGING PROFESSIONAL
MRAD 279 Summer 3 Credits
33 hours of lecture
Sectional human anatomy in the axial/transverse, sagittal, and coronal planes with emphasis on the brain, head, chest and abdominopelvic cavity. Introduction to basic CT physics. Concurrent enrollment in the Medical Radiography Program with a grade of “C” or better. Prerequisite: Admission in the Medical Radiography Program and consent of the Instructional Unit.

SELECTED TOPICS
MRAD 280 Fall Winter Spring 1 – 5 Credits
55 hours of lecture
Varying topics in Medical Radiography, as listed in the quarterly class schedule. May be repeated for credit. Prerequisite: Consent of Instructional Unit.

SPECIAL PROJECTS
MRAD 290 Summer Fall Winter Spring 1 – 5 Credits
Opportunity to plan, organize, and complete special projects approved by the department. Prerequisite: Consent of Instructional Unit.

Meteorology

ATMOSPHERE AND THE ENVIRONMENT
METR 101 Fall Winter Spring 5 Credits
44 hours of lecture
44 hours of lab
Fundamental theories in meteorology and current topics in the atmospheric sciences are developed conceptually for non-science students interested in the changing environment. Topics include atmospheric structure and composition, global circulation and atmospheric motions, clouds and precipitation, weather patterns and weather prediction, tornados, hurricanes, the greenhouse effect, atmospheric ozone, air pollution, and El Nino. [NS, SE]
SPECIAL PROJECTS
METR 290  Fall Winter Spring  1 – 5 Credits
Opportunity to plan and complete special projects approved by the instructional unit. Prerequisite: Consent of Instructional Unit. [GE]

Music

FUNDAMENTALS OF MUSIC
MUSC 098  Summer  2 Credits
22 hours of lecture
Fundamentals of reading and writing music including clefs, pitch, scales, chords and rhythm.

SPECIAL SEMINARS
MUSC 100  Summer Fall Winter Spring  1 – 5 Credits
55 hours of lecture
Special workshops on various musical topics as listed in the quarterly class schedule. [HA, SE]

BEGINNING PIANO CLASS
MUSC 101  Summer Fall Winter Spring  2 Credits
22 hours of lecture
Beginning-level study of the piano. [HB, SE]

READING RHYTHM LAB
MUSC 103  Fall Winter Spring  1 – 2 Credits
44 hours of lab
Learn or improve reading of musical rhythms. Self-paced, individualized instruction using tapes. Placement in program via pre-test. Covers basic to professional level. [HB, SE]

MUSIC APPRECIATION
MUSC& 104  Summer Fall Winter Spring  3 Credits
33 hours of lecture
Study and understanding of music. Nonverbal explorations into the listening process, a brief look at the history of Western music, and work in formal descriptive music analysis. [HA, SE]

MUSIC IN EARLY CHILDHOOD EDUCATION
MUSC 106  Summer Fall Winter Spring  3 Credits
33 hours of lecture
Introduction to music as a teaching tool for young children, and to the importance of music in the educational development of children. Students develop skills in reading music, working with the musical abilities of young children, and using music in the classroom. [HB, SE]

BEGINNING GUITAR CLASS
MUSC 110  Fall Winter Spring  2 Credits
22 hours of lecture
Beginning-level study of the guitar. [HB, SE]

BEGINNING VOICE CLASS
MUSC 115  Winter  2 Credits
11 hours of lecture  22 hours of lab
Basic technique and knowledge about singing. No previous experience or music study required. [HB, SE]

MUSIC HISTORY
MUSC 116  Fall  5 Credits
55 hours of lecture
Music of the Middle Ages, Renaissance and Baroque studied in context of its cultural and historical environment.
Recordings of Gregorian chant, polyphonic music of the Renaissance (des Pres and Palestrina) and Baroque music (Bach, Frescobaldi, Corelli, Monteverdi, and Handel) listened to and studied. [HA, SE]

**MUSIC HISTORY**  
**MUSC 117**  
*Fall Winter Spring*  
5 Credits  
55 hours of lecture  
Music of the classical and romantic eras studied in context of its cultural and historical environment. Recordings of Haydn, Mozart, Beethoven, Schubert, Wagners, Brahms, and others listened to and studied. [HA, SE]

**MUSIC HISTORY**  
**MUSC 118**  
*Winter Spring*  
5 Credits  
55 hours of lecture  
Music of the twentieth century studied in context of its cultural and historical environment. Recordings and live performances. Debussy, Stravinsky, Schoenberg, Berg, Hindemith, Stockhausen, and others listened to and studied in context of 20th century culture. [SE, HA]

**EAR TRAINING 1**  
**MUSC& 121**  
*Fall*  
2 Credits  
22 hours of lecture  
Learning to write what is heard in melodic and intervalic ways. Sight singing and chord recognition. Develops rhythmic, melodic, and harmonic perception skills through dictation, sight singing and drill. [HB, SE]

**EAR TRAINING 2**  
**MUSC& 122**  
*Winter*  
2 Credits  
22 hours of lecture  
Continuation of MUS 144. Learning to write what is heard in melodic and intervalic ways. Sight-singing and chord recognition. Develops rhythmic, melodic, and harmonic perception skills through dictation, sight-singing and drill. Prerequisite: MUS 144 or consent of Instructional Unit. [HB, SE]

**EAR TRAINING 3**  
**MUSC& 123**  
*Spring*  
2 Credits  
22 hours of lecture  
Learning to write what is heard in melodic and intervalic ways. Sight-singing and chord recognition. Prerequisite: MUS 145 or consent of Instructional Unit. [HB, SE]

**ROCK MUSIC**  
**MUSC 125**  
*Fall Winter Spring*  
3 Credits  
33 hours of lecture  
Rhythm, melody, harmony, timbre, text uses, and form in current rock music. Problems and definitions of these elements with illustrations from various styles of rock music. [HA, SE]

**WORLD FOLK MUSIC**  
**MUSC 127**  
*Fall Winter Spring*  
3 Credits  
33 hours of lecture  
Folk music in selected cultures beginning with the Anglo-American folk song. Music and cultural values. Role of music in folk cultures. Appreciation of differences in music styles as they relate to their social settings. [HA, SE]

**MUSIC APPRECIATION**  
**MUSC 128**  
*Summer Fall Winter Spring*  
3 Credits  
33 hours of lecture  
Study and understanding of music. Nonverbal explorations into the listening process, a brief look at the history of Western music, and work in formal descriptive music analysis. [HA, SE]

**JAZZ APPRECIATION**  
**MUSC 135**  
*Fall Winter Spring*  
3 Credits  
33 hours of lecture  
An interactive process of learning for all jazz enthusiasts, from casual listeners to experienced performers. Topics
include ways to listen to jazz, a chronology of significant jazz periods, societal events affecting each period, and biographies of key performers, culminating in a fieldwork project focusing on local jazz groups.

**CLARK COLLEGE CHORALE**

**MUSC 137**  
Fall Winter Spring  
1 – 2 Credits  
11 hours of lecture  
22 hours of lab  
The Clark College Chorale performs a wide variety of choral literature including classical masterworks and non-classical genres for both male and female as well as mixed-voicing choral music. Open to all students and community members, the Chorale performs a minimum of one concert per term with possible additional performances.  
Prerequisite: Audition or consent of Instructional Unit. [HB, SE]

**CLARK COLLEGE CHORALE**

**MUSC 138**  
Fall Winter Spring  
1 – 2 Credits  
11 hours of lecture  
22 hours of lab  
The Clark College Chorale performs a wide variety of choral literature including classical masterworks and non-classical genres for both male and female as well as mixed-voicing choral music. Open to all students and community members, the Chorale performs a minimum of one concert per term with possible additional performances.  
Prerequisite: Audition or consent of Instructional Unit. [HB, SE]

**CLARK COLLEGE CHORALE**

**MUSC 139**  
Fall Winter Spring  
1 – 2 Credits  
11 hours of lecture  
22 hours of lab  
The Clark College Chorale performs a wide variety of choral literature including classical masterworks and non-classical genres for both male and female as well as mixed-voicing choral music. Open to all students and community members, the Chorale performs a minimum of one concert per term with possible additional performances.  
Prerequisite: Audition or consent of Instructional Unit. [HB, SE]

**MUSIC THEORY I**

**MUSC& 141**  
Fall  
5 Credits  
55 hours of lecture  
First-year musicianship. Sound sources and nature of sound. Writing skills and use of musical symbol-notation. Basic vocabulary of music. Introduction to forms, composition, and analysis. Open to all students. Concurrent enrollment in MUS 144 required. [HA, SE]

**MUSIC THEORY II**

**MUSC& 142**  
Winter  
5 Credits  
55 hours of lecture  
Continuation of MUSC& 141. Addition to the I 6-4, II, VI, III chords to harmonic tones, ear training in melodic and rhythmic concepts. Intervals and introduction to the keyboard. Concurrent enrollment in MUSC& 122 required. Prerequisite: MUSC& 141 or consent of Instructional Unit. [HA, SE]

**MUSIC THEORY III**

**MUSC& 143**  
Spring  
5 Credits  
55 hours of lecture  
Continuation of MUSC& 142. Chromatic chords, popular song forms and jazz-related harmonies and forms. Concurrent enrollment in MUSC& 123 required. Prerequisite: MUSC& 142 or consent of Instructional Unit. [HA, SE]

**ORCHESTRA**

**MUSC 150**  
Fall Winter Spring  
1 – 2 Credits  
11 hours of lecture  
22 hours of lab  
Performance of orchestral literature from a variety of periods and styles. [HB, SE]
ORCHESTRA
MUSC 151  Fall Winter Spring  1 – 2 Credits
11 hours of lecture  22 hours of lab
Performance of orchestral literature from a variety of periods and styles. [HB, SE]

ORCHESTRA
MUSC 152  Fall Winter Spring  1 – 2 Credits
11 hours of lecture  22 hours of lab
Performance of orchestral literature from a variety of periods and styles. [HB, SE]

WOMEN’S CHORAL ENSEMBLE
MUSC 153  Fall Winter Spring  1 – 2 Credits
11 hours of lecture  22 hours of lab
Performance of choral music from a variety of periods and styles written for women’s voices. Prerequisite: Audition or consent of Instructional Unit. [HB, SE]

WOMEN’S CHORAL ENSEMBLE
MUSC 154  Fall Winter Spring  1 – 2 Credits
11 hours of lecture  22 hours of lab
Performance of choral music from a variety of periods and styles written for women’s voices. Prerequisite: Audition or consent of Instructional Unit. [HB, SE]

WOMEN’S CHORAL ENSEMBLE
MUSC 155  Fall Winter Spring  1 – 2 Credits
11 hours of lecture  22 hours of lab
Performance of choral music from a variety of periods and styles written for women’s voices. Prerequisite: Audition or consent of Instructional Unit. [HB, SE]

APPLIED VOICE
MUSC 170  Summer Fall Winter Spring  1 Credit
11 hours of lecture
Private voice lessons with a college-approved teacher. Prerequisite: Written consent of Instructional Unit required. [HB, SE]

APPLIED VOICE
MUSC 171  Summer Fall Winter Spring  1 Credit
11 hours of lecture
Private voice lessons with a college-approved teacher. Prerequisite: Written consent of Instructional Unit required. [HB, SE]

APPLIED VOICE
MUSC 172  Summer Fall Winter Spring  1 Credit
11 hours of lecture
Private voice lessons with a college-approved teacher. Prerequisite: Written consent of Instructional Unit required. [HB, SE]

APPLIED PIANO
MUSC 173  Summer Fall Winter Spring  1 Credit
11 hours of lecture
For students with some previous keyboard experience. Prerequisite: MUS 201 and written consent of Instructional Unit required. [HB, SE]

APPLIED PIANO
MUSC 174  Summer Fall Winter Spring  1 Credit
11 hours of lecture
For students with some previous keyboard experience. Prerequisite: MUS 201 and written consent of Instructional Unit required. [HB, SE]
APPLIED PIANO
MUSC 175 Summer Fall Winter Spring 1 Credit
11 hours of lecture
For students with some previous keyboard experience. Prerequisite: MUS 201 and consent of Instructional Unit. [HB, SE]

APPLIED INSTRUMENT
MUSC 176 Summer Fall Winter Spring 1 Credit
11 hours of lecture
Private lessons with a college-approved teacher. Instruction available for orchestra and band instruments. Prerequisite: Written consent of Instructional Unit required. [HB, SE]

APPLIED INSTRUMENT
MUSC 177 Summer Fall Winter Spring 1 Credit
11 hours of lecture
Private lessons with a college-approved teacher. Instruction available for orchestra and band instruments. Prerequisite: Written consent of Instructional Unit required. [HB, SE]

APPLIED INSTRUMENT
MUSC 178 Summer Fall Winter Spring 1 Credit
11 hours of lecture
Private lessons with a college-approved teacher. Instruction available for orchestra and band instruments. Prerequisite: Written consent of Instructional Unit required. [HB, SE]

CONCERT BAND
MUSC 180 Fall Winter Spring 1 – 2 Credits
11 hours of lecture 22 hours of lab
Open to all students with experience performing on brass, woodwind, and percussion instruments. The Clark College Concert Band performs a wide spectrum of standard concert band and contemporary wind ensemble literature in at least one concert per quarter. Topics include musical excellence, and skills for teamwork and leadership. No auditions necessary to enroll but the ability to read music on your respective instrument is required.

CONCERT BAND
MUSC 181 Fall Winter Spring 1 – 2 Credits
11 hours of lecture 22 hours of lab
Open to all students with experience performing on brass, woodwind, and percussion instruments. The Clark College Concert Band performs a wide spectrum of standard concert band and contemporary wind ensemble literature in at least one concert per quarter. Topics include musical excellence, and skills for teamwork and leadership. No auditions necessary to enroll but the ability to read music on your respective instrument is required.

CONCERT BAND
MUSC 182 Fall Winter Spring 1 – 2 Credits
11 hours of lecture 22 hours of lab
Open to all students with experience performing on brass, woodwind, and percussion instruments. The Clark College Concert Band performs a wide spectrum of standard concert band and contemporary wind ensemble literature in at least one concert per quarter. Topics include musical excellence, and skills for teamwork and leadership. No auditions necessary to enroll but the ability to read music on your respective instrument is required.

CONCERT CHOIR
MUSC 183 Fall Winter Spring 1 – 2 Credits
11 hours of lecture 22 hours of lab
The concert choir performs a wide variety of choral music in at least one public concert per quarter. Music notation, vocal technique, and effective interpretation of music literature. Open to all students interested in improving their vocal skills. Prerequisite: Audition or consent of Instructional Unit. [HB, SE]
CONCERT CHOIR
MUSC 184  Fall Winter Spring  1 – 2 Credits
11 hours of lecture  22 hours of lab
The concert choir performs a wide variety of choral music in at least one public concert per quarter. Music notation, vocal technique, and effective interpretation of music literature. Open to all students interested in improving their vocal skills. Prerequisite: Audition or consent of Instructional Unit. [HB, SE]

CONCERT CHOIR
MUSC 185  Fall Winter Spring  1 – 2 Credits
11 hours of lecture  22 hours of lab
The concert choir performs a wide variety of choral music in at least one public concert per quarter. Music notation, vocal technique, and effective interpretation of music literature. Open to all students interested in improving their vocal skills. Prerequisite: Audition or consent of Instructional Unit. [HB, SE]

JAZZ IMPROVISATION
MUSC 186  Fall Winter Spring  2 Credits
11 hours of lecture  22 hours of lab
Improvisation on one or more of the traditional jazz band instruments or through vocal interpretation. [HB, SE]

VOCAL JAZZ ENSEMBLE
MUSC 187  Fall Winter Spring  1 – 3 Credits
22 hours of lecture  22 hours of lab
Selection, arrangement, rehearsal, and performance of a variety of popular vocal jazz pieces. Prerequisite: Audition or consent of Instructional Unit. [HB, SE]

VOCAL JAZZ ENSEMBLE
MUSC 188  Fall Winter Spring  1 – 3 Credits
22 hours of lecture  22 hours of lab
Selection, arrangement, rehearsal, and performance of a variety of popular vocal jazz pieces. Prerequisite: Audition or consent of Instructional Unit. [HB, SE]

VOCAL JAZZ ENSEMBLE
MUSC 189  Fall Winter Spring  1 – 3 Credits
22 hours of lecture  22 hours of lab
Selection, arrangement, rehearsal, and performance of a variety of popular vocal jazz pieces. Prerequisite: Audition or consent of Instructional Unit. [HB, SE]

INSTRUMENTAL ENSEMBLE
MUSC 193  Fall Winter Spring  2 Credits
11 hours of lecture  22 hours of lab
Combination of woodwinds and brasses organized as performing groups. Experience in ensemble playing. Familiarization with literature for ensembles. [HB, SE]

JAZZ ENSEMBLE
MUSC 195  Fall Winter Spring  1 – 2 Credits
11 hours of lecture  22 hours of lab
Open to all students who perform on saxophone, trumpet, trombone, guitar, piano, bass, and drum set. Topics include performance techniques of jazz styles and repertoire and introduction to a wide variety of jazz subjects from improvisation and jazz history to understanding Latin/Afro-Cuban jazz rhythm. Additional topics include musical excellence and skills for teamwork and leadership. Jazz improvisation skills not required, but strong music reading skills are required, to be assessed at the beginning of the term.

JAZZ ENSEMBLE
MUSC 196  Fall Winter Spring  1 – 2 Credits
11 hours of lecture  22 hours of lab
Open to all students who perform on saxophone, trumpet, trombone, guitar, piano, bass, and drum set. Topics
include performance techniques of jazz styles and repertoire and introduction to a wide variety of jazz subjects from improvisation and jazz history to understanding Latin/Afro-Cuban jazz rhythm. Additional topics include musical excellence and skills for teamwork and leadership. Jazz improvisation skills not required, but strong music reading skills are required, to be assessed at the beginning of the term.

<table>
<thead>
<tr>
<th>Course Name</th>
<th>MUSC 197</th>
<th>Fall Winter Spring</th>
<th>1 – 2 Credits</th>
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</thead>
<tbody>
<tr>
<td>JAZZ ENSEMBLE</td>
<td></td>
<td>11 hours of lecture</td>
<td>22 hours of lab</td>
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<tr>
<td>Open to all students who perform on saxophone, trumpet, trombone, guitar, piano, bass, and drum set. Topics include performance techniques of jazz styles and repertoire and introduction to a wide variety of jazz subjects from improvisation and jazz history to understanding Latin/Afro-Cuban jazz rhythm. Additional topics include musical excellence and skills for teamwork and leadership. Jazz improvisation skills not required, but strong music reading skills are required, to be assessed at the beginning of the term.</td>
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<tr>
<th>Course Name</th>
<th>MUSC 201</th>
<th>Summer Fall Winter Spring</th>
<th>2 Credits</th>
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<tbody>
<tr>
<td>INTERMEDIATE PIANO CLASS</td>
<td></td>
<td>22 hours of lecture</td>
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<tr>
<td>Intermediate-level study of the piano. Prerequisite: MUS 101 or consent of Instructional Unit. [HB, SE]</td>
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<thead>
<tr>
<th>Course Name</th>
<th>MUSC 202</th>
<th>Winter Spring</th>
<th>2 Credits</th>
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<tbody>
<tr>
<td>ADVANCED PIANO CLASS</td>
<td></td>
<td>22 hours of lecture</td>
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<tr>
<td>A continuation of instruction from Intermediate Piano. Baroque, classic, romantic, and contemporary repertoire, jazz stylings and fake books. Prerequisite: MUSC 201 or consent of Instructional Unit. [HB, SE]</td>
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<thead>
<tr>
<th>Course Name</th>
<th>MUSC 210</th>
<th>Winter Spring</th>
<th>2 Credits</th>
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</thead>
<tbody>
<tr>
<td>INTERMEDIATE GUITAR CLASS</td>
<td></td>
<td>22 hours of lecture</td>
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<tr>
<td>Intermediate-level study of the guitar. Prerequisite: MUS 110 or consent of Instructional Unit.</td>
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<tr>
<th>Course Name</th>
<th>MUSC&amp; 221</th>
<th>Fall</th>
<th>2 Credits</th>
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<tbody>
<tr>
<td>EAR TRAINING 4</td>
<td></td>
<td>22 hours of lecture</td>
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<tr>
<td>Trains students to write what they hear in harmonic and polyphonic textures. Examples coordinated with theory classes. [HB, SE]</td>
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<tr>
<th>Course Name</th>
<th>MUSC&amp; 222</th>
<th>Winter</th>
<th>2 Credits</th>
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<tbody>
<tr>
<td>EAR TRAINING 5</td>
<td></td>
<td>22 hours of lecture</td>
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<tr>
<td>Trains students to write what they hear in harmonic and polyphonic textures. Examples coordinated with theory classes. Prerequisite: MUSC&amp; 221. [HB, SE]</td>
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<tr>
<th>Course Name</th>
<th>MUSC&amp; 223</th>
<th>Spring</th>
<th>2 Credits</th>
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<tbody>
<tr>
<td>EAR TRAINING 6</td>
<td></td>
<td>22 hours of lecture</td>
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<tr>
<td>Trains students to write what they hear in harmonic and polyphonic textures. Examples coordinated with theory classes. Prerequisite: MUSC&amp; 222. [HB, SE]</td>
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<tr>
<th>Course Name</th>
<th>MUSC&amp; 231</th>
<th>Fall</th>
<th>3 Credits</th>
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<tbody>
<tr>
<td>MUSIC THEORY IV</td>
<td></td>
<td>33 hours of lecture</td>
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<tr>
<td>Extended chromatic chords, borrowed chords, Neapolitan 6th chords, augmented 6th chords, altered dominants, and chromatic mediants. Concurrent enrollment in MUS 244 required. Prerequisite: MUS 143 or consent of division. [HA, SE]</td>
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</tbody>
</table>
MUSIC THEORY V
MUSC& 232  Winter  3 Credits
33 hours of lecture
Study of variation form, sonata form, rondo form and fugue. Concurrent enrollment in MUS 245 required. Prerequisite: MUS 241 or consent of division. [HA, SE]

MUSIC THEORY VI
MUSC& 233  Spring  3 Credits
33 hours of lecture
Invention and two-voice counterpoint. Extensions of harmonic language and compositional styles in the 20th/21st century, including atonal forms. Concurrent enrollment in MUS 245 required. Prerequisite: MUS 242 or consent of division. [HA, SE]

CLARK COLLEGE CHORALE
MUSC 237  Fall Winter Spring  1 – 2 Credits
11 hours of lecture  22 hours of lab
The Clark College Chorale performs a wide variety of choral literature including classical masterworks and non-classical genres for both male and female as well as mixed-voicing choral music. Open to all students and community members, the Chorale performs a minimum of one concert per term with possible additional performances. Prerequisite: Audition or consent of Instructional Unit. [HB, SE]

CLARK COLLEGE CHORALE
MUSC 238  Fall Winter Spring  1 – 2 Credits
11 hours of lecture  22 hours of lab
The Clark College Chorale performs a wide variety of choral literature including classical masterworks and non-classical genres for both male and female as well as mixed-voicing choral music. Open to all students and community members, the Chorale performs a minimum of one concert per term with possible additional performances. Prerequisite: Audition or consent of Instructional Unit. [HB, SE]

CLARK COLLEGE CHORALE
MUSC 239  Fall Winter Spring  1 – 2 Credits
11 hours of lecture  22 hours of lab
The Clark College Chorale performs a wide variety of choral literature including classical masterworks and non-classical genres for both male and female as well as mixed-voicing choral music. Open to all students and community members, the Chorale performs a minimum of one concert per term with possible additional performances. Prerequisite: Audition or consent of Instructional Unit. [HB, SE]

ORCHESTRA
MUSC 250  Fall Winter Spring  1 – 2 Credits
11 hours of lecture  22 hours of lab
Performance of orchestral literature from a variety of periods and styles. [HB, SE]

ORCHESTRA
MUSC 251  Fall Winter Spring  1 – 2 Credits
11 hours of lecture  22 hours of lab
Performance of orchestral literature from a variety of periods and styles. [HB, SE]

ORCHESTRA
MUSC 252  Fall Winter Spring  1 – 2 Credits
11 hours of lecture  22 hours of lab
Performance of orchestral literature from a variety of periods and styles. [HB, SE]

WOMEN'S CHORAL ENSEMBLE
MUSC 253  Fall Winter Spring  1 – 2 Credits
11 hours of lecture  22 hours of lab
Performance of choral music from a variety of periods and styles written for women's voices. Prerequisite: Audition or consent of Instructional Unit. [HB, SE]
WOMEN'S CHORAL ENSEMBLE
MUSC 254  Fall Winter Spring  1 – 2 Credits
11 hours of lecture  22 hours of lab
Performance of choral music from a variety of periods and styles written for women's voices. Prerequisite: Audition or consent of Instructional Unit. [HB, SE]

WOMEN'S CHORAL ENSEMBLE
MUSC 255  Fall Winter Spring  1 – 2 Credits
11 hours of lecture  22 hours of lab
Performance of choral music from a variety of periods and styles written for women's voices. Prerequisite: Audition or consent of Instructional Unit. [HB, SE]

APPLIED VOICE
MUSC 270 Summer Fall Winter Spring  1 Credit
11 hours of lecture
Private voice lessons with a college-approved teacher. Prerequisite: Written consent of Instructional Unit required. [HB, SE]

APPLIED VOICE
MUSC 271 Summer Fall Winter Spring  1 Credit
11 hours of lecture
Private voice lessons with a college-approved teacher. Prerequisite: Written consent of Instructional Unit required. [HB, SE]

APPLIED VOICE
MUSC 272 Summer Fall Winter Spring  1 Credit
11 hours of lecture
Private voice lessons with a college-approved teacher. Prerequisite: Written consent of Instructional Unit required. [HB, SE]

APPLIED PIANO
MUSC 273 Summer Fall Winter Spring  1 Credit
11 hours of lecture
Private lessons with a college-approved teacher. Prerequisite: MUSC 201 and consent of Instructional Unit. [HB, SE]

APPLIED PIANO
MUSC 274 Summer Fall Winter Spring  1 Credit
11 hours of lecture
Private lessons with a college-approved teacher. Prerequisite: MUSC 201 and consent of Instructional Unit. [HB, SE]

APPLIED PIANO
MUSC 275 Summer Fall Winter Spring  1 Credit
11 hours of lecture
Private lessons with a college-approved teacher. Prerequisite: MUSC 201 and consent of Instructional Unit. [HB, SE]

APPLIED INSTRUMENT
MUSC 276 Summer Fall Winter Spring  1 Credit
11 hours of lecture
Private lessons with a college-approved teacher. Instruction available for orchestra and band instruments. Prerequisite: Written consent of Instructional Unit required. [HB, SE]

APPLIED INSTRUMENT
MUSC 277 Summer Fall Winter Spring  1 Credit
11 hours of lecture
Private lessons with a college-approved teacher. Instruction available for orchestra and band instruments. Prerequisite: Written consent of Instructional Unit required. [HB, SE]
## Applied Instrument

**MUSC 278**  
**Summer Fall Winter Spring**  
1 Credit  
11 hours of lecture  
Private lessons with a college-approved teacher. Instruction available for orchestra and band instruments. Prerequisite: Written consent of Instructional Unit required. [HB, SE]

## Concert Band

**MUSC 280**  
**Fall Winter Spring**  
1 – 2 Credits  
11 hours of lecture  
22 hours of lab  
Open to all students with experience performing on brass, woodwind, and percussion instruments. The Clark College Concert Band performs a wide spectrum of standard concert band and contemporary wind ensemble literature in at least one concert per quarter. Topics include musical excellence, and skills for teamwork and leadership. No auditions necessary to enroll but the ability to read music on your respective instrument is required.

**MUSC 281**  
**Fall Winter Spring**  
1 – 2 Credits  
11 hours of lecture  
22 hours of lab  
Open to all students with experience performing on brass, woodwind, and percussion instruments. The Clark College Concert Band performs a wide spectrum of standard concert band and contemporary wind ensemble literature in at least one concert per quarter. Topics include musical excellence, and skills for teamwork and leadership. No auditions necessary to enroll but the ability to read music on your respective instrument is required.

**MUSC 282**  
**Fall Winter Spring**  
1 – 2 Credits  
11 hours of lecture  
22 hours of lab  
Open to all students with experience performing on brass, woodwind, and percussion instruments. The Clark College Concert Band performs a wide spectrum of standard concert band and contemporary wind ensemble literature in at least one concert per quarter. Topics include musical excellence, and skills for teamwork and leadership. No auditions necessary to enroll but the ability to read music on your respective instrument is required.

## Concert Choir

**MUSC 283**  
**Fall Winter Spring**  
1 – 2 Credits  
11 hours of lecture  
22 hours of lab  
The concert choir performs a wide variety of choral music in at least one public concert per quarter. Music notation, vocal technique, and effective interpretation of music literature. Open to all students interested in improving their vocal skills. Prerequisite: Audition or consent of Instructional Unit. [HB, SE]

**MUSC 284**  
**Fall Winter Spring**  
1 – 2 Credits  
11 hours of lecture  
22 hours of lab  
The concert choir performs a wide variety of choral music in at least one public concert per quarter. Music notation, vocal technique, and effective interpretation of music literature. Open to all students interested in improving their vocal skills. Prerequisite: Audition or consent of Instructional Unit. [HB, SE]

**MUSC 285**  
**Fall Winter Spring**  
1 – 2 Credits  
11 hours of lecture  
22 hours of lab  
The concert choir performs a wide variety of choral music in at least one public concert per quarter. Music notation, vocal technique, and effective interpretation of music literature. Open to all students interested in improving their vocal skills. Prerequisite: Audition or consent of Instructional Unit. [HB, SE]

## Vocal Jazz Ensemble

**MUSC 287**  
**Fall Winter Spring**  
1 – 3 Credits  
22 hours of lecture  
22 hours of lab  
Selection, arrangement, rehearsal, and performance of a variety of popular vocal jazz pieces. Prerequisite: Audition or consent of Instructional Unit. [HB, SE]
**VOCAL JAZZ ENSEMBLE**  
MUSC 288  
Fall Winter Spring  
22 hours of lecture  
22 hours of lab  
1 – 3 Credits  
Selection, arrangement, rehearsal, and performance of a variety of popular vocal jazz pieces. Prerequisite: Audition or consent of Instructional Unit. [HB, SE]

**VOCAL JAZZ ENSEMBLE**  
MUSC 289  
Fall Winter Spring  
22 hours of lecture  
22 hours of lab  
1 – 3 Credits  
Selection, arrangement, rehearsal, and performance of a variety of popular vocal jazz pieces. Prerequisite: Audition or consent of Instructional Unit. [HB, SE]

**SPECIAL PROJECTS**  
MUSC 290  
Summer Fall Winter Spring  
1 – 5 Credits  
Opportunity to plan, organize and complete special projects approved by the department. Prerequisite: Consent of Instructional Unit. [HB, GE]

**JAZZ ENSEMBLE**  
MUSC 295  
Fall Winter Spring  
11 hours of lecture  
22 hours of lab  
1 – 2 Credits  
Open to all students who perform on saxophone, trumpet, trombone, guitar, piano, bass, and drum set. Topics include performance techniques of jazz styles and repertoire and introduction to a wide variety of jazz subjects from improvisation and jazz history to understanding Latin/Afro-Cuban jazz rhythm. Additional topics include musical excellence and skills for teamwork and leadership. Jazz improvisation skills not required, but strong music reading skills are required, to be assessed at the beginning of the term.

**JAZZ ENSEMBLE**  
MUSC 296  
Fall Winter Spring  
11 hours of lecture  
22 hours of lab  
1 – 2 Credits  
Open to all students who perform on saxophone, trumpet, trombone, guitar, piano, bass, and drum set. Topics include performance techniques of jazz styles and repertoire and introduction to a wide variety of jazz subjects from improvisation and jazz history to understanding Latin/Afro-Cuban jazz rhythm. Additional topics include musical excellence and skills for teamwork and leadership. Jazz improvisation skills not required, but strong music reading skills are required, to be assessed at the beginning of the term.

**JAZZ ENSEMBLE**  
MUSC 297  
Fall Winter Spring  
11 hours of lecture  
22 hours of lab  
1 – 2 Credits  
Open to all students who perform on saxophone, trumpet, trombone, guitar, piano, bass, and drum set. Topics include performance techniques of jazz styles and repertoire and introduction to a wide variety of jazz subjects from improvisation and jazz history to understanding Latin/Afro-Cuban jazz rhythm. Additional topics include musical excellence and skills for teamwork and leadership. Jazz improvisation skills not required, but strong music reading skills are required, to be assessed at the beginning of the term.

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**Network Technology**

**INTRODUCTION TO VOICE AND DATA COMMUNICATIONS**  
DNET 102  
Summer Fall Winter Spring  
2 Credits  
11 hours of lecture  
22 hours of lab  
Introduction to voice and data communications for beginning students. Topics include key facets of voice and data communications: operation of a telephone set, sending voice over data networks, processing of calls in public and private telephone systems. [GE]
CISCO CCNA 1: NETWORK + AND CCNA NETWORK BASICS
DNET 121  Summer Fall Winter Spring  6 Credits
44 hours of lecture  44 hours of lab
First of four courses to prepare for Cisco CCNA certification: an introduction to concepts needed for Network+ certification. Topics include network terminology and protocols, local-area networks (LANs), wide-area networks (WANs), Open System Interconnection (OSI) models, cabling, cabling tools, routers, switches, Ethernet, Internet Protocol (IP) addressing, and network standards. Focus on the proper care, maintenance, and use of networking software, tools, and equipment and all local, state, and federal safety, building, and environmental codes and regulations. [GE]

COOPERATIVE WORK EXPERIENCE
DNET 199  Fall Winter Spring  1 – 6 Credits
198 hours of clinical
Supervised work experience in an approved job. Completion of specific learning objectives and employee evaluation. Prerequisite: Completion of or concurrent enrollment in HDEV 195 and 198 or 200 and consent of Instructional Unit. [GE]

TELECOM 1: BASIC TELECOMMUNICATIONS
DNET 211  Fall Winter Spring  6 Credits
44 hours of lecture  44 hours of lab
First of two courses for CCNT certification: fundamentals of telecommunications and comprehensive introduction to analog and digital concepts. Topics include history of telecommunications, structure of business systems (including station sets, PBX, key and hybrid systems, ISDN and broadband), Consumer Premises Equipment (CPE), and services (dedicated and switched); analog signals – their history and associated variables; digital systems – their advantages over analog, also Pulse Code Modulation, Time Division Multiplexing, optical standards and loop carriers; transmission networks, switching, and signaling. Network+ Certification may substitute as a prerequisite for DNET 211. Prerequisite: A grade of “C” or better in DNET 121 or CTEC 151, or consent of Instructional Unit. [GE]

TELECOM 2: VOICE OVER IP (VOIP) ESSENTIALS
DNET 212  Fall Winter Spring  6 Credits
44 hours of lecture  44 hours of lab
Second of two courses of CCNT certification: Introduction to Computer-Telephony Integration Essentials (CTI) and Voice over IP (VoIP). CTI topics include CTI architecture, hardware, market applications and system development; VoIP topics include its technology, benefits, QoS issues and their solutions, and standards; Packet voicing basics, Internet technology, and the benefits and applications of VoIP; Gateways and their various functions, major issues involved in bandwidth consumption, and consideration of uses of PCs as phones; transmission standards and protocols in VoIP networks (e.g. H.323, SIP, G.7xx): Quality of Service (QoS) issues associated with VoIP technology, and the most significant solutions to these QoS issues. Prerequisite: A grade of “C” or better in DNET 211, or consent of Instructional Unit. [GE]

INTRO TO NETWORK SERVERS: WINDOWS AND LINUX
DNET 220  Winter Spring  6 Credits
44 hours of lecture  44 hours of lab
Knowledge and skills for using Windows Server OS and LINUX Server OS to setup LAN/WAN connections and authentication; and to explore features of the network operating systems, such as FTP, email, web server, file server, print server, remote desktop, DNS, DHCP, and users and groups. Prerequisite: A grade of “C” or better in DNET 121 or CTEC 151, or consent of Instructional Unit.

CISCO CCNA 1: NETWORK FUNDAMENTALS
DNET 221  Summer Fall Winter Spring  6 Credits
44 hours of lecture  44 hours of lab
Introduction to architecture, structure, functions, components, and models of the Internet, using the OSI and TCP layered models to examine the nature and roles of protocols and services at the application, network, data link, and physical layers. The principles and structure of IP addressing and the fundamentals of Ethernet concepts, media, and operations are introduced to provide a foundation for the curriculum. Students will build simple LAN topolo-
gies by applying basic principles of cabling; performing basic configurations of network devices, including routers and switches; and implementing IP addressing schemes. Prerequisite: A grade of “C” or better in MATH 090, ENGL 098, or consent of Instructional Unit.

**CISCO CCNA 2: ROUTING PROTOCOLS AND CONCEPTS**
DNET 222  
Summer Fall Winter Spring  
6 Credits  
44 hours of lecture  44 hours of lab

Architecture, components, and operation of routers, and the principles of routing and routing protocols. Topics include analyzing, configuring, verifying, and troubleshooting the primary routing protocols RIPv1, RIPv2, EIGRP, and OSPF. Skills include recognizing and correcting common routing issues and problems, through basic procedural labs, basic configuration, implementation, and troubleshooting labs. Prerequisite: A grade of “C” or better in DNET 221, or consent of Instructional Unit.

**CISCO CCNA 3: LAN SWITCHING AND WIRELESS**
DNET 223  
Summer Fall Winter Spring  
6 Credits  
44 hours of lecture  44 hours of lab

Comprehensive, theoretical, and practical approach to learning the technologies and protocols needed to design and implement a converged switched network; the hierarchical network design model and selecting devices for each layer. Focus on how to configure a switch for basic functionality and how to implement Virtual LANs, VTP, and Inter-VLAN routing in a converged network; and the different implementations of Spanning Tree Protocol in a converged network. Knowledge and skills necessary to implement a WWLAN in a small to medium network. Prerequisite: A grade of “C” or better in DNET 222, or consent of Instructional Unit.

**CISCO CCNA 4: ACCESSING THE WAN**
DNET 224  
Summer Fall Winter Spring  
6 Credits  
44 hours of lecture  44 hours of lab

WAN technologies and network services required by converged applications in Enterprise Networks using the Cisco Enterprise Composite model (ECM) to introduce integrated network services. Topics include how to select the appropriate devices and technologies to meet ECM requirements, how to implement and configure common data link protocols, how to apply WAN security concepts, principles of traffic, access control and addressing services, and how to detect, troubleshoot, and correct common enterprise network implementation issues. Prerequisite: A grade of “C” or better in DNET 223, or consent of Instructional Unit.

**CISCO CCNA SECURITY**
DNET 225  
Fall Spring  
6 Credits  
44 hours of lecture  44 hours of lab

Preparation to obtain CCNA Security Certification. Course meets the needs of IT professionals responsible for network security. Developing skills for job roles such as Network Security Specialists, Security Administrators, and Network Security Support Engineers. Skills include installation, troubleshooting and monitoring of network devices to maintain integrity, confidentiality and availability of data and devices. Competency in the technologies that Cisco uses in its security structure. Introduction to core security technologies as well as how to develop security policies and mitigate risks. Prerequisite: A grade of “C” or better in DNET 224, or consent of Instructional Unit.

**VOICE OVER IP**
DNET 226  
Fall Spring  
6 Credits  
44 hours of lecture  44 hours of lab

Preparation to obtain Cisco CCNA Voice certification. Required skill set for specialized job roles in voice technologies such as voice technologies administrator, voice engineer, and voice manager; in-demand skills in VoIP technologies such as IP PBX, IP telephony, handset, call control, and voicemail solutions; and exposure to the Cisco Unified Communications architecture and design covering mobility, presence, and TelePresence applications. Prerequisite: A grade of “C” or better in DNET 224, or consent of Instructional Unit.

**CISCO CCNA 2: ROUTERS AND ROUTING BASICS**
DNET 231  
Fall Winter Spring  
6 Credits  
44 hours of lecture  44 hours of lab

Second of four courses for Cisco CCNA certification: an introduction to initial router configuration. Topics
include Cisco IOS Software management, routing protocol configuration, TCP/IP, and access control lists (ACLs). Focus on skills to configure a router, managing Cisco IOS Software, configuring protocol on routers, and set the access lists to control the access to routers. Prerequisite: A grade of “C” or better in DNET 121 or CTEC 151, or consent of Instructional Unit. [GE]

**COMPTIA A+ COMPUTER SUPPORT TECHNICIAN**

DNET 232 Summer Fall Winter Spring 6 Credits

44 hours of lecture 44 hours of lab

Preparation to successfully pass the CompTIA A+ certification, the industry standard for computer support technicians. Focus on the installation, preventative maintenance, networking, security and troubleshooting of PC desktop systems, with emphasis on hands-on role playing experiences to develop excellent customer service and communication skills to work with clients. Prerequisite: A grade of “C” or better in CTEC 110, or department approval.

**SERVER HARDWARE/SOFTWARE: SERVER+**

DNET 233 Summer Fall Winter Spring 6 Credits

44 hours of lecture 44 hours of lab

Focus on CompTIA Server+ certification and Industry Standard Server Architecture (ISSA) issues, such as RAID, SCSI, multiple CPUs, SANs – and more. Prerequisite: A grade of “C” or better in CTEC 210, or consent of Instructional Unit.

**MICROSOFT ACTIVE DIRECTORY**

DNET 234 Summer Fall Winter Spring 6 Credits

44 hours of lecture 44 hours of lab

Windows Server 2009 Active Directory Domain Services includes features allowing organizations to simplify and secure deployment, and to administer AD DS more efficiently. Developing comprehensive hands-on skills required to effectively manage and secure a high-availability AD enterprise and ensure a successful migration to Windows Server 2008 Active Directory. Prerequisite: A grade of “C” or better in DNET 221, or consent of Instructional Unit.

**MICROSOFT NETWORK INFRASTRUCTURE**

DNET 235 Summer Fall Winter Spring 6 Credits

44 hours of lecture 44 hours of lab

Skills to design a Windows Server 2008 Network Infrastructure that meets business and technical requirements for network services. Prerequisite: A grade of “C” or better in DNET 234, or consent of Instructional Unit.

**MICROSOFT SERVER ADMINISTRATOR**

DNET 236 Summer Fall Winter Spring 6 Credits

44 hours of lecture 44 hours of lab

Windows Server 2008 provides administrators with powerful and flexible tools to overcome a multitude of administrative challenges to infrastructure, and management of complex server environments. Developing practical skills and experience to administer, troubleshoot and secure a Windows Server 2008 environment. Prerequisite: A grade of “C” or better in DNET 235, or consent of Instructional Unit.

**DESKTOP SUPPORT TECHNICIAN**

DNET 237 Summer Fall Winter Spring 6 Credits

44 hours of lecture 44 hours of lab

Hands-on lab/lecture preparation for the Microsoft MCITP Exam 70-680: Windows 7 Desktop Support and Administration. Focus on doing a clean install, performing an upgrade, migrate user profiles, system imaging, pre-deployment, preparing a VHD, configure devices, application compatibility, networking (IPv4 and IPv6), firewall settings, remote management, backup and recovery. Prerequisite: A grade of “C” or better in DNET 232, or department approval.

**CISCO CCNA 3: SWITCHING BASICS AND ADV ROUTING**

DNET 241 Summer Fall Winter Spring 6 Credits

44 hours of lecture 44 hours of lab

Third of four courses for Cisco CCNA certification: Advanced IP addressing techniques (Variable Length Subnet Masking [VLSM]), intermediate routing protocols (RIP v2, single-area OSPF, EIGRP), command-line interface
configuration of switches, Ethernet switching, Virtual LANs (VLANs), Spanning Tree Protocol (STP), and VLAN Trunking Protocol (VTP). Particular emphasis on students’ applying learning from CCNA 1 and 2 to a network and explaining how and why a particular strategy is employed. Prerequisite: A grade of “C” or better in DNET 231, or consent of Instructional Unit. [GE]

**DATACENTER VIRTUALIZATION TECHNOLOGY**

DNET 242  
Fall Winter Spring  
6 Credits

44 hours of lecture  
44 hours of lab

Fundamentals of server and desktop virtualization. Topics include practical and conceptual skills for understanding basic virtualization concepts, comparison of physical servers and virtualized servers, skills for planning and implementing datacenter virtualization, the virtualized approach to datacenters with functions and services of their components, plus the various components, concepts and skill-sets associated with virtualization. Prerequisite: A grade of “C” or better in DNET 223 or CTEC 210, or consent of Instructional Unit.

**CISCO CCNA 4: WAN TECHNOLOGIES**

DNET 251  
Summer Fall Winter Spring  
6 Credits

44 hours of lecture  
44 hours of lab

Fourth of four courses for Cisco CCNA certification: Advanced IP addressing techniques (Network Address Translation [NAT], Port Address Translation [PAT], and DHCP), WAN technology and terminology, PPP, ISDN, DDR, Frame Relay, network management, and introduction to optical networking. Particular emphasis on students’ applying knowledge of CCNA 1, CCNA 2, and CCNA 3 to a network and explaining how and why a particular strategy is employed. Prepares students to take the CCNA Exam. Prerequisite: A grade of “C” or better in DNET 241, or consent of Instructional Unit. [GE]

**PC TECHNICIAN A+ EXAM PREP**

DNET 252  
Fall Spring  
2 Credits

22 hours of lecture

Preparing for CompTIA’s A+ exams. Not intended for those with little to no experience with the installation, preventative maintenance, networking, security, and troubleshooting of PC desktop systems. Activities include lecture, study aids, testing and role playing experiences to develop the knowledge and skills needed to pass the current A+ exams for technician certification. Prerequisite: A grade of “C” or better in DNET 232 or consent of Instructional Unit.

**CISCO CCNA EXAM I PREP**

DNET 255  
Summer Fall Winter Spring  
2 Credits

22 hours of lecture

A fast-paced and comprehensive review of topics essential for successfully passing the Cisco CCNA INTRO exam. Successfully passing both the Cisco CCNA INTRO 7 ICND exams results in full Cisco CCNA industry certification. Topics include design and support, implementation, operation and technology. Prerequisite: A grade of “C” or better in DNET 121 and DNET 231, or consent of Instructional Unit.

**CISCO CCNA EXAM II PREP**

DNET 256  
Summer Fall Winter Spring  
2 Credits

22 hours of lecture

A fast-paced and comprehensive review of topics essential for successfully passing the Cisco CCNA ICND exam. Successfully passing both the Cisco CCNA INTRO & ICND exams results in full Cisco CCNA industry certification. Topics include planning and designing, implementation and operations, troubleshooting and technology. Prerequisite: A grade of “C” or better in DNET 241 and DNET 251, or consent of Instructional Unit.

**CISCO NETWORK SECURITY I**

DNET 261  
Summer Winter  
6 Credits

44 hours of lecture  
44 hours of lab

Introduction to the use of Cisco PIX, Secure Router, and switch technologies for overall security processes emphasizing hands-on skills in the areas of secure perimeter, secure connectivity, security management, identify services, and intrusion detection. Prerequisite: A grade of “C” or better in DNET 231 and CTEC 230, or consent of Instructional Unit.
CISCO NETWORK SECURITY II
DNET 271  Summer Winter  6 Credits
44 hours of lecture  44 hours of lab
Advanced application of Cisco PIX, Secure Router, and switch technologies for overall security processes emphasizing hands-on skills in the areas of secure perimeter, secure connectivity, security management, identify services, and intrusion detection. Prerequisite: A grade of “C” or better in DNET 261, or consent of Instructional Unit.

SELECTED TOPICS
DNET 280  1 – 5 Credits
55 hours of lecture
Topics vary. May be repeated for credit. Prerequisite: Consent of Instructional Unit. [GE]

SPECIAL PROJECTS
DNET 290  1 – 5 Credits
Opportunity to plan, organize, and complete special projects approved by the department. Prerequisite: Consent of Instructional Unit. [GE]

CAPSTONE EXPERIENCE
DNET 299  Summer Fall Winter Spring  3 Credits
11 hours of lecture  44 hours of lab
CAPSTONE course in the DNET AAS and AAT degree programs at Clark College, normally taken during the final quarter of the program. Application of many topics covered in the other program courses in a simulated employee team or small group setting. Introduction to the experience of designing an enterprise network using required documentation of design and implementation. Topics include all aspects of network planning, design, and troubleshooting. Prerequisite: MCITP Server certification or CCNA certification, completion of all required core coursework related degree, and consent of Instructional Unit.

Nursing

FOUNDATIONS OF PROFESSIONAL NURSING
NURS 110  Fall Winter Spring  3 Credits
33 hours of lecture
Introduction to professional nursing; topics include health promotion and health care delivery systems, professional roles and standards, nurse-client relationships, and theoretical basis for nursing practice. Concurrent enrollment in NURS 111, 113, 114, and 115. These courses are linked; failure in one course requires repeat of all concurrent courses. Prerequisite: Consent of Instructional Unit. [GE]

FOUNDATIONS OF NURSING PRACTICE
NURS 111  Fall Winter Spring  4 Credits
88 hours of lab
Introduction to nursing practice in the community setting with emphasis on direct patient care of the older adult. Concurrent enrollment is required in NURS 110, 113, 114, and 115. Prerequisite: Consent of the Instructional Unit. [GE]

PROFESSIONAL NURSING SKILLS I
NURS 113  Fall Winter Spring  2 Credits
22 hours of lecture
Introduction to health assessment, nursing skills, clinical simulation, and entry level NAC competency testing. Concurrent enrollment in NURS 110, 111, 114 and 115. Prerequisite: Consent of the Instructional Unit required. [GE]

NURSING SKILLS PRACTICE I
NURS 114  Fall Winter Spring  1 Credit
22 hours of lab
Practice and nursing skill achievement on NURS 113 competencies. Concurrent enrollment in NURS 110, 111, 113 and 115. Prerequisite: Consent of the Instructional Unit. [GE]
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<tr>
<th>Course Title</th>
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<tbody>
<tr>
<td>NURSING COMPETENCIES AND SIMULATION</td>
<td>NURS 115</td>
<td>Fall Winter Spring</td>
<td>2 Credits</td>
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<tr>
<td>Practice in the nursing skills lab under supervision at the first year nursing student level.</td>
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<tr>
<td>NURSING CONCEPTS I</td>
<td>NURS 120</td>
<td>Fall Winter Spring</td>
<td>2 Credits</td>
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<tr>
<td>44 hours of lab</td>
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<tr>
<td>Practice in the nursing skills lab under supervision at the first year nursing student level.</td>
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<tr>
<td>NURSING CONCEPTS I</td>
<td>NURS 121</td>
<td>Fall Winter Spring</td>
<td>4 Credits</td>
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<tr>
<td>22 hours of lecture</td>
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<tr>
<td>Introduction to nursing management of health problems, including fluid and electrolytes, the immune and musculoskeletal systems, and the perioperative period in the acute care of community setting. Planning client care to include prevention of disease, promotion of wellness, and intervention in emotional and physical response to acute and chronic illness. Concurrent enrollment in NURS 121, 125, 126 and 127. Prerequisite: A grade of “C” or above in NURS 110 or consent of the Instructional Unit. [GE]</td>
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<tr>
<td>NURSING CONCEPTS IN PRACTICE I</td>
<td>NURS 125</td>
<td>Fall Winter Spring</td>
<td>2 Credits</td>
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<tr>
<td>44 hours of lab</td>
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<tr>
<td>Practice in the nursing skills lab under supervision at the first year nursing student level. Concurrent enrollment in NURS 120, 121, 126 and 127.</td>
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<tr>
<td>PROFESSIONAL NURSING SKILLS II</td>
<td>NURS 126</td>
<td>Fall Winter Spring</td>
<td>1 Credit</td>
</tr>
<tr>
<td>11 hours of lecture</td>
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<tr>
<td>Intermediate nursing skills for perioperative and wound care. Concurrent enrollment in NURS 120, 121, 125 and 127 required. Prerequisite: A grade of “C” or better in NURS 110 or consent of the Instructional Unit.</td>
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<tr>
<td>NURSING SKILLS PRACTICE II</td>
<td>NURS 127</td>
<td>Fall Winter Spring</td>
<td>1 Credit</td>
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<tr>
<td>22 hours of lab</td>
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<tr>
<td>Practice and nursing skill achievement on NURS 126 competencies. Concurrent enrollment in NURS 120, 121, 125 and 126. Prerequisite: A grade of “C” or above in NURS 110 or consent of the Instructional Unit. [GE]</td>
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<tr>
<td>FAMILY-CENTERED NURSING</td>
<td>NURS 130</td>
<td>Fall Winter Spring</td>
<td>2 Credits</td>
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<tr>
<td>22 hours of lecture</td>
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<tr>
<td>Theory and the nursing process related to care of children and their families. Physiologic and psychological adaptation during the childbearing and childrearing years; emphasis on the nurse's role in health promotion and education in the care of culturally diverse families in the community. Concurrent enrollment in NURS 131 and 132. Prerequisite: A grade of “C” or above in NURS 120 and 126 or consent of Instructional Unit. [GE]</td>
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<tr>
<td>NURSING CARE OF THE EMERGING FAMILY</td>
<td>NURS 131</td>
<td>Fall Winter Spring</td>
<td>4 Credits</td>
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<tr>
<td>88 hours of lab</td>
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<tr>
<td>Application of theoretical, assessment, and practice concepts for nursing care of intrapartum and postpartum women and newborn infants. Concurrent enrollment in NURS 130 and 132. Prerequisite: A grade of “C” or above in NURS 120 or consent of the Instructional Unit. [GE]</td>
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NURSING CARE OF THE CHILD
NURS 132  Fall Winter Spring  4 Credits
88 hours of lab
Application of theoretical, assessment, and practice concepts for nursing care of children. Concurrent enrollment in NURS 130 and 131. Prerequisite: A grade of “C” or above in NURS 120 or consent of the Instructional Unit. [GE]

FAMILY CENTERED NURSING SKILLS
NURS 133  Fall Winter Spring  1 Credit
22 hours of lab
Simulation of beginning and intermediate nursing concepts with emphasis on client management. Concurrent enrollment in NURS 130, 131, and 132 required. Prerequisite: A grade of “C” or better in NURS 120 or consent of Instructional Unit. [GE]

SELECTED TOPICS-LEVEL II
NURS 150  Fall Winter Spring  1 – 15 Credits
Independent study modules to meet needs of the student. Course contents may be drawn from any of the Level I and II nursing courses. Credit will be based upon contracted work in keeping with college policies. Credit is not applicable toward a nursing major at Clark College. Prerequisite: Consent of nursing director. [GE]

COOPERATIVE WORK EXPERIENCE
NURS 199  Summer Fall Winter Spring  1 – 5 Credits
165 hours of clinical
Supervised work experience in an approved job. Completion of specific learning objectives and employer evaluation. Completion of, or concurrent enrollment in, HDEV 195, 198, or 200 required. Prerequisite: Consent of Instructional Unit.

LPN TO RN BRIDGE
NURS 200  Summer  7 Credits
66 hours of lecture  22 hours of lab
Overview of nursing with emphasis on professional foundations, nursing process, pathophysiology, medication administration and review of principles and techniques of nursing care common to all clients. A scope of practice focus for LPN to RN role transition is included in this bridge course. Review of maternity and pediatric content as well as computer research as it relates to pathophysiology. Instructional methods include two weeks of classroom sessions, group discussions, group learning activities, nursing skills lab activities, eLearning projects, written assignments, oral presentation, and independent study. Students enrolled in the Clark College Nursing program are building a sound base of knowledge and developing critical thinking skills needed to effectively use that knowledge in their daily lives as well as in their clinical practice. Instructional methods include; two weeks of classroom sessions, group discussions, group learning activities, nursing skills lab activities. E-learning projects, written assignments, oral presentation, and independent study.

NURSING CONCEPTS II
NURS 210  Fall Winter Spring  3 Credits
33 hours of lecture
Nursing management of health problems involving cardiac, respiratory, renal and gastrointestinal systems in the acute care or community setting. Planning nursing interventions to include prevention of disease and promotion of wellness. Emphasis on the biopsychosocial effects of acute and chronic illness. Concurrent enrollment in NURS 211 and 212. Prerequisite: A grade of “C” or above in BIOL 240, ENGL 102, NUTR 103, PSYC 211, and NURS 130 or consent of the Instructional Unit. [GE]

NURSING CONCEPTS IN PRACTICE II
NURS 211  Fall Winter Spring  8 Credits
176 hours of lab
Advanced medical/surgical concepts with emphasis on the management of the acutely ill client. Concurrent enrollment in NURS 210 and 212. Prerequisite: A grade of “C” or above in BIOL 240, ENGL 102, NUTR 103, PSYC 211, and NURS 130 or consent of the Instructional Unit. [GE]
NURSING SKILLS PRACTICE III
NURS 212  Fall Winter Spring 1 Credit
22 hours of lab
Simulation of advanced medical/surgical concepts with emphasis on the management of the acutely ill client. Concurrent enrollment in NURS 210 and 211. Prerequisite: A grade of “C” or above in BIOL 240, ENGL 102, NUTR 103, PSYC 211, and NURS 130 or consent of the Instructional Unit. [GE]

NURSING CONCEPTS III
NURS 220  Fall Winter Spring 2 Credits
22 hours of lecture
Advanced nursing concepts with emphasis on the organization of multiple patients. Nursing management of patients with health problems related to regulation and metabolism, sensory, perception, cognition, and mobility in the acute care or community setting. Concurrent enrollment in NURS 221, 222 and 223. Prerequisite: A grade of “C” or better in NURS 210 or consent of Instructional Unit. [GE]

NURSING CONCEPTS IN PRACTICE III
NURS 221  Fall Winter Spring 4 Credits
88 hours of lab
Designed to provide the student the opportunity to put into practice previously learned skills learning to manage care for a group of clients. Concurrent enrollment in NURS 220, 222 and 223. Prerequisite: A grade of “C” or above in NURS 210 or consent of the Instructional Unit. [GE]

MENTAL HEALTH CONCEPTS
NURS 222  Fall Winter Spring 2 Credits
22 hours of lecture
Mental health concepts related to biopsychosocial disorders. Care of the client with psychiatric disorders, using mental health promotion strategies based on theories of stress and adaption and the mind-body connection. Concurrent enrollment in NURS 223. Prerequisite: A grade of “C” or above in NURS 210 or consent of the Instructional Unit.

MENTAL HEALTH IN PRACTICE
NURS 223  Fall Winter Spring 4 Credits
88 hours of lab
Care of the client with mental illness in the community. Clinical experience in both acute care inpatient and community outpatient settings. Concurrent enrollment in NURS 220, 221 and 222. Prerequisite: A grade of “C” or above in NURS 210 or consent of the Instructional Unit. [GE]

NURSING SKILLS PRACTICE II
NURS 225  Fall Winter Spring 1 – 10 Credits
220 hours of lab
Practice in the nursing skills lab under supervision at the second year nursing level. [GE]

PROFESSIONAL LEADERSHIP
NURS 230  Fall Winter Spring 2 Credits
22 hours of lecture
Theory and application of leadership and management principles in the clinical setting. Topics include professional and ethical issues in nursing. Concurrent enrollment in NURS 231 and 232. Prerequisite: A grade of “C” or above in NURS 220 and 222 or consent of the Instructional Unit. [GE]

PROFESSIONAL LEADERSHIP IN PRACTICE
NURS 231  Fall Winter Spring 8 Credits
176 hours of lab
Advanced client care practice in a specialty area of the student’s interest. Clinical areas include acute and community settings. Emphasis on developing leadership abilities as a professional nurse. Concurrent enrollment in NURS 230 and 232. Prerequisite: A grade of “C” or above in NURS 220 and 222 or consent of the Instructional Unit. [GE]
PROFESSIONAL ROLE IN THE COMMUNITY
NURS 232  Fall Winter Spring  1 Credit
22 hours of lab
Advanced simulation activities include mentorship and leadership/management of novice peers. Additional focus on community service and community volunteerism. Concurrent enrollment in NURS 230 and 231. Prerequisite: A grade of “C” or above in NURS 220 and 222 or consent of the Instructional Unit. [GE]

SELECTED TOPICS-LEVEL III
NURS 250  Fall Winter Spring  1 – 15 Credits
Independent study modules designed to meet student specialized needs. Content may be drawn from any of the associate degree nursing courses. Credit will be based upon contracted work in keeping with college policies. Credit is not applicable toward a nursing major at Clark College. Prerequisite: consent of nursing director. [GE]

SELECTED TOPICS
NURS 280  Summer Fall Winter Spring  1 – 5 Credits
55 hours of lecture
Selected topics in nursing. Topics vary and course theme and content change to reflect new topics. Because the course varies in content, it is repeatable for credit. Specific topics are listed in the quarterly class schedule.

SPECIAL PROJECTS
NURS 290  Summer Fall Winter Spring  1 – 15 Credits
Opportunity to plan, organize and complete special projects approved by the faculty of the department. Prerequisite: Consent of Instructional Unit. [GE]

Nursing Assistant Certified

NURSING ASSISTANT FOUNDATIONS
NAC 101  6 Credits
66 hours of lecture
Study and practice in preparation for the Washington state certification examination as a nursing assistant. Topics include anatomy and physiology, resident rights, concepts of death and dying, dementia care, legal aspects of care, scope of practice of the nursing assistant, function of the health care team, communication skills, infection control, safety and emergency procedures, and restorative care. Concurrent enrollment in NAC 102 is required.

NURSING ASSISTANT CLINICAL EXPERIENCE
NAC 102  3 Credits
66 hours of lab
Supervised clinical experience for Nursing Assistants in long term care settings. Concurrent enrollment in NAC 101 is required.

NURSING ASSISTANT FOUNDATIONS/CLINICAL
NAC 103  Summer Fall Winter Spring  9 Credits
66 hours of lecture  66 hours of lab
Study and practice in preparation for the Washington state certification examination as a nursing assistant. Topics include anatomy and physiology, resident rights, concepts of death and dying, dementia care, legal aspects of care, scope of practice of the nursing assistant, function of the health care team, communication skills, infection control, safety and emergency procedures, and restorative care. Includes supervised clinical experience for Nursing Assistants in long term care settings. Prerequisite: Successful completion of, or concurrent enrollment in FACPR 032, or consent of Instructional Unit.

SELECTED TOPICS
NAC 280  Fall Winter Spring  1 – 10 Credits
110 hours of lecture
Varying topics in the Nursing Assistant Certified program, as listed in the quarterly class schedule. May be repeated for credit. Prerequisite: Consent of Instructional Unit.
**Nutrition**

**GENERAL NUTRITION**

**NUTR 103**

Summer Fall Winter Spring 3 Credits

33 hours of lecture

Nutrition of healthy human beings. Principles of balanced nutrition, physiology and metabolism of nutrients, and changing nutritional needs throughout the human life span. Prerequisite: A grade of “C” or better in CHEM 111 or higher. [NS, SE]

**Paralegal**

**INTRODUCTION TO LEGAL THEORY**

**PRLE 101**

Fall Winter Spring 3 Credits

33 hours of lecture

Introduction to the origin of our legal system and the theories giving rise to our common law, civil law, and statutory law systems, with emphasis on legal terminology in our contemporary legal system. Review of the court system with emphasis on our state courts and an overview of substantive law. [GE]

**LEGAL ETHICS**

**PRLE 102**

Winter Spring 3 Credits

33 hours of lecture

Introduction to legal ethics, a study of issues: respecting client confidentiality, protecting a client’s privileged communications, avoiding conflicts of interests, and avoiding unauthorized practice of law. Exploration of the ethical issues regarding legal fees and fee sharing arrangements, advertising and solicitation, and competence and honesty.

**LEGAL RESEARCH**

**PRLE 103**

Fall Winter Spring 3 Credits

22 hours of lecture 22 hours of lab

Legal research terminology and legal research strategies. Topics include efficient techniques to locate state and federal legal information by citation; locate search tools; update validity of legal resources; construct appropriate legal citations using ALWD Citation Manual style; develop a research strategy to efficiently and productively research a given legal issue. Meets at the Clark County Courthouse Law Library for the research section of classes one through nine. Prerequisite: PRLE 101 required and PRLE 102 recommended.

**LEGAL INTERVIEWSING AND INVESTIGATION**

**PRLE 104**

Fall Spring 3 Credits

33 hours of lecture

Strategies, techniques and tactics of interviewing witnesses and clients including investigation procedures and preparation of complete reports for the attorney. Prerequisite: CMST& 210 or 230 (or CMST 201 or 211) and PRLE 103 recommended. [GE]

**LEGAL WRITING**

**PRLE 106**

Fall 3 Credits

33 hours of lecture

Introduction to the basics of technical writing and the relationship of legal writing to legal analytical thought. Guidance through both theoretical and practical applications of writing. Focus on straightforward language. Prerequisite: PRLE 101. [GE]

**CIVIL LITIGATION AND PROCEDURES**

**PRLE 109**

Winter 3 Credits

33 hours of lecture

The litigation process, with emphasis on the law of torts and civil litigation including client and witness interviews, pleadings preparation, investigation, and appeal procedures. Prior completion of PRLE 102 and 104 recommended. Prerequisite: A grade of “C” or better in PRLE 106.
CRIMINAL LAW AND PROCEDURES
PRLE 110  Fall  3 Credits
33 hours of lecture
The litigation process, with emphasis on criminal law including client and witness interviews, pleadings preparation, investigation and appeals preparation. Study of general criminal law and procedures to provide a basic understanding of the criminal justice system. Prior completion of PRLE 102 and 104 recommended. Prerequisite: A grade of “C” or better in PRLE 106. [GE]

REAL ESTATE AND PROPERTY LAW
PRLE 111  Fall  3 Credits
33 hours of lecture
Law of personal and real property with emphasis on common types of real estate transactions and conveyances such as deeds, contracts, leases, deeds of trust, liens, zoning agreements, assessments, searches and foreclosures. Drafting of conveyance instruments and methods of recording and searching public records. Prerequisite: PRLE 101 and 106. [GE]

LAW OFFICE PROCEDURES AND COMPUTER TECHNOLOGY
PRLE 115  Fall Spring  3 Credits
33 hours of lecture
Law office organization, specialized recordkeeping, law office computer applications (software in data management, storage and calendar controls), and accounting, scheduling, filing, management of personnel and other aspects of law office management. PRLE 102 recommended.

INTERVIEWING, INVESTIGATION AND EVIDENCE
PRLE 150  3 Credits
33 hours of lecture
Strategies, techniques and tactics for interviewing witnesses and clients including investigation procedures, collecting evidence and preparation of complete reports for the attorney. Students will understand, review and apply Rules of Evidence. Prerequisite: CMST& 210 or 230 (or CMST 201 or 211) and PRLE 103 recommended.

LEGAL DOCUMENT PREPARATION
PRLE 151  Winter  3 Credits
33 hours of lecture
Preparation of legal documents, legal terminology, and court rules and procedures as applied to general areas of law. Ability to type 40 wpm is recommended. Prerequisite: PRLE 101,102 and BTEC 122 or 125 or consent of Instructional Unit. [GE]

LEGAL OFFICE SEMINAR
PRLE 153  Fall Winter Spring  1 Credit
11 hours of lecture
Overview of student success strategies, library resources, the Legal system in the United States and the various employment opportunities in legal office occupations including discussion of job requirements and responsibilities. Concurrent enrollment in PRLE 299 required. Prerequisite: Consent of Instructional Unit. [GE]

COMPUTER RESEARCH IN LAW
PRLE 203 Summer Winter  3 Credits
11 hours of lecture
Survey of legal research terminology, electronic legal resources, and research strategies. Students will learn to locate state and federal legal information by citation through finding tools, utilize research strategies to efficiently locate non-legal information of interest to the legal researcher, evaluate the validity of electronic sources, and construct appropriate electronic sources. Prerequisite: A grade of “C” or better in PRLE 103 and 106. [GE]

FAMILY LAW
PRLE 204  3 Credits
33 hours of lecture
Law and theory relating to dissolutions of marriage, legal separation, parenting/custody agreements, prenuptials, ante-
nuptial agreements, adoptions, child support, change of name, and post-divorce issues such as maintenance modification, child support modification, and parenting plan modifications. Prerequisite: PRLE 101 and PRLE 151.

**ESTATE PLANNING AND PROBATE LAW**
PRLE 205 3 Credits
33 hours of lecture
Law and theory of estate planning, probate, and options of probate with emphasis on wills, trusts, community property agreements, gifts, estate taxation, probate procedures, administration and accounting. Prerequisite: A grade of “C” or better in PRLE 101.

**REAL ESTATE AND PROPERTY LAW**
PRLE 206 3 Credits
33 hours of lecture
Law of personal and real property with emphasis on common types of real estate transactions and conveyances such as deeds, contracts, leases, deeds of trust, liens, zoning agreements, assessments, searches and foreclosures. Drafting of conveyance instruments and methods of recording and searching public records. Prerequisite: A grade of “C” or better in PRLE 101.

**BUSINESS ORGANIZATIONS**
PRLE 207 3 Credits
33 hours of lecture
Significant state law regarding corporations and partnerships, preparation and filing of corporate documents, partnership agreements, conduct of corporate shareholder and director meetings, corporate distributions, commercial litigation, secured transactions. Prerequisite: A grade of “C” or better in PRLE 101 and 106.

**BANKRUPTCY LAW**
PRLE 208 3 Credits
33 hours of lecture
Introduction to bankruptcy procedures including filing of initial petition, selection of appropriate relief, meeting of creditors, adversarial proceedings, the final discharge hearing, and automatic stay. Analysis of relief available under Chapter 7, 11, 12, and 13 of the United States Bankruptcy code. Prerequisite: A grade of “C” or better in PRLE 101, 102, 103, 106 and 115.

**INSURANCE CLAIMS CASE PREPARATION**
PRLE 209 3 Credits
33 hours of lecture
Introduction to case management theory, using a “walk-through” personal injury action and preparation/handling of insurance claim(s) on behalf of a civil plaintiff. A complete preparation of a legal case, from intake to litigation including applicable legal terminology, court rules and procedures. Emphasis on the practices of law surrounding insurance claims and policies related to a civil action. Prerequisite: A grade of “C” or better in PRLE 106 and 151 or consent of Instructional Unit.

**LEGAL WRITING II**
PRLE 210 3 Credits
33 hours of lecture
Methods of legal research and legal writing. Application of research and analysis skills learned in PRLE 103 Legal Research and PRLE 203 Computer Research in Law. Continuation of the writing skills learned in PRLE 106 Legal Writing I. Focus on skills to research more intricate issues of law in a more accurate and precise method, with emphasis on preparing complex legal documents such as an interoffice Memorandum, Memorandum in Support of Motion and other types of legal documents, including the Appellate Brief. Prerequisite: A grade of “C” or better in BTEC 122 Word for Business, PRLE 103 Legal Research, PRLE 203 Computer Research in Law and PRLE 106 Legal Writing.
TORT LAW AND PROCEDURES
PRLE 211   3 Credits
33 hours of lecture
Resolution of personal injury claims with insurance companies, social security and workers’ compensation claims, with emphasis on the interpretation of insurance policies and the procedures for processing claims and effecting settlements. Methods for identifying workers’ compensation and social security claims, as well as the filing and processing of these claims through the applicable state and federal administrative law procedures. Prerequisite: A grade of “C” or better in PRLE 106.

LAW AND ECONOMICS
PRLE 212   3 Credits
33 hours of lecture
Legal rules, regulations and precedent interact with market mechanics and influence the allocation of resources. Focus on the common law property, contract and tort area, methods to explain, predict and evaluate such areas as a means to predict future outcomes and evaluate their potential impact upon societal welfare. Topics include relevant economic theories in conjunction with individual court cases to emphasize how the subtleties of the theory connect with key facts of the case. Course methodology develops the economic theory in the context of legal problems via point by point analysis.

SELECTED TOPICS
PRLE 280 Summer Fall Winter Spring 1 – 3 Credits
33 hours of lecture
Varying topics for the paralegal profession as listed in the quarterly class schedule. May be repeated for credit. [GE]

SPECIAL PROJECTS
PRLE 290 Summer Fall Winter Spring 1 – 5 Credits
Opportunity for students to plan, organize and complete special projects approved by the department. Contact the instructional dean, division chair or your instructor for more information or to make arrangements to register for Special Project credits in this department. (Note: special project closely supervised by the instructor. Student must create written plan, select an instructor and petition for Departmental approval.) Consent of Instructional Unit.

CASA SPECIAL PROJECT
PRLE 295   1 – 5 Credits
Court Appointed Special Advocate (CASA) Internship Project: a specialized Internship. Supervised, community service learning experience as trained, court appointed child advocate. Must complete thirty or more hours in CASA training and minimum one year commitment as a court appointed child advocate. No set requirement for hours worked per week, which is to be determined by the student and CASA. Work sites include the YWCA, Clark County courts, and other related off-site locations necessary for CASA program work. Prerequisite: Consent of Instructional Unit. Must receive admission into the Vancouver YWCA’s Court CASA program. Must pass background check.

PARALEGAL INTERNSHIP
PRLE 299 Summer Fall Winter Spring 1 – 3 Credits
Attorney-supervised work-based learning experience in a law office or other legal facility for paralegal internship. A capstone including a scheduled internship. Credits/grades based on hours worked, work performance, and completion of learning objectives specified in a learning contract (demonstrated adequate skills and professionalism) and completion of Seminar “Paralegal Information Night”. Prerequisite: Department Chair approval required, based on completion of core paralegal courses (all PRLE and BUS& 201).
Pharmacy Technician

OVERVIEW OF PHARMACY
PHAR 100  Winter  2 Credits
22 hours of lecture
Overview of pharmacy with particular focus on the technician in pharmacy practice settings including job roles, resources and ethical standards of practice. [GE]

A MINI DOSE OF PHARMACY
PHAR 101  Spring  1 Credit
11 hours of lecture
A preview of the practice of pharmacy. Identifies the role of the pharmacy tech, explores various pharmacy practice settings for employment, beginning basics of the language of pharmacy, both in written and oral forms. [GE]

INTRODUCTION TO PHARMACY
PHAR 105  Fall  4 Credits
44 hours of lecture
Introduction to the role of the pharmacy technician in a variety of pharmacy practice settings including history, personnel, resources, and ethical standards of pharmacy practice. Prerequisite: A grade of “C” or better in BMED 110 and consent of Instructional Unit. [GE]

PHARMACY CALCULATIONS
PHAR 110  Spring  3 Credits
33 hours of lecture
Basic math and arithmetic skills as they relate to pharmacy practice. Calculations and manipulations of metrics and related dosages. Pharmacy topics related to mathematical functions are emphasized. Prerequisite: Consent of HEOC advisor. [GE]

PHARMACOLOGY I
PHAR 112  Summer Winter  5 Credits
55 hours of lecture
First of 2-quarter sequence in pharmacology. Topics include pharmacokinetic and pharmacodynamic principles of drug therapy, with focus on absorption, distribution, metabolism, excretion, drug classification, indication for use, dose, and side effects of the most common drugs, including antibiotics, analgesics, autonomic system, cardiovascular and respiratory drugs. Prerequisite: A grade of “C” or better in PHAR 105.

PHARMACY PRACTICE AND TECHNOLOGY
PHAR 114  4 Credits
33 hours of lecture  22 hours of lab
Pharmacy skills and knowledge essentials to the practice of pharmacy at the work site. Topics include correlation of terminology, computer system manipulation, use of current and emerging technology, and practical application of pharmacy dispensing activities. Prerequisite: Consent of HEOC advisor.

PHARMACY EXTERNSHIP I
PHAR 118  Winter  4 Credits
132 hours of clinical
Practical on-the-job instruction in the knowledge base required of a pharmacy assistant (technician) in the work force. Community pharmacies/facilities will be used for this course. Concurrent enrollment in PHAR 119 required. Prerequisite: A grade of “C” or better in PHAR 105 and consent of Instructional Unit. [GE]

PHARMACY EXTERNSHIP SEMINAR I
PHAR 119  Summer Winter  2 Credits
11 hours of lecture  22 hours of lab
First of 2-quarter sequence coordinating with PHAR 118 externship experience at work site. Topics include professionalism, productivity, handling challenging situations, and continuing education, with emphasis on success in
the workplace. Group work, case study analysis, journal entries and a final written paper are required. Concurrent enrollment in PHAR 118 and written consent of Instructional Unit.

**PHARMACOLOGY II**
PHAR 122   5 Credits
55 hours of lecture
Second of 2-quarter sequence in pharmacology. Topics include pharmacokinetic and pharmacodynamic principles of drug therapy. Focus on absorption, distribution, metabolism, excretion, drug classification, indication for use, dose, and side effects of the most common drugs, including antidepressants and anti-anxiety agents, antipsychotics, anticonvulsants and other CNS disorder agents, hormone therapy, chemotherapy, antiretrovirals, as well as topicals, ophthalmics and otics. Prerequisite: Completion of PHAR 112 and written consent of the Instructional Unit required.

**PHARMACY LAW**
PHAR 123   Winter  2 Credits
22 hours of lecture
State and federal laws and regulations that pertain to the duties of pharmacy technicians. Revised Code of Washington and Washington Administrative Codes will be reviewed. Prerequisite: written consent of Instructional Unit required. [GE]

**OVER-THE-COUNTER DRUGS**
PHAR 125   Winter  3 Credits
33 hours of lecture
Medications available to patients without prescription. Particular attention to those medications that have changed from legend to non-prescription products and those most frequently carried by local pharmacies. Prerequisite: written consent of instructional unit required. [GE]

**PHARMACY COMPOUNDING**
PHAR 127   Fall Spring  4 Credits
33 hours of lecture  22 hours of lab
Overview of sterile products and aseptic technique for compounding of sterile products, intravenous (IV) drug delivery systems and equipment related to compounding and administration of IV products. Combination of lecture and lab projects.

**PHARMACY EXTERNSHIP II**
PHAR 128   Spring  4 Credits
132 hours of clinical
Continued practical, on-the-job instruction in the knowledge base required of a pharmacy (technician) in the work force. Concurrent enrollment in PHAR 129 required. Prerequisite: Completion of PHAR 105 and written consent of Instructional Unit required. [GE]

**PHARMACY EXTERNSHIP SEMINAR II**
PHAR 129   Fall Spring  2 Credits
22 hours of lecture
Second of 2-quarter sequence coordinating with PHAR 128 externship experience. Topics include work ethics, interpersonal communication, problem solving, and success in the work place emphasized. Components include group work, case study analysis, journal entries and a final written and oral project. Concurrent enrollment in PHAR 128 and written consent of Instructional Unit required.

**SELECTED TOPICS**
PHAR 280   Summer Fall Winter Spring  1 – 5 Credits
55 hours of lecture
Selected topics in pharmacy. Topics vary and course theme and content change to reflect new topics. Because the course varies in content, is is repeatable for credit. Specific topics are listed in the quarterly class schedule.
SPECIAL PROJECTS
PHAR 290  
Summer Fall Winter Spring  1 – 15 Credits
Opportunity to plan, organize and complete special projects approved by the faculty of the department. Prerequisite: Consent of Instructional Unit required.

Philosophy

INTRODUCTION TO PHILOSOPHY
PHIL& 101  
Summer Fall Winter Spring  5 Credits
55 hours of lecture
Some of the great themes and major figures of Western philosophy. [HA, SE]

INTRODUCTION TO LOGIC
PHIL& 106  
Summer Fall Winter Spring  5 Credits
55 hours of lecture
Introduction to modern symbolic logic. Successful completion of MATH 093, or 095, or eligibility for college level math strongly recommended. [HA, SE]

INTRODUCTION TO ANCIENT AND MEDIEVAL PHILOSOPHY
PHIL 115  
Fall  5 Credits
55 hours of lecture
An overview of ancient Greek philosophy from the pre-Socratic thinkers through Aristotle and beyond, and an introduction to medieval philosophical thought, especially that of Augustine and Aquinas. [HA, SE]

INTRODUCTION TO EARLY MODERN PHILOSOPHY
PHIL 116  
Winter  5 Credits
55 hours of lecture
Introduction to some of the great thinkers and ideas of the sixteenth, seventeenth and eighteenth centuries. [HA, SE]

INTRODUCTION TO LATE MODERN PHILOSOPHY
PHIL 117  
Spring  5 Credits
55 hours of lecture
Some of the major thinkers and ideas of the nineteenth and twentieth century. Emphasis on the great thinkers of the nineteenth century. [HA, SE]

INTRODUCTION TO CLASSICAL LOGIC
PHIL 160  
5 Credits
55 hours of lecture
Introduction to traditional, Aristotelian logic. Includes formulation of propositions, logical inference, syllogisms (categorical, hypothetical, etc.), and fallacies. [HA, SE]

ETHICS
PHIL 240  
Fall Spring  5 Credits
55 hours of lecture
Theories of morality from ancient times to the present, with attention to both practical and theoretical issues. The relationship between ethics and other areas of philosophy. [HA, SE]

PHILOSOPHY OF RELIGION
PHIL 251  
Summer Winter  5 Credits
55 hours of lecture
Exploration of the nature of the religious experience, the difficulties inherent in the use of religious language, the classical proofs for the existence of God, the relationship between faith and reason, and the problem of evil.
SELECTED TOPICS
PHIL 280   1 – 3 Credits
33 hours of lecture
Varying topics in philosophy, as listed in the quarterly class schedule. May be repeated for credit. [HA, SE]

SPECIAL PROJECTS
PHIL 290 Summer Fall Winter Spring   1 – 5 Credits
Opportunity to plan, organize and complete special projects approved by the department. Prerequisite: Completion of two philosophy courses and consent of Instructional Unit. [HA, GE]

Physical Education

CARDIO CONDITIONING
PE 100 Summer Fall Winter Spring   1 Credit
22 hours of lab
Basic group exercise to music, primarily targeting cardiovascular conditioning.

FITNESS WALKING
PE 102 Summer Fall Winter Spring   1 – 2 Credits
44 hours of lab
Emphasis on walking programs, including interval training, power walking, and race walking. Walking technique and health benefits also discussed. [PE]

BENCH STEP AEROBICS
PE 103 Fall Winter Spring   1 Credit
22 hours of lab
Introduction to high-intensity/low impact exercise promoting overall body strength and cardiovascular fitness that involves stepping up and down on a bench step platform to music. [PE]

CIRCUIT FITNESS
PE 104 Summer Fall Winter Spring   1 – 2 Credits
44 hours of lab
An individualized systematic approach to cardiovascular fitness through the use of multiple weight machines and aerobic equipment. Pre and post fitness assessments conducted. Students must earn 2 credits of PE 104 before advancing to PE 105. [PE]

CIRCUIT FITNESS
PE 105 Summer Fall Winter Spring   1 – 2 Credits
44 hours of lab
An individualized systematic approach to cardiovascular fitness through the use of multiple weight machines and aerobic equipment. Pre and post fitness assessments conducted. Prerequisite: Two credits of PE 104. [PE]

CIRCUIT FITNESS
PE 106 Summer Fall Winter Spring   1 – 2 Credits
44 hours of lab
An individualized systematic approach to cardiovascular fitness through the use of multiple weight machines and aerobic equipment. Pre and post fitness assessments conducted. Prerequisite: 2 credits of PE 105. [PE]

SPEED, AGILITY, AND QUICKNESS
PE 107 Fall Winter Spring   1 Credit
22 hours of lab
Focuses on biomechanics of running, development of speed, agility and personal quickness. Learning of drills and enhancement of skills to improve personal performance. [PE]
INDEPENDENT FITNESS PROGRAM
PE 108 Summer Fall Winter Spring 1 – 2 Credits
44 hours of lab
A self-paced conditioning course for the motivated, self-directed student. Design, implement and document a goal-oriented fitness program with instructor advice and approval. Areas of concentration will be the three components of fitness: Cardiovascular endurance, muscular strength and muscular flexibility training. [PE]

MARTIAL ARTS: TAE KWON DO
PE 109A Fall Winter Spring 1 Credit
22 hours of lab
Taekwondo is a Korean martial art that predominately focuses on kicking. Students must purchase a uniform for this class.

MARTIAL ARTS: KUNG FU
PE 109B Fall Winter Spring 1 Credit
22 hours of lab
Kung Fu is a Chinese method of self-defense. Covers history and philosophy, basic strikes, blocks, and escapes from various attacks and grabs. Students must purchase a uniform for this class.

MARTIAL ARTS: BRAZILIAN JIU-JITSU
PE 109C Fall Winter Spring 1 Credit
22 hours of lab
Jiu-Jitsu is a Brazilian sport of self-defense that uses grappling, wrestling, and locking techniques. Students must purchase a uniform for this class.

MARTIAL ARTS: JUDO
PE 109D Fall Winter Spring 1 Credit
22 hours of lab
Judo is a Japanese martial art focused on throwing, where students learning falling techniques, basic takedowns, escapes, and joint locks. Students must purchase a uniform for this class.

SELF DEFENSE
PE 110 Fall Winter Spring 1 Credit
22 hours of lab
This course is designed to teach the student basic self-defense techniques as well as situational awareness through class participation and discussion. [PE]

CORE CONDITIONING
PE 111 Fall Winter Spring 1 Credit
22 hours of lab
Focus on engaging the core area to improve posture and muscular endurance for everyday movement.

TONE AND TRIM
PE 112 Fall Winter Spring 1 Credit
22 hours of lab
Stretching exercise class (with music) to improve muscle tone, posture, flexibility and general fitness with emphasis on increased abdominal and back strength. [PE]

TOTAL BODY CONDITIONING
PE 113 Fall Winter Spring 2 Credits
44 hours of lab
Students will use fitness center equipment and a variety of conditioning activities to develop cardiovascular endurance, muscular strength, and flexibility. Course will emphasize how to structure an exercise plan to meet individualized goals. [PE]
WEIGHT TRAINING – GENERAL I
PE 115  Summer Fall Winter Spring  1 Credit
22 hours of lab
Strength development through basic exercise and lift techniques. Beginning theories and techniques in fitness conditioning, body building, and power lifting. [PE]

FITNESS CENTER BASICS
PE 116  Fall Winter Spring  1 Credit
22 hours of lab
Introduction to the fundamental skills necessary to implement a physical activity program in a fitness center setting. Students develop and implement an exercise program appropriate to their fitness level and individual needs using a variety of cardiovascular and resistance machines. [PE]

WEIGHT TRAINING – POWER LIFTING I
PE 117  Fall Winter Spring  2 Credits
44 hours of lab
Conditioning class for students interested in strength improvement through heavy resistance training. The Olympic lifts along with numerous power/speed lifts will be performed for personal improvement in various fitness parameters. [PE]

CARDIO KICKBOXING – BEGINNING
PE 120  Fall Winter Spring  1 Credit
22 hours of lab
Combination of aerobic dance and martial arts, including American Kickboxing and Thai Boxing, in a format that increases cardiovascular endurance, sharpens reflexes and enhances power. [PE]

YOGA
PE 121  Summer Fall Winter Spring  1 Credit
22 hours of lab
Introduction to hatha yoga (physical yoga) with an emphasis on postures, breathing and body-mind centering. [PE]

T’AI CHI
PE 122  Summer Fall Winter Spring  1 Credit
22 hours of lab
T’ai Chi is an ancient form of mental and spiritual discipline developed in China. The movements of the t’ai chi form are slow and deliberate, helping with relaxation, focus, strengthening, and balance. [PE]

HEALTHY HEART – BEGINNING
PE 123  Fall Winter Spring  1 Credit
22 hours of lab
Cardiac prevention and rehabilitation exercise: designed to promote awareness and practice of exercise, nutrition, and stress. Skills in dealing with pre- and post-cardiac trauma. [GE]

PILATES – BEGINNING
PE 124  Summer Fall Winter Spring  1 Credit
22 hours of lab
Methods of conditioning covers the basic principles and exercise technique needed to increase core strength and stabilization, improve coordination, balance, postural awareness, and increase muscular flexibility and stamina. [PE]

BOOT CAMP – BEGINNING
PE 129  Fall Winter Spring  2 Credits
44 hours of lab
Introduction to physical fitness for military purposes; emphasis on basic conditioning and discipline. This course is open to all students. [PE]
BALLET – BEGINNING
PE 130  Fall Winter Spring  1 Credit
22 hours of lab
Beginning ballet technique including barre and centre work. [PE]

BALLROOM DANCE: SMOOTH
PE 131A  Summer Fall Winter Spring  1 Credit
22 hours of lab
Fundamentals, forms and pattern of ballroom dance. Develop confidence through practice with a variety of partners. Smooth style dances include waltz, tango, fox trot, quick step and Viennese waltz.

BALLROOM DANCE: LATIN
PE 131B  Summer Fall Winter Spring  1 Credit
22 hours of lab
Fundamentals, forms and pattern of ballroom dance. Develop confidence through practice with a variety of partners. Latin dance sections will include: mambo, cha cha, rhumba, samba, and salsa.

BALLROOM DANCE: LATIN OR SMOOTH
PE 131C  Summer Fall Winter Spring  1 Credit
22 hours of lab
Fundamentals, forms and pattern of ballroom dance. Develop confidence through practice with a variety of partners. Smooth style dances include waltz, tango, fox trot, quick step and Viennese waltz. Latin dances include: mambo, cha cha, rhumba, samba, salsa.

WORLD DANCES
PE 132  1 – 3 Credits
66 hours of lab
Introduction to one particular style of cultural dance and an appreciation of its cultural and geographical background. Topics vary, but may include Irish Dance, Hula Dance, African Dance, Bollywood or other folk dancing specialty.

WORLD DANCES: HULA
PE 132A  1 Credit
22 hours of lab
Focus on Hawaiian traditional dance forms.

WORLD DANCES: AFRICAN
PE 132B  1 Credit
22 hours of lab
Introduction to African dance, which focuses on drumming, rhythm, and music predominantly of West Africa.

WORLD DANCES: BOLLYWOOD
PE 132C  1 Credit
22 hours of lab
Introduction to dances of India, sometimes referred to as Indian Fusion. Dance styles focus on semi-classical, regional, folk, bhangra, and everything in between--up to westernized contemporary Bollywood dance.

CONTEMPORARY DANCE
PE 133  Fall  1 Credit
22 hours of lab
Fundamentals and techniques of modern dance and rhythmic self-expression. [PE]

MODERN JAZZ
PE 134  Fall Winter Spring  1 Credit
22 hours of lab
Beginning Modern Jazz technique. Students will study fundamental moves and learn a routine. [PE]
**SWING DANCE – BEGINNING**  
PE 135  
Fall Winter Spring  
1 Credit  
22 hours of lab  
Basic patterns and partnering skills for East Coast Swing (jive), West Coast Swing (hustle), and Lindy Hop. Course covers dance technique, partnering skills, patterns and music identification. [PE]

**HIP-HOP DANCE**  
PE 137  
Fall Winter Spring  
1 Credit  
22 hours of lab  
Introduction to basic dance techniques, floor combinations, balance, and longer dance routines of hip hop dance. Develop confidence and skill through practice. [PE]

**BELLY DANCE**  
PE 139  
1 Credit  
22 hours of lab  
Gain knowledge of movement and dance steps, culture and history, various rhythms, country of origin and related movements. Egyptian music is the predominant focus.

**BASKETBALL**  
PE 140  
Fall Winter Spring  
1 Credit  
22 hours of lab  
Ball handling, shooting, passing, offensive and defensive techniques, rules, strategy and competitive play. [PE]

**BOWLING**  
PE 143  
1 Credit  
22 hours of lab  
Techniques, styles of play, rules of courtesy, scoring and competitive games. [PE]

**FENCING – FOIL**  
PE 147  
Fall Winter Spring  
1 Credit  
22 hours of lab  
Movement of fencing plus defense, offense, rules of boutsing, officiating, and competition. [PE]

**GOLF**  
PE 148  
Fall Spring  
1 Credit  
22 hours of lab  
Fundamentals and practice of golf. Focuses on full-swing fundamentals, chipping, pitching, putting, golf strategies, and rules of the game. [PE]

**SOCCER**  
PE 150  
Summer Fall Spring  
1 Credit  
22 hours of lab  
Focus on individual offensive and defensive skills, game strategy, rules, and team tactics through the use of small-sided games and individual drills. [PE]

**SPORTS CONDITIONING: SOCCER – WOMEN**  
PE 152A  
Summer Fall Winter Spring  
1 – 3 Credits  
66 hours of lab  
Strength and cardiovascular conditioning in preparation for competing in intercollegiate women’s soccer.

**SPORTS CONDITIONING: SOCCER – MEN’S**  
PE 152B  
Summer Fall Winter Spring  
1 – 3 Credits  
66 hours of lab  
Strength and cardiovascular conditioning in preparation for competing in intercollegiate men’s soccer.
SPORTS CONDITIONING: CROSS COUNTRY  
PE 152C  
Summer Fall Winter Spring  
1 – 3 Credits  
66 hours of lab  
Strength and cardiovascular conditioning in preparation for competing in intercollegiate cross country.

SPORTS CONDITIONING: VOLLEYBALL  
PE 152D  
Summer Fall Winter Spring  
1 – 3 Credits  
66 hours of lab  
Strength and cardiovascular conditioning in preparation for competing in women's intercollegiate volleyball.

SPORTS CONDITIONING: BASKETBALL – WOMEN'S  
PE 152E  
Summer Fall Winter Spring  
1 – 3 Credits  
66 hours of lab  
Strength and cardiovascular conditioning in preparation for competing in intercollegiate women's basketball.

SPORTS CONDITIONING: BASKETBALL – MEN'S  
PE 152F  
Summer Fall Winter Spring  
1 – 3 Credits  
66 hours of lab  
Strength and cardiovascular conditioning in preparation for competing in intercollegiate men's basketball.

SPORTS CONDITIONING: SOFTBALL  
PE 152G  
Summer Fall Winter Spring  
1 – 3 Credits  
66 hours of lab  
Strength and cardiovascular conditioning in preparation for competing in women's intercollegiate softball.

SPORTS CONDITIONING: BASEBALL  
PE 152H  
Summmer Fall Winter Spring  
1 – 3 Credits  
66 hours of lab  
Strength and cardiovascular conditioning in preparation for competing in intercollegiate baseball.

SPORTS CONDITIONING: TRACK AND FIELD  
PE 152I  
Summer Fall Winter Spring  
1 – 3 Credits  
66 hours of lab  
Strength and cardiovascular conditioning in preparation for competing in intercollegiate track and field.

TENNIS  
PE 155  
Summer Fall Spring  
1 Credit  
22 hours of lab  
Basic tennis skills including grip, foot work, and strokes, such as backhand, forehand, volley and serve. The drop shot, lob, and overhead shots will be introduced, as will singles and doubles strategies, rules, scoring and court etiquette. [PE]

Volleyball  
PE 158  
Fall Winter Spring  
1 Credit  
22 hours of lab  
Introduction to the fundamental skills and strategies of organized volleyball. Volleyball requires development of the following individual skills: forearm pass, set, spike, block, dig, and serve. In addition, students will gain an understanding of elementary team strategies. Students will learn to practice effective communication with teammates. [PE]

ULTIMATE FRISBEE – BEGINNING  
PE 163  
Fall Spring  
1 Credit  
22 hours of lab  
Ultimate Frisbee fundamentals: individual skill development, rules, game play, and strategies. [PE]
### AQUA EXERCISE

**PE 171**
- **Fall Winter Spring**
- 1 Credit
- 22 hours of lab
Conditioning through water exercises for students with or without swimming ability. Increased fitness with emphasis on stretching, flexibility, and abdominal and back strength. [PE]

### SCUBA – BEGINNING

**PE 173**
- **Fall Spring**
- 2 Credits
- 11 hours of lecture
- 22 hours of lab
Classroom lectures and discussion, swimming pool practice, and diving safety. Supervised experience in open water training optional at extra cost. Successful completion qualifies student for certification card. Prerequisite: Swimming ability. [PE]

### SWIMMING – STROKE AND SKILL IMPROVEMENT

**PE 175**
- **Fall Winter Spring**
- 1 Credit
- 22 hours of lab
For swimmer who is comfortable in deep water. Instruction and improvement of individual swimming strokes and survival skills. [PE]

### SWIMMING – BEGINNING

**PE 176**
- **Fall Winter Spring**
- 1 Credit
- 22 hours of lab
For non-swimmers and those who cannot swim 25 yards (one pool length). Opportunity to learn and improve individual swimming and water survival skills. Introduction to Red Cross swimming strokes with increased endurance and comfort in the water. [PE]

### SWIMMING – ELEMENTARY

**PE 177**
- **Fall Winter Spring**
- 1 Credit
- 22 hours of lab
Designed for beginning swimming students who wish to further their confidence in the water. Focus is on improving swimming proficiency and water survival skills. Beginning swimming skills that are emphasized include the crawl, breast stroke, and diving. [PE]

### SWIM CONDITIONING – BEGINNING

**PE 179**
- **Fall Winter Spring**
- 1 Credit
- 22 hours of lab
Emphasizes swimming fitness through lap swimming. Students will participate in a workout designed to address their particular fitness and skill level. Prerequisite: Ability to swim comfortably in the deep end of pool. [PE]

### HIking

**PE 182**
- **Summer Fall Spring**
- 1 Credit
- 22 hours of lab
Experience hiking off-campus on designated trails. Course emphasizes basic safety and survival skills and practices low-impact hiking methods. [PE]

### ROWING – BEGINNING

**PE 183**
- **Summer Fall Spring**
- 1 Credit
- 22 hours of lab
Introduction to the sport of rowing. Includes basic technique and terminology, related water safety, development of strength, endurance and flexibility. Skills include rowing, strength training, cardiovascular training. Prerequisite: Must pass swimming test prior to first class. See Course Information Sheet outside OSC 206 for more information.

### CARDIO CONDITIONING – INTERMEDIATE

**PE 200**
- **Summer Fall Winter Spring**
- 1 Credit
- 22 hours of lab
Intermediate group exercise to music, primarily targeting cardiovascular conditioning. Prerequisite: PE 100.
<table>
<thead>
<tr>
<th>Course Description</th>
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<th>Credits</th>
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<td><strong>FITNESS WALKING – INTERMEDIATE</strong></td>
<td>PE 202</td>
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<td>Prerequisite: PE 102. [PE]</td>
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<tr>
<td><strong>BENCH STEP AEROBICS – INTERMEDIATE</strong></td>
<td>PE 203</td>
<td>1</td>
<td>Fall Winter Spring</td>
<td>22</td>
<td>Intermediate high-intensity/low impact exercise program using a bench step promoting overall body strength and cardiovascular fitness. Prerequisite: PE 103. [PE]</td>
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<tr>
<td><strong>SPEED, AGILITY, AND QUICKNESS</strong></td>
<td>PE 207</td>
<td>1</td>
<td>Fall Winter Spring</td>
<td>22</td>
<td>Additional drills to further advance personal ability in running, quickness, speed. Includes advanced plyometric training techniques. Prerequisite: PE 107. [PE]</td>
</tr>
<tr>
<td><strong>INDEPENDENT FITNESS – INTERMEDIATE</strong></td>
<td>PE 208</td>
<td>1 – 2</td>
<td>Summer Fall Winter Spring</td>
<td>44</td>
<td>A continuation of the self-paced conditioning course, plus setting and implementing an additional personalized health related goal to be determined at the first individual meeting with instructor. Prerequisite: PE 108. [PE]</td>
</tr>
<tr>
<td><strong>MARTIAL ARTS – INTERMEDIATE: TAE KWON DO</strong></td>
<td>PE 209A</td>
<td>1</td>
<td>Fall Winter Spring</td>
<td>22</td>
<td>A further examination into Tae Kwon Do, a Korean martial art that predominately focuses on kicking. Students must purchase a uniform for this class. Prerequisite: PE 109A.</td>
</tr>
<tr>
<td><strong>MARTIAL ARTS -INTERMEDIATE : KUNG FU</strong></td>
<td>PE 209B</td>
<td>1</td>
<td>Fall Winter Spring</td>
<td>22</td>
<td>A further examination into Kung Fu, a Chinese method of self-defense. Covers history and philosophy, basic strikes, blocks, and escapes from various attacks and grabs. Students must purchase a uniform for this class. Prerequisite: PE 109B.</td>
</tr>
<tr>
<td><strong>MARTIAL ARTS – INTERMEDIATE: BRAZILIAN JIU-JITSU</strong></td>
<td>PE 209C</td>
<td>1</td>
<td>Fall Winter Spring</td>
<td>22</td>
<td>A further examination into Jiu-Jitsu, a Brazilian sport of self-defense that uses grappling, wrestling, and locking techniques. Students must purchase a uniform for this class. Prerequisite: PE 109C.</td>
</tr>
<tr>
<td><strong>MARTIAL ARTS – INTERMEDIATE: JUDO</strong></td>
<td>PE 209D</td>
<td>1</td>
<td>Fall Winter Spring</td>
<td>22</td>
<td>A further examination into Judo, a Japanese martial art focused on throwing, where students learn falling techniques, basic takedowns, escapes, and joint locks. Students must purchase a uniform for this class. Prerequisite: PE 109D.</td>
</tr>
<tr>
<td><strong>CORE CONDITIONING – INTERMEDIATE</strong></td>
<td>PE 211</td>
<td>1</td>
<td>Fall Winter Spring</td>
<td>22</td>
<td>Continuation of core conditioning techniques learned in PE 111. More advanced techniques introduced. Prerequisite: PE 111.</td>
</tr>
<tr>
<td><strong>TONE AND TRIM – INTERMEDIATE</strong></td>
<td>PE 212</td>
<td>1</td>
<td>Fall Winter Spring</td>
<td>22</td>
<td>Continuation of general fitness improvement through stretching, flexibility and toning exercise. Prerequisite: PE 112. [PE]</td>
</tr>
</tbody>
</table>
TOTAL BODY CONDITIONING – INT
PE 213  Fall Winter Spring  2 Credits
44 hours of lab
Continuation of individualized conditioning program for developing the various components of fitness. Additional focus on learning principles of fitness to create personalized workouts. Prerequisite: PE 113. [PE]

TRIATHLON TRAINING
PE 214  Spring  2 Credits
44 hours of lab
Theoretical basis and competencies needed to safely and effectively train to complete a small triathlon will be explored. Activities include swimming, cycling and running along with a self-contained mini triathlon at course conclusion. Students must know how to swim and have their own bicycle.

WEIGHT TRAINING-GENERAL II
PE 215 Summer Fall Winter Spring  1 Credit
22 hours of lab
Continuation of individual lifting skills. Application of principles and theories to design personal workouts. Additional advanced lifts and techniques to be used and reviewed via videotapes. Prerequisite: PE 115. [PE]

FITNESS CENTER-INTERMEDIATE
PE 216  Fall Winter Spring  1 Credit
22 hours of lab
Introduction to the fundamental skills necessary to implement a physical activity program in a fitness center setting. Students develop and implement an exercise program appropriate to their fitness level and individual needs using a variety of cardiovascular and resistance machines. [PE]

WEIGHT TRAINING – POWER LIFTING II
PE 217  Fall Winter Spring  2 Credits
44 hours of lab
Continued application of skill and conditioning level. Application of workout design and training theory will also be covered and applied. Assessment of personal fitness parameters. Prerequisite: PE 117. [PE]

CARDIO KICKBOXING – INT
PE 220 Summer Fall Winter Spring  1 Credit
22 hours of lab
Continuation of PE 120. Intermediate students will demonstrate more advanced techniques and perform moves that require greater conditioning. Combines aerobic dance and martial arts, including American Kickboxing and Thai Boxing, in a format that increases cardiovascular endurance, sharpens reflexes and enhances power. Prerequisite: PE 120. [PE]

YOGA – INTERMEDIATE
PE 221 Summer Fall Winter Spring  1 Credit
22 hours of lab
A continuation of Hatha yoga technique. Students will practice more advanced postures and a deeper exploration of body-mind centering. Prerequisite: PE 121. [PE]

T’AI CHI – INTERMEDIATE
PE 222 Summer Fall Winter Spring  1 Credit
22 hours of lab
T’ai Chi is an ancient form of mental and spiritual discipline developed in China. The movements of the T’ai Chi form are slow, deliberate and focused. Intermediate T’ai Chi will introduce additional movements of the Yang Family Short Form, as well as encourage a deeper exploration of the principles introduced in Beginning T’ai Chi. Prerequisite: PE 122. [PE]
<table>
<thead>
<tr>
<th>Course</th>
<th>Semester</th>
<th>Credits</th>
<th>Hours of Lab</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>HEALTHY HEART – INTERMEDIATE</strong></td>
<td></td>
<td>1</td>
<td>22</td>
</tr>
<tr>
<td>PE 223</td>
<td>Fall Winter Spring</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Continuation of exercise designed to lower risk for heart disease or to promote cardiac recovery. Study of healthy nutrition and stress reduction in the prevention of heart disease. Prerequisite: PE 123. [PE]</td>
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</tr>
</tbody>
</table>

| **PILATES – INTERMEDIATE**            |                 | 1       | 22           |
| PE 224                                | Summer Fall Winter Spring |         |              |
| Continuation of Pilates method of conditioning needed to increase core strength and stabilization, improve coordination, balance, postural awareness, and increase muscular flexibility and stamina. Prerequisite: PE 124. [PE] |

| **BOOT CAMP – INTERMEDIATE**          |                 | 2       | 44           |
| PE 229                                | Fall Winter Spring |         |              |
| Continuation of physical fitness for military purposes; emphasis on basic conditioning, discipline, and leadership. This course is open to all students. Prerequisite: PE 129. [PE] |

| **BALLETT – INTERMEDIATE**            |                 | 1       | 22           |
| PE 230                                | Fall Winter Spring |         |              |
| Stronger techniques with more advanced steps and combinations including toe. Prerequisite: PE 130. [PE] |

| **BALLROOM DANCE – INTERMEDIATE: SMOOTH** |                 | 1       | 22           |
| PE 231A                               | Summer Fall Winter Spring |         |              |
| Fundamentals, forms and pattern of ballroom dance. Develop confidence through practice with a variety of partners. Smooth style dances include waltz, tango, fox trot, quick step and Viennese waltz. Prerequisite: PE 131A. |

| **BALLROOM DANCE – INTERMEDIATE: LATIN** |                 | 1       | 22           |
| PE 231B                               | Summer Fall Winter Spring |         |              |
| Fundamentals, forms and pattern of ballroom dance. Develop confidence through practice with a variety of partners. Latin dance sections will include: mambo, cha cha, rhumba, samba, and salsa. Prerequisite: PE 131B. |

| **BALLROOM DANCE-INTERMEDIATE: SMOOTH-LATIN** |                 | 1       | 22           |
| PE 231C                               | Summer Fall Winter Spring |         |              |
| Fundamentals, forms and pattern of ballroom dance. Develop confidence through practice with a variety of partners. Smooth style dances include waltz, tango, fox trot, quick step and Viennese waltz. Latin dances include: mambo, cha cha, rhumba, samba, salsa. Prerequisite: PE 131C. |

| **CONTEMPORARY DANCE – INTERMEDIATE** |                 | 1       | 22           |
| PE 233                                | Fall Winter Spring |         |              |
| Intermediate techniques with opportunities for individual and group composition. Prerequisite: PE 133. [PE] |

| **MODERN JAZZ – INTERMEDIATE**         |                 | 1       | 22           |
| PE 234                                | Fall Winter Spring |         |              |
| Refinement of jazz technique and skill improvement. Prerequisite: PE 134. [PE] |

| **SWING DANCE – INTERMEDIATE**         |                 | 1       | 22           |
| PE 235                                | Fall Winter Spring |         |              |
| Continuation of PE 135. Includes partnering techniques such as leverage, posture, hovering, contrary body move- |
ment, rise and fall, and sway, and styling such as Cuban motion for Latin, spring action for East Coast Swing and heel leads for smooth. Introduction to opposite role as lead/follow. Prerequisite: PE 135. [PE]

**HIP-HOP DANCE – INTERMEDIATE**
PE 237  Fall Winter Spring  1 Credit
22 hours of lab
Intermediate study of dance techniques, floor combinations, balance, and longer dance routines of hip hop dance. Develop more confidence and skill through practice. Prerequisite: PE 137. [PE, SE, GE]

**BELLY DANCE – INTERMEDIATE**
PE 239  1 Credit
22 hours of lab
Continuation of the skills learned in PE 139, plus new variations and intermediate study of Middle Eastern Dance technique. Prerequisite: PE 139.

**BASKETBALL – INTERMEDIATE**
PE 240  Fall Winter Spring  1 Credit
2 hours of lab
Continuation of skills, practice, and competitive play. Prerequisite: PE 140. [PE]

**BOWLING – INTERMEDIATE**
PE 243  1 Credit
22 hours of lab
Advanced instruction in all phases of bowling including league play and competition. Prerequisite: PE 143. [PE]

**FENCING-FOIL,SABRE/EPEE**
PE 246  Spring  1 Credit
22 hours of lab
Movements of all three weapons of fencing. Emphasizes defense, offense, rules, officiating and competition. [PE]

**FENCING-FOIL INTERMEDIATE**
PE 247  Fall Winter Spring  1 Credit
22 hours of lab
Skill refinement and advanced technique for experienced foil fencers. Prerequisite: PE 147. [PE]

**GOLF – INTERMEDIATE**
PE 248  Fall Spring  1 Credit
22 hours of lab
More advanced instruction on golf swing, short game, and golf strategies. [PE]

**SOCCER – INTERMEDIATE**
PE 250  Summer Fall Spring  1 Credit
22 hours of lab
Focus on learning and applying more advanced individual skills utilizing small and large groups to demonstrate more advanced team tactics. Prerequisite: PE 150. [PE]

**SPORTS CONDITIONING INTERMEDIATE: SOCCER-WOMEN’S**
PE 252A  Summer Fall Winter Spring  1 – 3 Credits
66 hours of lab
Strength and cardiovascular conditioning in preparation for competing in women's intercollegiate soccer. Prerequisite: PE 152A.

**SPORTS CONDITIONING INTERMEDIATE: SOCCER-MEN’S**
PE 252B  Summer Fall Winter Spring  1 – 3 Credits
66 hours of lab
Strength and cardiovascular conditioning in preparation for competing in men's intercollegiate soccer. Prerequisite: PE 152B.
SPORTS CONDITIONING INTERMEDIATE: CROSS COUNTRY
PE 252C  Summer Fall Winter Spring  1 – 3 Credits
66 hours of lab
Strength and cardiovascular conditioning in preparation for competing in intercollegiate cross country. Prerequisite: PE 152C.

SPORTS CONDITIONING INTERMEDIATE: VOLLEYBALL
PE 252D  Summer Fall Winter Spring  1 – 3 Credits
66 hours of lab
Strength and cardiovascular conditioning in preparation for competing in women's intercollegiate volleyball. Prerequisite: PE 152D.

SPORTS CONDITIONING INTER: BASKETBALL-Women's
PE 252E  Summer Fall Winter Spring  1 – 3 Credits
66 hours of lab
Basketball-women's: Strength and cardiovascular conditioning in preparation for competing in intercollegiate basketball. Prerequisite: PE 152E.

SPORTS CONDITIONING INTER: BASKETBALL-Men's
PE 252F  Summer Fall Winter Spring  1 – 3 Credits
66 hours of lab
Strength and cardiovascular conditioning in preparation for competing in intercollegiate basketball. Prerequisite: PE 152F.

SPORTS CONDITIONING INTERMEDIATE: SOFTBALL
PE 252G  Summer Fall Winter Spring  1 – 3 Credits
66 hours of lab
Strength and cardiovascular conditioning in preparation for competing in intercollegiate softball. Prerequisite: PE 152G.

SPORTS CONDITIONING INTERMEDIATE: BASEBALL
PE 252H  Summer Fall Winter Spring  1 – 3 Credits
66 hours of lab
Strength and cardiovascular conditioning in preparation for competing in men's intercollegiate baseball. Prerequisite: PE 152H.

SPORTS CONDITIONING INTERMEDIATE: TRACK & FIELD
PE 252I  Summer Fall Winter Spring  1 – 3 Credits
66 hours of lab
Strength and cardiovascular conditioning in preparation for competing in intercollegiate track and field. Prerequisite: PE 152I.

TENNIS – INTERMEDIATE
PE 255  Summer Fall Spring  1 Credit
22 hours of lab
Refinement of tennis skills, advanced game strategies and strokes. Observe and assist 100 level students. Prerequisite: PE 155. [PE]

VOLLEYBALL – INTERMEDIATE
PE 258  Fall Winter Spring  1 Credit
22 hours of lab
Further development of individual skills, team offenses and defenses learned in the beginning level PE 158. Prerequisite: PE 158. [PE]
Volleyball – Power
PE 260  Spring  1 Credit
22 hours of lab
Higher level of volleyball for the advanced player utilizing advanced skills and drills. Emphasis will be placed on advanced offensive and defensive strategies. Prerequisite: PE 158 and PE 258 or competitive experience. [PE]

Ultimate Frisbee – Intermediate
PE 263  Fall Spring  1 Credit
22 hours of lab
Continuation of individual skill development, rules, game play, and strategies for the intermediate level ultimate Frisbee player. Prerequisite: PE 163. [PE]

Aqua Exercise – Intermediate
PE 271  Fall Winter Spring  1 Credit
22 hours of lab
Continuation of water exercise conditioning through stretching, flexibility, abdominal and back strength. Prerequisite: PE 171. [PE]

Swimming – Intermediate
PE 274  Fall Winter Spring  1 Credit
22 hours of lab
For the elementary swimmer who is comfortable in deep water and can swim 25 yards. Review Red Cross swimming strokes and safety skills while increasing strength and endurance. [PE]

Swimming-Stroke & Skill Improvement – Int
PE 275  Fall Winter Spring  1 Credit
22 hours of lab
For the intermediate swimmer. Continuation of individual swimming strokes and endurance. Prerequisite: PE 175. [PE]

Swim Conditioning – Intermediate
PE 279  Fall Winter Spring  1 Credit
22 hours of lab
Continued practice of swimming fitness through lap swimming. Students will participate in a workout designed to address their particular fitness and skill level. Prerequisite: PE 179. [PE, SE, GE]

Selected Topics
PE 280  1 – 5 Credits
55 hours of lecture
The course focuses on selected topics in Physical Education. Topics vary, and course theme and content change to reflect new topics. Because the course varies in content, it is repeatable for credit for different topics. Individual topics are listed in the quarterly class schedules. [SE]

Hiking – Intermediate
PE 282  Summer Fall Spring  1 Credit
22 hours of lab
Continuation of hiking skills with focus on advanced safety and survival skills. Explore local hiking options, practice low-impact hiking methods on longer, more challenging hikes, and plan a future hike. [PE, SE, GE]

Rowing – Intermediate
PE 283  Summer Fall Spring  1 Credit
22 hours of lab
Further development of rowing technique, tactics and fitness development. Prerequisite: A grade of “S” in PE 183.

Special Projects
PE 290  Summer Fall Winter Spring  1 – 5 Credits
Opportunity to plan, organize and complete special projects approved by the department. Prerequisite: Consent of Instructional Unit. [GE]
CARE AND PREVENTION OF ATHLETIC INJURIES
PE 291  Spring 3 Credits
22 hours of lecture  22 hours of lab
Injury prevention in sports through understanding of conditioning, bio-mechanics, taping, bandaging, nutrition, immediate post-injury care, and rehabilitation of sports injury. [SE]

MENTAL PERFORMANCE IN SPORTS
PE 293  Fall  3 Credits
33 hours of lecture
Theories and strategies of mental preparation for improvement in individual and team performances. Discussion topics include: personality, motivational model, time management/goal setting techniques. Coach profiles, team communication, steps to team building, stress management and performance anxiety and imagery will also be covered. A review of current literature and the case analysis method will provide opportunity for individual and group application of presented materials. [SE]

SPORT IN SOCIETY
PE 294  Spring 3 Credits
33 hours of lecture
Explores the relationship which exists between the multifaceted world of sport and society. Discussion topics include: racism, gender in equality, aggression, deviancy, media/commercialism, as well as youth sports. Discussion will also include the concept of play, competition and the rapid development of youth sport programs and their impact on the family unit. [SE]

Physical Science

GENERAL PHYSICAL SCIENCE
PHSC 101  Fall Winter Spring 5 Credits
44 hours of lecture  22 hours of lab
How the world around us behaves depends on the nature of matter and energy. Physical laws are presented in this course that describe the interaction of matter and energy. These laws are used to help explain experiences from daily life. For the non-science major, with little or no science background. [NS, SE]

GENERAL PHYSICAL SCIENCE
PHSC 102 Summer Fall Winter Spring 5 Credits
44 hours of lecture  22 hours of lab
How matter reacts and its application in a technical society. Simple chemical molecules are discussed as are the origin, nature, and changing features of the earth. For non-science majors with little or no science background. No prerequisites are required. [NS, SE]

INTRODUCTION TO DESIGN
PHSC 104  Fall Winter Spring 5 Credits
33 hours of lecture  44 hours of lab
Introduction to the engineering method of problem solving through guided Engineering design projects. Focus on developing group skills, understanding the effects of different learning styles, producing strategies for innovation, and fostering creativity in problem solving.

OUR CHEMICAL WORLD
PHSC 106  Fall Winter Spring 3 Credits
33 hours of lecture
Introduction to basic chemical concepts and discussion of selected applications in the world around us. [NS, SE]

SCIENCE OF SCI FI
PHSC 110  Fall Winter  5 Credits
33 hours of lecture  44 hours of lab
Introduction to the Scientific Method and the principles of Physics, and Chemistry though the investigation of Sci-
ence Fiction. Learn to distinguish between science and pseudoscience. Through the investigation of science fiction TV shows and films we will establish and investigate both accepted scientific principles and examine and invalidate others. Prerequisite: A grade of “C” or better in MATH 089 or 090, or placement in MATH 091 or higher.

**COOPERATIVE WORK EXPERIENCE**

PHSC 199  
99 hours of clinical  
1 – 3 Credits  
Supervised work experience in an approved job. Completion of specific learning objectives and employer evaluation. Completion of, or concurrent enrollment in, HDEV 195, 198, or 200 required. Prerequisite: Consent of Instructional Unit. [GE]

**SELECTED TOPICS**

PHSC 280  
55 hours of lecture  
1 – 5 Credits  
The course focuses on selected topics in Physical Sciences. Topics vary, and course theme and content change to reflect new topics. Because the course varies in content, it is repeatable for credit for different topics. Individual topics are listed in the quarterly class schedule.

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**Physics**

**APPLIED PHYSICS**

PHYS 090  
Winter  
44 hours of lecture  
22 hours of lab  
5 Credits  
Topics include force, motion, torque, energy, power, friction, electricity, magnetism, mechanical advantage, fluids, metric measurement, elasticity, heat, temperature, heat transfer, and heat engines. Open to all students seeking an Applied Science degree.

**PHYSICS CALCULATIONS**

PHYS 091  
Fall Winter  
11 hours of lecture  
1 Credit  

PHYS 092  
Winter Spring  
11 hours of lecture  
1 Credit  

PHYS 093  
Fall Spring  
11 hours of lecture  
1 Credit  

PHYS 094  
Fall Winter  
11 hours of lecture  
1 Credit  
Methods of problem-solving in physics. Concurrent enrollment in PHYS& 221 required.

PHYS 095  
Winter Spring  
11 hours of lecture  
1 Credit  

PHYS 096  
Fall Spring  
11 hours of lecture  
1 Credit  
PHYSICS NON-SCI MAJORS
PHYS& 100
Winter Spring
4 Credits
44 hours of lecture
Introduction to basic physics concepts for non-science majors, technical students, or students who desire a
PHYS& 121 or 221 preparatory course. Prerequisite: MATH 090 or equivalent. [NS, SE]

GENERAL PHYSICS I
PHYS& 121
Fall Winter Spring
5 Credits
44 hours of lecture 33 hours of lab
Physical principles of motion, equilibrium, dynamics, gravity, work energy, momentum, and fluids. Recommended
for students in medicine, dentistry, pharmacy, physical therapy, forestry and the life sciences. Part of a three-quarter
sequence offered each year beginning fall and winter quarters. Concurrent enrollment in PHYS 091 required. Pre-
requisite: A grade of “C” or better in MATH 103 or equivalent or concurrent enrollment in MATH 111. [NS, SE]

GENERAL PHYSICS II
PHYS& 122
Winter Spring
5 Credits
44 hours of lecture 33 hours of lab
Fundamental physical principles of sound, fluids, heat, thermodynamics, electricity, and magnetism. Second of a
three-quarter sequence. Concurrent enrollment in PHYS 092 and 122 Lab required. Prerequisite: PHYS& 121 (or
PHYS 101) or consent of Instructional Unit. [NS, SE]

GENERAL PHYSICS III
PHYS& 123
Fall Spring
5 Credits
44 hours of lecture 33 hours of lab
Topics in electricity, magnetism, atomic and nuclear physics, and optics. Third of a three-quarter sequence. Concur-
rent enrollment in PHYS 093 required. Prerequisite: PHYS 102 or consent of Instructional Unit. [NS, SE]

COOPERATIVE WORK EXPERIENCE
PHYS 199
Fall Winter Spring
1 – 3 Credits
99 hours of clinical
Supervised work experience in an approved job. Completion of specific learning objectives and employer evalu-
ation. Completion of, or concurrent enrollment in, HDEV 195, 198, or 200 required. Prerequisite: Consent of
Instructional Unit. [GE]

ENGINEERING PHYSICS
PHYS& 221
Fall Winter Spring
5 Credits
44 hours of lecture 33 hours of lab
Classical physics topics in mechanics. For students majoring in engineering, chemistry, physics, geology, or math-
ematics. Beginning course of a three-quarter sequence offered each year starting fall and winter quarters. Comple-
tion of, or concurrent enrollment in MATH& 152 (or MATH 211), and concurrent enrollment in PHYS 094
required. [NS, SE]

ENGINEERING PHYSICS
PHYS& 222
Winter Spring
5 Credits
44 hours of lecture 33 hours of lab
Physics topics in fluids, heat, thermodynamics, sound, electricity, and magnetism. Second quarter of a three-quarter
sequence beginning with PHYS 201. Concurrent enrollment in PHYS 095 required. Prerequisite: A grade of “C”
or better in PHYS& 221 (or PHYS 201). [NS, SE]

ENGINEERING PHYSICS
PHYS& 223
Fall Spring
5 Credits
44 hours of lecture 33 hours of lab
Topics in electricity, magnetism, atomic and nuclear physics, and optics. Third quarter of a three-quarter sequence
beginning with PHYS 221. Concurrent enrollment in PHYS 096 required. Prerequisite: A grade of “C” or better
in PHYS& 222 (or PHYS 202). [NS, SE]
SPECIAL PROJECTS
PHYS 290  Fall Winter Spring  1 – 5 Credits
Opportunity to plan, organize and complete special projects approved by the department. Prerequisite: Consent of Instructional Unit. [GE, NS]

Political Science

AMERICAN NATIONAL GOVERNMENT AND POLITICS
POLS 111  Fall Winter Spring  5 Credits
55 hours of lecture
The institutions, structures, and processes that affect the course of politics and public policy at the national level of American government. [SE, SS]

STATE AND LOCAL GOVERNMENT
POLS 131  Spring  5 Credits
55 hours of lecture
The institutions, structures, and political processes at the state and local levels of government in our federal system. [SE, SS]

SURVEY OF STATE AND LOCAL GOVERNMENT
POLS 141  Fall  3 Credits
33 hours of lecture
The structure and operation of state and local government, stressing the politics and other processes involved in the making of public policy at these levels of government. Designed for paralegal students. [SE, SS]

MODEL UNITED NATIONS
POLS 151  Fall Winter Spring  2 Credits
22 hours of lecture
The United Nations and its functions, current problems, and world reactions to them. Required for participation in the Model United Nations program. Entering students first register for 151, then subsequent sequence numbers for up to a total of 6 quarters. [SE, SS]

MODEL UNITED NATIONS
POLS 152  Fall Winter Spring  2 Credits
22 hours of lecture
Continuation of POLS 151. Required for participation in Model United Nations activities. [SE, SS]

MODEL UNITED NATIONS
POLS 153  Fall Winter Spring  2 Credits
22 hours of lecture
Continuation of POLS 152. Required for participation in Model United Nations activities. [SE, SS]

WORLD WITHOUT WAR
POLS 161  Spring  3 Credits
33 hours of lecture
Seminar exploring psychological, emotional, political, economic, and other causes of war. Emphasis on search for peace and kinds of peace research currently being conducted in the world. [SE]

SURVEY OF THE UNITED STATES CONSTITUTION
POLS 171  Spring  3 Credits
33 hours of lecture
An examination of the role of the Constitution and judicial interpretation in American politics and public policy. Primary emphasis is on the United States Supreme Court. Specific topics will include civil rights, civil liberties, economic regulation and property rights, and criminal justice. Prerequisite: POSC 111 or SOC 110 or HIST 131. [SE]
COOPERATIVE WORK EXPERIENCE
POLS 199   1 – 3 Credits
99 hours of clinical
Supervised work experience in an approved job. Completion of specific learning objectives and employer evaluation. Completion of, or concurrent enrollment in, HDEV 195, 198, or 200 required. Prerequisite: Consent of Instructional Unit.

INTERNATIONAL RELATIONS
POLS& 203 Summer Fall Winter Spring 5 Credits
55 hours of lecture
World politics, concepts and theories from the post-World War II period. Processes of power, foreign policy, development and trends in the current international scene analyzed. Conflict and conflict resolution and control. [SE, SS]

THE GEOPOLITICS OF THE MIDDLE EAST
POLS 220 Summer Spring 5 Credits
55 hours of lecture
Geo-political survey of the Middle East, including interrelationships between the physical, economic and political geography of this region, the impact of geography on politics and political issues within the nations of this region, the corresponding impact of politics and political issues on geography and on the lives of the people living in this region, as well as the resulting diversity of cultures, beliefs, perceptions, challenges and issues among the people of this region. This course will also examine the importance and impact of the Middle East on the rest of the world, as well as the impact and influence of the rest of the world on the Middle East. Credit not allowed for both POLS 220 and GEOG 220. [SE]

THE GEOPOLITICS OF AFRICA
POLS 221 Summer Spring 5 Credits
55 hours of lecture
Geo-political survey of Africa, including interrelationships between the physical, economic and political geography of this region, the impact of geography on politics and political issues within the nations of this region, the corresponding impact of politics and political issues on geography and on the lives of the people living in this region, as well as the resulting diversity of cultures, beliefs, perceptions, challenges and issues among the people of this region. This course will also examine the importance and impact of Africa on the rest of the world, as well as examine the impact and influence of the rest of the world on Africa. Credit not allowed for both POLS 221 and GEOG 221. [SE]

THE GEOPOLITICS OF CHINA, JAPAN & EAST ASIA
POLS 222 Summer Spring 5 Credits
55 hours of lecture
Geo-political survey of China, Japan and East Asia, including interrelationships between the physical, economic and political geography of this region, the impact of geography on politics and political issues within the nations of this region, the corresponding impact of politics and political issues on geography and on the lives of the people living in this region, as well as the resulting diversity of cultures, beliefs, perceptions, challenges and issues among the people of this region. This course will also examine the importance and impact of China, Japan and East Asia on the rest of the world, as well as examine the impact and influence of the rest of the world on China, Japan and East Asia. Credit not allowed for both POLS 222 and GEOG 222. [SE]

THE GEOPOLITICS OF SOUTH AND CENTRAL ASIA
POLS 223 Summer Spring 5 Credits
55 hours of lecture
Geo-political survey of South and Central Asia, including interrelationships between the physical, economic and political geography of this region, the impact of geography on politics and political issues within the nations of this region, the corresponding impact of politics and political issues on geography and on the lives of the people living in this region, as well as the resulting diversity of cultures, beliefs, perceptions, challenges and issues among the people of this region. This course will also examine the importance and impact of South and Central Asia on the rest of the world, as well as examine the impact and influence of the rest of the world on South and Central Asia. Credit not allowed for both POLS 223 and GEOG 223. [SE]
**ENVIRONMENTAL POLITICS**  
**POLS 231**  
Spring  
5 Credits  
55 hours of lecture  
Examines the relationship between industrial civilization and the natural environment by exploring underlying ecological philosophies and the economic and political processes by which environmental decisions are made. Emphasis on critical thinking and evaluating alternative points of view. Prerequisite: POLS 111, 131 or POLS& 203 (or POSC 111, 131 or 211), or consent of Instructional unit.

**MODEL UNITED NATIONS**  
**POLS 251**  
Fall Winter Spring  
2 Credits  
22 hours of lecture  
Continuation of POLS 153. Required for participation in Model United Nations activities. [SE, SS]

**MODEL UNITED NATIONS**  
**POLS 252**  
Fall Winter Spring  
2 Credits  
22 hours of lecture  
Continuation of POLS 251. Required for participation in Model United Nations activities. [SE, SS]

**MODEL UNITED NATIONS**  
**POLS 253**  
Fall Winter Spring  
2 Credits  
22 hours of lecture  
Continuation of POLS 252. Required for participation in Model United Nations activities. [SE, SS]

**SELECTED TOPICS**  
**POLS 280**  
Summer Fall Winter Spring  
1 – 5 Credits  
55 hours of lecture  
This course focuses on selected topics in political science. Topics vary and course theme and content change to reflect new topics. Because the course varies in content, it is repeatable for credit for different topics. [SE]

**SPECIAL PROJECTS**  
**POLS 290**  
Fall Winter Spring  
1 – 5 Credits  
Opportunity to plan, organize and complete special projects approved by the department. Prerequisite: Consent of Instructional Unit. [GE]

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**Power Utilities**

**BASIC ELECTRICAL CONCEPTS**  
**PWR 101**  
Fall  
7 Credits  
55 hours of lecture  
44 hours of lab  
Fundamentals of direct current and alternating current circuits, components and devices. Includes power laboratory assignments. Concurrent enrollment in PWR 150. Prerequisite: A grade of “C” or better in ENGL 098 and MATH 090, or equivalent placement score.

**CAREER EXPLORATION FOR THE POWER UTILITIES**  
**PWR 150**  
Fall  
1 Credit  
11 hours of lecture  
Introduction to various technical career tracks available within the electric power industry. Topics include job responsibilities involved with careers in the power generation, electric transmission and distribution areas.

**INTRODUCTION TO THE POWER UTILITIES INDUSTRY**  
**PWR 151**  
Winter  
7 Credits  
55 hours of lecture  
44 hours of lab  
Introduction to the electric power industry, its history and the development of our country’s electric system. Students will learn about generation, transmission, and distribution or electric energy and the development of local, regional and national energy grids. Concurrent enrollment in PWR 152 required. Prerequisite: A grade of “C” or better in PWR 101; and a grade of “C” or better in MATH 090 or placement in MATH 095.
TOOLS OF THE TRADE
PWR 152 Winter 2 Credits
44 hours of lab
Introduction to the tools commonly used in the electric power utilities trades and safety practices in their operation. Activities will include tours to local utility facilities. Concurrent enrollment in PWR 151. Prerequisite: A grade of “C” or higher in PWR 101 and MATH 098.

ELECTRICAL SAFETY
PWR 153 Winter 1 Credit
11 hours of lecture
Introduction to the general safety practices and information employees need while working in any segment of the electrical industry. Materials will include federal safety regulations and safe operating practices in the technical crafts of the industry. Concurrent enrollment in PWR 151. Prerequisite: A grade of “C” or better in PWR 101 or MATH 098.

ELECTRICAL SYSTEM COMPONENTS
PWR 154 Spring 7 Credits
55 hours of lecture 44 hours of lab
Examination of practical considerations and applications of the generation, transmission, and distribution systems of local, regional and national energy grids. Concurrent enrollment in PWR 155 and 156. Prerequisite: A grade of “C” or better in PWR 151, 152, and 153, ENGL 098 and MATH 090, or equivalent placement score.

PRINT READING FOR THE UTILITY INDUSTRY
PWR 155 Spring 2 Credits
22 hours of lecture
Introduction to electrical utility blueprint reading which defines the physical and electrical arrangements of equipment including power plants, substations, transmission lines, distribution lines and customer service facilities. These documents are developed by designers to guide construction of facilities and are used by operating personnel to maintain, repair and modify utility equipment. Concurrent enrollment in PWR 154, or consent of Instructional Unit. Prerequisite: A grade of “C” or better in PWR 151, or consent of Instructional Unit.

ELECTRICAL SYSTEM TROUBLE SHOOTING
PWR 156 Spring 2 Credits
11 hours of lecture 22 hours of lab
Electrical System Troubleshooting is a key skill required of many electrical craft personnel. The course includes analysis of circuit diagrams and assembly and troubleshooting of electric control systems. Concurrent enrollment in PWR 154. Prerequisite: A grade of “C” or better in PWR 151.

COOPERATIVE WORK EXPERIENCE
PWR 199 Summer Fall Winter Spring 1 – 6 Credits
198 hours of clinical
Supervised work experience in an approved job. Completion of specific learning objectives and employer evaluation. Written consent of the Power Utilities Program is required. Prerequisite: A grade of “C” or better or concurrent enrollment in PWR 154, PWR 155 and PWR 156.

ELECTRIC UTILITY SYSTEM PROTECTION
PWR 201 Spring 3 Credits
27 hours of lecture 11 hours of lab
Basic electric utility protective relay systems beginning with electromechanical relays and advancing to modern microprocessor relays. Introduction to Supervisory Control and Data Acquisition systems and revenue metering. Prerequisite: Completion of the Power Utilities Technology Certificate of Proficiency. Students with equivalent industry experience may enroll in the class with permission of the instructor.
SELECTED TOPICS
PWR 280
Summer Fall Winter Spring 1 – 6 Credits
66 hours of lecture
Course focuses on selected topics in Electronics. Topics vary, and course theme and content change to reflect new topics. Because the course varies in content, it is repeatable for credit for different topics. [GE]

Professional Technical Writing

APPLIED TECHNOLOGY WRITING DESCRIPTIONS
PTWR 094
11 hours of lecture
Basic skills for organizing and writing technical descriptions for Applied Technology courses; identifying and describing objects or events and exploring best practices and procedures for practical scenarios. Concurrent enrollment in an Applied Technology program. Prerequisite: ASSET Writing Test Score 36-38, placement in ENGL 097, or “C” or better in DVED 094.

APPLIED TECHNOLOGY WRITING ANALYSES
PTWR 095
11 hours of lecture
Basic skills for organizing and explaining causes and effects as taught in Applied Technology classes; writing concise reports under timed conditions that reflect the results of research, critical thinking and problem-solving. Concurrent enrollment in an Applied Technology program. Prerequisite: ASSET Writing Test Score 36-38, placement in ENGL 097, or “C” or better in DVED 094.

APPLIED TECHNOLOGY WRITING PROCEDURES
PTWR 096
11 hours of lecture
Basic skills for organizing and writing technical descriptions of processes or procedures for Applied Technology courses; writing concise reports under timed conditions that reflect the results of research, critical thinking and problem-solving. Concurrent enrollment in an Applied Technology program. Prerequisite: ASSET Writing Test Score 36-38, placement in ENGL 097, or “C” or better in DVED 094.

APPLIED TECHNOLOGY WRITING REPORTS
PTWR 097
11 hours of lecture
Basic skills for person-to-person research and communication in Applied Technology courses; writing concise reports under timed conditions that reflect the results of research, critical thinking and problem-solving. Concurrent enrollment in an Applied Technology program. Prerequisite: ASSET Writing Test Score 36-38, placement in ENGL 097, or “C” or better in DVED 094.

APPLIED TECHNOLOGY WRITING APPLICATIONS
PTWR 098
11 hours of lecture
Basic skills for seeking and identifying potential employers, analyzing published notices of employment opportunities, writing and revising letters of applications and preparing appropriate resumes of professional experience. Designed to provide tangible tools related to gaining employment. Concurrent enrollment in an Applied Technology program. Prerequisite: ASSET Writing Test Score 36-38, placement in ENGL 097, or “C” or better in DVED 094.

FUNDAMENTALS OF TECHNICAL WRITING
PTWR 099
33 hours of lecture
Fundamental skills in workplace written communication: focus on resumes, instructions, letters, memos, reports; methods of writing clear, concise documents for technical audiences and purposes. Prerequisite: ASSET Writing Test Score 39-44 or ENGL 097.
Psychology

GENERAL PSYCHOLOGY
PSYC& 100  Summer Fall Winter Spring  5 Credits
55 hours of lecture
The scientific study of behavior and mental processes including research methods, psychobiological processes, learning, memory, psychological disorders, psychotherapy, and other topics to be determined by the instructor. Prerequisite: COMPASS reading score of 85 or higher, or a cumulative GPA of 2.0 or higher. [SE, SS]

COORDERATIVE WORK EXPERIENCE
PSYC 199  Summer Fall Winter Spring  1 – 5 Credits
165 hours of clinical
Supervised work experience in an approved job. Completion of specific learning objectives and employer evaluation. Completion of, or concurrent enrollment in, HDEV 195, 198, or 200 required. Prerequisite: Consent of Instructional Unit. [GE]

LIFESPAN PSYCHOLOGY
PSYC& 200  Summer Fall Winter Spring  5 Credits
55 hours of lecture
Principles and theories of human growth and development; the interaction of psychological, biological, and social factors throughout the life span. Prior completion of PSYC 101 recommended. [SE, SS]

SOCIAL PSYCHOLOGY
PSYC 203  5 Credits
55 hours of lecture
Effects of social environment and interpersonal processes on both individual and collective behaviors. Socialization, impression formation and management, attitude formation and change, prejudice, aggression, altruism, leadership, power, conformity, environmental psychology, and other topics. Prerequisite: PSYC& 100 (or PSYC 101). [SE, SS]

PSYCHOLOGY: SELECTED TOPICS
PSYC 280  1 – 3 Credits
33 hours of lecture
Selected topics in psychology as listed in the quarterly class schedule. May be repeated for credit. Prerequisite: PSYC& 100 (or PSYC 101) or consent of instructional Unit. [SE]

SPECIAL PROJECTS
PSYC 290  Summer Fall Winter Spring  1 – 5 Credits
Opportunity to plan, organize and complete special projects approved by the department. Prerequisite: Consent of Instructional Unit. [GE]

Reading

BASIC READING
READ 081  Fall Winter  4 Credits
44 hours of lecture
For students planning on continuing in college. Development of reading skills including vocabulary and overall comprehension. Prerequisites: Recommending score on placement test or written consent of Instructional Unit.

READING FUNDAMENTALS
READ 082  Fall Winter  4 Credits
44 hours of lecture
Improvement of academic reading skills through instruction and practice in comprehension, vocabulary building, retention strategies, textbook reading and notetaking skills along with an introduction to the basic elements for the development and enhancement of the enjoyment of reading. Prerequisite: Recommending score on placement test or written consent of Instructional Unit.
ACADEMIC READING
READ 083  Fall Winter Spring  4 Credits
44 hours of lecture
Analysis and interpretation of textbooks, short stories and other sources. Development of information-gathering, vocabulary and rate techniques, and use of graphs and charts. Prerequisite: Recommendation on placement test or written consent of Instructional Unit.

CRITICAL READING
READ 087  Fall Winter Spring  4 Credits
44 hours of lecture
Development of advanced comprehension skills such as recognizing the author's tone, interpreting figuration language, distinguishing fact and opinion, recognizing persuasive language, and evaluating the soundness of an argument. Prerequisite: Recommending score on placement test or written consent of Instructional Unit.

COLLEGE READING
READ 100  Fall Winter Spring  4 Credits
44 hours of lecture
Develops skills for more comprehensive and efficient college level reading. Emphasis is on the improvement of comprehension and reading rate, the development of good reading habits, critical and analytical skills, study-reading techniques, and vocabulary enhancements. Prerequisite: College reading level on placement test or recommendation of instructor. [GE]

Sociology
INTRO TO SOCIOLOGY
SOC& 101 Summer Fall Winter Spring  5 Credits
55 hours of lecture
Introduces the sociological perspectives that explain human interaction, social institutions, and social change. Examines these social phenomena from a variety of sociological perspectives, including the functionalist, conflict, and symbolic-interactionist. Prerequisite: COMPASS reading score of 85 or higher, or a cumulative GPA of 2.00 or higher. [SE, SS]

MARRIAGE AND FAMILY EXPERIENCES IN THE U.S.
SOC 121  3 Credits
33 hours of lecture
Marriage and family experiences will be examined along with other social institutions that affect the marriage and family relationships in a changing U.S. culture. [SE, SS]

RACE AND ETHNICITY IN THE U.S.
SOC 131  3 Credits
33 hours of lecture
The sociological perspectives of race and ethnicity, including an examination of prejudice and discrimination from the interpersonal to the institutional level. Application of concepts and theories to both historical and current events in the U.S. [SE]

INTRODUCTION TO ISLAM
SOC 141  3 Credits
33 hours of lecture
Introduction to the world of Islam and Muslim populations. Topics include Islam as a way of life in a socio-cultural context and the ways this religion affects the individual, family, and social life in various Islamic societies. Focus on analyzing Islam both in theory and in practice.

COOPERATIVE WORK EXPERIENCE
SOC 199  Fall Winter Spring  1 – 5 Credits
165 hours of clinical
Supervised work experience in an approved job. Completion of specific learning objectives and employer evalua-
tion. Completion of, or concurrent enrollment HDEV 195, 198 or 200 required. Prerequisite: Consent of Instructional Unit. [GE]

**SOCIAL PROBLEMS**
SOC& 201  5 Credits
55 hours of lecture
Study of the magnitude and consequences of social problems in the US from a sociological perspective and examination of solutions to these problems from a cross-cultural perspective. Topics include: health, work, inequality, family, environment, substance abuse, crime and national security. Prerequisite: A grade of “C” or better in SOC 101. [SE, SS]

**DEATH AND DYING**
SOC 220  3 Credits
33 hours of lecture
A comprehensive survey of death, dying, bereavement, and other losses and their societal impacts upon people. Various cultural attitudes, traditions and changing values surrounding death and dying will be explored. [SE, SS]

**DOMESTIC VIOLENCE**
SOC 230  Winter Spring  5 Credits
55 hours of lecture
Introducing historical and current ideas, myths and empirical research regarding domestic partner abuse. Defining abuse and examining cultural, social, family and psychological factors associated with offenders and victims: why, how, who, and what responses have been tried. Prerequisite: SOC& 101 or PSYC& 100 (or SOC 101 or PSYC 101). [SE]

**CRIMINOLOGY**
SOC 240  Fall  5 Credits
55 hours of lecture
An introductory examination of crime, deviant behavior and social control. Crime and deviance as social processes. Historical and contemporary explanations of criminological theory. Prerequisite: SOC& 101 or PSYC& 100 (or SOC 101 or PSYC 101). [SE]

**SOCIOLOGY: SELECTED TOPICS**
SOC 280  Fall Winter Spring  1 – 5 Credits
55 hours of lecture
Varying topics in Sociology as listed in the quarterly class schedule. May be repeated for credit. [SE]

**SPECIAL PROJECTS**
SOC 290  Fall Winter Spring  1 – 5 Credits
Opportunity to plan, organize and complete special projects approved by the department. Prerequisite: Consent of Instructional Unit. [GE]

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**Spanish**

**SPANISH I**
SPAN& 121  Fall Winter Spring  5 Credits
55 hours of lecture
First of a three-quarter sequence in elementary Spanish. Emphasis on listening/speaking skills, with additional practice in reading/writing. Course intended for students with little or no previous experience in studying Spanish. [HA, SE]

**SPANISH II**
SPAN& 122  Summer Fall Winter Spring  5 Credits
55 hours of lecture
Continuation of the elementary Spanish sequence. Prerequisite: SPAN& 121 or two years high school Spanish, or S-CAPE placement test recommended. [HA,SE]

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SPANISH III
SPAN& 123  
55 hours of lecture
Conclusion of the three-quarter sequence in elementary Spanish. Prerequisite: SPAN& 122 or equivalent, or S-CAPE placement test recommended. [HA, SE]

CONVERSATIONAL SPANISH
SPAN 141
33 hours of lecture
Intensive practice in Spanish conversation. Discussion in small groups of contemporary topics common to American and Hispanic societies. Prerequisite: SPAN& 122 or equivalent. [HB, SE]

STUDY ABROAD ORIENTATION
SPAN 150
11 hours of lecture
Preparing students to travel with the Clark College study abroad program in Spanish-speaking country. Successful completion of this course required for students to participate in the travel abroad program. Application and acceptance into the study abroad program also required. Prerequisite: A grade of “C” or better or concurrent enrollment in SPAN& 122 or above; or consent of Instructional Unit.

COOPERATIVE WORK EXPERIENCE
SPAN 199  
330 hours of clinical
Summer cooperative work experience in a Spanish-speaking country. Requires use of Spanish language. Enroll in this course Spring quarter prior to participation abroad. Prerequisite: Consent of Instructional Unit.

SPANISH STUDIES
SPAN 204
22 hours of lecture
Student and instructor determine area of study from the following: literature, civilization and culture, or advanced Spanish composition and conversation. Prerequisite: Consent of Instructional Unit. [HA, SE]

SPANISH STUDIES
SPAN 205
22 hours of lecture
Student and instructor determine area of study from the following: literature, civilization and culture, or advanced Spanish composition and conversation. Prerequisite: Consent of Instructional Unit. [HA, SE]

SPANISH STUDIES
SPAN 206
22 hours of lecture
Student and instructor determine area of study from the following: literature, civilization and culture, or advanced Spanish composition and conversation. Prerequisite: Consent of Instructional Unit. [HA, SE]

SPANISH IV
SPAN& 221  
55 hours of lecture
Discussion in Spanish of topics from Hispanic civilization and culture. Intensive grammar review and composition practice. Prerequisite: SPAN& 123 or equivalent, or S-CAPE placement test recommended. [HA, SE]

SPANISH V
SPAN& 222  
55 hours of lecture
Discussion in Spanish of topics from Hispanic civilization and culture. Intensive grammar review and composition practice. Prerequisite: SPAN& 221 or equivalent. [HA, SE]
### SPANISH VI

**SPAN& 223**  
**Fall Winter Spring**  
5 credits  
55 hours of lecture  
Discussion in Spanish of topics from Hispanic civilization and culture. Intensive grammar review and composition practice. Prerequisite: SPAN& 222 or equivalent. [HA, SE]

### SELECTED TOPICS

**SPAN 280**  
1 – 5 credits  
55 hours of lecture  
Selected topics in Spanish. Topics vary and course theme and content change to reflect new topics. This course may be repeated for credit. [SE]

### SPECIAL PROJECTS

**SPAN 290**  
**Fall Winter Spring**  
1 – 5 credits  
Opportunity to plan, organize and complete special projects approved by the department. Prerequisite: Consent of Instructional Unit. [GE]

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### Speech (CMST)

#### INTRO TO MASS MEDIA

**CMST& 102**  
3 credits  
33 hours of lecture  
Survey of major communication media, print through satellite, their primary functions and social impact. Formerly CMST 120. [HA, SE]

#### INTRODUCTION TO BROADCASTING

**CMST 130**  
3 credits  
33 hours of lecture  
Examination of the broadcasting system; the social and economic forces that shape it and its end product, programming. Analysis of the rights and responsibilities of broadcasters. [SE]

#### COMPETITIVE SPEAKING AND DEBATE

**CMST 171**  
Fall  
3 credits  
33 hours of lecture  
For students interested in intercollegiate speech/debate competition. Emphasis on debate/persuasive speaking, attention given to other forms of speech events and tournament management. Prerequisite: A grade of “C” or better in CMST& 220 (or CMST 101), or consent of Instructional Unit. [HB, SE]

**CMST 172**  
Winter  
3 credits  
33 hours of lecture  
For students interested in intercollegiate speech/debate competition. Emphasis on informative speaking and interpretive reading. Attention given to debate and other forms of speech events. Prerequisite: A grade of “C” or better in CMST& 220 (or CMST 101), or consent of Instructional Unit. [HB, SE]

**CMST 173**  
Spring  
3 credits  
33 hours of lecture  
For students interested in intercollegiate speech/debate competition. Emphasis on audience analysis and other forms of forensics activities. Prerequisite: A grade of “C” or better in CMST& 220 (CMST 101) or consent of Instructional Unit. [HB, SE]

#### COOPERATIVE WORK EXPERIENCE

**CMST 199**  
1 – 5 credits  
1 credit  
Supervised work experience in an approved job. Completion of specific learning objectives and employer evalu-
INTERPERSONAL COMMUNICATION
CMST& 210 Summer Fall Winter Spring 5 Credits
55 hours of lecture
Person-to-person communication emphasizing theoretical principles and their application. How self-concept, perception, verbal and non-verbal attributes and attitudes influence communication within the family, between friends, and at work. [C, SE, HA]

INTERPERSONAL COMMUNICATION
CMST& 210 Summer Fall Winter Spring 5 Credits
55 hours of lecture
Person-to-person communication emphasizing theoretical principles and their application. How self-concept, perception, verbal and non-verbal attributes and attitudes influence communication within the family, between friends, and at work. [C, SE, HA]

ORAL COMMUNICATION IN BUSINESS
CMST 212 3 Credits
33 hours of lecture
Principles and practices of speech communication at work. Face-to-face and person-to-group interactions common to organizations and work settings. Credit not allowed for both MGMT 108 and CMST 212. [SE]

INTERCULTURAL COMMUNICATION
CMST 216 Summer Fall Winter Spring 5 Credits
55 hours of lecture
Examination of the impact of culture on communication. Analysis of patterns of communications which affect the ability to establish clear understanding and effective interpersonal relationships. Skills to improve communication across cultural boundaries. [HA, SE]

PUBLIC SPEAKING
CMST& 220 Summer Fall Winter Spring 5 Credits
55 hours of lecture
Introduction to speechmaking based primarily on a traditional public speaking approach. Aids students in developing theoretical understanding and practical application of oral communication skills. Techniques in controlling speech anxiety, how to structure and organize information to present to a variety of audiences; and physical and vocal delivery skills. [C,HA,SE]

SMALL GROUP COMMUNICATION
CMST& 230 Summer Fall Winter Spring 5 Credits
55 hours of lecture
Small group communication emphasizing theoretical principles and their application, enabling students to become more comfortable and competent participants in the group communication process. Emphasis will be on the study and application of the dynamics of group development, problem solving methodologies, and the use of power, including leadership and conflict. Formerly titled CMST 201. Credit not allowed for both CMST 201 and CMST& 230. [C,SE,SS,HA]

INTRODUCTION TO PERSUASION THEORY
CMST 240 5 Credits
55 hours of lecture
A survey of the evaluation of the concepts and techniques of persuasive public address, from the early Greek period through contemporary theorists. A non-public speaking course with the emphasis and focus on the understanding and analysis of persuasive oral discourse. [HA, SE]

WRITING FOR TELEVISION AND FILM
CMST 250 3 Credits
33 hours of lecture
Film and television scriptwriting with emphasis on commercial, dramatic and news formats. Prerequisite: A grade of “C” or better in ENGL& 101 (or ENGL 101). [SE]

COMPETITIVE SPEAKING AND DEBATE
CMST 271 Fall 3 Credits
33 hours of lecture
For students interested in intercollegiate speech/debate competition. Emphasis given to advanced and indepen-
dent studies in debate and persuasive speaking. Attention given to style. Students will manage the Clark College forensics tournament. Prerequisite: A grade of “C” or better in CMST 171, 172 or 173, or consent of Instructional Unit. [HB, SE]

COMPETITIVE SPEAKING AND DEBATE
CMST 272  Winter  3 Credits
33 hours of lecture
For students interested in intercollegiate speech/debate competition. Emphasis given to advanced and independent studies in informative speaking and interpretive reading. Attention given to style. Prerequisite: A grade of “C” better in CMST 171, 172 or 173, or consent of Instructional Unit. [HB, SE]

COMPETITIVE SPEAKING AND DEBATE
CMST 273  Spring  3 Credits
33 hours of lecture
For students interested in intercollegiate speech/debate competition. Attention given to advanced and independent audience analysis and other forensics activities. Prerequisite: A grade of “C” or better in CMST 171, 172 or 173, or consent of Instructional Unit. [HB, SE]

SELECTED TOPICS
CMST 280   5 Credits
55 hours of lecture
The course focuses on selected topics in Communication Studies. Topics vary, and course theme and content change to reflect new topics. Because the course varies in content, it is repeatable for credit for different topics. Individual topics are listed in the quarterly class schedule. [SE]

SPECIAL PROJECTS
CMST 290   1 – 5 Credits
Opportunity to plan, organize and complete special projects approved by the department. Prerequisite: Consent of Instructional Unit. [GE]

Surveying

INTRODUCTION TO GPS
SURV 100  Fall  2 Credits
11 hours of lecture  22 hours of lab
Introduction to global positioning tools. Fundamental concepts and use of modern handheld GPS. Includes field work and use of basic GPS software. Prerequisite: A grade of “C” or better in MATH 095 or qualifying score on placement test.

FUNDAMENTALS OF SURVEY
SURV 102  Fall Winter Spring  2 Credits
11 hours of lecture  22 hours of lab
Introduction to concepts of map reading, coordinate systems, the Public Land Survey System, basic legal descriptions of real property, plotting field data and creating a plat, and the minimum requirements for preparing plats in the State of Washington. No field work required.

APPLIED MATH FOR SURVEYING
SURV 104  Winter  5 Credits
55 hours of lecture
Basic coordinate geometry, curves and solutions, conversions, statistics and error analysis, traverse calculations, inversing, coordinate positions, and area calculations. Prerequisite: A grade of “C” or better in MATH 103.

FIELD SURVEY I
SURV 121  Fall  5 Credits
88 hours of lecture  44 hours of lab
Basic theory of surveying, measurement and calculation. Topics include measurement and determination of bound-
aries, areas, shapes, and location through traversing techniques, error theory, compass adjustments, public land system, and use of programmable calculators. Also covers principles of measurements of distances, elevation and angles. Concurrent enrollment in Lab. Prerequisite: A grade of “C” or better in MATH 095 or qualifying score on placement exam.

FIELD SURVEY II
SURV 122 Winter 5 Credits
33 hours of lecture 44 hours of lab
Theories of electronic distance measurement, instrument calibration and analysis; principles of route location and design; theories of circular, parabolic, and spiral curves; highway and railway geometric design; area and volumes of earthwork; and mass diagrams. Prerequisite: A grade of “C” or better in SURV 121.

SURVEY TECHNOLOGY SEMINAR
SURV 123 Winter 2 Credits
22 hours of lecture
Survey safety, ethics, and communication. Problem solving methods, procedures, and human relations related to on-the-job work experience in field surveying. Prerequisite: Completion of, or concurrent enrollment in, SURV 121.

INTRODUCTION TO GIS
SURV 125 Fall 3 Credits
33 hours of lecture
Introduction to Geographic Information Systems (GIS) methods and theory. Background and development of GIS technology. Introduction to relational and spatial databases and spatial analysis. Prerequisite: A grade of “C” or better in MATH 089 or 090, or placement in MATH 091 or higher.

ROUTE SURVEYING
SURV 163 Spring 5 Credits
33 hours of lecture 44 hours of lab
Introduction to elements of horizontal and vertical route alignment and layout. Use design software and a total station for the construction of a section of road. Include the construction of a topographic map, a centerline alignment, and a final plan and profile showing centerline alignment. Use of topographic data for earthwork computations for proposed route. Prerequisite: A grade of “C” or better in SURV 162.

CO-OP WORK EXPERIENCE
SURV 199 Summer Spring 1 – 5 Credits
165 hours of clinical
Work-based learning experience that enables students to apply specialized occupational theory, skills and concepts. Specific objectives are developed by the College and the employer. Prerequisite: A grade of “C” or better in SURV 121.

BOUNDARY SURVEYS
SURV 202 Fall 4 Credits
44 hours of lecture
Principles and laws relating to boundary surveys, including their creation, ownership, and the role of the surveyor; introduction to the Public Land Survey System, including history, proportioning, subdividing and evidence analysis. Topics include boundary history and boundary surveys, rights in land, junior/senior title rights, retracement of originals surveys, deed first/survey first, common and case law, ranking/prioritizing evidence, controlling monuments and corners, errors in legal descriptions and plats. Prerequisite: A grade of “C” or better in SURV 121.

LEGAL DESCRIPTIONS
SURV 203 Winter 3 Credits
33 hours of lecture
Research and practice pertaining to the legal aspects of writing land description documents used in real property; written research project required. Prerequisite: A grade of “C” or better in SURV 121.
**BOUNDARY LAW I**
SURV 223  Spring  3 Credits
33 hours of lecture
Introduction to statute law, common law, case law, and legal principles of land boundaries and the practice of land surveying in Washington. Topics include an introduction to principles of professional practice and ethical consideration. Prerequisite: A grade of “C” or better in SURV 121.

**SUBDIVISION PLANNING A & PLATTING**
SURV 225  Spring  3 Credits
33 hours of lecture
A study of selected state laws and regulations pertaining to the surveying profession that affect the surveying of division of lands; layout and design of subdivisions; environmental considerations and site analysis procedures. Prerequisite: A grade of “C” or better in SURV 102 and 122.

**ARC GIS I**
SURV 250  Spring  4 Credits
22 hours of lecture  44 hours of lab
Introduction to ArcGIS. GIS concepts, methodologies, and techniques. Prerequisite: A grade of “C” or better in SURV 125.

**SURVEY SOFTWARE APPLICATIONS**
SURV 264  Winter  3 Credits
22 hours of lecture  22 hours of lab
Use of surveying and related software to solve and plot assignments in traverse calculations, horizontal and vertical curve alignments, profiles, contours, and earthwork calculations. Some hand generated plots and calculations will be made to supplement the computer calculations. Prerequisite: A grade of “C” or better in SURV 121.

**SELECTED TOPICS**
SURV 280  Winter  1 – 6 Credits
44 hours of lecture
Course focuses on selected topics in Surveying. Topics vary, and course theme and content change to reflect new topics. Because the course varies in content, it is repeatable for credit for different topics. [SE]

**SPECIAL PROJECTS**
SURV 290  1 – 5 Credits
Opportunity to plan, organize, and complete special projects approved by the department. Prerequisite: Consent of Instructional Unit. [GE]

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**Tutoring**

**TUTORING**
TUTR 185  Summer Fall Winter Spring  1 – 3 Credits
66 hours of lab
Introduction to methods and techniques in tutoring. Tutoring training assignments in various disciplines. [GE]

**TUTORING-WRITING**
TUTR 186  Summer Fall Winter Spring  1 – 3 Credits
66 hours of lab
Introduction to strategies for effectively tutoring writers at all stages of the writing process and experience working one-on-one with writing across the disciplines. [GE]
Welding

WELDING FABRICATION
WELD 056 1 – 2 Credits
44 hours of lab
Opportunity for students to organize and complete projects. Also to complete welder certification. Concurrent enrollment in the welding program or journeyman level. Prerequisite: Consent of Instructional Unit.

RELATED WELDING FOR DIESEL
WELD 101 Fall 6 Credits
33 hours of lecture 66 hours of lab
Instruction and practice in related welding for students enrolled in the Diesel Technology program. Oxy-acetylene and electric arc welding processes will be covered. [GE]

RELATED WELDING FOR AUTOMOTIVE
WELD 105 Spring 3 Credits
22 hours of lecture 22 hours of lab
Instruction and practice in related welding for students enrolled in the Automotive Technology program. Oxy-acetylene and gas metal arc welding processes will be covered. [GE]

EXPLORING WELDING I
WELD 107 Winter 6 Credits
33 hours of lecture 66 hours of lab
Instruction and practice of arc welding processes, oxyfuel processes, and fabrication machinery for beginning to advanced welders. Specialized instruction and American Welding Society welder certification is available to advanced students. [GE]

EXPLORING WELDING II
WELD 108 Spring 4 Credits
22 hours of lecture 44 hours of lab
Instruction and practice of arc welding processes, oxyfuel processes, and fabrication machinery for beginning to advanced welders. Specialized instruction and American Welding Society welder certification is available to advanced students. [GE]

WELDING BLUEPRINT READING
WELD 110 Winter Spring 4 Credits
44 hours of lecture
Interpretation of welding blueprints, welding symbols, tolerances and structural shapes. [GE]

INTRODUCTION TO WELDING INDUSTRY
WELD 111 Fall Winter Spring 3 Credits
33 hours of lecture
Welding and shop safety, oxy-fuel theory (fusion, welding, braze welding, brazing, flame cutting), shielded metal arc welding, filler metal identification, joint design, welding codes and specifications. Concurrent enrollment in WELD 112 required. [GE]

OXY-ACETYLENE AND SHIELDED METAL ARC LAB
WELD 112 Fall Winter Spring 10 Credits
55 hours of lecture 110 hours of lab
Shop practice in concepts and topics covered in WELD 111 including three weeks of oxy-fuel applications and cutting, and seven weeks of shielded metal arc using E6010/E6011 electrode, and related processes. Concurrent enrollment in WELD 111 required. [GE]
SHIELDED METAL ARC WELDING THEORY I
WELD 113  Fall Winter Spring  3 Credits
33 hours of lecture
Welding and shop safety, S.M.A.W. power sources, and basic metallurgy. Weld evaluation and quality control, de-
structive and non-destructive testing and metal removal processes. Concurrent enrollment in WELD 114 required.
Prerequisite: WELD 111. [GE]

SHIELDED METAL ARC WELDING LAB I
WELD 114  Fall Winter Spring  10 Credits
55 hours of lecture  110 hours of lab
Application of concepts and topics covered in WELD 113. Ten weeks shielded metal arc welding using E7018
electrode in all positions, and related processes. Concurrent enrollment in WELD 113 required. Prerequisite:
WELD 112. [GE]

SHIELDED METAL ARC WELDING THEORY II
WELD 115  Fall Winter Spring  3 Credits
33 hours of lecture
Welding fabrication, pipe welding, repair and maintenance welding, and special welding processes using shielded
metal arc, and oxy-fuel processes. Concurrent enrollment in WELD 116 required. Prerequisite: WELD 113. [GE]

SHIELDED METAL ARC WELDING LAB II
WELD 116  Fall Winter Spring  10 Credits
55 hours of lecture  110 hours of lab
Application of concepts and topics covered in WELD 115 to do a variety of projects covering fabrication and
repair. Concurrent enrollment in WELD 115 required. Prerequisite: WELD 114. [GE]

ARC/OXY FUEL WELDING
WELD 117  Fall  6 Credits
33 hours of lecture  66 hours of lab
Welding theory and practical applications in the use of oxy-fuel equipment and shielded metal arc welding (stick).
Designed for beginners to intermediate welders. [GE]

WIRE FEED AND TIG WELDING I
WELD 118  Winter Spring  6 Credits
33 hours of lecture  66 hours of lab
Welding theory and practical applications in the use of the Wire Feed Welding process and use of the TIG Welding
process. Designed for beginners to intermediate welders. [GE]

WIRE FEED AND TIG WELDING II
WELD 119  Winter Spring  6 Credits
33 hours of lecture  66 hours of lab
Welding theory and practical applications in the use of the Wire Feed process and use of the TIG Welding process.
Designed for intermediate to advanced welders. [GE]

WELDED SCULPTURE LAB I
WELD 120  Fall Winter Spring  3 Credits
66 hours of lab
Development of a rudimentary expressive design language using welded metal as a medium. Exploration of begin-
ning welding and metal-working skills. Concurrent enrollment in ART 295 required. [GE]

WELDED SCULPTURE LAB II
WELD 121  Fall Winter Spring  3 Credits
66 hours of lab
Three dimensional design problems are explored while creating a welded metal sculpture. Gas metal arc welding
and plasma arc cutting are introduced. Use of hydraulic power equipment and metal cut-off equipment is covered.
Concurrent enrollment in ART 296 required. [GE]
WELDED SCULPTURE LAB III
WELD 122 Fall Winter Spring 3 Credits
66 hours of lab
A fabricated welded metal sculpture is created while learning advanced metal working skills. The gas tungsten arc welding process and resistance welding are covered. Concurrent enrollment in ART 297 required. [GE]

COOPERATIVE WORK EXPERIENCE
WELD 199 Fall Winter Spring 1 – 5 Credits
165 hours of clinical
Supervised work experience in an approved job. Completion of specific learning objectives and employer evaluation. Prerequisite: Consent of Instructional Unit.

GAS TUNGSTEN ARC WELDING
WELD 221 Fall 3 Credits
33 hours of lecture
Tungsten inert gas welding of ferrous and non-ferrous metals. Study of the various types of shielding gases and filler metals. [GE]

GAS TUNGSTEN ARC WELDING LAB
WELD 222 Fall 10 Credits
55 hours of lecture 110 hours of lab
Application of concepts and topics covered in WELD 221. Concurrent enrollment in WELD 221 required. [GE]

SEMI-AUTOMATIC WELDING
WELD 223 Winter Spring 3 Credits
33 hours of lecture
Semi-automatic production welding of ferrous and non-ferrous metals. Short arc, flux core and spray arc welding processes. Effect of various shielding gases and filler metals. [GE]

SEMI-AUTOMATIC WELDING LAB
WELD 224 Winter Spring 10 Credits
55 hours of lecture 110 hours of lab
Application of concepts and topics covered in WELD 223. Concurrent enrollment in WELD 223 required. [GE]

SPECIAL WELDING PROCESSES
WELD 225 Spring 3 Credits
33 hours of lecture
Submerged arc, resistance, welder certification, weld procedures, GMAW pulse arc, non-ferrous metals. Concurrent enrollment in WELD 226 required. Prerequisite: WELD 223 or consent of Instructional Unit. [GE]

PRODUCTION WELDING PROCESSES
WELD 226 Spring 10 Credits
55 hours of lecture 110 hours of lab
Application of concepts and topics covered in WELD 225. Concurrent enrollment in WELD 225 required. Prerequisite: WELD 224 or consent of Instructional Unit. [GE]

ELEMENTARY METALLURGY
WELD 235 Fall Winter Spring 2 Credits
22 hours of lecture
Physical metallurgy oriented towards the metal working trades, ferrous and non-ferrous metals, manufacturing methods, material classification and identification, thermal processing, and joining. Concurrent enrollment in WELD 236 required. [GE]

ELEMENTARY METALLURGY LAB
WELD 236 Fall Winter Spring 2 Credits
44 hours of lab
Application of physical metallurgy oriented towards the metal working trades, ferrous and non-ferrous metals,
manufacturing methods, material classification and identification, thermal processing, and joining. Concurrent enrollment in WELD 235 required. [GE]

**SELECTED TOPICS**
WELD 280 Summer Fall Winter Spring 1 – 6 Credits
66 hours of lecture
Selected topics in Welding as listed in the quarterly class schedule. Repeatable for credit. [GE]

**SPECIAL PROJECTS**
WELD 290 Fall Winter Spring 1 – 5 Credits
Projects assigned according to needs and abilities of the student. Hours arranged with instructor. Maximum of 15 credits allowed toward a certificate or degree. Prerequisite: Consent of Instructional Unit required. [GE]

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**Women’s Studies**

**INTRODUCTION TO WOMEN’S STUDIES**
WS 101 Summer Fall Winter Spring 5 Credits
55 hours of lecture
Essential issues of feminism and theories of oppression and privilege particularly with respect to gender, race, class, sexuality, age, and ability. Topics may include women and gender socialization, family, work, politics, health, sexuality, body image, violence, spirituality, art, and culture. Fulfills either humanities or social science distribution requirements for the associate degree. Prerequisite: A grade of “C” or better in ENGL 098 taken at 5 credits or recommended score on the writing skills placement test for ENGL& 101. [HA, SE, SS]

**WOMEN AROUND THE WORLD**
WS 201 Summer Fall Winter Spring 3 Credits
33 hours of lecture
Study of current issues affecting women. International feminism, reproductive rights, women in leadership, and affirmative action from a cross-cultural perspective. Fulfills either humanities or social science distribution requirements for the associate degree. [HA, SE, SS]

**WOMEN’S CULTURE**
WS 210 Summer Fall Winter Spring 3 Credits
33 hours of lecture
A study of women’s art and women in the arts, with emphasis on the roles and images of women in fine and folk art, music, film and mythology. Examines the historical events and sociological factors influencing those roles and images. Fulfills either humanities or social science distribution requirements for the A.A. transfer degree. [HA, SE, SS]

**RACE, CLASS, GENDER AND SEXUALITY**
WS 220 Spring 5 Credits
55 hours of lecture
Studies the social construction of difference, inequality and privilege in race, class, gender, sex, and sexual orientation in the U.S. Examines how these categories are created, maintained, and experienced; how meaning is assigned to those categories; and how social constructions can be challenged. Prerequisite: WS 101.

**SELECTED TOPICS**
WS 280 1 – 3 Credits
33 hours of lecture
This course focuses on selected topics in women’s studies. Topics vary and course theme and content change to reflect new topics. This course may be repeated for credit. [SE]

**SPECIAL PROJECTS**
WS 290 Summer Fall Winter Spring 1 – 5 Credits
Opportunity to plan, organize and complete special projects approved by the department. Prerequisite: Consent of Instructional Unit. [GE]