About Course Descriptions

Course Numbering System

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<td>Instruction on a special topic within a broader discipline area (such as child development), lecture and/or laboratory hours, units of credit, repeatability, and transferability may vary by offering. Check with the school to which student is transferring</td>
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<td>Classes in which a particular topic in a discipline (such as history) is treated with in-depth study. The topic, the number of units and hours, and prerequisites (if any), will be posted in class search/conncolumbia. Experimental courses may be repeated for credit with different topics only. For UC campuses, these courses may transfer for elective or other credit and will not fulfill requirements unless pre-authorized. It is the student’s responsibility to have the course pre-authorized by the appropriate UC department chair and admissions office</td>
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<td>INDEPENDENT STUDY COURSES (Not listed, but available)</td>
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<td>Independent research and study of specialized areas/topics not currently offered as Columbia College courses. Limitations apply. See page 4 and a counselor for more information. For UC campuses, these courses may transfer as electives or other credit as pre-authorized by the transfer school. It is the student’s responsibility to have the course pre-authorized by the appropriate UC department chair and admissions office</td>
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Course Descriptions

Course descriptions provide a summary of the content of the course, enrollment restrictions, as well as grading policies, field trips, course-specific fees, allocation of class hours over the term for lecture, or other required learning activities.

Articulation of Courses with Other Colleges

Columbia College articulates many of its courses with other public and private two- and four-year colleges and universities, which can allow units earned at Columbia College to apply satisfy academic requirements at other schools. Please ask your counselor for information related to agreements establishing what courses will transfer and those that meet lower-division preparation for a baccalaureate major at a four-year university.

Transferability of Courses

Courses that transfer to the California State University System (CSU) and/or the University of California System (UC) are designated at the end of the course description:

- **CSU**—May transfer to CSU System
- **UC**—Transfer to UC System
- **UC/CSU**—Transfer to both systems
- **UC or CSU**—(Transfer credit limited. See a counselor.)

Some courses designated as baccalaureate level may not meet certain requirements at the transferring institution; however, they may be used for elective credit at the discretion of the transfer school. Check with the Articulation Officer in the Counseling Office if you have questions about the transfer status of a course.

Prerequisites/Co-Requisites/Recommended for Success

In accordance with the Title 5 of the California Educational Code, Columbia College can restrict who can enroll in college courses through prerequisites, corequisites, advisories (“Recommended for Success”), and limitations on enrollment. Refer to p. 4 for more information.

Non-Credit Courses

To meet the needs of various populations served by the College, non-credit courses are often offered (see p. 141 of the catalog.) Continuing Education or Community Services also offers non-credit courses in sponsorship. Non-credit courses do not satisfy graduation, transfer, or vocational requirements.

Credit Value

The number after the course indicates the unit credit value of the course. Courses listed in this catalog are described in “semester” units. Some other colleges function on what is known as the “quarter” system. One unit of coursework completed in the quarter system equals .667 semester system units.

Course Repetition

Courses may be repeated for credit only if:

1. the student has received a substandard grade (D, F, NC or NP) or
2. the course is approved as repeatable by the College Curriculum Committee and is so identified in this catalog. See “Academic Schedule” on page 4 for more information.

Field Trips

Field trips may be required in a number of courses where such a statement is not currently a part of the course description.
ANTHR (ANTHROPOLOGY)

ANTHR 1—Biological Anthropology, 3 units

Hours per term: 54 lecture

This course introduces the concepts, methods of inquiry, and scientific explanations for biological evolution and their application to the human species. Issues and topics will include, but are not limited to, genetics, evolutionary theory, human variation and biocultural adaptations, comparative primate anatomy and behavior, and the fossil evidence for human evolution. The scientific method serves as foundation of the course. Not repeatable. MJC equivalent: (ANTHR 101) Transfer: (CSU/UC) (CSU-GE: B2, D1) (IGETC: 4A, 5B) C-ID: (ANTHR 110)

ANTHR 2—Cultural Anthropology, 3 units

Hours per term: 54 lecture

The scientific study of human societies including preliterate societies along with the concept of culture basic to Anthropology. Emphasis is on methods of fieldwork, cultural ecology, language, social and political structure, applied anthropology, the psychological perspective, religion, cultural change, and the cultural future of humanity. Not repeatable. MJC equivalent: (ANTHR 102) Transfer: (CSU/UC) (CSU-GE: D1) (IGETC: 4A) C-ID: (ANTHR 120)

ANTHR 3—Current Issues in Anthropology, 3 units

Recommended for Success: ENGL 151

Hours per term: 54 lecture

Intra-specific aggression, territoriality, population control, primate social organization, intra- and inter-species communication, and the present and future trends in social organization, war, religion, and cultural change. Not repeatable. Transfer: (CSU) (CSU-GE: D1)

ANTHR 7/SOCIO 7—Gender, Culture and Society, 3 units

Hours per term: 54 lecture

The course takes an inclusive bio-cultural evolutionary perspective on gender, focusing on non-human primate societies as well as primitive (small scale) and modern (large scale) human societies. Factors such as culture, ecological conditions and historical circumstances, forces of stratification (e.g. age, social class), socialization (e.g. rites of passage, conformity and deviance) as well as the science (e.g. concepts, theories and methods) of studying these topics will be addressed. Though course readings will represent many disciplines, the foundation readings reflect the perspectives of bio-cultural anthropology as well as sociology. This emphasis addresses the fundamental assumption that while sex differences are biological, gender encompasses the traits that culture assigns and inculcates (with varying degrees of success) in males and females. Credit may be earned for only one of the following: ANTHR 7 or SOCIO 7. Not repeatable. Transfer: (CSU/UC) (CSU-GE: D1, D3) (IGETC: 4A, 4C)

ANTHR 8/SOCIO 8—Research Methods in the Social and Behavioral Sciences, 3 units

Prerequisite: Completion of SOCIO 1 with at least a C or P

Hours per term: 54 lecture

Surveys research traditions and processes in the social and behavioral sciences. The course addresses: epistemological traditions, research conceptualization, research design, research process, measures, sampling, data collection and analysis, reporting traditions, ethics, as well as implications for theory and public policy. While the primary focus is on Anthropology, Psychology, and Sociology, there will be a secondary focus on the disciplines of Biology, Demography, History, Political Science, and Public Health. Credit may be earned once for ANTHR 8 or SOCIO 8. Not repeatable. Transfer: (CSU/UC) (CSU-GE: D0) (IGETC: 4J) C-ID: (SOCI 120)

ANTHR 10—Archaeology and Cultural Prehistory, 3 units

Hours per term: 54 lecture

This course is an introduction to anthropological archaeology including concepts, theories, and methods employed by archaeologists in reconstructing past life ways of humans. Topics include history and interdisciplinary nature of archaeological research; data acquisition, analysis and interpretation with discussion of applicable data and models; cultural resource management; professional ethics; and selected cultural sequences. Not repeatable. MJC equivalent: (ANTHR 130) Transfer: (CSU/UC) (CSU-GE: D1) (IGETC: 4A) C-ID: (ANTHR 120)

ANTHR 15—Native People of North America, 3 units

Hours per term: 54 lecture

A survey of the origins, cultures, and customs of peoples indigenous to the North American continent with primary emphasis upon folkways dominant prior to interference by foreign cultures, and a secondary emphasis upon the status of Native Americans in the USA today. This course is designed to meet an ethnic studies requirement. Not repeatable. MJC equivalent: (ANTHR 150) Transfer: (CSU/UC) (CSU-GE: D1, D3) (IGETC: 4A, 4C)
ART (ART)

ART 1—Basic Freehand Drawing, 3 units
Hours per term: 36 lecture and 54 laboratory
Introduction to principles, elements, and practices of drawing, employing a wide range of subject matter and drawing media. Focus on perceptually based drawing, observational skills, technical abilities, and creative responses to materials and subject matter. Not repeatable. MJC equivalent: (ART 120) Transfer: (CSU/UC) C-ID: (ARTS 110)

ART 2—Basic Color and Design, 3 units
Hours per term: 36 lecture and 54 laboratory
Introduction to elements and principles of visual design and color theory as applied in a studio setting. Class will encompass organizing principles of two-dimensional art, including balance, proportion, repetition, contrast, harmony, unity, point of emphasis and visual movement. Focus will be on problem solving to develop two-dimensional awareness and development of skills in a variety of media. The translation of ideas and visual experience are an important consideration in creating finished class work/images. Course will include examination of historical and contemporary trends, materials and approaches in two-dimensional art. Development of a visual vocabulary for creative expression through lecture presentations, studio projects, problem solving, and written assignments. Not repeatable. MJC equivalent: (ART 124) Transfer: (CSU/UC) C-ID: (ARTS 100)

ART 3—3-D Art and Design, 3 units
Hours per term: 36 lecture, 54 laboratory
Introduction to the concepts, applications, and historical references related to three-dimensional design and spatial composition, including the study of the elements and organizing principles of design as they apply to three-dimensional space and form. Development of a visual vocabulary for creative expression through lecture, presentations and use of appropriate materials for three-dimensional studio projects. Not repeatable. MJC equivalent: (ART 125) Transfer: (CSU/UC) C-ID: (ARTS 101)

ART 9A—Figure Drawing: Beginning, 3 units
Hours per term: 36 lecture and 54 laboratory
Introduction to observational drawing of the human figure by using various techniques and media. Students will learn both descriptive and expressive approaches to drawing the human figure. Topics include an introduction to human anatomy and the historical and contemporary roles of figure drawing in the visual arts. Not repeatable. MJC equivalent: (ART 123) Transfer: (CSU/UC) C-ID: (ARTS 200)

ART 9B—Figure Drawing: Intermediate, 3 units
Prerequisite: Completion of Art 9A with at least a C or P
Hours per term: 36 lecture and 54 laboratory
An extension of ART 9A emphasizing various media and compositional problems. Not repeatable. Transfer: (CSU/UC)
ART 11—History of Art: Ancient and Medieval, 3 units
   Recommended for Success: ENGL 151
   Hours per term: 36 lecture and 54 laboratory
Survey of art history from the Paleolithic Age through the Late Gothic Era. Not repeatable. MJC equivalent: (ART 164) Transfer: (CSU/UC) (CSU-GE: C1) (IGETC: 3A) C-ID: (ARTH 110)

ART 12—History of Art: Renaissance, Baroque, and Modern, 3 units
   Recommended for Success: ENGL 1A
   Hours per term: 36 lecture and 54 laboratory
Survey of art history from the 14th through the 20th century. Not repeatable. MJC equivalent: (ART 165) Transfer: (CSU/UC) (CSU-GE: C1) (IGETC: 3A) C-ID: (ARTH 120)

ART 13—Art of Africa, Asia, Australia, and the Americas, 3 units
   Recommended for Success: ENGL 151
   Hours per term: 36 lecture and 54 laboratory
Survey of the art of Africa, Asia, Australia, the Americas, and Islamic art from prehistoric to modern periods. This course is designed to meet an ethnic studies requirement. Not repeatable. MJC equivalent: (ART 167 or ART 148) Transfer: (CSU/UC) (CSU-GE: C1) (IGETC: 3A)

ART 21A—Painting: Beginning, 3 units
   Hours per term: 36 lecture and 54 laboratory
Introduction to principles, elements, and practices of painting. Focus on exploration of oil and/or acrylic painting materials, perceptual skills and color theory, paint mixing and technique, as well as creative responses to materials and subject matter. Not repeatable. MJC equivalent: (ART 149) Transfer: (CSU/UC) (CSU-GE: C1) (IGETC: 3A)

ART 21B—Painting: Intermediate, 3 units
   Prerequisite: Completion of ART 21A with at least a C or P
   Hours per term: 36 lecture and 54 laboratory
Continuation of ART 21A with emphasis on personal expression. Not repeatable. MJC equivalent: (ART 149) Transfer: (CSU/UC)

ART 23A—Watercolor: Beginning, 3 units
   Hours per term: 36 lecture and 54 laboratory
Introduction to basic materials, techniques and problems of transparent watercolors. Not repeatable. Transfer: (CSU/UC)

ART 23B—Watercolor: Intermediate, 3 units
   Prerequisite: Completion of ART 23A with at least a C or P
   Hours per term: 36 lecture and 54 laboratory
Continuation of ART 23A introducing opaque watercolors and various experimental techniques. Not repeatable. Transfer: (CSU/UC)

ART 25—Mixed Media Painting, 3 units
   Hours per term: 36 lecture and 54 laboratory
A beginning studio class which introduces students to the elements and principles of mixed media painting. The course will involve the use of oil or acrylic paints and will emphasize technique, special illusion and basic composition skills using different mixed media. Not repeatable. Transfer: (CSU/UC)

ART 31—Ceramics: Introductory, 3 units
   Hours per term: 36 lecture and 54 laboratory
Introduction to basic ceramic methods including hand-building and wheel-thrown forms, and introduction to glazes and decoration. Not repeatable. MJC equivalent: (ART 108) Transfer: (CSU/UC)

ART 32—Ceramics: Intermediate, 3 units
   Hours per term: 36 lecture and 54 laboratory
Course emphasis is on glazes, formulation and application with increased opportunity for personal expression and experimentation. Not repeatable. Transfer: (CSU/UC)

ART 33—Ceramics: Advanced, 3 units
   Hours per term: 36 lecture and 54 laboratory
Course emphasis is on personal growth and independence. Not repeatable. Transfer: (CSU/UC)

ART 35—Raku and Alternative Firing Methods, 2-4 units
   Hours per term: 27-54 lecture and 27-54 laboratory
Introduction to the raku process, pit firing, fuming, barrel smoked, historic origins and contemporary uses. Practical experience in clay bodies, glazes, raku and other firing. Not repeatable. Transfer: (CSU/UC)

ART 36—Wheel-Thrown Ceramics, 2 units
   Hours per term: 27 lecture and 27 laboratory
An introduction to throwing on the potter's wheel, and its historical and contemporary significance. This class will introduce the process of wedging clay, centering a pot, pulling a wall, shaping process, and trimming techniques to complete well-balanced forms on the potter's wheel. In addition, students will examine, discuss, critique and write about the techniques, terminology and processes of historical and contemporary thrown clay vessels. Students will use vocabulary in verbal and written class critiques. Not repeatable. Transfer: (CSU/UC)

ART 40—Photography: Beginning, 4 units
   Hours per term: 54 lecture and 54 laboratory
Introduction to the history, art, craft, and scope of black-and-white photography. Emphasis will be on the choice, types, and use of various cameras and lenses (special emphasis on the 35mm camera), camera work and handling, composition, and black-and-white darkroom procedures. Adjustable 35mm film camera (or equivalent) will be utilized. Not repeatable. MJC equivalent: (ART 108) Transfer: (CSU/UC)

ART 41—Photography: Intermediate, 3 units
   Recommended for Success: ART 40
   Hours per term: 36 lecture and 54 laboratory
Emphasis will be on refining camera and darkroom work, composition, visual concepts; exposure and development of the negative, and printing skills in black and white. Adjustable 35mm film camera (or equivalent) will be utilized. Field trips may be required. Not repeatable. Transfer: (CSU/UC)
ART 44—Advanced Photography Laboratory, 1 unit  
**Recommended for Success:** ART 40  
**Hours per term:** 54 laboratory  
Supervised black and white darkroom work in the production of negatives and prints to improve photographic skills. Not repeatable.  
**Transfer:** (CSU)

ART 45—Field Photography, 3 units  
**Hours per term:** 36 lecture and 54 laboratory  
An introduction to producing professional quality nature photographs. Field instruction in locations of natural beauty followed by lectures, demonstrations, and critiques. The student will utilize an adjustable film or digital camera. Field trips required. Not repeatable.  
**Transfer:** (CSU)

ART 46—Field Photography: Composition and Design, 2-4 units  
**Hours per term:** 27-54 lecture and 27-54 laboratory  
An introduction to elements of design and composition as they relate to field photography. Field instruction in locations of natural beauty and historical significance followed by lectures, demonstrations, and critiques. Requires adjustable 35mm camera or larger format, or adjustable SLR type digital. Field trips required. Not repeatable.  
**Transfer:** (CSU)

ART 49—Intermediate Field Photography, 3 units  
**Recommended for Success:** ART 45 or equivalent  
**Hours per term:** 36 lecture and 54 laboratory  
Various field- and studio-oriented topics related to nature photography which may include but are not limited to learning to tell a story photographically, and editing and creating mockup book layouts. Students will also learn to identify and work on their own personal vision as it relates to photography. Students will do a series of assignments, learn picture editing, create and critique picture layouts and learn how to plan detailed photographic coverage. Not repeatable.  
**Transfer:** (CSU)

ART 51/CCTDM 51/OFTEC 42—Publication Design I, 3 units  
**Recommended for Success:** OFTEC 141  
**Hours per term:** 36 lecture and 54 laboratory  
**Materials fee required**  
An introduction to general publication design theory with emphasis on typography, page layout, graphics, and design. Students will create media for print and digital publishing. Exercises and projects will include the creation of a multi-page booklet, poster, newsletter, brochures and an interactive document formatted for digital publishing. Credit may be earned once for ART 51 or CCTDM 51 or OFTEC 42. Not repeatable.  
**Transfer:** (CSU)

ART 52/CCTDM 52/OFTEC 43—Publication Design II, 3 units  
**Prerequisite:** Completion of CCTDM 51/ART 51/OFTEC 42 with at least a C or P  
**Hours per term:** 36 lecture and 54 laboratory  
**Materials fee required**  
A continuation of study in problems of Publication Design. Areas of focused study will be in advanced problems of page layout, typography, print, and interactive documents for digital publication. Credit may be earned once for ART 52 or CCTDM 52 or OFTEC 43. Not repeatable.  
**Transfer:** (CSU)

ART 53/CCTDM 53—Computer Graphics I, 3 units  
**Hours per term:** 36 lecture and 54 laboratory  
**Materials fee required**  
This course introduces the student to the fundamentals of computer graphics. Topics include the elements and principles of design, concept development, characteristics of vector and raster digital files, color modes, digital drawing and painting, and formatting for print and the Web. Students will acquire basic skills in current digital illustration software and create original design pieces. Credit may be earned for only one of the following: CCTDM 53 or ART 53. Not repeatable.  
**Transfer:** (CSU/UC)

ART 54/CCTDM 54—Computer Graphics II, 3 units  
**Prerequisite(s):** Completion of CCTDM 53 or ART 54 with at least a C or P  
**Hours per term:** 36 lecture and 54 laboratory  
**Materials fee required**  
Computer Graphics topics covered will include concept development, analog drawing, scanning, advanced techniques of painting and drawing software, critiquing, and publishing. Credit may be earned for only one of the following: CCTDM 54 or ART 54. Not repeatable.  
**Transfer:** (CSU/UC)

ART 56/CCTDM 56—Typography, 3 units  
**Prerequisite(s):** Completion of ART 53/CCTDM 53 with at least a C or P  
**Hours per term:** 54 lecture  
**Materials fee required**  
Designed to focus study of the elements of typography as related to print and to the World Wide Web. This is an interactive course where students practice and apply skills of typography for visual communication. Emphasis will focus on identifying type as a dynamic visual element; typographical forms and nuance; and the development of successful typographic solutions to convey concepts. Through collaborative discussions of assigned exercises and projects, students will acquire skills of analysis and critique. The course outcome will be the creation of a student portfolio of completed projects. Credit may be earned for only one of the following: CCTDM 56 or ART 56. Not repeatable.  
**Transfer:** (CSU/UC)
ART 71—Ceramic Sculpture: Introductory, 3 units
Hours per term: 36 lecture and 54 laboratory
Basic principles, techniques and problems in sculpture. Not repeatable. Transfer: (CSU/UC)

ART 72—Ceramic Sculpture: Advanced, 3 units
Hours per term: 36 lecture, 54 laboratory/activity
Course emphasis is on advanced principles, techniques, and problems in hand-built sculpture. Not repeatable. Transfer: (CSU/UC)

ART 103/WT 103—Practical Laboratory, Metal Sculpture, 1 unit
Prerequisite: Completion of ART 166/WT 166 with at least a C or P
Hours per term: 54 laboratory
The student shall gain practical experience by working on individual projects in metal sculpture design and fabrication. Emphasis is on quality, appearance and function. Credit may be earned once for ART 103 or WT 103. Not repeatable.

ART 165/WT 165—Metal Sculpture, 1½ units
Hours per term: 9 lecture and 54 laboratory
An introduction to various metal working techniques with an emphasis on aesthetic design and quality of metal joining. An introduction to M.I.G. welding will be offered, time being available. Field trips may be required. Credit may be earned once for ART 165 or WT 165. Not repeatable.

ART 166/WT 166—Metal Sculpture Projects, 1 unit
Prerequisite: Completion of ART 165/WT 165 with at least a C or P
Hours per term: 54 laboratory
This course is designed to allow students to expand upon their skills in metal sculpture techniques and to provide for the student a more individualized pursuit in metal sculpturing. Students will work progressively more independently from instructor direction. Field trips may be required. Not repeatable.

AT (AUTOMOTIVE TECHNOLOGY)

AT 97—Work Experience in Auto Technology, 1 to 4 units
Hours per term: 75 hours paid employment equals 1 unit of credit, or 60 hours unpaid employment equals 1 unit of credit
Provides students an opportunity to experience supervised employment in Automotive Technology. The student's employment must be related to educational or occupational goals. May be repeated for no more than a total of 16 units of credit less any units earned in any other Work Experience course. For students interested in working full time one semester and attending classes one semester on an alternate basis. Not repeatable. Grading: (P/NP Only). Transfer: (CSU)

AT 100—Introduction to Automotive Technology, 4 units
Hours per term: 72 lecture
Introduction to theory, operation and maintenance of automotive systems. Includes fundamentals of math, measuring devices, fasteners, shop safety, careers and certifications, tools/equipment common to the automotive industry, environmental issues, classifications/applications of lubricants, and resume writing. Environmental issues will be discussed. This course is designed to comply with the National Automotive Technicians Education Foundation (NATEF) objectives, enabling students to prepare for Automotive Service Excellence (ASE) certification. Not repeatable. Field trips may be required. Grading: (P/NP only)

AT 102—Engine Repair, 5 units
Hours per term: 54 lecture and 108 laboratory
Techniques involved in gasoline engine diagnosing and repair. Diagnosis of the engine's systems will be emphasized. This course is designed to comply with the National Automotive Technicians Education Foundation (NATEF) objectives, enabling students to prepare for Automotive Service Excellence (ASE) certification. Field trips may be required. Not repeatable.

AT 102A1—ASE Certification Preparation (A1), 5 units
Hours per term: 54 lecture and 108 laboratory
This course is designed for students who have completed the Engine Repair course, but are seeking ASE certification. Students’ competencies in ASE A1 will be surveyed and an individual preparation plan will be developed. The focus on topics for study will be driven by the student's individual assessment. Not repeatable.

AT 103—Practical Laboratory, ½-2 units
Recommended for Success: Six units of AT coursework with a C or better, or concurrent enrollment in six units of AT courses
Hours per term: 27 to 108 laboratory
This course includes special automotive repair projects that are assigned to students, with emphasis on speed, accuracy, and quality work habits. Not repeatable.
AT 104—Practical Laboratory (Auto Body), ½-2 units  
*Hours per term: 27 to 108 laboratory*

This course includes special auto body collision repair projects that are assigned to advanced students, with emphasis on speed, accuracy, and quality work habits. Completion of, or concurrent enrollment in three Automotive Technology units required. Exceptions to the units requirement will be considered on an individual basis. Field trips may be required. Not repeatable.

AT 105—Automotive Braking Systems, 4 units  
*Hours per term: 36 hours, 108 laboratory*

This course covers the principles of operation and repair of automotive drum and disc brake systems. Also covered are anti-lock braking and traction control systems. The subjects covered allow for compliance with the National Automotive Technicians Education Foundation (NATEF) objectives, thus enabling students to prepare for automotive Service Excellence (ASE) certification. Field trips may be required. Not repeatable.

AT 105A5—ASE Certification Preparation (A5), 4 units  
*Hours per term: 36 lecture and 108 laboratory*

Designed for students who need additional preparation for the Automotive Service Excellence (ASE) A5 exam. Not repeatable.

AT 106—Engine Performance, 8 units  
*Hours per term: 9 lecture and 162 laboratory  
Materials fee required.*

Theory and operation of ignition systems, fuel systems, and on board computers. Use of hand-held meters, oscilloscopes, late model computerized analyzers, and four gas infrared analyzers will be covered. Advanced diagnostic techniques will be included. This course is designed to comply with the National Technicians Education Foundation (NATEF) objectives enabling students to prepare for Automotive Service Excellence (ASE) exams. Field trips may be required. Not repeatable.

AT 106A8—ASE Certification Preparation (A8), 8 units  
*Hours per term: 90 lecture and 162 laboratory  
Materials fee required.*

Designed for students who need additional preparation for the Automotive Service Excellence (ASE) A8 exam. Not repeatable.

AT 112—Heating and Air Conditioning, 3 units  
*Hours per term: 36 lecture and 54 laboratory  
Materials fee required.*

Fundamentals and theory of air conditioning (R12 and R134a), as well as techniques of service and diagnosis. Recycling refrigerant and handling of hazardous materials are also covered. This course is designed to comply with the National Automotive Technicians Education Foundation (NATEF) objectives, enabling students to prepare for Automotive Service Excellence (ASE) certification. Field trips may be required. Not repeatable.

AT 112A7—ASE Certification Preparation (A7), 3 units  
*Hours per term: 36 lecture and 54 laboratory*

Designed for students and technicians in need of further Automotive Service Excellence (ASE) A7 test preparation. Not repeatable.

AT 113—Automotive Electrics, 7 units  
*Hours per term: 90 lecture and 108 laboratory*

Fundamentals of electricity and electronics that apply to all automotive electrical and electronic systems. Electrical theory, lighting systems, and chassis electrical and electronic circuits, and charging and starting systems are included. Methods of diagnosis will be emphasized. This course is designed to comply with the National Automotive Technicians Education Foundation (NATEF) objectives to enable students to prepare for Automotive Service Excellence (ASE) certification.

AT 113A6—ASE Certification Preparation (A6), 7 units  
*Hours per term: 90 lecture and 108 laboratory*

Designed for students and technicians who need additional preparation for Automotive Service Excellence (ASE) certification exams. Not repeatable.

AT 120—Suspension and Steering, 4 Units  
*Hours per term: 54 lecture and 54 laboratory  
Materials fee required.*

Operations of automotive suspension and steering systems. Inspection, diagnosis, part replacement, and alignment procedures, wheel alignment and computerized alignment equipment. Emphasis will be placed on analyzing inspection results. This course is designed to comply with the National Automotive Technicians Education Foundation (NATEF) objectives, enabling students to prepare for Automotive Service Excellence (ASE) certification. Field trips may be required. Not repeatable except for grade improvement. Transfer: (CSU)

AT 120A4—ASE Certification Preparation (A4), 4 units  
*Hours per term: 54 lecture and 54 laboratory*

This course is designed for students who need additional preparation for the Automotive Service Excellence (ASE) A4 exam. Not repeatable.

AT 122—Manual Power Trains and Axles, 4 units  
*Recommended for Success: AT 100  
Hours per term: 36 lecture and 108 laboratory*

Principles and operation of automotive power trains including diagnosis and overhaul of clutches, manual transmissions, and transfer cases. This course is designed to comply with the National Automotive Technicians Education Foundation (NATEF) objectives enabling students to achieve Automotive Service Excellence (ASE) certification. Field trips may be required. Not repeatable.

AT 122A2—ASE Certification Preparation (A2), 3 units  
*Hours per term: 18 lecture and 108 laboratory*

This course is designed for students who need additional preparation for the Automotive Service Excellence (ASE) A2 exam. Not repeatable.

AT 125—Team-Managed Projects, 3 units  
*Hours per term: 27 lecture and 81 laboratory*

Using a team-based format, students will solve problems using various principles and fundamentals in automotive technology and by following a Total Quality Management (TQM) process. Grading: (P/NP only) Field trips may be required. Not repeatable.
AT 132—Automatic Transmissions and Transaxles, 3 units
Hours per term: 18 lecture and 108 laboratory
Materials fee required.
Principles and theories involved with the diagnosis, repair, and rebuilding of automatic transmissions and transaxles. This course is designed to comply with the National Automotive Technicians Education Foundation (NATEF) requirements, enabling students to prepare for certification. Field trips may be required. Not repeatable.

AT 132A3—ASE Certification Preparation (A3), 4 units
Hours per term: 36 lecture and 108 laboratory
For students or technicians in need of additional preparation for the Automotive Service Excellence (ASE) A3 exam. Not repeatable.

AT 140—B.A.R. Smog Check Training, Level II, 3 units
Hours per term: 45 lecture and 27 laboratory
Students successfully completing this course will have met the training requirement for the Smog Check Inspector License. Note: Students are encouraged to contact Automotive Technology staff (on campus) or the Bureau of Automotive Repair for all licensing requirements. This course also serves as the Level III citation training. Not repeatable.

AT 150—Soft Skills for the Industrial Trades, 2 units
Hours per term: 36 lecture
This course covers the “soft skills” needed to succeed in a career that involves a shop environment. Topics include workplace communications, ethics, safety, customer service, pay models, self awareness of employee/employer expectations, and other attributes of a prosperous employee. Field trips may be required. Not repeatable.

AT 155—Automotive Spray Refinishing I, 2 units
Prerequisite: Completion of AT 186 with at least a C or P
Hours per term: 18 lecture and 54 laboratory
Introduction to automobile spray painting. Study of materials, supplies and equipment. Experience in feather edging and application of base coats; spray techniques in spot blending and panel refinishing with a base coat and clear coat. Field trips required. Not repeatable.

AT 156—Automotive Spray Refinishing II, 3 units
Prerequisite: Completion of AT 155 with at least a C or P
Hours per term: 18 lecture and 108 laboratory
Advanced techniques in automotive refinishing with single stage, base/clear coat urethane paints, and estimate writing. Field trips may be required. Not repeatable.

AT 160/WT 160—Exploring Technical Trades, 6 units
Hours per term: 18 lecture and 162 laboratory
Students will experience topics and engage in projects from the auto body/collision repair, automotive technology, and welding technology programs. Career and educational pathways will be emphasized. Field trips may be required. Credit may be earned once for ART 160 or WT 160. Not repeatable.

AT 185—Auto Body Collision Repair I, 2 units
Hours per term: 27 lecture and 27 laboratory
For beginning students in auto body collision repair work. Theory and study of the body sheet metal and structure. Theory and manipulative skills in oxy-acetylene welding, metal straightening, plastic filling and shrinking. Time allowing, students will learn basic proper removal and replacement of braking, engine, steering and suspension, and axle housing components as necessary to complete the auto body repair. Curriculum is aligned with the National Automotive Technicians Education Foundation (NATEF). Field trips may be required. Not repeatable.

AT 186—Auto Body Collision Repair II, 2 units
Recommended for Success: AT 185
Hours per term: 27 lecture and 81 laboratory
Advanced theory and study of body sheet metal and structure and manipulative skills in M.I.G. welding, sheet metal straightening, body alignment, making adjustments and refinishing equipment. Time allowing, students will learn basic removal and replacement of braking, engine, steering and suspension, and axle housing components as necessary to complete the auto body repair. Curriculum is aligned with the National Automotive Technicians Education Foundation (NATEF). Field trips may be required. Not repeatable.

AT 187—Automotive Detailing, 1 unit
Hours per term: 9 lecture and 27 laboratory
This course is for beginning students in auto detailing work. Topics covered include the theory and study of the proper maintenance and restoring of the automobile exterior finish by use of proper cleaning materials and methods approved by the industry. Not repeatable.

AT 200—Exploring Automotive Technology, 3 units
Hours per term: 27 lecture and 81 laboratory
This course allows students to perform routine maintenance and services in a supervised environment. Emphasis will be placed on safety and information competency. This course is also an exploratory course for those who are interested in learning proper usage of automotive repair facilities, equipment and tools, and in pursuing an automotive technology career. Field trips may be required. Materials fee required. Not repeatable. Grading: (P/NP Only).

AT 201—Team-Managed Projects, 3 units
Hours per term: 36 lecture and 54 laboratory
Using a team-based format, students will solve problems (projects) using various principles and fundamentals in automotive technology. Project outcomes will be dependent on teamwork and research. Not repeatable. Grading: (P/NP only)

AT 220—Industry Update Training, 1 unit
Hours per term: 18 lecture
This course will cover updates relevant to the eight ASE areas in automotive technology. Topics presented are intended for technicians currently employed in the field. Not repeatable. Grading: (P/NP only)
COURSES: BIOL

BIOL (BIOLOGY)

BIOL 2—Cell and Molecular Biology, 4 units
Prerequisite(s): Completion of MATH 104 and CHEM 2A with at least a C or P
Recommended for Success: ENGL 151
Hours per term: 54 lecture, 54 laboratory
Covers principles and applications of the structure and function of biological molecules, prokaryotic and eukaryotic cell structure and function, homeostasis, cell reproduction and its controls, molecular biology, molecular genetics, transmission genetics, cell metabolism, including photosynthesis, respiration, and viruses. Science as an ongoing process of inquiry is a theme that runs throughout this course. BIOL 2 is a laboratory course. Not repeatable. MJC equivalent: (BIO 101) Transfer: (CSU/UC) (CSU-GE: B2, B3) (IGETC: 5B, 5C) C-ID: (BIOL 190) (BIOL 2+BIOL 4+BIOL 6=C-ID BIOL 135S)

BIOL 4—Principles of Evolution and Zoology, 4 units
Prerequisite: Completion of MATH 104 with at least a C or P
Recommended for Success: Completion of ENGL 151 or eligibility for ENGL 1A
Hours per term: 54 lecture and 54 laboratory
As part of the Biology Majors sequence, students explore the diversity of the animal kingdom and non-photosynthetic single celled eukaryotic taxa. Core concepts of the course include mechanisms of evolution, comparative anatomy physiology and behavior among animal phyla, and life cycles. Students will also deepen their understanding of the nature of science and practice scientific reasoning skills. Field trips may be required. Not repeatable. MJC equivalent: (ZOO 101) Transfer: (CSU/UC) (CSU-GE: B2, B3) (IGETC: 5B, 5C) C-ID: (BIOL 150) (BIOL 4+BIOL 6=C-ID BIOL 140) (BIOL 2+BIOL 4+BIOL 6=C-ID BIOL 135S)

BIOL 6—Plant Biology And Ecology, 4 units
Prerequisite(s): Completion of MATH 104 with at least a C or P
Hours per term: 54 lecture and 54 laboratory
Covers photosynthesis, algae, protists, fungi, comparative plant structures and function, homeostasis, development, evolution, phylogeny, and taxonomy of plants. Principles of population and community ecology and ecosystem interactions are emphasized. Field trips may be required. Not repeatable. MJC equivalent: (BOT 101) Transfer: (CSU/UC) (CSU-GE: B2, B3) (IGETC: 5B, 5C) C-ID: (BIOL 155) (BIOL 4+BIOL 6=C-ID BIOL 140) (BIOL 2+BIOL 4+BIOL 6=C-ID BIOL 135S)

BIOL 10—Human Anatomy, 4 units
Prerequisites: Completion of ENGL 151 and MATH 104 with at least a C or P, or placement through the assessment process
Recommended for Success: BIOL 17 or BIOL 150
Hours per term: 54 lecture and 54 laboratory
An introduction to the study of the gross and microscopic structure of the human body using an organ systems approach including the integumentary, skeletal, muscular, nervous, sensory, endocrine, cardiovascular, lymphatic, respiratory, digestive, urinary, and reproductive systems. This course is primarily intended for nursing, allied health, kinesiology, and other health-related majors. Not repeatable. MJC equivalent: (ANAT 125) Transfer: (CSU/UC) (CSU-GE: B2, B3) (IGETC: 5B, 5C) C-ID: (BIOL 110B)

BIOL 17—Fundamentals of Biology, 4 units
Hours per term: 54 lecture and 54 laboratory
An integrated lecture and laboratory course of study emphasizing the fundamental principles common to all forms of life. The course is a core general education biology class for transfer students and for AA and AS students at Columbia College. The laboratory makes extensive use of computer simulations as experimentation in traditional laboratory. Not repeatable. MJC equivalent: (BIOL 111) Transfer: (CSU/UC) (CSU-GE: B2, B3) (IGETC: 5B, 5C)
BIO 24—General Ecology, 4 units
Recommended for Success: Completion of MATH 101 and ENGL 11A with at least a C or P
Hours per term: 54 lecture and 54 laboratory
Students will be introduced to environmental biology, which focuses on physiological, behavioral, and population ecology, and on linking ecological processes to evolution. Principles of evolution at the molecular, organismal, and population levels will be related to conservation issues affecting ecosystem management. The ecology component will cover basic principles and experimental approaches to solving ecological problems. Case studies in pollution issues, resource use, global warming, and ozone depletion will also be covered. Field trips may be required. Not repeatable. MJC equivalent: (BIO 114) Transfer: (CSU/UC) (CSU-GE: B2, B3) (IGETC:SB, SC)

BIO 39—Field Biology, 1 - 2 units
Hours per term: 18 to 36 lecture
A lecture field course in biology to be held in natural surroundings. The study site will vary with the seasons. Natural history, ecology, and biology of the locale will be studied. Field trips required. Not repeatable. Transfer: (CSU)

BIO 40—Field Biology: Ecosystems, 1 unit
Hours per term: 18 lecture
A lecture field course in biology to be held in natural surroundings. The course will emphasize ecosystem level processes. Included will be the effects of climate change, and other regional human disturbances on ecosystem processes. Field trips required. Not repeatable. Transfer: (CSU)

BIO 50—Nutrition, 3 units
Hours per term: 54 lecture
Introductory study of energy and nutrient requirements of the body in relation to growth, maintenance, and reproduction; factors influencing normal metabolism, construction of the adequate diet. Emphasis is placed upon the chemical aspects of nutrition. Not repeatable. MJC equivalent: (FDNTR 219) Transfer: (CSU/UC) (CSU-GE: E) C-ID: (NUTR 110)

BIO 60—Human Physiology, 4 units
Prerequisites: Completion of ENGL 151 and MATH 104 with at least a C or P, or placement through the assessment process
Recommended for Success: BIO 10 AND BIO 17 AND CHEM 14 AND CHEM 14L
Hours per term: 54 lecture and 54 laboratory
Study of the physiological principles, function, integration and homeostasis of the human body at the cellular, tissue, organ, organ system and organism level: integumentary system, bone, skeletal, smooth and cardiac muscles, nervous system, sensory organs, cardiovascular system, lymphatic and immune systems, respiratory system, urinary system, digestive system, endocrine system, and reproductive system. This course is primarily intended for nursing, allied health, kinesiology, and other health-related majors. Not repeatable. MJC equivalent: (PHYSO 101) Transfer: (CSU/UC) (CSU-GE: B2, B3) (IGETC: 5B SC) C-ID: (Biol 120B)

BIO 65—Microbiology, 4 units
Recommended for Success: CHEM 14, CHEM 14L, BIO 17
Hours per term: 54 lecture and 54 laboratory
Morphology, physiology, genetics, cultivation and control of microorganisms, particularly bacteria and viruses. Principles of immunology and the relationship of microbes to disease will be included. Not repeatable. MJC equivalent: (MICRO 101) Transfer: (CSU/UC) (CSU-GE: B2, B3) (IGETC: 5B, SC)

BIO 100—A Natural History of California, 3 units
Hours per term: 54 lecture
This course is an introduction to plants and animals of California with emphasis on the plant communities and wildlife of the Central Valley, the coastal ranges, and the Sierra Nevada. Ecologically oriented, the course probes ways in which plants and animals are adapted to their environment. Present and historical human environmental relationships will be investigated. Field trip required. Not repeatable.

BIO 150—Elementary Anatomy and Physiology, 3 units
Hours per term: 54 lecture
Introduction to human structure and function. Designed as a foundation course for the allied health student, but open to all interested students. Not repeatable. MJC equivalent: (AP 50.)

BIO 158—Birds of Central California, 1 unit
Hours per term: 9 and 27 laboratory
A survey of the birds of Central California through field observations and lectures. Students will learn how to identify birds by sight and sound, then use identification skills as a tool for understanding other aspects of avian biology and ecology. Discussion topics will include anatomy, physiology, behavior, and ecology of birds. Field trips may be required. Not repeatable. Grading: (P/NP only)

BIO 159—Wildflowers, 1½ units
Hours per term: 27 lecture

BIO 160—Mushrooms and Other Fungi, 1½ units
Hours per term: 27 lecture
Survey of mushrooms with emphasis on mushroom taxonomy, identification, and differentiation of common edibles from poisonous fungi, the ecology of fungi, including their habitat and role in various ecosystems, as well as their impact on civilizations. Field trips may be required. Not repeatable. Grading: (P/NP Only).

BIO 179—Fishing and Fishery Biology of the Sierra Nevada, 1 unit
Hours per term: 18 lecture
An overview of the identification, ecology, and management of fish species inhabiting the foothill, forest and alpine communities of the Sierra Nevada. Not repeatable. Field trips required. Grading: (P/NP only)
BUSAD 2A—Financial Accounting, 4 units

Recommended for Success: BUSAD 161A, BUSAD 161B, CCTIS 30
Hours per term: 72 lecture

Provides Business Administration and Accounting majors an opportunity to develop a working knowledge of accounting information systems used in recording and reporting business transactions for service and merchandising businesses under corporation entities. Special focus is on the accounting cycle, financial statements, analysis and generally accepted accounting principles, including internal control and ethical issues. Students will work with asset, liability and equity valuation, revenue and expenditure recognition, cash flow calculations and appropriate computer applications. Not repeatable. MJC equivalent: (BUSAD 201) Transfer: (CSU/UC) C-ID: (ACCT 110)

BUSAD 2B—Managerial Accounting, 4 units

Prerequisite: Completion of BUSAD 2A with at least a C or P
Recommended for Success: BUSAD 163, CCTIS 30
Hours per term: 72 lecture

Provides Business Administration and Accounting majors an opportunity to develop a working knowledge of techniques used for decision making, planning, directing, and controlling manufacturing operations. Particular focus is on costing methods, cost-volume-profit issues, incremental analysis and pricing. Students will work with standard cost, budgets, and control responsibility, including capital investments and cash flow analysis. Not repeatable. MJC equivalent: (BUSAD 202) Transfer: (CSU/UC) C-ID: (ACCT 120)

BUSAD 9/SPCOM 9—Introduction to Small Group and Team Communication, 3 units

Hours per term: 54 lecture

This course focuses on the intersection between communication and the ability of small groups or teams to effectively achieve objectives. Course includes the study of, and practice in, discussion methodology, types of discussion groups, information gathering, problem solving, decision making, and leadership roles. Credit may be earned once for BUSAD 9 or SPCOM 9. Not repeatable. MJC equivalent: (COMM 106) Transfer: (CSU) C-ID: (COMM 140)

BUSAD 18—Business Law, 3 units

Hours per term: 36 lecture and 54 laboratory

Laws and regulations affecting managerial decisions; legal concepts and case analyses in the areas of ethics, employment, agency, consumer transactions, business torts and crimes, business organizations, and with special emphasis on contracts. Not repeatable. MJC equivalent: (BUSAD 218) Transfer: (CSU/UC) C-ID: (BUS 125)

BUSAD 20—Principles of Business, 3 units

Hours per term: 54 lecture

Survey of business principles, problems and procedures; ownership; recruitment and training of personnel; labor-management relations; production and distribution of goods; competition; profit; transportation; finance; managerial controls; government and business relations. Not repeatable. MJC equivalent: (BUSAD 248) Transfer: (CSU/UC)

BUSAD 24—Human Relations in Organizations, 3 units

Hours per term: 54 lecture

People and their roles in organizations. The nature of organizational relationships; working in groups, recognizing and solving human relations problems. Creating the win-win situation of satisfying individual and organizational objectives. Not repeatable. Transfer: (CSU)

BUSAD 25/GUIDE 25—Job Search and Interviewing Strategies, 1 unit

Hours per term: 18 lecture

Understanding the employment process and development of written and oral presentation skills necessary to conduct an efficient and effective job search. Topics include: the hiring process, employer perspectives, the hidden job market, networking, research, job search planning, making employer contacts and interviewing. Development of a master application, resume and letter of application. Credit may be earned once for Busad 25 or Guide 25. Not repeatable. Grading: (P/NP only) MJC equivalent: (GUIDE 112) Transfer: (CSU)

BUSAD 29/CCTIS 29—Project Management, 3 units

Recommended for Success: CCTIS 10
Hours per term: 54 lecture

This course is designed to familiarize individuals with current and emerging project management technologies using the Internet, project management software and other application software packages as needed for project completion. Project management knowledge topics will include project integration, scope, time, cost, quality, human resource, communications, and risk and procurement management. Credit may be earned for only one of the following: CCTIS 29 or BUSAD 29. Not repeatable. Transfer: (CSU)

BUSAD 30—Principles of Marketing, 3 units

Hours per term: 54 lecture

Marketing principles, policies, and functions, price policies and controls, trade channels, merchandising, market research, advertising, and competitive practices. Not repeatable. MJC equivalent: (BUSAD 245) Transfer: (CSU)

BUSAD 40—Principles of Management, 3 units

Hours per term: 54 lecture

The functions of management, techniques of decision making and problem solving, methods used by the manager to achieve organizational goals, various theories of management, lines of authority, functions of departments, and the importance of policies, procedures and controls. Not repeatable. MJC equivalent: (BUSAD 240) Transfer: (CSU)
COURSES: BUSAD

BUSAD 41—Small Business Management, 3 units
Formerly listed as: BUSAD 150
Hours per term: 54 lecture
Small business operation with proper balance between business functions of purchasing, production, sales and finance, and the management functions of planning, organizing, actuating, and controlling. Not repeatable. Transfer: (CSU)

BUSAD 97—Work Experience in Business and Commerce, 1-4 units
Co-requisite: Must be enrolled in at least seven (7) units including Work Experience where 75 hours paid employment equals 1 unit of credit and 60 hours unpaid employment equals 1 unit of credit.
Provides students an opportunity to experience supervised employment in a variety of occupational settings within Business and Commerce (e.g., Business Administration, Hospitality Management, Computer Science). The student's employment must be related to educational or occupational goal. May be repeated for no more than a total of 16 units of credit less any units earned in any other Work Experience course. Grading: (P/NP only) Transfer: (CSU-Transfer credit limited. See a counselor.)

BUSAD 121—Adobe Acrobat Essentials, 2 units
Hours per term: 18 lecture, 54 Laboratory
Designed for those who need to convert various file formats to the universally accepted PDF file format and work with Acrobat Standard or Professional in the creation, editing, packaging and management processes of PDF files. Students will also learn creation of Adobe forms and working with their interactive features. Not repeatable.

BUSAD 135—Computerized Accounting (QuickBooks), 2 units
Recommended for Success: BUSAD 161A
Hours per term: 36 lecture
Provides the student opportunities to set up and maintain a computerized accounting system using QuickBooks application software. Review of financial accounting in working with payables, receivables, banking transactions, company transactions and the financial statements. Not repeatable.

BUSAD 151—Finance and Investments, 3 units
Hours per term: 54 lecture
A study of financial systems and functions including markets, which funds are traded, institutions which participate in fund flows, and principles and concepts of management for making sound financial and investment decisions. Not repeatable.

BUSAD 155—Computerized Accounting for Business, 4 units
Recommended for Success: BUSAD 2A or BUSAD 161A
Hours per term: 54 lecture and 54 laboratory
Provides students with an opportunity to set up and maintain an accounting system utilizing QuickBooks and Peachtree accounting programs to focus on concepts and best practices. Hands-on experience in the software will help students learn the computerized methods of financial accounting, including sales, accounts receivable, accounts pay- able, inventory, adjusting entries, closing entries, financial statements, sales tax and budget analysis. Not repeatable.

BUSAD 158—Payroll Accounting, 3 units
Hours per term: 54 lecture
Introduction and practice in all payroll operations, the preparation of payroll registers, recording of payroll transactions, understanding of payroll laws, and preparation of required tax returns and reports. Not repeatable.

BUSAD 161A—Small Business Accounting I, 4 units
Hours per term: 72 lecture
Accounting procedures and analysis for most small businesses. Includes complete double entry accounting system with journals, ledgers, worksheets, and financial statements, with adjusting and closing entries for service or merchandising businesses; payroll for employees and employers, a voucher system, and use of manual simulations. Not repeatable.

BUSAD 161B—Small Business Accounting II, 4 units
Prerequisite: Completion of BUSAD 161A with at least a C or P
Hours per term: 72 lecture
Extension of the techniques learned in BUSAD 161A with more in-depth treatment of receivables, notes, inventory and depreciation, and with the introduction of partnership and corporation accounting, statements of cash flow and financial analysis; also an introduction to managerial accounting for decision making, departmentalized cost and manufacturing systems, planning and budgeting used in both financial and managerial phases. Not repeatable.

BUSAD 163—Business Mathematics, 3 units
Hours per term: 54 lecture
After review of mathematical processes, students will apply math skills in business situations that include banking, credit cards, discounts, retailing, payroll, interest, compounding, present value, annuities, sinking funds, revolving credit, home mortgages, financial analysis and ratio interpretation, depreciation, inventory, taxes, insurance, stocks, bonds, business statistics. Not repeatable.

BUSAD 164—Income Tax, 2 units
Hours per term: 27 lecture and 27 laboratory
Instruction on income tax preparation and reporting based on the current requirements of the U.S. Internal Revenue Code and the California State Tax Code for individuals and Small Business filers. Successful completion of the course leads to VITA (Volunteer Income Tax Assistance) Certification. Not repeatable.
COURSES: CCTDM

COURSES:

CCTDM (COMPUTER AND COMMUNICATIONS TECHNOLOGY: Digital Media)

CCTDM 5—Introduction to Digital Multimedia, 3 units
   Formerly listed as: CMPSC 36
   Hours per term: 54 lecture
   An introduction to the various elements that comprise the multimedia development environment. This includes hardware and software tools for text, sound, images, animation, video, multimedia authoring, and multimedia tools for the Web. Not repeatable. Transfer: (CSU)

CCTDM 6—Writing for Multimedia, 3 units
   Formerly listed as: CMPSC 37
   Hours per term: 54 lecture
   This course will present an overview of multimedia writing including techniques for effective communication in web page copy, digital storytelling, scripts, critique writing, storyboarding, and other current industry modes of delivery. Not repeatable. Transfer: (CSU)

CCTDM 10—Introduction to HTML and CSS, 3 units
   Formerly listed as: CMPSC 13
   Recommended for Success: CCTIS 4
   Hours per term: 54 lecture
   Use HTML and CSS software authoring tools to prepare multimedia presentations to use with an Internet browser. Combine text, graphics, video, and sound. Enhance computer displays for an audience and prepare home page links for access over the Internet. Not repeatable. Transfer: (CSU)

CCTDM 12—Website Development Applications, 3 units
   Formerly listed as: CMPSC 12
   Recommended for Success: CCTIS 4
   Hours per term: 54 lecture
   Students will be able to use website/webpage development application software to prepare multimedia presentations for use with an Internet browser. They will also be able to combine text, graphics, video, and sound, enhance computer displays for an audience, and prepare home page links for access over the Internet. Not repeatable. MJC equivalent: (CSCI 250) Transfer: (CSU)

Effective with the 2015-2016 academic year, the Columbia College Computer Science (CMPSC) department has renamed the department and renumbered course IDs to more accurately reflect sub-disciplines in the field. The following crosswalk shows how CMPSC course IDs map to Computer and Communications Technology (CCT) sub-discipline course IDs. The CCT sub-discipline suffixes are as follows:


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<th>CMPSC Course ID</th>
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COURSES: CCTDM

CCTDM 14—Advanced Topics in Website Development, 3 units
Formerly listed as: CMPSC 14
Recommended for Success: CCTDM 10
Hours per term: 36 lecture
This course guides students through the process of exploring advanced tools for website design, which may include, but are not limited to Javascript, ASP, PHP, HTML and CSS. Students will also attain skills in techniques for publicizing websites and best practices for site maintenance. Not repeatable. Transfer: (CSU)

CCTDM 28—Video Production I, 2 units
Formerly listed as: CMPSC 28A
Hours per term: 18 lecture and 54 laboratory
Introduces the student to the basic computer video production stages. Students will learn the process of creating digital video productions. This course is a project-based course. Students will be required to work in groups on approved class-related and school event projects. Not repeatable. Transfer: (CSU)

CCTDM 29—Video Production II, 2 units
Formerly listed as: CMPSC 29B
Prerequisite(s): Completion of CCTDM 28 with at least a C or P
Hours per term: 18 lecture and 54 laboratory
This course is a continuation of CCTDM 28. Includes video production using the three-stage process. Students will learn the process of creating digital video productions using expanded techniques in video shooting, lighting, audio, editing, and authoring. This course is a project-based course. Students may be required to work in groups on approved class-related and/or school event projects. Not repeatable. Transfer: (CSU)

CCTDM 40—Computer Graphics and Animation, 3 units
Formerly listed as: CMPSC 19
Recommended for Success: CCTDM 12, CCTDM 14, CCTDM 53
Hours per term: 36 lecture and 54 laboratory
Computer Graphics and Animation introduces the student to an interactive media application for creating vector graphics, animation, and interactive multimedia for web pages and other digital media. The course will also cover basic action scripting integration. Not repeatable. MJC equivalent: (CMPGR 268) Transfer: (CSU/UC)

CCTDM 41—Compositing for Motion Graphics, 3 units
Recommended for Success: CCTDM 28 or CCTDM 40 or CCTDM 53 or CCTDM 50
Hours per term: 36 lecture and 54 laboratory
This course introduces software and techniques designed to provide a comprehensive set of 2D and 3D tools for compositing, animation, and effects for motion-graphics, visual effects, web design, film and video. Not repeatable. Transfer: (CSU/UC)

CCTDM 45—Digital 3D Modeling and Animation, 3 units
Formerly listed as: CMPSC 35
Recommended for Success: CCTDM 40
Hours per term: 36 lecture and 54 laboratory
This course introduces digital 3D modeling and animation. Students will explore 3D modeling software, digital modeling techniques, and animation. CMPSC 35 is intended to train students who are pursuing 3D computer-driven animation in preparation for additional study in digital animation, game design and Multimedia. The course uses industry standard, state-of-the-art, high-end computer-driven animation software which is upgraded as industry changes. Not repeatable. Transfer: (CSU)

CCTDM 50—Photo Editing for Digital and Print Publication, 3 units
Formerly listed as: CMPSC 39
Hours per term: 36 lecture and 54 laboratory
Materials fee required
This course focuses on the principles and practices of photo editing, artistic expression, and development of problem-solving skills, using an industry standard photo editing software program. Included is a survey of the tools and techniques used to create effective and sophisticated digital imagery for websites, multimedia and print publications. Additionally, the course will integrate the use of tablets and cloud technology as they pertain to photo editing. Not repeatable. Transfer: (CSU)

CCTDM 51/ART 51/OFTEC 42—Publication Design I, 3 units
Formerly listed as: CMPSC 31
Recommended for Success: OFTEC 141
Hours per term: 36 lecture and 54 laboratory
Materials fee required
An introduction to general publication design theory with emphasis on typography, page layout, graphics, and design. Students will create media for print and digital publishing. Exercises and projects will include the creation of a multi-page booklet, poster, newsletter, brochures and an interactive document formatted for digital publishing. Credit may be earned once for ART 51 or CCTDM 51 or OFTEC 42. Not repeatable. Transfer: (CSU)

CCTDM 52/ART 52/OFTEC 43—Publication Design II, 3 units
Prerequisite: Completion of CCTDM 51/ART 51/OFTEC 42 with at least a C or P
Formerly listed as: CMPSC 32
Hours per term: 36 lecture and 54 laboratory
Materials fee required
A continuation of study in problems of Publication Design. Areas of focused study will be in advanced problems of page layout, typography, print, and interactive documents for digital publication. Credit may be earned once for ART 52 or CCTDM 52 or OFTEC 43. Not repeatable. Transfer: (CSU)
COURSES:  CCTDM - CCTIS

CCTDM 53/ART 53—Computer Graphics I, 3 units
Formerly listed as: CMPSC 33
Hours per term: 36 lecture and 54 laboratory
Materials fee required
This course introduces the student to the fundamentals of computer graphics. Topics include the elements and principles of design, concept development, characteristics of vector and raster digital files, color modes, digital drawing and painting, and formatting for print and the Web. Students will acquire basic skills in current digital illustration software and create original design pieces. Credit may be earned for only one of the following: CCTDM 53 or ART 53. Not repeatable. Transfer: (CSU/UC)

CCTDM 54/ART 54—Computer Graphics II, 3 units
Formerly listed as: CMPSC 34
Prerequisite(s): Completion of CCTDM 53/ART 53 or with at least a C or P
Hours per term: 36 lecture and 54 laboratory
Materials fee required
Computer Graphics topics covered will include concept development, analog drawing, scanning, advanced techniques of painting and drawing software, critiquing, and publishing. Credit may be earned for only one of the following: CCTDM 54 or ART 54. Not repeatable. Transfer: (CSU/UC)

CCTDM 56/ART 56—Typography, 3 units
Formerly listed as: CMPSC 56
Prerequisite(s): Completion of CCTDM 53/ART 53 with at least a C or P
Hours per term: 54 lecture
Materials fee required
Designed to focus study of the elements of typography as related to print and to the World Wide Web. This is an interactive course where students practice and apply skills of typography for visual communication. Emphasis will focus on identifying type as a dynamic visual element; typographical forms and nuance; and the development of successful typographic solutions to convey concepts. Through collaborative discussions of assigned exercises and projects, students will acquire skills of analysis and critique. The course outcome will be the creation of a student portfolio of completed projects. Credit may be earned for only one of the following: CCTDM 56 or ART 56. Not repeatable. Transfer: (CSU/UC)

CCTDM 105—Image Managing and Editing for Digital Photographers, 2-3 units
Recommended for Success: CCTDM 50
Formerly listed as: CMPSC 150
Hours per term: 36 or 54 lecture
Using image management software created for professional photographers and designers, students will process, organize, and edit large numbers of digital images. This course will teach a comprehensive workflow from importing, reviewing, organizing and enhancing digital images to publishing photos, creating web galleries and producing client presentations. Not repeatable.

CCTIS 4—Windows Operating Systems Essentials, 1½ units
Formerly listed as: CMPSC 4
Hours per term: 27 lecture
This course provides instruction in Operating Systems. Topics include management of window elements, desktop arrangement, folders and files, and file management. Students will use multitasking, cut and paste, linking, and printing operations within elected Windows applications. Not repeatable. Transfer: (CSU)

CCTIS 6—Internet Essentials, 2 units
Formerly listed as: CMPSC 10
Hours per term: 36 lecture
Access the Internet with web browsers on personal computers. Topics include navigating, browser features, email, search techniques, personal privacy, downloading, and communicating on the World Wide Web. Not repeatable. Grading: (P/NP only) Transfer: (CSU)

CCTIS 8—Advanced Internet Research, 1½ units
Formerly listed as: CMPSC 17
Recommended for Success: CCTIS 6
Hours per term: 27 lecture
Designed to focus on advanced search and research techniques and tools available via the World Wide Web. The course reviews basic components of Internet search engines and includes advanced subject matter research techniques, database resources and advanced Internet technology skills. Topics include E-Commerce, Internet Resources, Digital Content, and Internet Publications. Not repeatable. Transfer: (CSU)

CCTIS 10—Computer Concepts and Information Systems, 4 units
Formerly listed as: CMPSC 1
Hours per term: 54 lecture and 54 laboratory
This course includes concepts of computer information systems in business, industry and other institutions. Study of computers, applications and network communications will also be covered. Actual practice is on personal computers in Windows environment on a network. Lab applications include graphical user interface, spreadsheets, word processing, database management, multimedia presentations and access to the Internet and World Wide Web. Not repeatable. MJC equivalent: (CSCI 220) Transfer: (CSU/UC) C-ID: (ITIS 120)
CCTIS 29/BUSAD 29—Project Management, 3 units

Recommended for Success: Completion of CCTIS 10 with at least a C or P
Hours per term: 54 lecture

This course is designed to familiarize individuals with current and emerging project management technologies using the Internet, project management software and other application software packages as needed for project completion. Project management knowledge topics will include project integration, scope, time, cost, quality, human resource, communications, and risk and procurement management. Credit may be earned for only one of the following: CCTIS 29 or BUSAD 29. Not repeatable. Transfer: (CSU)

CCTIS 30—Financial Worksheets on Computers, 3 units

Formerly listed as: CMPSC 30

Hours per term: 36 lecture and 54 laboratory

Electronic spreadsheets will be used to develop a basic understanding of business operations, managerial decision making, and strategic advantage. Students will develop spreadsheets for financial statements, what-if analysis, databases, and other ledger-type applications. Other topics include use of formulas, charts, tables, and macros to customize data entry for business applications and combining data between worksheets and link files. Lab projects will focus on the use of spreadsheet design, development, and use for managerial decision making. Not repeatable. MJC equivalent: (CSCI 223) Transfer: (CSU)

CCTIS 57/GEOGR 57—GIS Data Management, Introduction to Geodatabase, 1-3 units

Formerly listed as: CMPSC 57

Hours per term: 18 or 54 lecture

Students who take this course will learn to use the ArcGIS Geodatabase format for management of spatial data. Students will be introduced to the concepts of database design and system architecture using ArcGIS software. Concepts covered include: introduction to the geodatabase; metadata; geodatabase vs. shapefile formats; overview of ArcGIS data models; feature datasets and feature classes; editing a geodatabase; personal geodatabase vs. multi-user geodatabase; domains and validation rules; and relationships and subtypes. Credit may be earned once for CCTIS 57 or GEOGR 57. Not repeatable. Transfer: (CSU)

CCTIS 58/GEOGR 58—GIS, ArcView, 1 unit

Formerly listed as: CMPSC 58

Hours per term: 18 lecture

Introduction to practical application of ArcView software; importation of GIS data, display, visualization, exploration, query, analysis, and production of hard-copy maps and reports. Students will be guided through a complete sequence of application fundamentals similar to what would normally be used in displaying, analyzing, and plotting a standard ArcView GIS application. Credit may be earned once for CCTIS 58 or GEOGR 58. Not repeatable. Grading: (P/NP only) Transfer: (CSU)

CCTIS 59/GEOGR 59—Geographic Information and Global Positioning Systems, 1-3 units

Formerly listed as: CMPSC 59

Hours per term: 18, 36, or 54 lecture

Introduction to basic GIS and GPS concepts and applications in the field of natural resources, earth sciences, and environmental systems. Students will learn to use Global Positioning System units, combined with Geographic Information System software to collect field data and produce maps for spatial analysis and decision-making purposes. Six weeks will be spent learning ArcView software; another six weeks will be spent learning to use GPS units; and another six weeks will be spent learning to design and carry out a research project merging GPS and GIS technologies. Credit may be earned once for CCTIS 59 or GEOGR 59. Not repeatable. Transfer: (CSU)

CCTIS 60/GEOGR 60—Introduction to ArcGIS, 3 units

Formerly listed as: CMPSC 60

Hours per term: 54 lecture

An introduction to fundamental Geographic Information Systems (GIS) concepts. Students will be introduced to the ArcGIS software package as the main vehicle for learning GIS. GIS geodatabases and maps will be produced from several different data sources. Emphasis will be placed on planning the design of GIS geodatabases which will permit specific types of queries. Not repeatable. Credit may be earned once for CCTIS 60 or GEOGR 60. Transfer: (CSU)

CCTIS 61/GEOGR 61—GIS Mapping-Introduction to Fire Incident Mapping, 1 unit

Formerly listed as: CMPSC 61

Recommended for Success: CCTIS 6

Hours per term: 9 lecture

Students who take this course will learn how to apply their GIS skills in Fire Incident Mapping. Students will learn fire incident symbology, data standards and organization, fire incident map products, and responsibilities of a Fire GIS Specialist. Additionally, students will utilize GPS data that they have collected, convert them to shapefiles, and create a fire incident map. This course includes hands-on experience in fire incident mapping and data organization. Students will also be encouraged to present their final project in public at GIS Day events. Not repeatable. Credit may be earned once for CCTIS 61 or GEOGR 61. Grading: (P/NP only) Transfer: (CSU)
COURSES:  

CCTIS 62/GEOGR 62/SAR 62—GIS Mapping—Introduction to SAR GIS, 1 unit  
Formerly listed as: CMPSC 62  
Hours per term: 18 lecture  
Students who take this course will learn how to apply their GIS skills in Search and Rescue (SAR) Mapping. Students will learn SAR incident symbology, data standards and organization, establishing incident locations, search segments, SAR incident map products, and responsibilities of GIS specialist on SARs and other critical incidents. The course will use a workflow and data model developed by SAR personnel that integrates with ArcGIS 10. Additionally, students will utilize GPS data that they have collected from GPS devices, convert them to shapefiles, and create team and briefing incident maps. During a full-day exercise, students will also live-track SAR teams using satellite tracking devices. This course includes hands-on experience in SAR incident mapping and data organization. Not repeatable. Credit may be earned once for CCTIS 62 or GEOGR 62. Grading: (P/NP only) Transfer: (CSU)

CCTIS 63/GEOGR 63—GIS and Making Maps: The Essential Skills, 1 unit  
Formerly listed as: CMPSC 63  
Hours per term: 18 lecture  
This course is intended as a resource for emergency responders, outdoor enthusiasts and anyone interested in acquiring basic skills in understanding maps and using geospatial information and devices. Emphasis will be on developing a working knowledge of coordinate systems, establishing a location when given coordinates, finding coordinates from a location, and converting among coordinate systems to create a basic map using this information. Not repeatable. Grading: (P/NP only) Credit may be earned once for CCTIS 63 or GEOGR 63. Transfer: (CSU)

CCTIS 64/GEOGR 64—ArcGIS: Creating a Basic Map, ½ units  
Formerly listed as: CMPSC 64  
Hours per term: 9 lecture  
This course will teach the skills and tools to use ArcGIS 10 mapping software to create maps. It will be useful to anyone wanting a quick “how to” for using the industry standard ArcGIS to make and edit a map. Not repeatable. Credit may be earned once for CCTIS 64 or GEOGR 64. Grading: (P/NP only) Transfer: (CSU)

CCTIS 65/GEOGR 65—GIS Applications ½ to 3 units  
Recommended for Success: Completion of CCTIS 60/GEOGR 60 with at least a C or P  
Hours per term: 9 or 18 or 36 or 54 lecture  
Uses the ArcGIS ArcView software to explore intermediate topics in GIS applications. Topics include geodatabase creation and editing, geoprocessing models, geocoding, and working with annotation. The course consists of a combination of lectures, demonstrations, hands-on exercises, and a student project. Not repeatable. Credit may be earned once for CCTIS 65 or GEOGR 65. Transfer: (CSU)

CCTIS 66/GEOGR 66—Web Mapping, 1 unit  
Hours per term: 18 lecture  
This course focuses on the fundamental principles of web mapping and creating web mapping applications. Students will learn the basics of Web GIS system architecture, geospatial web services, and web service based geoprocessing. In addition, students will also learn about mobile GIS solutions by collecting data and creating a web map. Not repeatable. Grading: (P/NP Only). Transfer: (CSU)

CCTIS 67/GEOGR 67—GIS Geocoding, 1 unit  
Formerly listed as: CMPSC 67  
Hours per term: 18 lecture  
Students who take this course will learn to use GIS software for geocoding purposes. Geocoding is the process of using common data to quickly and easily create location maps and is used by most government agencies and many businesses. GIS software will be used to produce maps useful in such things as routing emergency vehicles, providing effective customer service delivery, understanding crime incident patterns, or locating restaurants, schools, and fire stations. Students will also learn to create and refine address data to develop the reference data necessary to build address or geocoding indexes. Strategies will be exercised to clean input addresses, achieve better address-matching results, and fine-tune software parameters. Not repeatable. Credit may be earned once for CCTIS 67 or GEOGR 67. Grading: (P/NP only) Transfer: (CSU)

CCTIS 70/GEOGR 70—Introduction to Raster-Based GIS, 3 units  
Formerly listed as: CMPSC 70  
Recommended for Success: Completion of CCTIS 59/GEOGR 59 and CCTIS 60/GEOGR 60  
Hours per term: 54 lecture  
This course uses the ArcGIS ArcView software along with the Spatial Analyst and 3D extensions to explore the use of raster GIS data in analysis and visualization. Topics include terrain analysis, hydrologic analysis, suitability analysis, and 3D modeling. The course consists of a combination of lectures, demonstrations, hands-on exercises, and a student project. Not repeatable. Credit may be earned once for CCTIS 70 or GEOGR 70. Transfer: (CSU)

CCTIS 75/GEOGR 75—GIS Applications in Resource Management, ½-3 units  
Formerly listed as: CMPSC 75  
Recommended for Success: CCTIS 70/GEOGR 70  
Hours per term: Hours per term: 9, 18, 36, or 54 lecture  
Uses ArcGIS ArcView software and the Image Analyst extension to explore the use of GIS in natural resource analysis and management. Emphasis is on the use of satellite imagery and aerial photography to derive information for GIS analysis. The course consists of a combination of lectures, demonstrations, hands-on exercises, and a student project. Not repeatable. Credit may be earned once for CCTIS 75 or GEOGR 75. Transfer: (CSU)
CCTIS 137—Presentations Using Computers and Multimedia, 1½ units
Formerly listed as: CMPSC 11
Hours per term: 27 lecture
Use presentation software to prepare multimedia presentations. Combine text, graphics, video, and sound. Use the computer and multimedia projector to present information to an audience or to individuals. Not repeatable. MJC equivalent: (CMPGR 215)

CCTIS 138—Excel Spreadsheets, 2 units
Formerly listed as: CMPSC 138
Hours per term: 36 lecture
Instruction in spreadsheet applications on computers, using Microsoft Excel. Develop, plan, and build spreadsheets for business decisions. Use formatting, charting, and lists to customize desired output. Not repeatable. Grading: (P/NP only)

CCTIS 139—Database Essentials, 1½ units
Formerly listed as: CMPSC 155
Hours per term: 27 lecture
Develop database applications using Database Management System (DBMS) software. Create databases, enter and edit data, query the database, using QBE, create and use forms, create and print reports, customize fields and tables, manage data and files, use as database for a mail merge. Not repeatable.

CCTIS 142/OFTEC 142—Desktop Publishing Essentials, 2 units
Formerly listed as: CMPSC 142
Recommended for Success: Basic word processing skills such as editing and formatting text, copy/paste, file saving, Spell Check, etc.
Hours per term: 36 lecture
An introduction to general desktop publishing theory with emphasis on design elements of formatted text, frames, photographs, clipart, lines, and pictures. Students will create sample projects such as newsletters, brochures, flyers, business cards, etc. Not repeatable. Credit may be earned once for CCTIS 142 or OFTEC 142. Grading: (P/NP only)

CCTIS 210—Basic Computer Skills for College Success, ½-1½ units
Provides students with the opportunity to build a foundation of basic computer skills vital to success in the college environment including navigating the college website, file management, word processing, course management systems for hybrid and online courses, Internet and email. The material is developed to ensure that students will see the importance of learning how to use the applications for future coursework. Grading: (P/NP only)

CCTPG 5—Introduction to Programming, 3 units
Formerly listed as: CMPSC 5
Recommended for Success: MATH 104
Hour per term: 54 lecture and 18 laboratory
First course in computer programming for students with little or no programming experience. Covers computer architecture, data representation, file systems and networks, software development methods (structured and object-oriented design), and basic problem-solving using analysis, documentation, algorithm design and control structures. Write programs using scripting languages such as JavaScript or Python, and a compiled, object-oriented language such as Java. This course is designed for majors and non-majors. Not repeatable. Transfer: (CSU/UC)

CCTPG 9—Operating Systems, Windows-Unix/Linux, 4 units
Recommended for Success: CCTIS 10
Hours per term: 54 lecture and 54 laboratory
Provides an introduction to operating systems concepts, system architecture, structure, and management. Topics include operating system history, system commands, system programs, role of the operating system, its operational characteristics, file management, system commands, shell scripting, TCP/IP basics, FTP, mail, telnet, and text editors. Not repeatable. Transfer: (CSU/UC)

CCTPG 22—Programming Concepts and Methodology I, 4 units
Formerly listed as: CMPSC 22
Recommended for Success: MATH 104 and CCTPG 5
Hours per term: 54 lecture and 54 laboratory
Designed for computer science majors but open to all students. Emphasizes problem analysis skills and algorithm development. Software engineering skills will be developed for both procedural and object-oriented programming techniques. Programming language will be the currently preferred object-oriented language used by equivalent UC/CSU courses. Extensive programming projects demonstrating problem-solving and implementation skills will be assigned throughout the semester, including use of data types, conditions and Boolean logic, loops, recursion, arrays, functions, references, and file input/output. Not repeatable. MJC equivalent: (CSCI 271) Transfer: (CSU/UC) C-ID: (COMP 112) (C-ID COMP 122)
COURSES:  

CCTPG - CCTSS

CCTPG 24—Programming Concepts and Methodology II, 4 units
Formerly listed as: CMPSC 24
Prerequisite: Completion of CCTPG 22 with at least a C or P
Recommended for Success: MATH 104
Hours per term: 36 lecture and 54 laboratory
A continuation of CCTPG 22 for computer science majors. Problem-solving techniques using an object-oriented design approach. Programming language will be the currently preferred object-oriented language used by equivalent UC/CSU courses. Topics include asymptotic notation, dynamic data structures (linked lists, stacks, queues, binary trees), directed graphs, generics, and searching/sorting algorithms. Also introduces programming in an event-driven GUI environment. Not repeatable. MJC equivalent: (CSCI 272) Transfer: (CSU/UC)

CCTPG 45—Applied Java Programming, 3 units
Formerly listed as: CMPSC 45
Prerequisite: Completion of CCTPG 22 with at least a C or P
Hours per term: 36 lecture and 54 laboratory
Use Java, a platform-independent, object-oriented programming language to develop applications for emerging environments including Android, Java Server Pages (JSP) and multi-media applications. Topics include classes, objects, arrays, inheritance, interfaces, control flow, file and network input/output, and access to relational databases using the current Java SDK API and other emerging APIs. Not repeatable. Transfer: (CSU/UC)

CCTPG 47—C/C++ Programming, 3 units
Formerly listed as: CMPSC 27
Prerequisite: Completion of CCTPG 22 or CCTPG 5 with at least a C or P
Hours per term: 36 lecture and 54 laboratory
Computer programming and program design using the C Language. Topics include language syntax, pre-processors, data types, conditionals, logic, recursion, array and string processing, functions, structures, bit operations, pointers, interactive programming, file input/output, and object-oriented features of C++. Not repeatable. Transfer: (CSU/UC)

CCTPG 48—Visual Studio.NET Programming, 3 units
Formerly listed as: CMPSC 28
Recommended for Success: CCTPG 5 Introduction to Programming
Hours per term: 36 lecture and 54 laboratory
Covers programming with current Microsoft Visual Studio tools (.NET environment). Emphasis is on structured design, object orientation, Graphical User Interface design, and event-driven applications. Includes programming projects using screen development, control constructs, array processing, file input/output, and database access. Not repeatable. MJC equivalent: (CSCI 221) Transfer: (CSU/UC)

CCTPG 51—Database Management, 3 units
Formerly listed as: CMPSC 55
Recommended for Success: CCTIS 10
Hours per term: 36 lecture and 54 laboratory
Fundamentals of database design and administration. Covers basic terminology, types of database systems, and how to design a database appropriate to an application. Topics include linking of tables in a relational database, SQL commands, Query By Example, and design of input forms and reports. Hands-on component uses a current commercial database management system in a Windows environment. Not repeatable. MJC equivalent: (CCTPG 230) Transfer: (CSU)

CCTSS

(Computer and Communications Technology: Support Services)

CCTSS 11—Networking Essentials, 3 units
Formerly listed as: CMPSC 41
Recommended for Success: CCTIS 10
Hours per term: 36 lecture and 54 laboratory
An introduction to computer networking and data communications. The focus is on concepts, terminology, and technologies in current networking environments. It is based on, and covers the Open System Interconnect (OSI) model including discussions of Local and Wide Area Networks (LAN & WAN). A laboratory component provides hands-on experience in network setup and computer configuration. Includes the first semester of Cisco Networking Academy Program which prepares students for Cisco Certified Network Association/CCNA certification. The topics covered are also applicable to Microsoft Certified Systems Engineer (MCSE) and other industry networking certifications. Not repeatable. Transfer: (CSU)

CCTSS 112—Networking, CCNA 2: Routing and Switching Essentials, 3 units
Formerly listed as: CMPSC 162
Prerequisite: Completion of CCTSS 11 with at least a C or P
Hours per term: 36 lecture and 54 laboratory
Cisco Networking Academy Semester 2. Describes the architecture, components, and operations of routers and switches in a small network. Students learn how to configure a router and a switch for basic functionality. By the end of this course, students will be able to configure and troubleshoot routers and switches and resolve common issues with RIPv1, RIPv2, single-area and multi-area OSPF, virtual LANs, and inter-VLAN routing in both IPv4 and IPv6 networks. A laboratory component provides hands-on experience in the configuration of routers. Not repeatable.

CCTSS 113—Networking, CCNA 3: Scaling Networks, 3 units
Formerly listed as: CMPSC 163
Prerequisite: Completion of CCTSS 112 with at least a C or P
Hours per term: 36 lecture and 54 laboratory
Cisco Networking Academy Semester 3. Describes the architecture, components, and operations of routers and switches in a larger and more complex network. Students learn how to configure routers and switches for advanced functionality. By the end of this course, students will be able to configure and troubleshoot routers and switches and resolve common issues with OSPF, EIGRP, STP, and VTP in both IPv4 and IPv6 networks. Students will also develop the knowledge and skills needed to implement DHCP and DNS operations in a network. Not repeatable.
CCTSS 114—Networking, CCNA 4: Connecting Networks, 3 units
Formerly listed as: CMPSC 164
Prerequisite: Completion of CCTSS 113 with at least a C or P
Hours per term: 36 lecture and 54 laboratory
Cisco Networking Academy Semester 4. Discusses the WAN technologies and network services required by converged applications in a complex network. The course enables students to understand the selection criteria of network devices and WAN technologies to meet network requirements. Students learn how to configure and troubleshoot network devices and resolve common issues with data link protocols. Students will also develop the knowledge and skills needed to implement IPSec and virtual private network (VPN) operations in a complex network. Not repeatable.

CCTSS 121—PC Assembly, Upgrade and Support (A+), 3 units
Formerly listed as: CMPSC 167
Prerequisite: Completion of or concurrent enrollment in CCTSS 121 with at least a C or P
Hours per term: 36 lecture and 54 laboratory
The first of two courses designed to prepare students to pass the current CompTIA A+ exams. Includes theory and hands-on activities for installing and maintaining current desktop computer installations. Also covers upgrading and adding I/O devices to desktop PCs. Not repeatable.

CCTSS 122—PC Operating System Installation and Support (A+), 3 units
Formerly listed as: CMPSC 168
Prerequisite: Completion of CCTSS 121 with at least a C or P
Hours per term: 36 lecture and 54 laboratory
The second of two courses designed to prepare students to pass the current CompTIA A+ exams. Includes theory and hands-on activities for installing and maintaining current Windows desktop installations. Also covers diagnosing and correcting operating system issues, and introduces connecting desktop PCs to LAN networks and the Internet. Not repeatable.

CCTIS 210—Basic Computer Skills for College Success, ½-1½ units
Formerly listed as: CMPSC 210
Hours per term: 9, 18, or 27 lecture
Provides students with the opportunity to build a foundation of basic computer skills vital to success in the college environment including navigating the college website, file management, word processing, course management systems for hybrid and online courses, Internet and email. The material is developed to ensure that students will see the importance of learning how to use the applications for future coursework. Not repeatable. Grading: (P/NP only)

CHEM (CHEMISTRY)

CHEM 2A—General Chemistry I, 3 units
Prerequisite(s): Completion of MATH 104 and CHEM 5 or CHEM 14 or CHEM 20 or CHEM 30/PHYS 30 with at least a C or P
Hours per term: 54 lecture
The first half of a two-semester course designed to give an in-depth survey of chemical principles and theories. The application of the scientific method to observable chemical phenomena is an overarching theme of this course. Subjects covered in-depth include measurement theory and practice, data acquisition and analysis, modern atomic theory, ionic and covalent bonding, reaction classifications, stoichiometry, gas and solution chemistry, thermochemistry, intermolecular forces, and colligative properties. Further introductions to molecular orbital theory, quantum chemistry, materials science, and environmental analysis ensure practical use of general chemical principles. Not repeatable. MJC equivalent: (CHEM 2A+CHEM 2AL=CHEM 101) Transfer: (CSU/UC) (CSU-GE: B1) (IGETC: 5A) C-ID: (CHEM 2A+CHEM 2AL=C-ID CHEM 110) (CHEM 2A+CHEM 2AL+CHEM 2B+CHEM2BL = C-ID CHEM 120S)

CHEM 2AL—General Chemistry I Laboratory, 2 units
Prerequisite/Co-requisite: Completion of or concurrent enrollment in CHEM 2A with at least a C or P
Hours per term: 18 lecture and 54 laboratory
The first laboratory course in a series designed so students gain multiple experiences in a chemistry lab. The investigation of compounds and elements using gravimetric, colorimetric, calorimetric, titrative, and qualitative means will be explored. The analysis of the validity of quantitative and qualitative data will be included throughout the course. Standard laboratory safety (SLS) and good laboratory practice (GLP) will be emphasized. Not repeatable. Transfer: (CSU/UC-Transfer credit limited. See a counselor.) (CSU-GE: B3) (IGETC: 5C) C-ID: (CHEM 2A+CHEM 2AL=C-ID CHEM 110) (CHEM 2A+CHEM 2AL+CHEM 2B+CHEM2BL = C-ID CHEM 120S)

CHEM 2B—General Chemistry II, 3 units
Prerequisite: Completion of CHEM 2A with at least a C or P
Hours per term: 54 lecture
The second half of an in-depth survey of chemical principles and theories. Subjects studied include chemical equilibria, acids and bases, solubility, thermodynamics, kinetics, electrochemistry, nuclear chemistry. Further introductions to inorganic chemistry, environmental chemistry, organic chemistry and biochemistry are used to create well rounded chemical education. Not repeatable. Equivalent sequence for MJC equivalent: (CC CHEM 2B + CHEM 2BL = MJC CHEM 102) Transfer: (CSU/UC-Transfer credit limited. See a counselor.) (CSU-GE: B1) (IGETC: 5A) (CHEM 2A+CHEM 2AL+CHEM 2B+CHEM2BL = C-ID CHEM 120S)
COURSES:

CHEM 2BL—General Chemistry II Laboratory, 2 units
Prerequisite/Co-requisite: Completion of or concurrent enrollment in CHEM 2B with at least a C or P
Hours per term: 54 lecture and 54 laboratory
The laboratory for the second semester of general chemistry covering kinetics, equilibrium, thermodynamics, electrochemistry, analytical chemistry, environmental chemistry, and organic chemistry. Emphasis will be on quantitative measurements, instrumentation, data analysis, and theory development. Not repeatable. MJC equivalent: (CC CHEM 2B + CHEM 2BL = MJC CHEM 102) Transfer: (CSU/UC-Transfer credit limited. See a counselor.) (CSU-GE: B3) (IGETC: 5C) C-ID: (CHEM 2A+CHEM 2AL+CHEM 2B+CHEM 2BL = C-ID CHEM 120S)

CHEM 4A—Organic Chemistry I, 3 units
Prerequisite: Completion of CHEM 2B with at least a C or P
Hours per term: 54 lecture
A mechanism-based investigation of the reactions of carbon and the analysis of the compounds produced. The nomenclature, structure, bonding, stereochemistry, and physical properties of alkanes, alkyl halides, alkenes, alkyynes, alcohols, ethers, and amines will be emphasized. Multi-step synthesis is also introduced. This is the first step in a two-semester series in organic chemistry designed for students majoring in chemistry or life sciences. Not repeatable. MJC equivalent: (CHEM 4A & CHEM 4AL = MJC CHEM 112) Transfer: (CSU/UC-Transfer credit limited. See a counselor.) (CSU-GE: B1) (IGETC: 5A) C-ID: (CHEM 4A+CHEM 4AL = C-ID CHEM 150) (CHEM 4A+CHEM 4AL+CHEM 4B+CHEM 4BL = C-ID CHEM 160S)

CHEM 4AL—Organic Chemistry I Laboratory, 1 unit
Prerequisite/Co-requisite: Completion of or concurrent enrollment in CHEM 4A with at least a C or P
Hours per term: 54 laboratory
The practice of laboratory skills involved in the synthesis, purification, and identification of organic molecules. The specific functional groups addressed will include alkenes, alkenes, alcohols, aromatics, and ethers. Not repeatable. Not repeatable. Transfer: (CSU/UC-Transfer credit limited. See a counselor.) (CSU-GE: B3) (IGETC: 5C) C-ID: (CHEM 4A+CHEM 4AL = C-ID CHEM 150) (CHEM 4A+CHEM 4AL+CHEM 4B+CHEM 4BL = C-ID CHEM 160S)

CHEM 4B—Organic Chemistry II, 3 units
Prerequisite: Completion of CHEM 4A with at least a C or P
Hours per term: 54 lecture
A mechanism-based investigation of the reactions of carbon and the analysis of the compounds produced. The chemistry of dienes, aromatics, amines, carbanions, carboxylic acids, carboxylic acid derivatives, aldehydes, ketones and biochemically important compounds will be examined. Multi-step synthesis is further extended from CHEM 4A to biomimetic natural product synthesis. Not repeatable. Equivalent sequence for MJC: (CHEM 4B & CHEM 4BL = MJC CHEM 113) Transfer: (CSU/UC-Transfer credit limited. See a counselor.) (CSU-GE: B1) (IGETC: 5A) C-ID: (CHEM 4A+CHEM 4AL+CHEM 4B+CHEM 4BL = C-ID CHEM 160S)

CHEM 4BL—Organic Chemistry II Laboratory, 1 unit
Prerequisite/Co-requisite: Completion of or concurrent enrollment in CHEM 4B with at least a C or P
Hours per term: 54 laboratory
Further practice of chemical synthesis of organic compounds, the use of the tools used to purify products and the ways chemists characterize new products formed. Attention to detail while performing multi-step synthesis, chromatographic separations, and spectroscopy analysis will be required. Not repeatable. MJC: (CHEM 4B & CHEM 4BL = MJC CHEM 113) Transfer: (CSU/UC-Transfer credit limited. See a counselor.) (CSU-GE: B3) (IGETC: 5C) C-ID: (CHEM 4A+CHEM 4AL+CHEM 4B+CHEM 4BL = C-ID CHEM 160S)

CHEM 5—Introductory Chemistry:
Environmental Emphasis, 3 units
Prerequisite: Completion of MATH 101 with at least a C or P
Hours per term: 54 lecture
Introductory chemical principles and theories applied to the study of the environment. Intended as a preparation course for general chemistry and other physical sciences, subjects include problem solving, measurement theory, data analysis, water solubility, spectral analysis, atomic structure, nuclear chemistry, ionic compounds, crystallography, stoichiometry, molecular compounds, gas laws, solutions, acids, bases, toxicity, equilibrium, kinetics, and the environmental analysis of water, soils and air. Science majors looking for an excellent foundation of chemistry before taking degree applicable physical science courses will benefit the most from this course offering. Not repeatable. Transfer: (CSU/UC-Transfer credit limited. See a counselor.) (CSU-GE: B1) (IGETC: 5A) C-ID: (CHEM 5+CHEM 5L = C-ID CHEM 106B)

CHEM 5L—Introductory Chemistry Laboratory, 1 unit
Prerequisite/Co-requisite: Completion of or concurrent enrollment in CHEM 5 with at least a C or P
Hours per term: 54 laboratory
Chemical laboratory practices related to environmental analysis including laboratory safety, measurement theory, data analysis, water sampling and analysis, soil sampling and analysis, atomic absorption spectroscopy, ionic and molecular compounds, environmental sampling, sample preparation, solution preparation, and use of standard solutions. Not repeatable. Transfer: (CSU/UC-Transfer credit limited. See a counselor.) (CSU-GE: B3) (IGETC: 5C) C-ID: (CHEM 5+CHEM 5L = C-ID CHEM 106B)

CHEM 14—Fundamental Chemistry for Allied Health, 3 units
Prerequisite: Completion of MATH 101 with at least a C or P
Hours per term: 54 lecture
Fundamental theories and principles of chemistry related to biological systems; scientific method, measurements and units, atomic and molecular structure, common biological ions, Lewis structures, nuclear medicine, gas laws, chemical reactions, solutions, acids, bases, buffers, oxidation reduction reactions, and biologically important organic compounds. Not repeatable. Not repeatable. Equivalent sequence for MJC: (CC CHEM 14 & CHEM 14L = MJC CHEM 143) Transfer: (CSU/UC-Transfer credit limited. See a counselor.) (CSU-GE: B1) (IGETC: 5A) C-ID: (CHEM 14+CHEM 14L = C-ID CHEM 101)
CHEM 14L—Fundamental Chemistry for Allied Health Laboratory, 1 unit
Prerequisite/Co-requisite: Completion of or concurrent enrollment in CHEM 14 with at least a C or P
Hours per term: 54 laboratory
Fundamental laboratory practices related to chemistry and biology; measurements and units, physical separations, solution preparation, observing chemical reactions, computer added molecular modeling, spectrophotometer analysis, organic synthesis, enzyme kinetics, qualitative analysis. Not repeatable. Equivalent sequence for MJC: (CC CHEM 14 & CHEM 14L = MJC CHEM 143) Transfer: (CSU/UC-Transfer credit limited. See a counselor.) (CSU-GE: B3) (IGETC: 5C) C-ID: (CHEM 14 + 14L = CHEM 101)

CHEM 16—Fundamental Organic and Biochemistry, 3 units
Prerequisite: Completion of CHEM 14 or CHEM 5 or CHEM 2A with at least a C or P
Hours per term: 54 lecture
The chemistry needed to pursue advanced allied health fields including the structure, nomenclature, physical properties, preparation, and reactions of organic compounds containing functional groups related to biological systems and the biochemistry of carbohydrates, lipids, amino acids, and nucleic acids. Special topics may include neurotransmitters, hormones, steroids, and other related biological molecules. Not repeatable. Equivalent sequence: (CC CHEM 16 & CHEM 16L = MJC CHEM 144) Transfer: (CSU/UC-Transfer credit limited. See a counselor.) (CSU-GE: B3) (IGETC: 5C) C-ID: (CHEM 16+CHEM 16L = C-ID CHEM 102)

CHEM 16L—Fundamental Organic and Biochemistry Laboratory, 1 unit
Prerequisite/Co-requisite: Completion of or concurrent enrollment in CHEM 16 with at least a C or P
Hours per term: 54 laboratory
Experiments and laboratory practices in organic and biochemistry will be explored in a wet lab setting. Organic purification techniques, compound analysis, and synthesis will be emphasized in the first half while reactions of biological molecules such as sugars, fats and oils, amino acids, and nucleic acids will be accomplished in the second half of the course. Not repeatable. MJC equivalent: (CC CHEM 16 & CHEM 16L = MJC CHEM 144) Transfer: (CSU/UC-Transfer credit limited. See a counselor.) (CSU-GE: B3) (IGETC: 5C) C-ID: (CHEM 16+CHEM 16L = C-ID CHEM 102)

CHEM 20—The Chemistry of Everything, 3 units
Prerequisite: Completion of MATH 101 with at least a C or P
Hours per term: 54 lecture
An introduction to the way chemists look at the world. Designed for non-science majors, topics ranging from dirt and sunshine to water and explosives will be explored. A blend of chemistry content and real-life applications will be used to illustrate scientific thought processes. Not repeatable. MJC equivalent: (CHEM 150) Transfer: (CSU/UC-Transfer credit limited. See a counselor) (CSU-GE: B1) (IGETC: 5A) C-ID: (CHEM 100)
CHEM 20L—The Chemistry of Everything Laboratory, 1 unit
Prerequisite/Co-requisite: Completion of or concurrent enrollment in CHEM 20 with at least a C or P
Hours per term: 54 laboratory
An introduction to how chemists work in the laboratory. Experiments will be performed in a wet lab environment allowing for a more in-depth understanding of how chemistry principles shape our world. Not repeatable. Transfer: (CSU/UC-Transfer credit limited. See a counselor.) (CSU-GE: B3) (IGETC: 5C)

CHEM 30/PHYCS 30—Survey of Chemistry and Physics, 4 units
Prerequisite: Completion of MATH 101
Hours per term: 54 lecture and 54 laboratory
An investigation of basic principles of physics and chemistry including matter, physical and chemical properties, energy, motion, light, atomic structure, bonding, solutions and chemical reactions. The inter-dependence of chemistry and physics will be emphasized. The inquiry-based learning experience is designed to assist students and future science educators in learning how to guide learning by self-discovery. Credit may be earned once for CHEM 30 or PHYCS 30. Not repeatable. MJC equivalent: (PHSCI 180) Transfer: (CSU/UC) (CSU-GE: B1, B3) (IGETC: 5A, 5C) C-ID: (CHEM 30 or PHYCS 30 = C-ID CHEM 140)

CHILD 1—Child Growth and Development, 3 units
Recommended for Success: ENGL 1A or ENGL 151
Hours per term: 54 lecture
Growth and development of children, both typical and atypical, from conception through adolescence. Basic concepts related to physical, social, intellectual, and emotional development, including the effects of culture, will be explored. Emphasis on interactions between maturational processes and environmental factors. While studying developmental theory and investigative research methodologies, students will observe children, evaluate individual differences and analyze characteristics of development at various stages. Not repeatable. MJC equivalent: (CLDDV 103) Transfer: (CSU/UC) (CSU-GE: D9, E) (IGETC: 4G) C-ID: (CLDDV 101)

CHILD 4—Observation and Assessment, 3 units
Hours per term: 54 lecture
This course focuses on the appropriate use of a variety of assessment and observation strategies to document development and behavior. Child observations will be conducted and analyzed. Not repeatable. MJC equivalent: (CLDDV 167) Transfer: (CSU) C-ID: (ECE 200)

CHILD 8—Early Literacy Development, 3 units
Hours per term: 54 lecture
This course will improve early childhood educators' and care providers' knowledge of early literacy development and the skills in teaching early literacy to children from birth through age eight. It includes research-based principles for providing children with a strong foundation in early reading and writing within a developmentally appropriate approach. Not repeatable. Transfer: (CSU)
CHILD 16—Practicum, 3 units
*Prerequisite: Completion of Child 1 and CHILD 22 with at least a C or P
Corequisite: Concurrent enrollment in CHILD 3
*Hours per term: 18 lecture and 108 laboratory
In this course students will practice and demonstrate developmentally appropriate early childhood program planning and teaching competencies at an approved placement site. Students will utilize practical classroom experiences to make connections between theory and practice, develop professional behaviors, and build a comprehensive understanding of children and families. Child centered, play-oriented approaches to teaching, learning, and assessment, and knowledge of curriculum content areas will be emphasized as student teachers design, implement and evaluate experiences that promote positive development and learning for all young children. Not repeatable. MJC equivalent: (CLDDV 127 or CLDDV 128) Transfer: (CSU) C-ID: (ECE 210)

CHILD 17—Adult Supervision Practicum, 2 units
*Hours per term: 18 lecture and 54 laboratory
Child development students will gain the skills and techniques needed to supervise adults in developmentally appropriate early childhood education programs. The curriculum is designed for advanced students who are seeking to fulfill the adult supervision requirement for the Child Development Permit and/or supervise others. Not repeatable. MJC equivalent: (CLDDV 154) Transfer: (CSU)

CHILD 19—Introduction to Children with Special Needs, 3 units
*Hours per term: 54 lecture
Introduces the variations in development of children with special needs ages birth through eight and the resulting impact on families. Includes an overview of historical and societal influences, laws relating to children with special needs, and the identification and referral process. Not repeatable. MJC equivalent: (CLDDV 163) Transfer: (CSU)

CHILD 22—Child, Family, Community, 3 units
*Hours per term: 54 lecture
An examination of the developing child in a societal context which focuses on the interrelationships of family, school, and community and emphasizes historical and socio-cultural factors. The processes of socialization and identity development will be highlighted. Not repeatable. MJC equivalent: (CLDDV 109) Transfer: (CSU) (CSU-GE: D7) C-ID: (CDEV 110)

CHILD 23—Guiding Children’s Social Development, 3 units
*Hours per term: 54 lecture
This course is designed to provide early childhood educators and parents with the skills necessary to promote the emotional support and guidance young children need for healthy social development. Topics include: the developmental aspects of social/emotional development, supporting children in stressful situations, fostering self-discipline, supporting children’s friendships, promoting pro-social behavior, handling children’s aggressive behavior, and diversity issues. This course covers children birth through school-age. Not repeatable. MJC equivalent: (CLDDV 121) Transfer: (CSU)

CHILD 26—Health, Safety and Nutrition, 3 units
*Hours per term: 54 lecture
Introduction to the laws, regulations, standards, policies and procedures and early childhood curriculum related to child health, safety and nutrition. The key components that ensure physical health, mental health and safety for both children and staff will be identified along with the importance of collaboration with families and health professionals. Focus on integrating the concepts into everyday planning and program development for all children. Not repeatable. MJC equivalent: (CLDDV 111) Transfer: (CSU) C-ID: (ECE 220)

CHILD 28—Books for Young Children, 3 units
*Hours per term: 54 lecture
An introductory course on books for young children. Topics will include how to evaluate content and illustration; choosing books that relate to children’s developmental needs and interest; the art of reading aloud. Field work involving reading aloud to children under six years of age is required. Not repeatable. Transfer: (CSU)

CHILD 30—Administration I: Programs in Early Childhood Education, 3 units
Recommended for Success: Completion of ENGL 151 with at least a C or P Hours per term: 54 lecture
Introduction to the administration of early childhood programs. Covers program types, budget, management, regulations, laws, development and implementation of policies and procedures. Examines administrative tools, philosophies, and techniques needed to organize, open, and operate an early care and education program. Not repeatable. MJC equivalent: (CLDDV 150) Transfer: (CSU)

CHILD 31—Advanced Child Care Administration, 3 units
*Prerequisite: Completion of CHILD 30 with at least a C or P
*Hours per term: 54 lecture
An advanced course for directors and lead teachers in child care. Students will learn staff development and leadership techniques. Fiscal, advocacy and current issues will be explored. Not repeatable. MJC equivalent: (CLDDV 151) Transfer: (CSU)

CHILD 35—Introduction to Curriculum, 3 units
*Hours per term: 54 lecture
An overview of knowledge and skills related to providing appropriate curriculum and environments for young children from birth to age 6. Students will examine teacher’s role in supporting development and fostering the joy of learning for all young children using observation and assessment strategies emphasizing the essential role of play. An overview of content areas will include but not be limited to: language and literacy, social and emotional learning, sensory learning, art and creativity, math and science. Not repeatable. MJC equivalent: (CLDDV 107) Transfer: (CSU) C-ID: (ECE 130)
COURSES: CHILD

CHILD 36—Teaching in a Diverse Society, 3 units

Hours per term: 54 lecture

Examination of the development of social identities in diverse societies including theoretical and practical implications of oppression and privilege as they apply to young children, families, programs, classrooms and teaching. Various classroom strategies will be explored, emphasizing culturally and linguistically appropriate anti-bias approaches supporting all children in becoming competent members of a diverse society. Course includes self-examination and reflection on issues related to social identity, stereotypes and bias, social and educational access, media and schooling. Not repeatable. MJC equivalent: (CLDDV 262) Transfer: (CSU) (CSU-GE: D7) C-ID: (ECE 230)

CHILD 41—Implementing Curriculum for Young Children, 4 units

Hours per term: 72 lecture

A hands on survey of educational activities suitable for young children birth to age 8 in the areas of math, science, art, and movement. Students will examine the connection between observation and assessment and planning curriculum. Developmentally appropriate practice and elements of high quality care will be emphasized. Transfer: (CSU)

CHILD 42—Infant/Toddler Development, 3 units

Hours per term: 54 lecture

A study of infants and toddlers from pre-conception to age three including physical, cognitive, language, social, and emotional growth and development. Applies theoretical frameworks to interpret behavior and interactions between heredity and environment. Emphasizes the role of family and relationships in development. Not repeatable. MJC equivalent: (CHILD 125) Transfer: (CSU)

CHILD 43—Infant/Toddler Care and Education, 3 units

Hours per term: 54 lecture

Applies current theory and research to the care and education of infants and toddlers in group settings. Examines essential policies, principles and practices that lead to quality care and developmentally appropriate curriculum for children birth to 36 months. Not repeatable. MJC equivalent: (CHILD 122) Transfer: (CSU)

CHILD 44—Infant/Toddler Practicum, 3 units

Formerly listed as: CHILD 116

Prerequisite(s): Completion of CHILD 1 and CHILD 22 with at least a C or P

Corequisite(s): Concurrent enrollment in or prior completion of CHILD 3 with at least a C or P

Hours per term: 18 lecture and 108 laboratory

In this course the student will practice and demonstrate developmentally appropriate early childhood program planning and teaching competencies in an approved infant or toddler field site. Students will utilize practical classroom experiences to make connections between theory and practice, develop professional behaviors, and build a comprehensive understanding of children and families. Child-centered, play-oriented approaches to teaching, learning and assessment, and knowledge of curriculum content areas will be emphasized as student teachers design, implement and evaluate experiences that promote positive development and learning for all young children. This class can be used by students as a specialization class toward their Child Development Permit (issued by the California Teacher Credentialing Office). Not repeatable except for grade improvement. MJC equivalent: (CHILD 127) Transfer: (CSU)

CHILD 45—School-Age Child Care, 3 units

Formerly listed as: CHILD 126

Hours per term: 54 lecture

This course will include the study of child development for children ages 6 to 12 and an overview of skills necessary to provide appropriate care for this age group. This class can be applied by students as a specialization class toward their Child Development Permit (issued by the California Teacher Credentialing Office). Not repeatable. Transfer: (CSU)

CHILD 97—Work Experience in Child Development, 1-4 units

Co-requisite: Must be enrolled in at least seven (7) units, including Work Experience, where 75 employed hours with pay equals 1 unit, or 60 employed hours without pay equals 1 unit

Provides students an opportunity to experience supervised employment in Child Development. The student’s employment must be related to educational or occupational goals. May be repeated for no more than a total of 16 units of credit less any units earned in any other Work Experience course. Grading: (P/NP only) Transfer: (CSU-Transfer credit limited. See a counselor.)
COURSES:  DRAFT - DRAMA

DRAFT (DRAFTING)

DRAFT 50A—Computer Assisted Drafting I, 3 units
   Hours per term: 36 lecture and 54 laboratory
Introduction to the use of the computer as a tool for accomplishing basic drafting tasks consistent with mechanical and architectural drafting conventions. Included topics: polar and rectangular coordinates, lines, polygons, layers, blocks, editing, hatches, dimensioning, orthographic projections, isometric drawing, layout view, plotting, and an introduction to 3-D. Not repeatable. Transfer: (CSU)

DRAFT 50B—Computer Assisted Drafting II, 3 units
   Prerequisite: Completion of DRAFT 50A with at least a C or P
   Hours per term: 36 lecture and 54 laboratory
Intermediate to advanced features of AutoCAD through creation of 3-D drawings. Included topics: customizing the AutoCAD environment, use of digitizer tablet, 3-D surfaces, solids modeling, elevated plane, extrusions, revolution, shading, rendering, scenes, lighting, textures, user coordinate system, views and ports, exporting of drawing, external databases. Not repeatable. Transfer: (CSU)

Columbia College's unique, forested setting is home to an array of beautiful flora and fauna. In spring, the campus lights up with blooms of lupine, redbud, coyote bush and more like the dogwood blossoms above.

DRAMA (DRAMATIC ARTS)

DRAMA 10—Introduction to the Theatre, 3 units
   Hours per term: 54 lecture
Provides an introduction to the art of theater, surveying the roles of the playwright, the director, the actor, the designers, the producer, the critics and the audience. Investigates the variety of theatrical styles observed in contemporary theater and its historical and cultural precedents. Compares live theatre with the electronic forms. Designed to promote the student's greater understanding and enjoyment of theatre as an art form. Field trips may be required. MJC equivalent: (THETR 100) Transfer: (CSU/UC) (CSU-GE: C1) (IGETC: 3A) C-ID: (THTR 111 or THTR 112)

DRAMA 19/SPCOM 19—Exploring Radio Drama, 1½-3 units
   Hours per term: 27-54 lecture
An intensive course focused on audio theatre production featuring the expressive use of the voice and sound effects. Students will create, rehearse, perform and provide sound effects for audio plays to be recorded. Credit may be earned once for DRAMA 19 or SPCOM 19. Not repeatable. Transfer: (CSU)

DRAMA 20—Oral Expression and Interpretation, 3 units
   Recommended for Success: ENGL 1A
   Hours per term: 54 lecture
Techniques in reading literature aloud; vocal development, production, articulation, and variety; understanding and interpreting prose, poetry, and dramatic literature; processes in the oral performance of principal literary genre. MJC equivalent: (COMM 120 & THETR 120) Not repeatable. Transfer: (CSU/UC) (CSU-GE: C1) C-ID: (COMM 170)

DRAMA 22—Introduction to Readers’ Theatre, 3 units
   Hours per term: 36 lecture and 54 laboratory
Theory and practice of Readers’ Theatre as an art form. Directed experiences in selecting, cutting, arranging and performing the Readers’ Theatre script. Not repeatable. MJC equivalent: (THETR 122) Transfer: (CSU/UC)

DRAMA 42—Acting Fundamentals, 3 units
   Hours per term: 36 lecture and 54 laboratory
Investigation of techniques and theories prerequisite to theatrical performances; psychological, philosophical, and practical preparation for the actor’s art. Not repeatable. MJC equivalent: (THETR 160) Transfer: (CSU/UC) (CSU-GE: C1)

DRAMA 43—Acting-Directing, 3 units
   Recommended for Success: DRAMA 42
   Hours per term: 36 lecture and 54 laboratory
A workshop in techniques of both acting and directing with specific focus upon the production of short scenes from a variety of theatrical genres. Not repeatable. Transfer: (CSU/UC) (CSU-GE: C1)
ECON (Economics)

ECON 10—Principles of Economics, Macro, 3 units
Prerequisite: Completion of MATH 101 or a higher-level math with at least a C or P, or placement through the assessment process
Recommended for Success: MATH 104
Hours per term: 54 lecture
Focus on the ongoing concerns of a market economy, particularly the United States and its dealings with growth, unemployment, inflation, and gross domestic product. Students will explore macroeconomic models, national income accounting, aggregate demand, aggregate supply, fiscal, and monetary policy. International implications are introduced throughout the course to explain the impact of globalization on our economy. Further understanding of these concepts and topics will be aided by the use of current events both foreign and domestic, and enhanced instruction by the use of electronic communication and interactive material. Not repeatable. MJC equivalent: (ECON 101) Transfer: (CSU/UC) (CSU-GE: D2) (IGETC: 4B) C-ID: (ECON 202)

ECON 11—Principles of Economics, Micro, 3 units
Prerequisite: Completion of MATH 101 or a higher-level math with at least a C or P, or placement through the assessment process
Recommended for Success: MATH 104
Hours per term: 54 lecture
Microeconomics emphasizes the study of individual units. The consumer: consumer behavior theory, demand and elasticity. The corporation: analysis of costs, theory of production, pricing factor inputs including wages, rent, and interest; the social implications of various market structures; and special economic problems. Further understanding of these concepts and topics will be aided by the use of current events, both foreign and domestic, and enhanced instruction by the use of electronic communication and interactive material. Not repeatable. MJC equivalent: (ECON 102) Transfer: (CSU/UC) (CSU-GE: D2) (IGETC: 4B) C-ID: (ECON 201)

EDUC (EDUCATION)

EDUC 11—Introduction to Elementary Classroom Teaching, 3 units
Recommended for Success: ENGL 1A
Hours per term: 36 lecture, 54 laboratory
This course introduces students to the concepts and issues related to teaching diverse learners in today's contemporary schools, Transition Kindergarten through grade 12 (TK-12). Course requires a minimum of 45 hours of structured fieldwork in public school elementary classrooms. Not repeatable. MJC equivalent: (SOCSC 110) Transfer: (CSU/UC) C-ID: (EDUC 200)

EDUC 50—Online Course Development, 3 units
Hours per term: 54 lecture
This course will emphasize techniques for developing universally designed online learning modules, effective pedagogy for teaching online, including effective teaching practices while demonstrating how to use the course management learning system. Synchronous and Asynchronous communication will be covered to encourage regular and effective communication. Not repeatable. Transfer: (CSU)

EDUC 51—Emerging Technologies for Online Course Development, 3 units
Hours per term: 54 lecture
The course will emphasize enhancing the online course environment with accessible, open source and/or low-cost emerging technology tools and objects. Ideas and hands-on practice will be introduced for integrating emerging technologies, e.g., digital and social media to enhance the online learning experience. Not repeatable. Transfer (CSU).

EDUC 52—Universal Design for Online Course Development, 3 units
Hours per term: 54 lecture
The course will focus on the implementation of universal design for course content, materials and activities to benefit all learners. Not repeatable. Transfer: (CSU)
**EMS**

(EMERGENCY MEDICAL SERVICES)

**EMS 4—Emergency Medical Technician Training,** 7 units

*Prerequisite(s): Completion of EMS 157 and OFTEC 50 with at least a C or P Recommended for Success: ENGL 151

*Hours per term:* 108 lecture and 72 laboratory

An intensive course to assist the student in developing didactic and manipulative skills to recognize and treat illness and injuries in the pre-hospital environment. The course meets or exceeds both State of California and United States Department of Transportation's EMT-Basic National Standard Curriculum (DOT HS 808 149) training guidelines. This course prepares students for National Registry certification as an Emergency Medical Technician. At the first class session students will be required to show verification of current CPR certification equivalent to current American Heart Association's Guidelines for Cardiopulmonary Resuscitation and Emergency Cardiovascular Care at the Healthcare Provider level as specified by State of California regulations. Not repeatable except for grade improvement. MJC Equivalent: (EMS 390) Transfer: (CSU)

**EMS 10—Outdoor Emergency Care Training,** 6 units

*Hours per term:* 108 lecture and 18 laboratory

This is an intensive course to assist the student in developing didactic and manipulative skills to recognize and treat illness and injuries in the non-urban, pre-hospital environment. The course shall meet or exceed the training guidelines and requirements as specified by the National Ski Patrol and the American Academy of Orthopedic Surgeons. Those students wishing to become National Ski Patrol Basic Patrollers must have approval from sponsoring agency and may be required to pass a skiing proficiency test on the first day of the class or prior to certification. Field trips may be required. Not repeatable. Transfer: (CSU)

**EMS 12—Pre-Paramedic Training,** 8 units

*Hours per term:* 144 lecture

Provides prerequisites needed for entry into a Paramedic Training Program. An intensive course dealing with anatomy, physiology, pharmacology, and EKG interpretation, and their relationship in the pre-hospital environment. Current EMT certification is required. Two or more years of pre-hospital work experience is strongly recommended. A class entrance exam will be administered on the first evening of class. Not repeatable. Transfer: (CSU)

**EMS 20—Basic Cardiology and Cardiac Dysrhythmias,** 3 units

*Hours per term:* 54 lecture

An intensive course that details basic cardiac anatomy and physiology, normal vs. abnormal cardiac function, electrocardiogram recognition of cardiac dysrhythmias, and the interventions, including pharmacologic therapy, pertaining to specific dysrhythmias. Designed for both the health care professional and the pre-hospital care professional. Serves as an excellent ACLS review and/or prepares students for a paramedic training program. Meets requirements for “Monitor Technician” at many health care facilities. Current EMT certification and/or LVN or higher nursing certification is required for class eligibility. Not repeatable. Transfer: (CSU)

**EMS 97—Work Experience in Emergency Medical Service,** 1-4 units

*Co-requisite: Must be enrolled in at least seven (7) units, including Work Experience, where 75 employed hours with pay equals 1 unit, or 60 employed hours without pay equals 1 unit

Provides students an opportunity to experience supervised employment in ems. The student's employment must be related to educational or occupational goals. Grading: (P/NP only) May be repeated for no more than a total of 16 units of credit less any units earned in any other Work Experience course. Transfer: (CSU)-Transfer credit limited. See a counselor.

**EMS 107—Skills Refresher for Emergency Medical Technicians and First Responders,** 1½ units

*Prerequisite: Completion of EMS 4 or EMS 157 with at least a C or P; or equivalent medical certification level

*Hours per term:* 27 lecture

This instructor-based course meets or exceeds the Skills Competency and Continuing Education requirements required for EMT recertification. Students will reacquaint themselves with the equipment and skills used by both Emergency Medical Technicians and/or First Responders in emergency medical situations. The course is designed to update existing EMT and First Responder certifications as well as provide continuing education (CE) for EMT and First Responder certificated personnel. Note: Students who do NOT require skills competency verification and require ONLY instructor-based Continuing Education credits should consider EMS 109 (Online Emergency Medical Technician Refresher). Grading: (P/NP only)

**EMS 109—Online Emergency Medical Technician Refresher,** 1½ units

*Prerequisite: Completion of EMS 4 or EMS 157 with at least a C or P; or equivalent medical certification level

*Hours per term:* 27 lecture

This online course meets or exceeds local requirements for instructor-based EMT Continuing Education and Recertification. Students will re-acquaint themselves with the treatment protocols and knowledge required by Emergency Medical Technicians. The course is designed to update existing EMT and/or First Responder certifications as well as provide continuing education credit (CE) for EMT and First Responder certificated personnel. Note: This course only provides instructor-based Continuing Education credits. Students should consider EMS 107 (Skills Refresher for Emergency Medical Technicians and First Responders) if skills competency verification and/or CPR/AED certification is desired. Not repeatable. Grading: (P/NP only)

**EMS 153—CPR and Basic First Aid,** ½ unit

*Hours per term:* 9 lecture

A basic course designed for the citizen who wishes to maintain or acquire Cardio-Pulmonary Resuscitation (CPR) and Basic First Aid certification, or who wishes to learn basic CPR and basic first aid techniques. Successful course completion results in Adult, Child and Infant CPR certification and Basic First Aid certification. Not repeatable. Grading: (P/NP only)
EMS 157—Emergency Medical Responder and CPR, 3 units

Hours per term: 54 lecture

A basic course for emergency service workers (volunteer or professional) who may, in the performance of their duties, be responding to medical emergencies. Particular emphasis will be placed on situations unique in the rural setting. Stresses continuity of care through the approach to the patients and prioritization of their injuries/illnesses where advanced life support response is delayed or unavailable. Meets or exceeds United States Department of Transportation National Standard Curriculum, and State and local government requirements. Not repeatable. MJC equivalent: (EMS 350)

EMS 165—Conversational Medical Spanish for Emergency Health Care Providers, 3 units

Hours per term: 54 lecture

This course is intended to develop fundamental conversational skills primarily for Emergency Health Care Providers and other health care providers. This course is not intended to replace or substitute for a course of study in a foreign language and is specific in its design and content. Basic dialogue and pattern practice will be the instructional method, emphasizing a medical question and answer format. The course will cover basic non-technical vocabulary, some specialized functional terms, idiomatic expressions and situational phrases used in medical Spanish. Also included will be cultural characteristics of the local population of Spanish speakers. Not repeatable.

EMS 175—EMS Skills Development, 2 units

Hours per term: 27 lecture and 27 laboratory

This course focuses on the development of basic skills needed for the operation of a variety of emergency medical equipment according to commonly accepted protocols. Sessions are designed to develop speed and accuracy in the application of equipment and enhance assessment and treatment techniques. Not repeatable. Grading: (P/NP only)
ENGL (ENGLISH)

ENGL 1A—Reading and Composition: Beginning, 3 units
Prerequisite: Completion of ENGL 151 with at least a C or P, or placement through the assessment process
Hours per term: 54 lecture
Development of college-level reading and composition skills. Emphasis will be on applying techniques of critical analysis to reading, interpreting, writing, and conducting research. Writing emphasis will be on the expository essay, including the longer documented essay. Note: Students will complete writing assignments with a total minimum of 8,000 words by the end of the semester. Not repeatable. MJC equivalent: (ENGL 101) Transfer: (CSU/UC) (CSU-GE: A3, C2) (IGETC: 3B) C-ID: (ENGL 100)

ENGL 1B—Advanced Composition and Introduction to Literature, 3 units
Prerequisite: Completion of ENGL 1A with at least a C or P
Hours per term: 54 lecture
This transfer-level course introduces students to major literature genres: poetry, drama, short story, and long works of fiction, from diverse cultural sources and perspectives. Students write approximately 8,000-10,000 words in critical essays, employing methods of literary analysis and research, demonstrating further development of reading, critical reasoning, and writing skills. Not repeatable. MJC equivalent: (ENGL 102) Transfer: (CSU/UC) (CSU-GE: A3, C2) (IGETC: 1B) C-ID: (ENGL 120)

ENGL 1C—Advanced Composition and Critical Thinking, 3 units
Formerly listed as: “Critical Reasoning and Writing”
Prerequisite(s): Completion of ENGL 1A with at least a C or P
Hours per term: 54 lecture
Designed to develop critical thinking, reading, and writing beyond the level taught in ENGL 1A. Will focus on the development of logical reasoning, analysis, and argumentation in composition. Note: Students will complete writing assignments with a total minimum of 8,000 words by the end of the semester. Not repeatable. MJC equivalent: (ENGL 103) Transfer: (CSU) (CSU-GE: A3) (IGETC: 1B) C-ID: (ENGL 105)

ENGL 10—Creative Writing, 3 units
Prerequisite: Completion of ENGL 1A with at least a C or P
Hours per term: 54 lecture
Instruction and practice in writing poetry, fiction, drama, and non-fiction prose, including autobiography, essays, and articles. Analysis of contemporary works with respect to literary techniques. The class employs a workshop format. Not repeatable. Transfer: (CSU/UC) C-ID: (ENGL 200)

ENGL 11—Film Appreciation, 3 units
Prerequisite(s): Completion of ENGL 1A with at least a C or P
Hours per term: 36 lecture and 54 laboratory
This course introduces students to many aspects of film: to its infancy and development, to its historical figures, to its technical elements like editing and cinematography, and to the many countries around the world where cinema is a thriving art form. Along the way, students will analyze films through discussions and essays, plus create their own original short movies. Not repeatable. MJC equivalent: (ENGL 161). Transfer: (CSU/UC) (CSU-GE: C2) (IGETC: 3B)

ENGL 17—American Literature, 3 units
Prerequisite: Completion of ENGL 1A with at least a C or P
Recommended for Success: ENGL 1B
Hours per term: 54 lecture
A study of American literature from its beginning to the late nineteenth century. Reading, analysis, and discussion of the major literary trends and authors of the time, including Emerson, Thoreau, Poe, Hawthorne, Melville, Whitman, and Dickinson. Not repeatable. MJC equivalent: (ENGL 135) Transfer: (CSU/UC) (CSU-GE: C2) (IGETC: 3B) C-ID: (ENGL 130)

ENGL 18—American Literature, 3 units
Prerequisite: Completion of ENGL 1A with at least a C or P
Recommended for Success: ENGL 1B
Hours per term: 54 lecture
A study of American literature from the late nineteenth century to the present. Reading, analysis, and discussion of the major literary trends and authors of the time, including Twain, James, Crane, Frost, Eliot, and Faulkner as well as a diverse group of contemporary writers. Not repeatable. MJC equivalent: (ENGL 136) Transfer: (CSU/UC) (CSU-GE: C2) (IGETC: 3B) C-ID: (ENGL 135)

ENGL 46—Survey of English Literature, 3 units
Prerequisite: Completion of ENGL 1A with at least a C or P
Recommended for Success: ENGL 1B
Hours per term: 54 lecture
English literature from the Anglo-Saxons through the 18th Century. MJC equivalent: (ENGL 137) Transfer: (CSU/UC) (CSU-GE: C2) (IGETC: 3B) C-ID: (ENGL 160)

ENGL 47—Survey of English Literature, 3 units
Prerequisite: Completion of ENGL 1A with at least a C or P
Recommended for Success: ENGL 1B
Hours per term: 54 lecture
English literature of the 19th and 20th Centuries. MJC equivalent: (ENGL 138) Not repeatable. Transfer: (CSU/UC) (CSU-GE: C2) (IGETC: 3B) C-ID: (ENGL 165)
ENGL 49—California Literature, 3 units
Prerequisite: Completion of ENGL 1A with at least a C or P
Recommended for Success: ENGL 1B
Hours per term: 54 lecture
An overview of the literary heritage of California, from its early origins to Harte, Bierce, and Twain through the realism of Norris and London, the regionalism of Steinbeck, Saroyan, Jeffers to the naturalism of Muir. Also will include writings from the Carmel cadre, the San Francisco Beat writers, to contemporary writers including Stegner, Yamamoto, Soto, Haslam, Tan, Didion, Rose, Miles, and Valdez. The approach will emphasize the rich ethnic diversity that has contributed to our literary heritage. Field trips may be required. Not repeatable. Transfer: (CSU/UC) (CSU-GE: C2) (IGETC: 3B)

ENGL 50—Introduction to Shakespeare, 3 units
Prerequisite(s): Completion of ENGL 1A with at least a C or P
Recommended for Success: Completion of ENGL 1B with at least a C or P
Hours per term: 54 lecture
An introduction to the representative works by Shakespeare, including the characteristics of the different genres—comedy, history, tragedy—and a study of a number of the sonnets. In addition, students will study the literary, social, and historical backgrounds of Shakespeare's time as they affect the meaning of the works studied. Not repeatable. MJC equivalent: (ENGL 163) Transfer: (CSU/UC) (CSU-GE: C2) (IGETC: 3B)

ENGL 81—Introduction to World Literature: 1500 to present, 3 units
Prerequisite: Completion of ENGL 151 with at least a C or P or eligibility for ENGL 1A
Recommended for Success: ENGL 1A
Hours per term: 54 lecture
Literature, including historical backgrounds, from the Renaissance to contemporary literatures of Asian, Middle Eastern, European, African, American, and Latin American cultures. Field trips may be required. Not repeatable. Transfer: (CSU/UC) (CSU-GE: C2) (IGETC: 3B) C-ID: (ENGL 145)

ENGL 125—Shakespeare Live: A Week of Theater in Ashland, Oregon, 3 units
Hours per term: 54 lecture
Ashland is the home of the Oregon Shakespeare Festival, one of America’s premier theater companies. Students will travel to Ashland to experience a variety of plays, plus receive instruction on acting and design from the company’s actors. At least one of the plays will be written by Shakespeare (more in the autumn), so much of the course will focus on Shakespeare and his times. Prior to the week in Ashland, students will attend classes at Columbia College to prepare for the plays. Field trips required. Not repeatable.

ENGL 132—Writing Short Fiction, 2 units
Hours per term: 36 lecture
Instruction and practice in writing shorter forms of fiction. Field trips may be required. Not repeatable.

ENGL 133—Writing It Real: Creative Nonfiction, 1-2 units
Recommended for Success: ENGL 151
Hours per term: 18 or 36 lecture
Development of skills in creative nonfiction writing. Study the principles involved in writing creative nonfiction, such as memoirs, personal essays, reviews, profiles, nature writing, and reportage. Participants create writings as well as analyze and respond to peer and professional work. Field trips may be required. Not repeatable.

ENGL 151—Preparation for College Composition, 5 units
Prerequisite: Completion of ENGL 650 with at least a C or P or eligibility for English 151
Recommended for Success: Concurrent enrollment in ENGL 649
Hours per term: 90 lecture
Developing writing skills. Students will implement writing process strategies in the production of 300-750 word essays. Course will emphasize techniques for developing descriptive, narrative, and expository essays, including essays requiring research and the inclusion of source materials, while demonstrating control over structural components of writing. Students will also develop critical reading skills and information-gathering competency. Completion of this course will prepare students for ENGL 1A. Note: Concurrent enrollment in ENGL 649 will complement studies in ENGL 151. Not repeatable. MJC equivalent: (ENGL 50)

ENGL 606—English as a Second Language: Advanced, 3 units
Prerequisite: Completion of ENGL 705A, ENGL 705B and/or ENGL 705C with at least a C or P
Hours per term: 54 lecture
This course will prepare the non-native speaker of English for regular college courses. It will involve reading, writing, listening and speaking with emphasis on reading various college-level materials and writing essays with additional preparation for success on the TOEFL. Not repeatable.

ENGL 637—Writing for Personal Enrichment, ½ unit
Hours per term: 9 lecture
Writing is an instinctive art form that can nourish and sustain; it is an art that is accessible to everyone. Personal writing is a means to access and develop that art. Participants will examine different writings and analyze their effective elements. Then students will focus on putting pen to paper, taking time to pause, reflect, discover their creative source, and ultimately work to create prose and/or poetry that contains specific qualities. Activities will involve analyzing literary selections and exploring the writing process in the context of journal writing and guided exercises. Not repeatable. Grading: (P/NP only)

ENGL 649—Writing Skills Workshop, 1 unit
Corequisite(s): ENGL 151 Preparation for College Composition or ENGL 650
English Fundamentals
Hours per term: 18 lecture
Individual assistance for students enrolled in ENGL 151 or ENGL 650. Students will receive assistance with prewriting, revision and proofreading strategies. The focus will be on encouraging students to identify their specific problems when completing writing assignments for ENGL 151/650. Grading: (P/NP Only). Not repeatable.
ENGL 650—English Fundamentals, 3 units

Recommended for Success: Completion of ENGL 649 with at least a C or P.
Hours per term: 54 lecture
Fundamentals of the writing process. Students will engage in the various stages of the writing process. Emphasis will be on improving writing fluency and grammatical skills, developing sentence structure, and proofreading strategies within the context of brief 250-500 word essays. Not repeatable. MJC equivalent: (ENGL 49)

ENTRE (ENTREPRENEURSHIP)

ENTRE 101—Introduction to Entrepreneurship, 2 units

Hours per term: 36 lecture
The student will evaluate the business skills and commitment necessary to successfully operate an entrepreneurial venture and review the challenges and rewards of entrepreneurship. The student will understand the role of entrepreneurial businesses in the United States and the impact on our national and global economy. Not repeatable.

ENTRE 102—Entrepreneurial Marketing, 2 units

Hours per term: 36 lecture
The student will gain insights essential for marketing an entrepreneurial venture utilizing innovative and financially responsible marketing strategies. The student will analyze marketing philosophies implemented by key successful entrepreneurs. Additionally, the student will prepare a marketing plan to launch the entrepreneurial venture and a marketing plan to implement during the first two years of business operation. Not repeatable.

ENTRE 103—Financial Management for Entrepreneurs, 2 units

Hours per term: 36 lecture
The importance and impact of funding sources for an entrepreneurial venture. This will be accomplished by reviewing the impact of venture capital in every phase of the business venture from idea to exit, including planning, team building, protecting intellectual capital, identifying funding sources, raising money, writing funding agreements, and managing through to an initial public offering (IPO) or merger and acquisition. Additionally, the student will develop and present a funding proposal. Not repeatable.

ENTRE 104—Preparing Effective Business Plans, 2 units

Hours per term: 36 lecture
Designed to help students develop an effective written implementation plan for a new business venture, including the critical decisions and action steps that entrepreneurs must take in both planning and executing a new venture. The course focuses on “doing” rather than on mere facts about business development and business plan writing. Not repeatable.

ENTRE 105—Social Media Marketing, 2 units

Hours per term: 36 lecture
Learn to use social media as a marketing tool, and develop competitive strategies to make your business or product stand out from the crowd. Whether it’s a blog, Facebook, LinkedIn, Twitter, or any other social media tool, social platforms are driving purchasing decisions in both the online and offline worlds. Not repeatable.

ENTRE 106—Patents, Copyrights, and Trademarks, 2 units

Hours per term: 36 lecture
A study of the requirements and procedures for obtaining and maintaining patent, trademark, copyright protection, and trade secrets. The basics behind intellectual property, and how they relate to the launch of a potential venture. Not repeatable.

ESC (EARTH SCIENCE)

ESC 1—Energy: Uses and Alternatives, 3 units

Hours per term: 54 lecture
The physical concepts of energy, work, and energy conversion techniques, including the first and second laws of thermodynamics, embedded energy, energy conservation and carbon footprint. Other concepts include the biogeochemical cycles (Carbon and Nitrogen cycles and anthropogenic impacts from energy consumption), historical and conventional uses (America and worldwide), environmental impacts generated by energy conversion, population growth and its potential impact upon energy consumption, alternative and renewable sources of energy, how we arrived at our current state of energy production/consumption, global impacts of energy production/consumption, and alternatives for future energy production/consumption. Sustainability and intergenerational equity are also explored. Apply critical thinking processes through analysis of present-day energy issues and formulation of alternative future solutions. Satisfies general education requirements for non-majors. Field trips required. Not repeatable. Transfer: (CSU/UC) (CSU-GE: B1) (IGETC: 5A)

ESC 5—Physical Geology, 4 units

Recommended for Success: ENGL 1A
Hours per term: 54 lecture and 54 laboratory
The study of the earth, its materials, structures, and processes. Erosion and deposition by streams, wind, waves and glaciers; mountain building and volcanoes at subduction zones, and rifting of the earth’s plates at mid-ocean ridges; tracing the energy from the sun and from the earth’s interior as it drives all of the processes of change on earth; the study of life on earth, past and present; the search for valuable minerals and building materials from the earth. Field trips may be required. MJC equivalent: (GEOL 161) Transfer: (CSU/UC) (CSU-GE: B1, B3) (IGETC: 5A, 5C) C-ID: (GEOL 101)
ESC 10—Environmental Geology, 3 units
Recommended for Success: Eligibility for ENGL 1A
Hours per term: 54 lecture
Students will be introduced to environmental geology, which includes the study of hazards associated with seismicity, mass wasting, flooding, coastal processes, and volcanism. Resource and pollution issues will be discussed in the context of population pressures. Global climate change and ozone depletion/limitation are also covered. Students will learn to conduct geologic research and will work collaboratively with peers inquiring about geo-environmental issues. Not repeatable. Transfer: (CSU/UC) (CSU-GE: B1) (IGETC: 5A) C-ID: (GEOL 130)

ESC 22—Historical Geology, 3 units
Hours per term: 54 lecture
This course will provide an introduction to the origin, development, and evolution of the earth and its inhabitants. The course covers the 4.5 billion year history of life on earth, as interpreted from the geologic and fossil record. The course will emphasize the diversity of life through geological time, including the origin, evolution, and extinction of the major groups of animals and plants. Additionally, impacts of changing landscapes and geologic environments on the history of life will be assessed. Through the course, students will learn to critically think as geologists and paleontologists do in order to solve geologic, palaeontologic, and evolutionary problems. Topics include the study of fossils and rocks, evolution, continents and ocean basins, geologic time, plate tectonics, climate change, and mass extinctions. Intended audience: This course is both a general science class, intended to satisfy general education requirements for non-majors as well as one of the requirements for geology majors. Field trips required. Not repeatable. Transfer: (CSU/UC) (CSU-GE: B1) (IGETC: 5A) C-ID: (GEOL 110)

ESC 23—Historical Geology, 4 units
Hours per term: 54 lecture and 54 laboratory
This course will provide an introduction to the origin, development, and evolution of the earth and its inhabitants. The course covers the 4.5 billion year history of life on earth, as interpreted from the geologic and fossil record. The course will emphasize the diversity of life through geological time, including the origin, evolution, and extinction of the major groups of animals and plants. Additionally, impacts of changing landscapes and geologic environments on the history of life will be assessed. Through the course, students will learn to critically think as geologists and paleontologists do in order to solve geologic, palaeontologic, and evolutionary problems. Topics include the study of fossils and rocks, evolution, continents and ocean basins, geologic time, plate tectonics, climate change, and mass extinctions. Intended audience: This course is both a general science class, intended to satisfy general education requirements for non-majors as well as one of the requirements for geology majors. Field trips required. Not repeatable. Transfer: (CSU/UC) (CSU-GE: B1, B3) (IGETC: 5A, 5C) C-ID: (GEOL 111)

ESC 25—Geology of the National Parks, 3 units
Recommended for Success: Eligibility for ENGL 1A
Hours per term: 54 lecture
The study of the earth's surface in relation to the formation of our National Parks. What part glaciation, erosion, volcanism, and other mountain-building processes play in the formation of the National Parks. Field trips may be required. Not repeatable. Transfer: (CSU)

ESC 30—Global Tectonic Geology, 3 units
Recommended for Success: ENGL 1A
Hours per term: 54 lecture
An introduction to global geology and how it has revolutionized man's understanding of the way the earth works. For all who wish to learn about the earth's wandering continents and spreading sea floors; what causes rising mountain ranges, volcanoes, and earthquakes; and the role that magnetism has played in the revelation of geology. Not repeatable. Transfer: (CSU/UC) (CSU-GE: B1) (IGETC: 5A)

ESC 33—Introduction to the Earth, 4 units
Hours per term: 54 lecture and 54 laboratory
This course is intended to provide an introduction to physical earth processes as studied through the disciplines of geology, oceanography, astronomy, and meteorology. Through the course, students will learn to critically think as geologists, oceanographers, meteorologists, and astronomers do in order to solve earth science problems. Topics include the study of rocks and minerals, mountain building, earthquakes and volcanoes, sea floor spreading, ocean and shoreline features, planets and stars, weather, and climate. Intended audience: This course is a general science class, intended to satisfy general education requirements for non-majors. Field trips may be required. MJC equivalent: (EASCI 161) Transfer: (CSU/UC) (CSU-GE: B1, B3) (IGETC: 5A, 5C) C-ID: (GEOL 121)

ESC 35—Field Geology, ½-3 units
Hours per term: 9-54 lecture
A field study of selected geologic features and related Earth Science topics. A one- to seven-day field trip will be taken with pre- and post-classroom sessions. Field trips required. MJC equivalent: (GEOL 171A & B) Transfer: (CSU)

ESC 35CC—Geology and Gold Mining of Calaveras County, 1-3 units
Hours per term: 18, 27, 36, 45, or 54 lecture
A field study of Calaveras County's selected geologic features, gold mining, and other related Earth Science topics, including coverage of the California State Earth Science Standards. A one- to seven-day field trip will be taken with possible pre- and post-classroom sessions. Field trips required. Not repeatable. Transfer: (CSU)

ESC 35DV—Geology of Death Valley, 1-3 units
Hours per term: 18, 27, 36, 45, or 54 lecture
A field study of Death Valley's selected geologic features and related Earth Science topics, including coverage of the California State Earth Science Standards. A one- to seven-day field trip will be taken with possible pre- and post-classroom sessions. Not repeatable. Transfer: (CSU)

ESC 35LS—Geology of Lassen, Shasta, Lava Beds, 1-3 units
Hours per term: 18, 27, 36, 45, or 54 lecture
A field study of Mt. Shasta, Lava Beds National Monument, and Lassen Peak volcanic areas. We will learn about selected geologic features and related Earth Science topics, including coverage of the California State Earth Science Standards. A one- to seven-day field trip will be taken with possible pre- and post-classroom sessions. Field trips required. Not repeatable. Transfer: (CSU)
Columbia College’s proximity to the Sierra Nevada range allows students to participate in contextual learning experiences in disciplines such as geology, earth science, fire technology, forestry, natural resources, water resources management, and geographic information systems.

**ESC 35LT—Geology of the Lake Tahoe Region, 1-3 units**  
*Hours per term: 18, 27, 36, 45, or 54 lecture*  
A field study of the Lake Tahoe region’s selected geologic features and related Earth Science topics, including coverage of the California State Earth Science Standards. A one- to seven-day field trip will be taken with possible pre- and post-classroom sessions. Field trips required. Not repeatable. **Transfer:** (CSU)

**ESC 35LV—Geology of the Long Valley Caldera, 1-3 units**  
*Hours per term: 18, 27, 36, 45, or 54 lecture*  
A field study of the Long Valley Caldera and surrounding area’s selected geologic features and related Earth Science topics, including coverage of the California State Earth Science Standards. A one- to seven-day field trip will be taken with possible pre- and post-classroom sessions. Field trips required. Not repeatable. **Transfer:** (CSU)

**ESC 35ML—Geology of the Mother Lode, 1-3 units**  
*Hours per term: 18, 27, 36, 45, or 54 lecture*  
A field study of the Mother Lode’s selected geologic features and related Earth Science topics, including coverage of the California State Earth Science Standards. A one- to seven-day field trip will be taken with possible pre- and post-classroom sessions. Field trips required. Not repeatable. **Transfer:** (CSU)

**ESC 35SA—Geology of the San Andreas Fault, 1-3 units**  
*Hours per term: 18, 27, 36, 45, or 54 lecture*  
A field study of the San Andreas Fault, Pinnacles National Monument, selected geologic features and related Earth Science topics, including coverage of the California State Earth Science Standards. A one- to seven-day field trip will be taken with possible pre- and post-classroom sessions. Field trips required. Not repeatable. **Transfer:** (CSU)

**ESC 35SN—Geology of the Sierra Nevada, 1-3 units**  
*Hours per term: 18, 27, 36, 45, or 54 lecture*  
A field study of the Sierra Nevada’s selected geologic features and related Earth Science topics, including Yosemite, King’s Canyon, and Sequoia National Parks. Also included will be coverage of the California State Earth Science Standards. A one- to seven-day field trip will be taken with possible pre- and post-classroom sessions. Field trips required. Not repeatable. **Transfer:** (CSU)

**ESC 35SP—Geology of the Sonora Pass Area, 1-3 units**  
*Hours per term: 18, 27, 36, 45, or 54 lecture*  
A field study of the Sonora Pass region’s selected geologic features and related Earth Science topics, including coverage of the California State Earth Science Standards. A one- to seven-day field trip will be taken with possible pre- and post-classroom sessions. Field trips required. Not repeatable. **Transfer:** (CSU)
ESC 35TR—Geology of the Tuolumne River, 1-3 units
Hours per term: 18, 27, 36, 45, or 54 lecture
A field study of the Tuolumne River’s selected geologic features and related Earth Science topics, including coverage of the California State Earth Science Standards. A one- to seven-day field trip will be taken with possible pre- and post-classroom sessions. Field trips required. Not repeatable. Transfer: (CSU)

ESC 40—Descriptive Astronomy, 3 units
Recommended for Success: Eligibility for ENGL 1A
Hours per term: 54 lecture
A survey course in astronomy. Topics include history of astronomy, telescopes, solar system, stars, galaxies, origin of universe, and extraterrestrial life. Field trips may be required. Not repeatable. Transfer: (CSU/UC) (CSU-GE: B1) (IGETC: 5A)

ESC 42—Natural Hazards, 3 units
Hours per term: 54 lecture
This course is intended to provide an introduction to natural hazards as studied through the disciplines of geology, oceanography, astronomy, and meteorology. Through the course, students will learn to critically think as geologists, oceanographers, meteorologists, and astronomers do in order to solve earth science problems. Topics include the study of subsidence, flooding, mass wasting, wildfires, comet/asteroid impacts and extinctions, climate change, severe weather, coastal hazards, earthquakes, and volcanoes. Intended audience: This course is a general science class, intended to satisfy general education requirements for non-majors. Field trips may be required. Not repeatable. Transfer: (CSU/UC) (CSU-GE: B1) (IGETC: 5A)

ESC 50—Oceanography, 4 units
Hours per term: 54 lecture and 54 laboratory
This course will provide students with insights into the field of Oceanography. Students will be exposed to various subtopics including plate tectonics, the ocean floor, air-sea interactions, ocean circulation, waves and water dynamics, tides, earth resources, the coast and coastal processes, the marine habitat and its animal and plant life, etc. This course will spend time teaching you to critically think as an oceanographer does in order to solve oceanographic problems. You will be able to transfer these thinking skills to other areas of your life. This course is a general science class, intended to satisfy general education requirements for non-majors as well as one of the first courses expected of oceanography and marine geology majors. Not repeatable. MJC equivalent: (EASCI I62) Transfer: (CSU/UC) (CSU-GE: B1, B3) (IGETC: 5A, 5C)

ESC 62—Meteorology, 3 units
Hours per term: 54 lecture
An introduction to the field of Meteorology. Topics include air pollution, clouds, precipitation, fog, storms, weather forecasting, the greenhouse effect, ozone depletion, and global warming. You will be asked to critically think as a meteorologist in order to solve meteorological problems. Field trips may be required. Not repeatable. Transfer: (CSU/UC) (CSU-GE: B1) (IGETC: 5A) C-ID: (GEOG 130)

FIRE 1—Fire Protection Organization, 3 units
Hours per term: 54 lecture
Introduction to fire protection; career opportunities in fire protection and related fields; philosophy and history of fire protection; fire loss analysis; fire department as part of local government; laws and regulations affecting the fire service; fire service nomenclature; specific fire protection functions; basic fire chemistry and physics; introduction to fire protection systems; introduction to fire strategy and tactics. Not repeatable. MJC equivalent: (FSCI 301) Transfer: (CSU)

FIRE 2—Fire Prevention Technology, 3 units
Prerequisite: Completion of FIRE 1 with at least a C or P
Hours per term: 54 lecture
Fundamental information regarding the history and philosophy of fire prevention, organization and operation of a fire prevention bureau, use of fire codes, identification and correction of fire hazards, and the relationship of fire prevention with fire safety education and detection and suppression systems. Not repeatable. MJC equivalent: (FSCI 302) Transfer: (CSU)

FIRE 3—Fire Protection Equipment and Systems, 3 units
Prerequisite: Completion of FIRE 1 with at least a C or P
Hours per term: 54 lecture
Provides information relating to the features of design and operation of fire detection and alarm systems, heat and smoke control systems, special protection and sprinkler systems, water supply for fire protection and portable fire extinguishers. Field trips may be required. Not repeatable. MJC equivalent: (FSCI 303) Transfer: (CSU)

FIRE 4—Building Construction for Fire Protection, 3 units
Prerequisite: Completion of FIRE 1 with at least a C or P
Hours per term: 54 lecture
The study of the components of building construction that relate to fire safety. The elements of construction and design of structures are shown to be key factors when inspecting buildings, pre-planning fire operations, and operating at fires. The development and evolution of building and fire codes will be studied in relation to past fires in residential, commercial, and industrial occupancies. Not repeatable. MJC equivalent: (FSCI 304) Transfer: (CSU)

FIRE 5—Fire Behavior and Combustion, 3 units
Prerequisite: Completion of FIRE 1 with at least a C or P
Hours per term: 54 lecture
Theory and fundamentals of how and why fires start, spread, and are controlled; an in-depth study of fire chemistry and physics, fire characteristics of materials, extinguishing agents, and fire control techniques. Not repeatable. MJC equivalent: (FSCI 305) Transfer: (CSU)
COURSES: FIRE

FIRE 7—Wildland Fire Control, 3 units
Prerequisite: Completion of FIRE 1 with at least a C or P
Hours per term: 54 lecture
Provides practical knowledge and an overview of the fundamental principles of wildland fire control and management. Topics include firefighter safety, wildland fire behavior, strategy and tactics, wildland-urban intermix fires and the role of prescribed fire activities. Not repeatable. MJC equivalent: (FSCI 337) MJC equivalent: (CC FIRE 7, FIRE 50, FIRE 101, FIRE 106, FIRE 108 & FIRE 100 = MJC FSCI 362 & FSCI 363) Transfer: (CSU)

FIRE 29A—Driver/Operator Training 1A, 1 unit
Prerequisite: Completion of FIRE 101 with at least a C or P, or Firefighter I certificate, or Volunteer Firefighter certification, or equivalent
Hours per term: 10.8 lecture and 28.8 laboratory activity
Designed to provide the student with information on driver techniques for emergency vehicles and techniques of basic inspection and maintenance for emergency vehicles, including actual driving exercises under simulated emergency conditions. Not repeatable. MJC equivalent: (FIRE 29A+29B = MJC FSCI 364) Transfer: (CSU)

FIRE 29B—Driver/Operator Training 1B, 1 unit
Prerequisite: Completion of FIRE 29A with at least a C or P, or Firefighter I Certificate, or Volunteer Firefighter certification or equivalent
Hours per term: 10.8 lecture and 86.5 laboratory activity
Designed to provide the student with information and skills on Pump Techniques and Operations including basic inspection and maintenance. Not repeatable. Grading: (P/NP only) Equivalent sequence: (CC FIRE 29A & FIRE 29B = MJC FSCI 364) Transfer: (CSU)

FIRE 50/SAR 50—Low Angle Rope Rescue, 1½ units
Hours per term: 27 lecture
This course is designed to take the student to the basic skill and knowledge levels of Low Angle (non-vertical) Rope Rescue. Topics will include, but are not limited to: basic rappelling, rescue of ambulatory and non-ambulatory persons with an emphasis on safety and teamwork. Topics reflect current Urban Search and Rescue and California State Fire Training standards and equipment. Successful students will be certified in Low Angle Rope Rescue by the California State Fire Marshal’s Office. Credit may be earned once for FIRE 50 or SAR 50. Not repeatable. Grading: (P/NP) Equivalent sequence: (CC FIRE 7, FIRE 50, FIRE 101, FIRE 106 & FIRE 107 = MJC FSCI 362 & FSCI 363) Transfer: (CSU)

FIRE 51—High Angle Rope Rescue, 1½ units
Prerequisite: Completion of FIRE 50 with at least a C or P
Hours per term: 27 lecture
This course is designed to take the student from the basic skill levels of Low Angle (non-vertical) Rope Rescue Certification to the more complex rappelling and rope rescue skills found in High Angle (vertical) Rope Rescue situations. This course will reflect current Urban Search and Rescue and California State Fire Training standards. Not repeatable. Grading: (P/NP only) Field trips required. Transfer: (CSU)

A fire student learns how to use the “jaws of life” in pursuit of one of many skills necessary for state certification in vehicle extrication.
FIRE 97—Work Experience in Fire Technology, 1-4 units

Co-requisite: Must be enrolled in at least seven (7) units, including Work Experience, where 75 employed hours with pay equals 1 unit, or 60 employed hours without pay equals 1 unit

Provides students an opportunity to experience supervised employment in Fire Technology. The student's employment must be related to educational or occupational goals. Grading: (P/NP only) May be repeated for no more than a total of 16 units of credit less any units earned in any other Work Experience course. Not repeatable. Transfer: (CSU-Transfer credit limited. See a counselor.)

FIRE 101—Firefighter I Academy, 16 units

Prerequisites: Completion of EMS 157 and HHP 55A with at least a C or P, or concurrent enrollment in EMS 157 and HHP 55A

Hours per term: 144 lecture and 432 laboratory

This course is designed for students who desire to enter the firefighting field and meet requirements, units A-X, for the California State Firefighter 1 certification. Upon successful completion of the course, the student is then responsible for completing the required field experience with Fire Department verification (either six months full-time or one year part-time or volunteer) before submitting an application to the State. Curriculum for the fire academy includes firefighting skills, safety, incident management systems, operations, manipulative skills, tools and equipment, emergency scene operations, fire prevention, and investigation. Additional certifications include I-100, I-200, I-700.a, S-130, S-133, S-134, S-190, L-180, Seasonal Wildland Firefighter, Basic Land Navigation, Auto Extrication, Low Angle Rope Rescue, Hazardous Materials Full FRO, Firefighter Safety and Survival, Confined Space Awareness, and Basic Power Saw Safety. Note: Students must have a medical release for the course to engage in strenuous physical lifting, carrying, and related activities. Field trips required. Not repeatable. MJC equivalent: (CC FIRE 7, FIRE 50, FIRE 101, FIRE 106 & FIRE 107 = MJC FSCI 362 & FSCI 363)

FIRE 106—Hazardous Materials First Responder Operational, 1 unit

Hours per term: 18 lecture

Meets requirements of CAL-OSHA for training of emergency responders to hazardous materials incidents, per CFR 1910.120(q) (6) (ii) and Title 8 California Code of Regulations 5192(q) (6) (B). Includes awareness and recognition of potential hazards, and procedures to insure safety of emergency personnel, the public and the environment. Not repeatable. Grading: (P/NP only) MJC equivalent: (CC FIRE 7, FIRE 50, FIRE 101, FIRE 106, FIRE 108 & FIRE 110 = MJC FSCI 362 & FSCI 363)

FIRE 108—Confined Space Awareness, ½ unit

Hours per term: 9 lecture

Prepares students to identify and safely consider operations in and around defined “confined spaces.” Meets the requirements of CAL-OHSA Title 8 for “Confined Space Awareness Level” training. Not repeatable. Grading: (P/NP only) MJC equivalent: (CC FIRE 7, FIRE 50, FIRE 101, FIRE 106, FIRE 108 & FIRE 110 = MJC FSCI 362 & FSCI 363)

FIRE 110—ICS 200, Basic Incident Command System, 1 unit

Hours per term: 18 lecture

Introduces students to the principles and features associated with the Incident Command System. Not repeatable. Grading: (P/NP only) (CC FIRE 7, FIRE 50, FIRE 101, FIRE 106, FIRE 108 & FIRE 110 = MJC FSCI 362 & FSCI 363)

FIRE 111—Basic Power Saw Safety, 1 unit

Hours per term: 16 lecture

Basic Power Saw Safety is aligned with State Fire Marshal S-212 to provide instruction on the function, maintenance and use of internal-combustion-engine-powered chain saws, and their tactical fire application. Instruction will support entry-level training for firefighters with little or no previous experience in operating a chain saw, providing hands-on experience in maintaining power saws. Not repeatable.

FIRE 120—Fire Operations in the Urban Interface, 1½ units

Hours per term: 27 lecture

This course addresses content in initial attack incident command and control of wild land fire that threatens life, property and improvements. Not repeatable.

FIRE 131—Introduction to ICS and Dispatch Recorder, 1 unit

Hours per term: 20 lecture

This course is designed to provide the student with the training, skills and knowledge necessary to work in the position of Dispatch Recorder, working in an emergency dispatch center in support of a wildland fire incident or other event. Instruction will include how to complete Resource Order Cards, how to document a pertinent request, resource or incident information and how to use the Virtual Resource Order and Status System (ROSS). This course will also teach the student how to identify positions in the Incident Command System, how to identify the proper chain of command, when to implement the Incident Command System and how to shrink and expand the Incident Command System to meet the needs of the incident. Not repeatable.

Foreign Language

See SPAN (Spanish)

FORES & FORTC

See FNR (Forestry and Natural Resources)
FNR
(FORESTRY AND NATURAL RESOURCES)

FNR 1—Environmental Conservation, 3 units
Formerly listed as: NATRE 1
Hours per term: 54 lecture
Conservation of the biological and physical environment. History of the conservation movement. A case-study approach to land use practices of environmental conservation with current topics on endangered species, environmental pollution, wilderness management, energy, population, and the uniqueness of California and Alaska natural resources. Not repeatable. Field trips may be required. Transfer: (CSU/UC) (CSU-GE: D7)

FNR 2—Introduction to Forestry, 3 units
Formerly listed as: FORES 1
Hours per term: 36 lecture and 54 laboratory
Overview of the objectives and methods of sustainable forest management, including significant forest history events, U.S. forest regions, forest ecology, forest products, forestry practices, forestry education pathways, career opportunities, certifications, and ethics. Field trips required. Not repeatable. Transfer: (CSU)

FNR 3—Natural Resources Law and Policy, 3 units
Formerly listed as: NATRE 3
Hours per term: 54 lecture
Introduction to principles and practice of natural resource policy and law in the United States. Topics include overview of major environmental policies and laws, environmental ethics, historical role of activists in legislative change and enforcement, development and limits of legislative and judicial approaches to solving environmental problems, and local and regional issues related to natural resources law and policy. Not repeatable. Field trips may be required. Transfer: (CSU/UC)

FNR 6—Soil Resources, 3 units
Formerly listed as: NATRE 6
Recommended for Success: CHEM 5
Hours per term: 36 lecture and 54 laboratory
Introduction to physical, chemical, and biological properties of soils. Soil development, type, and analysis. Implications and applications for natural resources management. Transfer: (CSU/UC) CSU-GE: B1 (IGETC: 5A)

FNR 9—Parks and Forests Law Enforcement, 2 units
Formerly listed as: NATRE 9
Hours per term: 36 lecture
Constitutional, criminal, and civil law as related to law enforcement activities conducted by resource agencies. Field trips may be required. Not repeatable. Transfer: (CSU)

Crosswalk: FNR Course ID Conversion

Effective as of the 2015-2016 academic year, the Columbia College departments of Forestry (FORES), Forestry Technology (FORTC), Natural Resources (NATRE), and Natural Resources Technology (NATRE) have renamed the department and renumbered course IDs into one department, Forestry and Natural Resources (FNR). The following crosswalk shows how FORES, FORTC, NATRE, and NARTC course IDs map to FNR course IDs.

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FNR 10—Dendrology, 3 units
Formerly listed as: FORES 10
Hours per term: 54 lecture
Evolution, systematics, identification, terminology, morphology, anatomy, life cycle, ecology, growth requirements, distribution and ethnobotany of trees and shrubs. Emphasis is on trees and shrubs of the Sierra Nevada, California and the western United States. Field trips required. Not repeatable. Transfer: (CSU/UC)

FNR 11—Natural Resources Field Camp, 3 units
Formerly listed as: NATRE 110
Hours per term: 54 lecture
An extended field course that can serve as both an introduction and a capstone to Forestry and Natural Resource majors, or as a refresher during any point in a forestry or natural resources career. Provides instruction and hands-on, real-world experiences, in a field setting. Integrates topics including safety and first aid, maps and aerial photos, compass and GPS, geology and soils, hydrology and watershed, plants and wildlife, ecology and ecosystem management, natural resource inventory and utilization, and wildland recreation management. Field trips required. Not repeatable. Transfer: (CSU)

FNR 12—Tallest, Oldest, Largest, 3 units
Formerly listed as: FNR 12—Tallest, Oldest, Largest
Hours per term: 54 lecture
California is home to the tallest (Coast Redwood), the oldest (Bristlecone Pine), and the largest (Giant Sequoia) trees in the entire world. This field course takes students to all three. The botany, natural history, management, and cultural history of these trees are explored. Field trips required. Not repeatable. Transfer: (CSU)

FNR 22—Ecology and Use of Fire in Forest Ecosystems, 2 units
Formerly listed as: NATRE 22
Hours per term: 27 lecture and 72 laboratory
Introduction to the ecology and management of fire in California landscapes. Selected topics include the effects of fire on vegetation, soils, hydrology, wildlife, air quality, and aesthetics; forest fire behavior and the role of fire suppression; the history and current issues of prescribed burning; the planning and implementation of fuels reduction and prescribed burning programs in selected locations. Field trips required. Not repeatable. Transfer: (CSU)

FNR 24—Fire-Fuels Management, 3 units
Hours per term: 54 lecture
Fundamentals of fire-fuels management, including: objectives of fuels reduction, preliminary surveys and reports, prescriptions for fuels reduction, and techniques for carrying out fuels reduction. Field trips may be required. Not repeatable. Transfer: CSU

FNR 30—Introduction to Watershed Management, 3 units
Formerly listed as: NATRE 30
Hours per term: 36 lecture and 54 laboratory
Fundamentals of watershed management, monitoring and stewardship, with an emphasis on California and the Sierra Nevada. Concepts and applications of climatology, meteorology, geology, soils, hydrology, biology, chemistry, physics and engineering as they pertain to management of watersheds. Field and laboratory techniques of sampling and monitoring soil, water, air, vegetation, and other biota. Application of integrated ecosystem approaches to natural resource protection and management of watersheds. Field trips may be required. Not repeatable. Transfer: (CSU)

FNR 50—Natural History and Ecology, 2 units
Formerly listed as: NATRE 50
Hours per term: 36 lecture
Introduction to concepts and examples of natural history and ecology with emphasis on the interrelationships among the biota, geology, and climate of California. Selected topics may include plant succession, ecosystem processes, adaptation and diversity, evolution, California’s physical and biological environment, and biomes. Field trips may be required. Not repeatable. Transfer: (CSU)

FNR 53—Forest Surveying, 3 units
Formerly listed as: FORTC 163
Hours per term: 34 lecture and 54 laboratory
Objectives and methods of forest surveying. Use of basic forest surveying instruments. Application of hand and staff compass, engineer’s tape, clinometer, abney, dumpy and hand levels, engineer’s transit, and total station. Field recording techniques, laboratory computations and map drafting. Not repeatable. Field trips may be required. Transfer: (CSU)

FNR 60—Introduction to Maps and Remote Sensing, 2 units
Formerly listed as: NARTC 160
Hours per term: 18 lecture and 54 laboratory
Application and interpretation of map and remote sensing information including aerial photography, multispectral and thermal scanning, and digital imaging. Emphasis on map features, coordinate systems, topography, land cover, resource management and navigation. Field trips required. Transfer: (CSU)

FNR 61—Introduction to Water Resources Management, 3 units
Formerly listed as: NARTC 161
Hours per term: 54 lecture
An introduction to the Water Resources Management Program. This course provides an overview of the educational tracks offered in the program including: Watershed Management, Water for Consumption and Distribution, Wastewater Collection and Treatment Plant Operations, and the emerging field of Decentralized Wastewater Management. Not repeatable. Transfer: (CSU)
COURSES: FNR

FNR 62—Applied Forest Inventory and Management, 2 units
Formerly listed as: FORTC 162
Hours per term: 18 lecture and 54 laboratory
Techniques of forest inventory and management including forest surveys, timber cruising, and scaling; data collection and analysis; location and delineation of forest properties and resources; and survey and management of other natural resources. Field trips required. MJC equivalent: (NR 376) Not repeatable. Transfer: (CSU)

FNR 63—Water for Consumption, 3 units
Formerly listed as: NARTC 163
Hours per term: 54 lecture
Study of present and future sources of community water supply with special attention to state standards for potable water; analysis, processing, treatment, quality control, storage, and distribution of community water. Meets Water Treatment Plant Operator state certification prerequisite for examination at Grade 2 level. Field trips may be required. Not repeatable. Transfer: (CSU)

FNR 64—Water Infrastructure in California, 3 units
Hours per term: 54 lecture
Water infrastructure in California. Water sources, diversions, conveyances, reservoirs, pump stations, Central Valley Project, State Water Project, PG&E. Not repeatable. Transfer: (CSU)

FNR 65—Rural Wastewater Strategies, 3 units
Formerly listed as: NARTC 165
Hours per term: 54 lecture
History of human waste management. Past practices and the known impact on human health and the environment. Understanding the evolution of wastewater treatment from cesspools to municipal sewers and the current focus on decentralized wastewater and recycling strategies. Field trips required. Not repeatable. Transfer: (CSU)

FNR 66—Decentralized Wastewater Management, 3 units
Formerly listed as: NARTC 166
Hours per term: 54 lecture
Inspection, operations, maintenance and monitoring of Onsite Wastewater Treatment Systems (OWTS), from simple standard gravity septic to high tech advanced treatment technologies. Operation, maintenance and monitoring of all types of engineered systems including aerobic treatment units, media filters, constructed wetlands, disinfection technologies and soil treatment applications. Prepares students for national certification testing and entrance into the onsite wastewater management field. Field trips may be required. Not repeatable. Transfer: (CSU)

FNR 67—Operation of Wastewater Treatment Plants, 3 units
Formerly listed as: NARTC 167
Hours per term: 54 lecture
Designed to train students in the practical aspects of operating and maintaining wastewater treatment plants, emphasizing the use of safe practices and procedures. Information presented includes the role and responsibilities of a treatment plant operator, an explanation of why wastes must be treated, and descriptions of the equipment and processes used in a wastewater treatment plant. Field trips may be required. Not repeatable. Transfer: (CSU)

FNR 69—Operation of Wastewater Treatment Plants 2, 3 units
Formerly listed as: NARTC 169
Recommended for Success: FNR 67
Hours per term: 54 lecture
An advanced course designed to train wastewater treatment plant operators in the practical aspects of operating and maintaining wastewater treatment plants. Topics covered include conventional activated sludge processes, sludge digestion and solids handling, effluent disposal, plant safety and good housekeeping, plant and equipment maintenance, laboratory procedures and chemistry, use of computers for plant operation and maintenance, analysis and presentation of data, records and report writing, analyzing and solving operational problems, and performing mathematical calculations relating to wastewater treatment process control. This course is worth 9 CEUs. Field trips may be required. Not repeatable. Transfer: (CSU)

FNR 71—Water Use Efficiency, 1 unit
Hours per term: 18 lecture
Covers the general knowledge requirements expected for Level 1 American Water Works Association California/Nevada Section Water Use Efficiency Practitioner Certification, focusing on water end uses and conservation measures and on regional water issues and resources. Not repeatable. Transfer: (CSU)

FNR 81—California Wildlife, 3 units
Formerly listed as: NARTC 181
Hours per term: 36 lecture and 54 laboratory
Study of the characteristics, evolution, population biology, ecology, behavior, life history, and management of California animals. Introduction to methods of studying and managing wildlife to improve populations, habitat, and ecosystem function. Practice of specific field and laboratory techniques of species identification, population biology, and wildlife management. Field trips may be required. Not repeatable. Transfer: (CSU)

FNR 86—California Naturalist Certification, 1½ units
Hours per term: 27 lecture and 18 laboratory
This course satisfies the course requirements to become a California Certified Naturalist. Classroom and field experience in California natural history, communication training, and community service. Field trips required. Not repeatable. Transfer: (CSU)

FNR 97—Work Experience in Forestry and Natural Resources, 1 to 4 units
Formerly listed as: NATRE 97
Co-requisite: Must be enrolled in at least seven (7) units including Work Experience. 75 hours paid employment equals 1 unit of credit and 60 hours unpaid employment equals 1 unit of credit
Provides students an opportunity to experience supervised employment in Forestry and Natural Resources. The student's employment must be related to educational or occupational goals. May be repeated for no more than a total of 16 units of credit less any units earned in any other Work Experience course. Offered for Pass/No Pass grading only. May be repeated for no more than a total of 16 units of credit less any units earned in any other Work Experience Course. Grading: (P/NP Only). Not repeatable. Transfer: CSU (Transfer credit limited. See a counselor.)
COURSES:  FNR - GEOGR

FNR 172—Nature Photography, 1½ units
Formerly listed as: NARTC 172
Hours per term: 27 lecture
An introduction to nature and wildlife photography including field
craft, maintaining records, conveying scale, performing basic photo-
graphic techniques, equipment specific to nature and wildlife pho-
tography, and advantages and disadvantages of digital photography.
Instruction is in the field. Digital cameras and tripods required. Macro
lenses and telephoto lenses recommended. Field trips may be required.
Not repeatable. Grading: (P/NP only)

FNR 173—Drawing Nature, 3 units
Hours per term: 54 lecture
An introduction to drawing nature, including basic concepts and termi-
nology used to organize, name, and describe the diversity of living and
non-living natural features, as well as basic techniques of observing and
drawing natural features. Not repeatable.

FNR 182—Techniques of Surveying Sierra Nevada Wildlife, 2 units
Formerly listed as: NARTC 182
Hours per term: 36 lecture
A technical, applied, field course on the methods of surveying and
monitoring Sierra Nevada mammals, raptors, songbirds, reptiles, and
amphibians. Topics include field identification of pelage, tracks, plum-
age, life cycle, geographic ranges, habitat, ecological niche, field signs,
behavioral patterns, and State and Federal listed status, as well as use of
track plates, hair snare systems, and wildlife cameras. Not repeatable.
Grading: (P/NP only)

FNR 183—Ecological Restoration, 1 unit
Formerly listed as: NARTC 183
Hours per term: 18 lecture
A field lecture course on ecological restoration. Topics covered include
the importance of ecological restoration to society and the environment,
identification, and prioritization of natural community types in jeop-
dardy, assessment of resource damage and causative factors, as well as,
restoration techniques, implementation, and monitoring. Not repeat-
able. Grading: (P/NP only)

FNR 185—Introduction to the National Wilderness Preservation System, 1 unit
Formerly listed as: NARTC 185
Hours per term: 18 lecture
A field course that informs and trains land management employees,
volunteers, and others in the historical and philosophical antecedents
to the Wilderness Act of 1964 and the provisions and administration of
the National Wilderness Preservation System. Field trips required. Not
repeatable. Grading: (P/NP only)

GEOGR—GEOGRAPHY

GEOGR 12—Cultural Geography, 3 units
Hours per term: 54 lecture
Examines humankind's relationship with the environment using mul-
disciplinary perspectives and techniques. Historical and contem-
porary patterns of cultural-enviro adaptations, the landscape of cultural
diversity, demography and mobility, political organization, the process
of urbanization, and economic organization will be emphasized. Not re-
peatable. MJC equivalent: (GEOG 101) Transfer: (CSU/UC) (CSU-GE:
D5) (IGETC: 5A) C-ID: (GEOG 120)

GEOGR 15—Physical Geography, 3 units
Hours per term: 54 lecture
An introduction to selected aspects of the earth's physical environment
(landforms, weather, climate, soils, and vegetation) and the processes
and conditions giving rise to their worldwide distribution, using the
tools of cartography, specifically all forms of mapping, GIS, GPS, and
graphic presentations. Emphasis on the interrelationships between
physical and human processes. The study of the earth as the home of
man. Not repeatable. MJC equivalent: (GEOG 102) Transfer: (CSU/
UC) (CSU-GE: B1) (IGETC: 5A) C-ID: (GEOG 110)

GEOGR 20—World Regional Geography, 3 units
Hours per term: 54 lecture
Survey of the world's culture regions and nations as interpreted by geog-
raphers, including physical, cultural, and economic features. Emphasis
on spatial and historical influences on population growth, transporta-
tion networks, and natural environments. Identification and importance
of the significant features of regions. Not repeatable. Transfer: (CSU/
UC) (CSU-GE: D5) (IGETC: 4E) C-ID: (GEOG 125)

GEOGR 57/CCTIS 57—GIS Data Management, Introduction to Geodatabase, 1-3 units
Formerly listed as: GEOGR 57/CMPSC 57
Hours per term: 18 or 54 lecture
Students who take this course will learn to use the ArcGIS Geodatabase
format for management of spatial data. Students will be introduced to
the concepts of database design and system architecture using ArcGIS
software. Concepts covered include: introduction to the geodatabase;
metadata; geodatabase vs. shapefile formats; overview of ArcGIS data
models; feature datasets and feature classes; editing a geodatabase; per-
sonal geodatabase vs. multi-user geodatabase; domains and validation
rules; and relationships and subtypes. Not repeatable. Transfer: (CSU)
GEOGR 59/CCTIS 59 — Geographic Information and Global Positioning Systems, 1-3 units
Formerly listed as: GEOGR 59/CMPSC 59
Hours per term: 18, 36, or 54 lecture
Introduction to basic GIS and GPS concepts and applications in the field of natural resources, earth sciences, and environmental systems. Students will learn to use Global Positioning System units, combined with Geographic Information System software to collect field data and produce maps for spatial analysis and decision-making purposes. Six weeks will be spent learning ArcView software; another six weeks will be spent learning to use GPS units; and another six weeks will be spent learning to design and carry out a research project merging GPS and GIS technologies. Credit may be earned once for CCTIS 59 or GEOGR 59. Not repeatable. Transfer: (CSU)

GEOGR 60/CCTIS 60 — Introduction to ArcGIS, 3 units
Formerly listed as: GEOGR 60/CMPSC 60
Hours per term: 54 lecture
An introduction to fundamental Geographic Information Systems (GIS) concepts. Students will be introduced to the ArcGIS software package as the main vehicle for learning GIS. GIS geodatabases and maps will be produced from several different data sources. Emphasis will be placed on planning the design of GIS geodatabases which will permit specific types of queries. Not repeatable. MJJC equivalent: (GEOG 109) Transfer: (CSU)

GEOGR 61/CCTIS 61 — GIS Mapping, Introduction to Fire Incident Mapping, 1 unit
Formerly listed as: GEOGR 61/CMPSC 61
Recommended for Success: CCTIS 6
Hours per term: 18 lecture
Students who take this course will learn how to apply their GIS skills in Fire Incident Mapping. Students will learn fire incident symbology, data standards and organization, fire incident map products, and responsibilities of a Fire GIS Specialist. Additionally, students will utilize GPS data that they have collected, convert them to shapefiles, and create a fire incident map. This course includes hands-on experience in fire incident mapping and data organization. Students will also be encouraged to present their final project in public at GIS Day events. Not repeatable. Grading: Pass/No Pass Only Transfer: (CSU)

GEOGR 62/CCTIS 62/SAR 62 — GIS Mapping—Introduction to SAR GIS, 1 unit
Formerly listed as: GEOGR 62/CMPSC 62
Hours per term: 18 lecture
Students who take this course will learn how to apply their GIS skills in Search and Rescue (SAR) Mapping. Students will learn SAR incident symbology, data standards and organization, establishing incident locations, search segments, SAR incident map products, and responsibilities of a GIS specialist on SARs and other critical incidents. The course will use a workflow and data model developed by SAR personnel that integrates with ArcGIS 10. Additionally, students will utilize GPS data that they have collected from GPS devices, convert them to shapefiles, and create team and briefing incident maps. During a full-day exercise, students will also live-track SAR teams using satellite tracking devices. This course includes hands-on experience in SAR incident mapping and data organization. Not repeatable. Grading: (P/NP only) Transfer: (CSU)

GEOGR 63/CCTIS 63 — GIS and Making Maps: The Essential Skills, 1 unit
Formerly listed as: GEOGR 63/CMPSC 63
Hours per term: 18 lecture
This course is intended as a resource for emergency responders, outdoor enthusiasts and anyone interested in acquiring basic skills in understanding maps and using geospatial information and devices. Emphasis will be on developing a working knowledge of coordinate systems, establishing a location when given coordinates, finding coordinates from a location, and converting among coordinate systems to create a basic map using this information. Not repeatable. Grading: (P/NP only) Transfer: (CSU)

GEOGR 64/CCTIS 64 — ArcGIS: Creating a Basic Map, ½ unit
Formerly listed as: CMPSC 64
Hours per term: 9 lecture
This course will teach the skills and tools to use ArcGIS 10 mapping software to create maps. It will be useful to anyone wanting a quick "how to" for using the industry standard ArcGIS to make and edit a map. Not repeatable. Grading: (P/NP only) Transfer: (CSU)

GEOGR 65/CCTIS 65 — GIS Applications ½ to 3 units
Recommended for Success: Completion of CCTIS 60/GEOGR 60 with at least a C or P
Hours per term: 9 or 18 or 36 or 54 lecture
Uses the ArcGIS ArcView software to explore intermediate topics in GIS applications. Topics include geodatabase creation and editing, geoprocessing models, geocoding, and working with annotation. The course consists of a combination of lectures, demonstrations, hands-on exercises, and a student project. Not repeatable. Transfer: (CSU)
**GEOGR 66/CCTIS 66—Web Mapping, 1 unit**  
*Hours per term: 18 lecture*
This course focuses on the fundamental principles of web mapping and creating web mapping applications. Students will learn the basics of Web GIS system architecture, geospatial web services, and web service based geoprocessing. In addition, students will also learn about mobile GIS solutions by collecting data and creating a web map. Not repeatable. Grading: (P/NP Only). **Transfer:** (CSU)

**GEOGR 67/CCTIS 67—GIS Geocoding, 1 unit**  
*Formerly listed as: GEOGR 67/CMPSC 67*  
*Hours per term: 18 lecture*
Students who take this course will learn to use GIS software for geocoding purposes. Geocoding is the process of using common data to quickly and easily create location maps and is used by most government agencies and many businesses. GIS software will be used to produce maps useful in such things as routing emergency vehicles, providing effective customer service delivery, understanding crime incident patterns, or locating restaurants, schools, and fire stations. Students will also learn to create and refine address data to develop the reference data necessary to build address or geocoding indexes. Strategies will be exercised to clean input addresses, achieve better address-matching results, and fine-tune software parameters. Not repeatable. Grading: (P/NP Only) **Transfer:** (CSU)

**GEOGR 70/CCTIS 70—Introduction to Raster-Based GIS, 3 units**  
*Formerly listed as: GEOGR/CMPSC 70*  
*Recommended for Success: Completion of CCTIS 59/GEOGR 59 and CCTIS 60/GEOGR 60*  
*Hours per term: 54 lecture*
This course uses the ArcGIS ArcView software along with the Spatial Analyst and 3D extensions to explore the use of raster GIS data in analysis and visualization. Topics include terrain analysis, hydrologic analysis, suitability analysis, and 3D modeling. The course consists of a combination of lectures, demonstrations, hands-on exercises, and a student project. Not repeatable. **Transfer:** (CSU)

**GEOGR 75/CCTIS 75—GIS Applications in Resource Management, ½-3 units**  
*Formerly listed as: GEOGR 75/CMPSC 75*  
*Recommended for Success: CCTIS 70/GEOGR 70*  
*Hours per term: 9, 18, 36, or 54 lecture*
Uses ArcGIS ArcView software and the Image Analyst extension to explore the use of GIS in natural resource analysis and management. Emphasis is on the use of satellite imagery and aerial photography to derive information for GIS analysis. The course consists of a combination of lectures, demonstrations, hands-on exercises, and a student project. Not repeatable. **Transfer:** (CSU)

**GUIDE (GUIDANCE)**

**GUIDE 1—Career/Life Planning, 3 units**  
*Recommended for Success: ENGL 151*  
*Hours per term: 54 lecture*
Designed to help students formulate and experience an organized and realistic approach to career planning. Development of awareness and objectivity in the areas of interests, skills, values, aptitudes, etc. Introduction to sources of occupational information, and occupational trends. Introduction to decision-making, career information, career trends and social influences on career-life planning. May include administration of standardized interest and personality inventories. **MJC:** (Satisfies Guidance requirement for AA/AS) Not repeatable. **Transfer:** (CSU) (CSU-GE: E)

**GUIDE 10A—Introduction to Helping Skills, 1½ units**  
*Hours per term: 27 lecture*
An introduction to the skills basic to a helping relationship. Includes instruction in the concepts and principles, as well as experience in the use of specific skills. Designed for non-professional and paraprofessional helpers such as peer tutors, peer counselors, advisors, managers, supervisors etc. Not repeatable. Grading: (P/NP only) **Transfer:** (CSU)

**GUIDE 10B—Intermediate Helping and Basic Conflict Management Skills, 1½ units**  
*Prerequisite: Completion of GUIDE 10A with at least a C or P*
*Hours per term: 27 lecture*
Continued instruction in concepts, principles and skills basic to a helping relationship. Experience in the specific use of each skill. Includes an emphasis on both helping skills and introduction to the skills unique to the process of conflict management. Designed for non-professional and paraprofessional helpers, especially in informal settings, including, but not limited to: friend-friend, parent-child, teacher-student, supervisor-employee, worker-client, and peer counseling situations. Not repeatable. Grading: (P/NP only) **Transfer:** (CSU)

**GUIDE 11—Occupational Exploration, 1 unit**  
*Hours per term: 18 lecture*
An introduction to occupational exploration and career choice. Emphasis will be on linking personal information (interests, values and abilities) obtained through career assessment, with information about occupations, researched by using Career Center and online resources. Career choices will be clarified and corresponding and appropriate educational goals will be selected. Students will receive instruction in goal setting, decision making, and problem solving as they relate to the development and fulfillment of educational and career plans. Not repeatable. **MJC equivalent:** (GUIDE 111) **Transfer:** (CSU)
GUIDE 18—Life Skills for Higher Education, 3 units

Recommended for Success: ENGL 151

Hours per term: 54 lecture

This course presents strategies for first-year students to thrive in the culture of higher education. By taking a holistic approach to college success, educational planning, and lifelong learning, students will develop self-understanding as they examine topics such as: motivation and attitudes, values, goal setting, creative and critical thinking, stress management, personal wellness, learning and personality theories, time management, study skills, interpersonal communication, cultural diversity, college expectations and etiquette, and how to build a community for academic and personal support. An educational plan is a course requirement. Not repeatable. Satisfies MJC Guidance requirement.

Transfer: (CSU/UC) (CSU-GE: E)

GUIDE 25/BUSAD 25—Job Search and Interviewing Strategies, 1 unit

Hours per term: 18 lecture

Understanding the employment process and development of written and oral presentation skills necessary to conduct an efficient and effective job search. Topics include: the hiring process, employer perspectives, the hidden job market, networking, research, job search planning, making employer contacts and interviewing. Development of a master application, resume and letter of application. Credit may be earned once for GUIDE 25 or BUSAD 25. Not repeatable. MJC equivalent: (GUIDE 112) Transfer: (CSU)

GUIDE 30—Personal Growth and Development, 3 units

Hours per term: 54 lecture

Examination of personal and psycho-social dynamics and influences for personal growth and self-management. Focus is on self-exploration, leading to self-awareness and self-understanding, examining motives behind choices, coping with changes, relationships, dynamics and resolution of conflicts, and the role of cognition and emotions in behavior and health; includes active personal involvement, class interaction, case studies, building personal portfolios, and self-study. Field trips may be required. Not repeatable. Satisfies MJC Guidance requirement. Transfer: (CSU) (CSU-GE: E)

GUIDE 51—Principles of Leadership, 1 unit

Formerly listed as: GUIDE 115

Hours per term: 18 lecture

Designed to introduce students to the dynamics of working groups and the impact of leadership on work groups. Students will explore leadership theories and models as well as their own values and beliefs to develop a personal leadership philosophy. Topics may include developing skills in principles and administration of parliamentary law; the co-curricular activity program; finances, including budgetary procedure. Not repeatable. MJC equivalent: SOCSC 58 Transfer: (CSU)

GUIDE 100—College Success, 3 units

Hours per term: 54 lecture

 Prepares students for the challenges of college-level coursework. Designed for students new to college, re-entering college, or those on academic or progress probation status who would like to develop or improve skills and abilities necessary for college success. Topics include: values, goal-setting methods, time management, note-taking techniques, textbook reading strategies, test-taking skills, memorization, critical and creative thinking, learning styles, and the use of technology for academic success. Familiarizes students with the College, its curriculum, facilities, services, policies, programs and degree and transfer requirements. Not repeatable. MJC equivalent: (STSK 78)

GUIDE 107—Orientation to College, ½-1 unit

Hours per term: 9-18 lecture

A course designed to prepare the student to meet the demands of college rigor. Especially beneficial to new students to Columbia College and students returning to college after a long absence, this course addresses policies and practices at Columbia College. Topics covered include academic renewal, grading policy, advanced placement credit, academic and progress probation and dismissal, educational planning, requirements for the associate degree, certificates of achievement and transfer to the four-year university, and other topics related to the use of the programs and services at Columbia College. Such topics include financial aid, tutoring, counseling, special services for students with disabilities, career planning and job placement. Not repeatable. Grading: (P/NP only) MJC equivalent: (GUIDE 110)

GUIDE 108—Guidance for Career Technical Education, 1 unit

Hours per term: 18 lecture

Designed to familiarize students with the various Career Technical Education certificates and degrees available at Columbia College. Course topics will include college resources available to assist students in meeting the rigor of college coursework, as well as the research and planning required to successfully achieve educational goals. Not repeatable. Grading: (P/NP only) Field trips required.

GUIDE 150—Guidance for Nursing Majors, ½ unit

Hours per term: 9 lecture

Course will familiarize Columbia College students with the MJC Associate Degree in Nursing Program and will also cover requirements for transfer to baccalaureate level nursing programs. Important aspects of nursing as an occupational choice will be covered along with information regarding the nursing profession. Not repeatable. Grading: (P/NP only) Field trips may be required. (Satisfies MJC Guidance requirement)
COURSES: HHP

HHP
(HEALTH AND HUMAN PERFORMANCE)

Note: Columbia College Health and Human Performance activity courses receive equivalent credit at MJC for physical education.

HHP 2—Women’s Health Issues, 3 units

Hours per term: 54 lecture

This course will focus on the politics of women’s health and medical care issues in the United States including analyzing, as well as establishing methods of utilizing, the health care system with specific attention to women as health care consumers; temporary concerns about the health care delivery system with emphasis on the gender politicalization of the social, physical, emotional, intellectual, spiritual and environmental aspects of gender-health. Not repeatable. MJC equivalent: (HE 111) 
Transfer: (CSU/UC) (CSU-GE: D4, E) (IGETC: 4D)

HHP 3—Introduction to Kinesiology, 3 units

Hours per term: 54 lecture

Provides an introduction to the interdisciplinary approach to the study of human movement. Emphasis on the importance of the subdisciplines will be discussed as well as career opportunities. Not repeatable. MJC equivalent: (PE 124) 
Transfer: (CSU/UC) C-ID: (KIN 100)

HHP 5—Introduction to Recreation and Leisure, 3 units

Hours per term: 54 lecture

This course provides students a detailed overview of the history, developments, and current trends in leisure and recreation studies. It reflects recent social change and challenges facing recreation industries in the 21st Century including: population shifts, technology and marketing. It also addresses the history of the parks movement and tourism/sport segments. This course is of interest to students of Health and Human Performance (Recreation-related subjects). Not repeatable. Transfer: (CSU) (CSU-GE: E)

HHP 6A—Lifetime Fitness Program I, 2 units

Hours per term: 54 lecture and 54 lecture/activity

Introduction to the fundamental principles and practices of scientific exercise conditioning, nutritional requirements, weight control techniques, coronary heart disease concepts, and considerations of preventive medicine. Basic exercise routine involves the circuit training system. Not repeatable. Transfer: (CSU/UC-Transfer credit limited. See a counselor.) (CSU-GE: E)

HHP 6B—Lifetime Fitness Program II, 1 unit

Prerequisite: Completion of HHP 6A with at least a C or P
Hours per term: 54 laboratory

A continuation of the exercise principles and practices employing the circuit training system presented in Lifetime Fitness Program I with emphasis on improving fitness component levels, compliance, motivation, and increased awareness of sound nutritional practices. Not repeatable. Transfer: (CSU/UC-Transfer credit limited. See a counselor.) (CSU-GE: E)

HHP 8A—Aerobic Exercise I, 1 unit

Formerly offered as: HHP 8A—Aerobic Exercise
Hours per term: 54 laboratory
Provides an introduction to cardiovascular conditioning with an emphasis on the fundamental principles of exercise as a component of health. Not repeatable. Transfer: (CSU/UC)

HHP 8B—Aerobic Exercise II, 1 unit

Formerly offered as: HHP 8B—Step Aerobics
Hours per term: 54 laboratory
Designed to improve cardiovascular endurance with an emphasis on step aerobics as a component of health. Not repeatable. Transfer: (CSU/UC-Transfer credit limited. See a counselor.)

HHP 9—Circuit Cross-Training, 1 unit

Hours per term: 54 laboratory

A comprehensive workout at an introductory level to achieve personal fitness goals through the use of cardiovascular and strength training systems. Not repeatable. Transfer: (CSU/UC-Transfer credit limited. See a counselor.)

HHP 10—Adaptive Physical Education, 1 unit

Hours per term: 54 laboratory

Designed to offer individually prescribed fitness direction to the physically limited with emphasis on the improvements of cardiovascular, flexibility, and strength components. Not repeatable. Transfer: (CSU/UC-Transfer credit limited. See a counselor.)

HHP 16A—Fitness Walking, 1 unit

Formerly offered as: HHP 16-Walking for Fitness
Hours per term: 54 laboratory
Provides an introduction and instruction to fitness walking along with other exercises to improve whole-body fitness. It is a low-impact activity course with emphasis on cardiovascular endurance and weight loss. Transfer: (CSU/UC)

HHP 16B—Power Walking, 1 unit

Recommended for Success: HHP 16A
Hours per term: 54 laboratory
Provides instruction and techniques for power (race) walking. Emphasis is on cardiovascular endurance and efficiency through moderate-to-high intensity workouts. Not repeatable. Transfer: (CSU)

HHP 18A—Yoga I, 1 unit

Hours per term: 54 laboratory

Designed to provide a basic yoga foundation using postures, breathing and relaxation techniques to increase flexibility, strength, balance and coordination. Not repeatable. Transfer: (CSU/UC-Transfer credit limited. See a counselor.)

HHP 18B—Yoga II, 1 unit

Recommended for Success: HHP 18A
Hours per term: 54 laboratory
Designed for students to perform more advanced postures, breathing, and relaxation techniques to further increase flexibility, strength, balance and coordination. Transfer: (CSU/UC-Transfer credit limited. See a counselor.)
HHP 19—Aerobic Spinning, 1 unit  
Hours per term: 54 laboratory  
Provides instruction on spinning as a method to improve cardio endurance and efficiency. Not repeatable. Transfer: (CSU/UC)

HHP 23—Contemporary Dance, 1 unit  
Hours per term: 54 laboratory  
Introduction to contemporary dance technique; designed to acquaint the student with the fundamentals of dance and creative movement exploration while developing strength, flexibility, and expressiveness. Not repeatable. Transfer: (CSU/UC)

HHP 25—Jazz Dance, 1 unit  
Formerly listed as: HHP 25—Jazz Dance  
Hours per term: 54 laboratory  
Introduction to the fundamentals of jazz dance; designed to acquaint the student with basic technique in a cultural and historical context while developing strength, flexibility, and stylistic awareness. Not repeatable. Transfer: (CSU/UC)

HHP 32A—Basketball I, 1 unit  
Hours per term: 54 laboratory  
This course is a basic introduction to basketball rules and terms, as well as an introduction to the basic skills of dribbling, passing, shooting, rebounding and defending in basketball. Not repeatable. Transfer: (CSU/UC-Transfer credit limited. See a counselor.)

HHP 32B—Basketball II, 1 unit  
Hours per term: 54 laboratory  
An intermediate level of skills and strategies for the experienced player. An introduction to offensive and defensive team concepts surrounding man-to-man, zone and transitional schemes will also be implemented in this course. Not repeatable. Transfer: (CSU UC-Transfer credit limited. See a counselor.)

HHP 32C—Basketball III, 1 unit  
Recommended for Success: HHP 32B or previous participation in high-level interscholastic and/or intercollegiate basketball  
Hours per term: 54 laboratory  
An advanced level of skill and strategies for the experienced basketball player. Intra-class scrimmages, scorekeeping and refereeing included. Not repeatable. Transfer: (CSU UC-Transfer credit limited. See a counselor.)

HHP 38A—Golf I, 1 unit  
Hours per term: 54 laboratory  
Instruction and practice in fundamentals. Not repeatable. Transfer: (CSU/UC)

HHP 38B—Golf II, 1 unit  
Recommended for Success: Completion of HHP 38A with at least a C or P  
Hours per term: 54 laboratory  
Instruction and practice in skills, rules and strategy. Not repeatable. Transfer: (CSU/UC)

HHP 45—Co-Ed Flag Football, 1 unit  
Hours per term: 54 laboratory  
Designed to introduce the necessary skills and knowledge to participate in recreational flag football. Instruction of rules along with drills to improve the student's skill level. Not repeatable. Transfer: (CSU/UC)

HHP 47A—Soccer I, 1 unit  
Hours per term: 54 laboratory  
Provides basic instruction, practice and participation in game play. Course emphasis on rules, skills and game strategies for the beginning player. Man-to-man defensive strategies are included as well as inter-class competition. Not repeatable. Transfer: (CSU/UC-Transfer credit limited. See a counselor.)

HHP 47B—Soccer II, 1 unit  
Recommended for Success: HHP 47A  
Hours per term: 54 laboratory  
Provides intermediate instruction and practice, and participation in game play. Course emphasis on rules, skills and strategies for the intermediate player. Zonal defensive strategies are included as well as inter-class competition. Not repeatable. Transfer: (CSU/UC-Transfer credit limited. See a counselor.)

HHP 47C—Soccer III, 1 unit  
Recommended for Success: HHP 47B  
Hours per term: 54 laboratory  
Provides advanced instruction, practice and participation in game play. Course emphasis on skills and strategies for the experienced player. Defensive concepts surrounding zonal versus man-to-man strategies are included. Not repeatable. Transfer: (CSU UC-Transfer credit limited. See a counselor.)

HHP 48—Co-Ed Softball, 1 unit  
Hours per term: 54 laboratory  
Discussion and practical application of rules and offensive/defensive team strategies in the sport of softball. Instruction on biomechanics and emphasis on skill development in throwing, catching, hitting, bunting, fielding, pop-ups, pitching, catching, base running, and sliding. Not repeatable. Transfer: (CSU/UC)

HHP 50A—Tennis I, 1 unit  
Hours per term: 54 laboratory  
Instruction and practice in fundamentals of Eastern grip tennis. Emphasis on development of sound ground strokes, serve, and volley. Includes rules, scoring, and game play in both singles and doubles tennis. Not repeatable. Transfer: (CSU/UC)

HHP 50B—Tennis II, 1 unit  
Prerequisite(s): Completion of HHP 50A  
Hours per term: 54 laboratory  
Instruction and practice in the advanced aspects of Eastern grip tennis. Emphasis on game play and development with individualized coaching and analysis for the more experienced player. Includes tactics and court coverage to encourage a more powerful game in both singles and doubles tennis. Not repeatable. Transfer: (CSU/UC)
COURSES:  HHP

HHP 53A—Volleyball I, 1 unit
   Hours per term: 54 laboratory hours
Basic techniques with emphasis on offensive and defensive tactics of team play. Rules and intra-class competition included. Not repeatable. Transfer: (CSU/UC-Transfer credit limited. See a counselor.)

HHP 53B—Volleyball II, 1 unit
   Hours per term: 54 laboratory
An intermediate level of skills and strategies for the experienced player; an introduction to power volleyball play. Not repeatable. Transfer: (CSU/UC-Transfer credit limited. See a counselor.)

HHP 53C—Volleyball III, 1 unit
   Hours per term: 54 laboratory
An advanced level of skill and strategies for the experienced player. Intra-class power play competition included. Not repeatable. Transfer: (CSU/UC-Transfer credit limited. See a counselor.)

HHP 55A—Fitness Training I for Firefighting, 1 unit
   Hours per term: 54 laboratory
An introductory course designed to prepare students for the Candidate Physical Ability Test (CPAT) which is a requirement to become a firefighter in California. Training and conditioning will focus on specific agility, flexibility, muscle strength, muscle endurance, and cardiovascular activities. Emphasis on developing a well-balanced workout will be emphasized. Not repeatable. Transfer: (CSU)

HHP 55B—Fitness Training II for Firefighting, 1 unit
   Hours per term: 54 laboratory
An intermediate course designed to prepare students for the Candidate Physical Ability Test (CPAT) which is a requirement to become a firefighter in California. Training and conditioning will focus on specific agility, flexibility, muscle strength, muscle endurance, and cardiovascular activities. Emphasis on developing a well-balanced workout will be emphasized. Not repeatable. Transfer: (CSU)

HHP 56A—Weight Training I, 1 unit
   Hours per term: 54 laboratory
Instruction in use of weights and body building equipment with emphasis upon individual program development. Not repeatable. Transfer: (CSU/UC-Transfer credit limited. See a counselor.)

HHP 56B—Weight Training II, 1 unit
   Recommended for Success: HHP 56A or equivalent
   Hours per term: 54 laboratory
Designed to help individuals accomplish a fine state of physical fitness through the use of “overload” equipment and progressive resistance exercises. Each person shall, with the counseling of the instructor, analyze particular needs and establish a program that will help accomplish these goals. Not repeatable. Transfer: (CSU/UC-Transfer credit limited. See a counselor.)

HHP 59A—Beginning Tai Chi, 1 unit
   Hours per term: 54 laboratory
Provides an introduction to Tai Chi. Emphasis will be on the Chuan-Yang style short form, 21 movements. Not repeatable. Transfer: (CSU/UC-Transfer credit limited. See a counselor.)
HHP 60—Health and Fitness Education, 3 units

Hours per term: 54 lecture

Personal and community health: an understanding of contemporary health issues and problems with an emphasis on personal fitness and adjustment. An informative material survey contributing to a person's mental, physical, and social well-being. Not repeatable. MJC equivalent: (HE 110) Transfer: (CSU/UC) (CSU-GE: E)

HHP 61—Activities in Motor Development, 1 unit

Co-requisite: CHILD 40
Hours per term: 54 laboratory

Introduction and physical applications of gross motor activities and concepts across early childhood curriculum. Key components that ensure developmentally-appropriate physical activities for both children and staff will be identified along with the importance of collaboration with families and caregivers. Not repeatable. Transfer: (CSU)

HHP 62—Safety and First Aid Education, 3 units

Hours per term: 54 lecture

Provides instruction on the theory and skills involved with the immediate and temporary care of the injured. Emphasis will be on learning how to assess a victim's condition and proper treatment. The American Red Cross Standard First Aid, CPR, and AED certifications for Infant/Child/Adult will be granted upon satisfactory completion. Not repeatable. MJC equivalent: (HE 101) Transfer: (CSU/UC-Transfer credit limited. See a counselor.) C-ID: (KIN 101)

HHP 63—Sociology of Sport, 3 units

Hours per term: 54 lecture

Examines the history of sport and its political, social and economic impact on public opinion. Includes an investigation into the phenomenon of sport, including cultural stratification, race, gender, education, economics, politics and the mass media. Not repeatable. MJC equivalent: (PE 120) Transfer: (CSU/UC) (CSU-GE: D0) (IGETC: 4J)

HHP 74—Introduction to Sport Management, 3 units

Hours per term: 54 lecture

Provides an introductory overview of professional sport management in North America. The political, historical, social, economic, and cultural impacts of sport management are explored. Topics will include team management, organizational administration, legal issues, public relations, and facility management. Students will become familiar with career opportunities in the sports management field. Not repeatable. Transfer: (CSU)

HHP 76—Sports Conditioning, 1 unit

Hours per term: 54 laboratory

This course is designed for the athlete or student wanting to participate in a vigorous training program to train for athletic competition. Components will include muscle strength, muscle endurance, cardiovascular endurance, and flexibility. Concepts of speed, power, and quickness will also be emphasized. May be repeated 3 times. Transfer: (CSU/UC-Transfer credit limited. See a counselor.)

HHP 78—Sports Conditioning, 1 unit

Hours per term: 54 laboratory

Conditioning

Recommended for Success: HHP 94A Swimming I

Provides an introduction to the application of mechanical and anatomical principles of aquatics for beginning swimmers. Not repeatable. Transfer: (CSU/UC)

HHP 94A—Swimming I, 1 unit

Hours per term: 54 laboratory

Recommended for Success: Students should be able to complete one length of the pool without assistance

Provides an introduction to the application of mechanical and anatomical principles of aquatics for beginning swimmers. Not repeatable. Transfer: (CSU/UC)

HHP 94B—Swimming II, 1 unit

Recommended for Success: HHP 94A Swimming I

Hours per term: 54 laboratory

Provides an introduction to the application of mechanical and anatomical principles of aquatics for intermediate swimmers, with an emphasis on the four competitive swim strokes and increasing cardiorespiratory endurance. Not repeatable. Transfer: (CSU/UC)

HHP 80—Varsity Cross-Country, 3 units

Hours per term: 162 laboratory

Instruction, training, and competition in intercollegiate cross-country running. Participation in contests with other colleges will be scheduled. May be repeated 3 times. Transfer: (CSU/UC-Transfer credit limited. See a counselor.)

HHP 82—Varsity Basketball (Men), 1½ units

Hours per term: 81 laboratory

Preparation and training for intercollegiate varsity basketball competition. Participation in contests with other colleges will be scheduled. Field trips required. May be repeated three times. Transfer: (CSU/UC-Transfer credit limited. See a counselor.)

HHP 85—Varsity Tennis, 3 units

Hours per term: 171 laboratory

Preparation and training for intercollegiate varsity tennis competition. Participation in contests with other colleges will be scheduled. May be repeated three times. Transfer: (CSU/UC)

HHP 86—Varsity Volleyball (Women), 3 units

Hours per term: 162 laboratory

Preparation and training for intercollegiate varsity volleyball competition. Participation in contests with other colleges will be scheduled. Field trips required. May be repeated three times. Transfer: (CSU/UC-Transfer credit limited. See a counselor.)

HHP 91A—Pilates I, 1 unit

Hours per term: 54 laboratory

Provides instruction designed to condition the entire body, using positions and movements that simulate functional activities and thereby correct body alignment and balance. Not repeatable. Transfer: (CSU/UC)

HHP 91D—Pilates II, 1 unit

Hours per term: 54 laboratory

Recommended for Success: Students should be able to complete one length of the pool without assistance

Provides an introduction to the application of mechanical and anatomical principles of aquatics for beginning swimmers. Not repeatable. Transfer: (CSU/UC)
COURSES:  HIST

HIST (HISTORY)

HIST 5/PHILO 5—Introduction to the History and Philosophy of Science, 3 units
Prerequisite: Completion of ENGL 1A with at least a C or P
Hours per term: 54 lecture
An introduction to the ideas, processes and consequences of science through history. The historical development of philosophies of science will be central throughout. Critical reasoning and extensive writing will be required. Contextual cultural analysis is expected. Credit may be earned once for HIST 5 or PHILO 5. Not repeatable. Transfer: (CSU/UC) (CSU-GE: A3, C2) (IGETC: 1B, 3B)

HIST 11—History of California, 3 units
Hours per term: 54 lecture
Survey of California history from pre-Colombian period to the present. Emphasis will include the Indians, Spaniards, Mexicans, and Anglo-Americans. Considerable attention will be devoted to California's influential role in national and world events. Not repeatable. MJC equivalent: (HIST 129) Transfer: (CSU/UC) (CSU-GE: D6) (IGETC: 4F)

HIST 13—World Civilizations: to 1650, 3 units
Hours per term: 54 lecture
Survey of the history of the world from the Neolithic period to the middle of the seventeenth century. The course will use a cross-cultural comparative approach as it analyzes the origins, achievements and decline of civilizations in Asia, Africa and the Americas, as well as the Middle East and Western Europe. Emphasis on the application of major theories of history to various stages of world development. The position of women in society will be highlighted. Not repeatable. MJC equivalent: (HIST 106) Transfer: (CSU/UC) (CSU-GE: D6) (IGETC: 4F) C-ID: (HIST 150)

HIST 14—World Civilizations: 1500 to Present, 3 units
Hours per term: 54 lecture
Survey of world history from the beginning of the sixteenth century to the present time. The theme of revolution will be illustrated by the Industrial Revolution, the democratic revolutions of the eighteenth century, and the Communist revolutions of the twentieth century. Contemporary problems in Asia, Africa, Central and South America will be placed in historical context. The contributions of women in history will be a special topic of study. Not repeatable. MJC equivalent: (HIST 107) Transfer: (CSU/UC) (CSU-GE: D6) (IGETC: 4F) C-ID: (HIST 160)

HIST 16—United States: to 1877, 3 units
Hours per term: 54 lecture
Survey of the history of the United States from pre-European settlement to the end of Reconstruction. Important topics include: the Art and Science of History, pre-European civilizations, Colonization and Society, the War for Independence, Constitutional Development and Federalism, American Leadership, Westward Expansion, Industrialization and Economic Transformation, Urbanization, Sectional Conflicts and the Impending Crisis, Slavery and experiences of historically disadvantaged groups in the United States, relative to their geographic, economic, political, and social contexts. Political and historical developments particular to California and in relation to the federal government will be highlighted. HIST 16, taken in conjunction with POLSC 10, satisfies Associate Degree and CSU requirements in United States History, Constitution, and American Ideals. Completion of HIST 16 and/or HIST 17 in combination with MJC HIST 101 or HIST 102 will not fulfill the requirement for CSU graduation. Not repeatable. MJC equivalent: (HIST 101) Transfer: (CSU/UC) (CSU-GE: D6) (IGETC: 4F) C-ID: (HIST 130)

HIST 17—United States: 1877 to Present, 3 units
Hours per term: 54 lecture
Survey of the history of the United States from the end of Reconstruction to the present era. Course includes examinations of Reconstruction, Western Conquest, Federalism, Industrialization and Post-Industrialization, Urbanization, Foreign Relations, Social Movements, Major Wars, the Great Depression, Major Political and Institutional Developments, and Globalization. This course will also examine U.S. citizens’ rights and obligations, with special attention given to the experiences of historically disadvantaged groups in the U.S. Political and historical developments particular to California and in relation to the federal government will be highlighted. HIST 17, taken in conjunction with POLSC 10, satisfies Associate Degree and CSU requirements in United States History, Constitution, and American Ideals. Completion of HIST 16 and/or HIST 17 in combination with MJC HIST 101 or HIST 102 will not fulfill the requirement for CSU graduation. Not repeatable. MJC equivalent: (HIST 102) Transfer: (CSU/UC) (CSU-GE: D6) (IGETC: 4F) C-ID: (HIST 140)

HIST 21—Women in American History, 3 units
Hours per term: 54 lecture
Review and evaluate the roles and contributions of American women from the colonial period to the present, viewed within the context of the total American experience. The diversity of experience according to class and ethnicity will be emphasized, including the roles and experiences of Native American, African American, European, Latina, and Asian women in American history. Not repeatable. MJC equivalent: (HIST 116) Transfer: (CSU/UC) (CSU-GE: D4, D6) (IGETC: 4D, 4F)

HIST 49—The Mother Lode, 3 units
Hours per term: 54 lecture
Introduction to a contextual examination of major topics in Mother Lode history including the geography of the region, Native Americans, California Gold Rush, the timber and ranching industries, the railroad, water and environmental issues, and Mother Lode myths. Field trips may be required. Not repeatable. Transfer: (CSU)
COURSES: 

HL-OC - HPMGT

HL-OC
(HEALTH OCCUPATIONS)

HL-OC 97—Work Experience in Health Occupations, 1-4 units
Co-requisite: Must be enrolled in at least seven (7) units, including Work Experience, where 75 deployed hours with pay equals 1 unit, or 60 deployed hours without pay equals 1 unit
Provides students an opportunity to experience supervised employment in Health Occupations. The student's employment must be related to educational or occupational goals. Grading: (P/NP only) May be repeated for no more than a total of 16 units of credit less any units earned in any other Work Experience course. Transfer: (CSU-Transfer credit limited. See a counselor.)

HPMGT
(HOSPITALITY MANAGEMENT)

HPMGT 97—Work Experience in Hospitality Management, 1-4 units
Co-requisite: Must be enrolled in at least seven (7) units, including Work Experience, where 75 deployed hours with pay equals 1 unit, or 60 deployed hours without pay equals 1 unit
Provides students an opportunity to experience supervised employment in Hospitality Management. The student's employment must be related to educational or occupational goals. Grading: (P/NP only) May be repeated for no more than a total of 16 units of credit less any units earned in any other Work Experience course. Two units of hotel work is required of hotel students. Transfer: (CSU-Transfer credit limited. See a counselor.)

HPMGT 102—Introduction to Hospitality Careers and Human Relations, 1.5 units
Hours per term: 27 lecture
An introduction to the hospitality industry (comprising lodging, food and beverage services, and tourism) with a focus on its career opportunities and human relations management in the hospitality industry. Individual goal-setting and career planning are emphasized. Not repeatable.
HPMGT 104—Hospitality Laws and Regulations, 2 units

*Hours per term: 36 lecture*

The study of legal issues relating to commercial food service and lodging operations which are national, State and local in scope. Using both the case method and specific statutes, introduces students to general concepts including the types of law, the nature of agreements and the judicial system, as well as regulatory agencies and the particular laws they enforce in the hospitality field. Not repeatable.

HPMGT 112—Front Office Management/Hotel Catering, 2 units

*Hours per term: 36 lecture*

Introduction to the essential equipment, routines, and duties of the front desk clerk and their relationship to other hotel departments. Covers planning and preparation for private parties, dinners, meetings, and other special events that a hotel or restaurant may cater. Not repeatable.

HPMGT 114—Introduction to Maintenance and Housekeeping, 1½ units

*Hours per term: 27 lecture*

Introduces the essential components of effective hotel or motel maintenance and housekeeping operations, including technical information on equipment and its servicing to establish a preventive maintenance routine. Provides broad scope of the housekeeping position, stressing employee responsibilities, record-keeping and use of equipment and materials. Not repeatable.

HPMGT 120—Safety and Sanitation, 1 unit

*Hours per term: 18 lecture*

Sanitation and safety principles and practices for the food service professional. Provides ServSafe certification from the National restaurant Association. Not repeatable.

HPMGT 122—Restaurant Math, 1 unit

*Hours per term: 18 lecture*

This is an arithmetic course for restaurant personnel. Students will be learning and applying basic math skills: addition, subtraction, multiplication, division, fractions, and percentages. There will be use of handheld calculators, gauges, scales and devices for measuring weights and volumes. Currency will be handled and time, distance, and temperature will be measured. There will be an emphasis on recognition and use of geometric shapes. Not repeatable.

HPMGT 126—Nutrition for Chefs, 2 units

*Hours per term: 36 lecture*

Students will understand the USDA recommendations for basic nutritional requirements for good health, the food groups encompassing carbohydrates, proteins, fats, vitamins, phytochemicals and minerals, their sources and dependency along with the roles of water, electrolytes and atmospheric gasses in human health. Students will be familiar with the fundamental physiology of digestion and how the basic food groups interact and react in the human body. They will have the knowledge to evaluate recipes and menus for nutritional balance and can devise recipes and menus that conform to USDA nutritional recommendations. They will understand the relationship between nutritional and physical exercise needs in terms of energy balances. Not repeatable.

HPMGT 128—Kitchen Management, 3 units

*Hours per term: 54 lecture*

Focused on the development of skills used to manage a commercial kitchen. Students will write menus and develop recipes, establish portion sizes and recipe costs, then price the menu items. Purchasing foods and supplies: comparative pricing among vendors, ordering, receiving, rotating and storing goods; taking and extending inventories. Students will learn to base production plans on sales forecasts, staff the kitchen accordingly, establish policies, standards and procedures regarding production, staff issues, facility/equipment maintenance and kitchen cleanliness. Basic concepts from the Uniform System of Accounts for Restaurants relating to kitchen operations will also be addressed. Not repeatable.

HPMGT 130—Survey of Commercial Food Service Operations, 3-6 units

*Hours per term: 18 to 36 lecture and 108-216 laboratory*

A survey course which gives practical experience in operating a commercial food service operation. Production efficiency, marketing, ServSafe Sanitation guidelines, quality control, and production records are emphasized. Not repeatable.

HPMGT 133A—Introduction to Commercial Food Preparation, 3 units

*Co-requisite: HPMGT 120*

*Hours per term: 27 lecture and 90 laboratory*

Initial culinary training for chefs includes concepts about safe, sanitary, and efficient food production procedures, orientation and training on equipment, hand tools and foods, and applications of nutritional concepts to recipe writing. Food inventory management skills will be practiced using both traditional and computer-aided costing. Adopting professional standards regarding uniforms, dependability, teamwork and quality performance will be emphasized. Field trips may be required. Not repeatable.

HPMGT 133B—Commercial Food Preparation, 4 units

*Prerequisite: Completion of HPMGT 133A with at least a C or P*

*Hours per term: 27 lecture and 153 laboratory*

Focus is on restaurant line cookery. Involves preparation of soups, salads, entrees, vegetables and starches. Menu cycle extends from family-style to classical cuisine, including buffets. Quality assurance, production efficiency and kitchen management are emphasized. Not repeatable.

HPMGT 134—Commercial Baking: Beginning, 2½ units

*Hours per term: 18 lecture and 81 laboratory*

*Materials fee required*

This course covers tools, terms and functions in preparation of baked goods: yeast breads and pastries, cookies, cakes and specialty items to American Culinary Federation (ACF) competencies. Field trips may be required. Not repeatable.

HPMGT 135—Commercial Baking: Advanced, 2 units

*Prerequisite: Completion of HPMGT 134 with at least a C or P*

*Hours per term: 36 lecture*

Formulas used in commercial pastry shop, cake decoration, marzipan, chocolate work, pâté à chou and specialty items. Student participation. Field trips may be required. Not repeatable.
HPMGT 136—Dining Room Service and Management I, 2 units  
*Hours per term: 18 lecture and 72 laboratory*
Operation of the Cellar Restaurant dining room and related service support stations is covered. The focus is on how to hire, train, motivate, schedule and assign jobs to a wait staff. Cost control, labor and supplies, quality assurance and productivity standards are addressed. Not repeatable.

HPMGT 140—Contemporary Cuisine, 2-3½ units  
*Prerequisite: Completion of HPMGT 133B with at least a C or P*  
*Hours per term: 27 lecture and 108-144 laboratory*
Focused on the preparation of seasonal ingredients used to develop the menus for the advanced culinary course. Cooking techniques and theory pertaining to contemporary cuisine will be emphasized and the student will prepare on-line cooking stations in pastry, pantry, sauté, and grill. Not repeatable.

HPMGT 141—Restaurant Desserts, 2 units  
*Prerequisite: Completion of HPMGT 135 with at least a C or P*  
*Hours per term: 18 lecture and 54 laboratory*
The production and presentation of classical and contemporary restaurant desserts. A practical study of the restaurant pastry chef’s special vendors, equipment, supplies, foods, processes and techniques used to produce a wide variety of desserts. Not repeatable.

HPMGT 142—Garde Manger, 1 unit  
*Hours per term: 9 lecture and 27 laboratory*
A study of cold food preparation which includes vegetable and fruit carvings, appetizers, hors d’oeuvres, canapés, sauces, salads, forcemeats, pâtés, tray presentations, table setups, room setups, and food show competitions. Field trips may be required. Not repeatable.

HPMGT 143—Advanced Garde Manger, 1 unit  
*Prerequisite: Completion of HPMGT 142 with at least a C or P*  
*Hours per term: 9 hours, 27 laboratory*
Advanced study of cold food preparation to include vegetable, fruit, and ice carvings, appetizers, hors d’oeuvres, canapés, sauces, salads, forcemeats, pâtés, tray presentation, table and room setup with attention to food shows and special event programs. Not repeatable.

HPMGT 146—Dining Room Service and Management II, 1-3½ units  
*Hours per term: 0-27 lecture and 24-108 laboratory*
*Prerequisite: Completion of Hpmgt 136 with at least a C or P*
Advanced service techniques, table settings and dining room etiquette utilizing a restaurant as a laboratory. Emphasis is on elegance and showmanship, developing the fine points of service, understanding wine and food compatibilities, building sales, managing the dining room with reservations, proper staffing and hosting. Field trips required. Not repeatable.

HPMGT 147—Beverage Management, 2 units  
*Hours per term: 27 lecture and 27 laboratory*
A study of all aspects of beverage management including federal, state and local regulations, mixology, background and future of the beverage industry. Students should be 21 years of age, or if under 21, will be required to complete a number of independent assignments instead of labs. Field trips may be required. Not repeatable.

HPMGT 148—Introduction to Wines, 2 units  
*Hours per term: 36 lecture*
A study of wines from around the world with an emphasis on California. History and development of the wine industry, viticulture, wine making techniques, restaurant sales, and restaurant service. Wine evaluation, marketing, and wine’s relationship to food and menus will be covered. Field trips may be required. Not repeatable.

HPMGT 152—Restaurant Planning, 3 units  
*Hours per term: 54 lecture*
Using a restaurant as a vehicle for attaining personal and professional goals, students create a plan to conceive, design, staff, equip, stock, market and open the restaurant. They develop systems, policies and procedures for daily operations as well as relationships with professional service providers, vendors, lenders and regulatory agencies. This is an advanced class. Many topics will have been addressed and skills developed in earlier courses. This class unifies that knowledge and skill in the formation of a comprehensive restaurant plan. Field trips may be required. Not repeatable.

HPMGT 190—Culinary Arts Internship, 2 units  
*Prerequisite: Completion of HPMGT 140 with at least a C or P*  
*Hours per term: 9 lecture and laboratory 72 hours*
Supervised field experience in Culinary or Pastry Arts study and research related to job training. Current developments in Culinary Arts. Not repeatable.

HPMGT 200—Exploring Culinary and Baking Skills, 1½-2½ units  
*Hours per term: 9 hours and 54-108 laboratory*
This course is an exploratory course for those who are interested in learning proper usage of baking ovens, stoves, cooking equipment and tools. This course allows students to perform culinary and baking skills in a supervised environment. Emphasis will be placed on safety, sanitation, professionalism and basic competencies. Field trips may be required. Not repeatable. Grading: (P/NP only)

HPMGT 201A—Basic Baking and Pastry Arts, 2 units  
*Hours per term: 9 lecture and 81 laboratory*
Introduction to pastries, breads, cookies, pies and cakes. Students will explore the proper use of baking ovens, stoves, cooking equipment, and tools to produce baked products. Emphasis is on safety, sanitation, and basic competencies. Not repeatable. Grading: (P/NP only)

HPMGT 201B—Intermediate Culinary and Pastry Arts, 2 units  
*Recommended for Success: HPMGT 201A*  
*Hours per term: 9 lecture and 81 laboratory*
Intermediate preparation of pastries, breads, cookies, pies, and cakes. Students will learn to bake goods to industry standards. Emphasis will be placed on preparing intermediate-level baked goods. Not repeatable. Grading: (P/NP only)
**COURSES:**  
**HUMAN - LIBR**

**HUMAN**  
**HUMANITIES**

**HUMAN 1—Old World Culture, 3 units**  
*Hours per term: 54 lecture*  
An introductory survey of influences on Western culture, historically structured from classical Greece to the Renaissance, presenting enduring works of art, drama, literature, music, and philosophy. MJC equivalent: (Human 105) **Transfer:** (CSU/UC) (CSU-GE: C2) (IGETC: 3B)

**HUMAN 2—Modern Culture, 3 units**  
*Recommended for Success: ENGL 151 or equivalent*  
*Hours per term: 54 lecture*  
An introductory survey of humanistic culture, historically structured from the enlightenment to the present, focusing on enduring works of art, drama, literature, music, and philosophy. Not repeatable. MJC equivalent: (HUMAN 106) **Transfer:** (CSU/UC) (CSU-GE: C2) (IGETC: 3B)

**HUMAN 3—World Culture, 3 units**  
*Recommended for Success: ENGL 151 or equivalent*  
*Hours per term: 54 lecture*  
A study of selected works of literature, art, music, film, religion, philosophy, theatre and other forms of expression, particularly emphasizing the non-Western world. The works will be studied in their historical and cultural contexts. Not repeatable. MJC equivalent: (HUMAN 110) **Transfer:** (CSU/UC) (CSU-GE: C2) (IGETC: 3B)

**HUMAN 4—World Religions and Spirituality, 3 units**  
*Hours per term: 54 lecture*  
Study of the development of religious consciousness, including the earliest belief systems in the world, the major “living religions” today, tribal religions, “new age” religion and spirituality, and an examination of the meaning of the religious experience. Field trips may be required. Not repeatable. MJC equivalent: (PHILO 115) **Transfer:** (CSU/UC) (CSU-GE: C2) (IGETC: 3B)

**INDEPENDENT STUDY**

Independent Study courses are intended to give students an opportunity to independently research specialized areas not available as regular course offerings of the college. They are designed to meet specific student interests and may be made available in any subject matter area. Consult your advisor for specific procedures. (See page 40 for conditions, limitations). These courses may transfer as electives or other credit as authorized by the transfer school. For UC, student is responsible for pre-authorization from UC department chair and Admissions Office.

**INDIS**  
**INTERDISCIPLINARY STUDIES**

**INDIS 48—Sustainable Living, 3 units**  
*Hours per term: 54 lecture*  
This course introduces life skills and decision-making strategies to students interested in a sustainable future for themselves and their local/global communities. The course will cover topics such as: how do our food choices affect both our health and our environment, what are the impacts of various consumer goods on the environment and society, what does it mean to build and maintain a sustainable house/building, where do my wastes go when I flush the toilet, where does my drinking water come from, where does my energy come from and what is its true cost? The course will be designed to help students see the individual as the pivot point between community health/world health and personal health. Field trips may be required. Not repeatable. **Transfer:** (CSU) (CSU-GE: E)

**INDIS 110—Peer Tutoring, 1 unit**  
*Hours per term: 18 lecture*  
Provides students with techniques and strategies for peer tutoring. Students will study learning styles, multiple intelligence theory, learning disabilities, as well as effective communication skills, planning and structuring a tutor session, questioning techniques and multicultural perspectives. Studying these topics will lead to clarifying the nature of an effective tutor. This course meets State regulations for peer tutoring training and College Reading and Learning Association (CRLA) certification. Not repeatable. Grading: (P/NP only)

**INDIS 111—Group Peer Tutoring, ½ unit**  
*Hours per term: 9 lecture*  
The Group Peer Tutoring course will train students to facilitate a structured group tutoring session and/or Supplemental Instruction (S.I.) session. Particular emphasis will be on tutoring techniques designed to improve study skills of students attending group sessions and/or S.I. sessions. Not repeatable. Grading: (P/NP only)

**LIBR**  
**LIBRARY SCIENCE**

**LIBR 1—Introduction to Library and Information Resources, 1 unit**  
*Hours per term: 18 lecture*  
This course is an introduction to the use of electronic and print resources, including developing effective search strategies and evaluating information sources. Emphasis is on library online catalogs, online periodical databases, print and electronic reference sources, and Internet resources. Not repeatable. **Transfer:** (CSU)

**LIBR 101 Introduction to the Library, ½ unit**  
*Hours per term: 9 lecture*  
Basic familiarization with library collections and services. Focus is on being an effective library user, including how to identify and locate print and electronic materials using library resources. Grading: (P/NP only)
MATH (MATHEMATICS)

MATH 2—Statistics, 4 units
Prerequisite(s): Completion of MATH 104 or with at least a C or P
Hours per term: 72 lecture
Statistics is the study of how to collect, organize, analyze, interpret, and communicate information from data. This course will cover descriptive statistics, normal distributions, correlation and regression, probability, sampling distributions, inference about quantitative and categorical variables, and inference about relationships. Not repeatable. MJC equivalent: (MATH 134) Transfer: (CSU/UC) (CSU-GE: B4) (IGETC: 2A) (C-ID: MATH 110)

MATH 4—Mathematics for Elementary Teachers, 3 units
Prerequisite: Completion of MATH 104 with at least a C or P, or placement through the assessment process
Hours per term: 54 lecture
Critical study of the real number system and its subsystems for prospective elementary school teachers. Includes the definitions of the basic arithmetic operations and their algorithms, number systems, number theory, problem solving, and mathematical communication and reasoning. Field trips may be required. Not repeatable. MJC equivalent: (MATH 105) Transfer: (CSU/UC-Transfer credit limited. See a counselor.) (CSU-GE: B4) C-ID (MATH 120)

MATH 6—Mathematics for Liberal Arts Students, 3 units
Prerequisite: Completion of MATH 104 with at least a C or P, or placement through the assessment process
Hours per term: 54 lecture
A survey of important mathematical ideas with insight into their historical development, with emphasis on the nature of mathematical reasoning and the importance and applications of mathematics in society. Topics may include set theory and logic, number theory, functions and graphs, geometric ideas, probability and statistics, calculus, graph theory, or other significant areas of mathematics. Not repeatable. MJC equivalent: (MATH 101) Transfer: (CSU/UC) (CSU-GE: B4) (IGETC: 2A)

MATH 8—Trigonometry, 3 units
Prerequisite(s): Completion of MATH 104 Algebra II or with at least a C or P
Hours per term: 54 lecture
The study of trigonometric functions analytically and graphically, in both Cartesian and polar coordinates. Course will cover solving trigonometric equations using identities and inverse functions and applying these concepts to right and oblique triangles, the unit circle, vectors, complex numbers and other applications. Not repeatable. Transfer: (CSU) (CSU-GE: B4) (C-ID MATH 851)

MATH 10—Algebra II, 5 units
Prerequisite(s): Completion of MATH 104 Algebra II or with at least a C or P
Hours per term: 72 lecture
Introduction to mathematical modeling, linear systems of equations and inequalities (linear programming), sets, combinatorics, probability, statistics, and the mathematics of finance. Not repeatable. MJC equivalent: (MATH 130) Transfer: (CSU/UC) (CSU-GE: B4) (IGETC: 2A) (C-ID: MATH 130)

MATH 12—Finite Mathematics, 3 units
Prerequisite: Completion of MATH 104 with at least a C or P, or placement through the assessment process
Hours per term: 54 lecture
Introduction to mathematical modeling, linear systems of equations and inequalities (linear programming), sets, combinatorics, probability, statistics, and the mathematics of finance. Not repeatable. MJC equivalent: (MATH 130) Transfer: (CSU/UC) (CSU-GE: B4) (IGETC: 2A) (C-ID: MATH 130)

MATH 15 —Calculus I, 5 units
Prerequisite(s): Completion of MATH 104 or with at least a C or P
Hours per term: 90 lecture
Topics in Algebra, Trigonometry and Analytic Geometry are studied in preparation for Calculus. Includes polynomial, absolute value, radical, rational, exponential, logarithmic, and trigonometric equations, functions and their graphs. Not repeatable. Transfer: (CSU/UC) (CSU-GE: B4) (IGETC: 2A) C-ID (MATH 155)

MATH 16—Precalculus, 5 units
Prerequisite(s): Completion of MATH 8 with at least a C or P
Hours per term: 90 lecture
Topics in Algebra, Trigonometry and Analytic Geometry are studied in preparation for Calculus. Includes polynomial, absolute value, radical, rational, exponential, logarithmic, and trigonometric equations, functions and their graphs. Not repeatable. Transfer: (CSU/UC) (CSU-GE: B4) (IGETC: 2A) C-ID (MATH 155)

MATH 18A—Calculus I, 5 units
Prerequisite: Completion of MATH 17B or MATH 16 with at least a C or P
Hours per term: 90 lecture
Families of functions, limits, continuity, the derivative, derivative formulas, implicit differentiation, applications of derivatives, and an introduction to concepts and applications of the definite integral. Graphing calculator required. Not repeatable. MJC equivalent: (MATH 171) Transfer: (CSU/UC) (CSU-GE: B4) (IGETC: 2A) C-ID (MATH 210)

MATH 18B—Calculus II, 5 units
Prerequisite(s): Completion of MATH 18A or MATH 16 with at least a C or P
Hours per term: 90 lecture
Anti-derivatives, techniques of integration, applications of definite integrals to geometry, physics, probability, and economics, numerical integration, improper integrals, simple differential equations, convergence of series, power series, Taylor series, Fourier series, areas defined by polar and parametric curves. Not repeatable. MJC equivalent: (MATH 172) Transfer: (CSU/UC) (CSU-GE: B4) (IGETC: 2A)

MATH 18C—Calculus III, 5 units
Prerequisite: Completion of MATH 18B with at least a C or P
Hours per term: 90 lecture
Vectors and solid analytic geometry, vector valued functions, partial differentiation, multiple integrals, vector fields and vector calculus. Not repeatable. MJC equivalent: (MATH 173) Transfer: (CSU/UC) (CSU-GE: B4) (IGETC: 2A)
MATH 26—Linear Algebra, 3 units
Prerequisite(s): Completion of MATH 18A with at least a C or P
Hours per term: 54 lecture
This course develops the techniques and theory needed to solve and classify systems of linear equations. Solution techniques include row operations, Gaussian elimination and matrix algebra. Investigation of properties of vectors in two and three dimensions leads to the notion of an abstract vector space. Vector space and matrix theory topics include inner products, norms, orthogonality, eigenvalues, eigenvectors, eigenspaces and linear transformations. The course also includes an introduction to writing proofs and selected applications and numerical methods. Not repeatable. Transfer: (CSU/UC) (CSU-GE: B4) (IGETC: 2A)

MATH 100A—Algebra I: First Half, 3 units
Prerequisite: Completion of MATH 602 with at least a C or P, or placement through the assessment process
Hours per term: 54 lecture
This course is equivalent to the first half of MATH 101, allowing the student more study time for the course topics. Completion of both MATH 100A and MATH 100B is equivalent to completion of MATH 101. Not repeatable.
MATH 100B—Algebra I: Second Half, 3 units
Prerequisite: Completion of MATH 100A with at least a C or P
Hours per term: 54 lecture
This course is equivalent to the second half of MATH 101, allowing the student more study time for the course topics. Completion of both MATH 100A and MATH 100B is equivalent to completion of MATH 101. Not repeatable.

MATH 101—Algebra I, 5 units
Prerequisite: Completion of MATH 602 with at least a C or P, or placement through the assessment process
Hours per term: 90 lecture
Introduction to algebraic structures using tabular, graphical and symbolic representations. Properties of real numbers, evaluating and simplifying algebraic expressions, linear equations and inequalities in one and two variables, systems of linear equations and inequalities, proportions and direct variation, linear functions and models, integer exponents, polynomial operations, factoring, solution of quadratic equations by factoring and the quadratic formula. Not repeatable. MJC equivalent: (MATH 90)

MATH 104—Algebra II, 5 units
Prerequisite: Completion of MATH 100B or MATH 101 with at least a C or P, or placement through the assessment process
Hours per term: 90 lecture
Algebra II continues from Algebra I, studying functions using graphical, numerical, formulaic and descriptive techniques. Students will solve problems and applications modeled by linear, polynomial, rational, exponential, logarithmic functions and quadratic functions in one and two variables using conic sections. Students also perform operations, simplify expressions and solve equations involving polynomials, complex numbers, matrices and rational exponents. Introduction to series and summation notation, as well as transformations and the algebra of functions. Graphing calculator required. This course is prerequisite to undergraduate transfer general education mathematics courses. Not repeatable. MJC equivalent: (MATH 90)

MATH 601—Elementary Mathematics, 4 units
Hours per term: 72 lecture
Study of the concepts and procedures of arithmetic, with emphasis on developing understanding as well as computational skills. Topics include mathematical vocabulary, symbolic representation, arithmetic operations, fractions, decimals, percents, ratio, proportion, prime factorization, and student study skills. Not repeatable. MJC equivalent: (MATH 10)

MATH 602—Prealgebra, 4 Units
Prerequisite: Completion of MATH 601 with at least a C or P
Hours per term: 72 lecture
Designed to help students prepare for algebra and applied math courses by reviewing fundamental operations of arithmetic and common geometric formulas, and introducing the algebraic concepts of simplifying expressions, polynomial arithmetic, and solving linear equations. Arithmetic reviewed includes calculation with integers, decimals, and fractions. Ratios, percents, and their applications are also studied. Not repeatable. MJC equivalent: (MATH 20)

MATH 650—Personalized Mathematics Development, ½-2 units
Hours per term: 27 to 108 laboratory
This course provides students opportunities to review or learn mathematics in an individualized, self-paced setting. Topics include: Basic Math, Prealgebra, Beginning Algebra, Introduction to Geometry, Intermediate Algebra, College Algebra, Trigonometry, Precalculus, and Introduction to Statistics. Successful completion of this course does not satisfy prerequisite or degree requirements. Not repeatable. Grading: (P/NP only)

MGMT (MANAGEMENT)

MGMT 110—Communication in the Workplace, ½ unit
Hours per term: 9 lecture
Designed to introduce the student to key elements in communication within business organizations. Topics include verbal and nonverbal communication, listening skills and specific supervisory communication skills. Not repeatable. Grading: (P/NP only)

MGMT 111—Customer Service, ½ unit
Hours per term: 9 lecture
Designed to provide the student with certain key skills and attitudes in order to effectively meet the needs of customers. The student will be introduced to the concept of internal and external customers, customer satisfaction and customer retention. Topics will also include communicating with customers, developing a positive attitude, handling complaints and sales skills. Not repeatable. Grading: (P/NP only)

MGMT 112—Team Building, ½ unit
Hours per term: 9 lecture
Designed to provide the student with an understanding of how teams work together, common problems teams encounter and how to solve them. Students will learn to recognize various team player styles. Students will be introduced to team building in the workplace. Not repeatable. Grading: (P/NP only)

MGMT 113—Attitude in the Workplace, ½ unit
Hours per term: 9 lecture
Designed to provide the student with certain key skills in the area of attitude so that they may effectively maintain a positive attitude at the workplace and at home. The student will be introduced to the concepts of how attitudes are communicated, the three types of attitudes and how to adjust one's attitude. Topics will also include the primary causes of a bad attitude, turnaround strategies to battle these bad attitudes and specific techniques to raise the attitude of others. Not repeatable. Grading: (P/NP only)
MGMT 114—Values and Ethics in the Workplace, ½ unit
Hours per term: 9 lecture
Designed to acquaint the student with the importance of values and ethics in the workplace. The importance of values and ethics involved in the supervisor’s carrying out his/her duties will be emphasized. Grading: (P/NP only)

MGMT 115—Time Management, ½ unit
Hours per term: 9 lecture
Designed to introduce the student to time management principles and specific tools that assist in making maximum use of time. Basic concepts of managing space will also be covered. Not repeatable. Grading: (P/NP only)

MGMT 116—Stress Management in the Workplace, ½ unit
Hours per term: 9 lecture
Designed to acquaint the student with various skills the supervisor needs to help employees. Included is the recognition of stress and how to manage it, job burnout and what to do about it, and counseling employees in various situations. Not repeatable. Grading: (P/NP only)

MGMT 117—Conflict Management, ½ unit
Hours per term: 9 lecture
Designed to provide the student with an analysis of attitudes and behavior which create conflict between individuals and groups within an organization. Not repeatable. Grading: (P/NP only)

MGMT 118—Decision Making in the Workplace, ½ unit
Hours per term: 9 lecture
Designed to introduce the student to decision making and problem solving as a supervisor or employee. Not repeatable. Grading: (P/NP only)

MGMT 119—Managing Organizational Change, ½ unit
Hours per term: 9 lecture
Designed to provide the student with an understanding of change and the influence it has on an organization and the individuals in that organization. Topics will include understanding organizational change, theoretical models of change, stages of change, and how to manage organizational change. Not repeatable. Grading: (P/NP only)

MGMT 120—Generational Diversity: Managing Cross-Generational Teams, ½ unit
Hours per term: 9 lecture
For the first time in America’s history, we have four generations working side by side in the workplace. This course is designed to equip students with knowledge and skills to work with and lead cross-generational teams. Not repeatable. Grading: (P/NP only)

MUSIC 2—Introduction to Music, 3 units
Recommended for Success: ENGL 151
Hours per term: 54 lecture
Survey of the many fields within the discipline of music, including a brief overview of fundamentals, music history, the voice, musical instruments, the science of acoustics, rock, jazz, and current styles, psychology of music, and analytical listening. Attendance at selected local concerts is required. Not repeatable. MJC equivalent: (MUSG 101) Transfer: UC/CSU. (CSU-GE: C1) (IGETC: 3A) C-ID: (MUS 100)

MUSIC 4A—Elementary Musicianship, 1 unit
Recommended for Success: Concurrent enrollment in Music 20A
Hours per term: 54 laboratory
Basic course for developing musical skills. Teaches sight singing, ear training, melodic dictation, and basic keyboard skills. Not repeatable. MJC equivalent: (MUST 131) Transfer: (CSU/UC) C-ID: (MUS 125)

MUSIC 4B—Elementary Musicianship, 1 unit
Prerequisite: Completion of MUSIC 4A with at least a C or P
Recommended for Success: Concurrent enrollment in MUSIC 20B
Hours per term: 54 laboratory
Continuation of MUSIC 4A to develop skills in sight singing, melodic and rhythmic dictation, and aural analysis of harmonic materials, and basic keyboard skills. Not repeatable. MJC equivalent: (MUST 132) Transfer: (CSU/UC) C-ID (MUSIC 135)

MUSIC 5A—Intermediate Musicianship, 1 unit
Prerequisite(s): Completion of MUSIC 4A with at least a C or P
Continuation of MUSIC 4B and applies and develops the rhythmic, melodic, and harmonic materials through ear training, sight singing, analysis, and dictation. Not repeatable. MJC equivalent: (MUST 133) Transfer: (CSU/UC)

MUSIC 5B—Intermediate Musicianship, 1 unit
Recommended for Success: MUSIC 21A and MUSIC 5A
Hours per week: 54 laboratory
Continuation of MUSIC 5A, including sight singing, melodic and rhythmic dictation, and aural analysis of harmonic materials and basic keyboard skills. Not repeatable. MJC equivalent: (MUST 134) Transfer: (CSU/UC) C-ID: (MUSIC 135)

MUSIC 10—Survey of Music History and Literature:
Ancient to 1750, 3 units
Hours per term: 54 lecture
A survey of elements of style, major composers, and masterpieces of music from the Greek era through Medieval, Renaissance, Baroque, and Early Classic periods; survey from 1000 BC through 1750 AD. Includes the music of Palestrina, Bach, and Handel. Not repeatable. MJC equivalent: (MUSG 121) Transfer: (CSU/UC) (CSU-GE: C1) (IGETC: 3A)
MUSIC 11—Survey of Music History and Literature: 1750 to Present, 3 units

Hours per term: 54 lecture
A survey of elements of style, major composers, and masterpieces of music during the Classic, Romantic, and Modern periods from 1750 to the present. Includes music of Mozart, Beethoven, Wagner, Debussy, Schoenberg, and Copland. Not repeatable. MJC equivalent: (MUSG 122) Transfer: (CSU/UC) (CSU-GE: C1) (IGETC: 3A)

MUSIC 12—American Popular Music: Blues and Jazz to Rock ‘n’ Roll, 3 units

Hours per term: 54 lecture
An introduction to jazz style, jazz history, and popular music of the 20th and 21st centuries. Not repeatable. Transfer: (CSU/UC) (CSU-GE: C1) (IGETC: 3A)

MUSIC 20A—Elementary Music Theory, 3 units

Recommended for Success: Concurrent enrollment in MUSIC 4A Hours per term: 54 lecture
Analysis of the essentials for understanding and writing music. Included are rhythm, scales, intervals, chords, notation, melody writing; study of diatonic 4 part harmony, figured bass, chord progressions, and harmonic motion. Not repeatable. MJC equivalent: (MUST 121) Transfer: (CSU/UC-Transfer credit limited. See a counselor.) C-ID: (MUS 120)

MUSIC 20B—Elementary Music Theory, 3 units

Prerequisite(s): Completion of MUSIC 20A with at least a C or P Hours per term: 54 lecture
Continuing study in harmony and analysis. Included are secondary dominants, modulation, altered chords, nonharmonic notes, and extended chords. Not repeatable. MJC equivalent: (MUST 122) Transfer: (CSU/UC) C-ID: (MUS 130)

MUSIC 21A—Intermediate Music Theory, 3 units

Prerequisite: Completion of Music 20B with at least a C or P Hours per term: 54 lecture
A continuation of the study of the basic structural elements of music such as melody, rhythm, harmony and form with an emphasis on the organization of these elements; also includes a study of chromaticism, chromatic alterations, and complex tertian structures. Not repeatable. MJC equivalent: (MUST 123) Transfer: (CSU/UC-Transfer credit limited. See a counselor.) C-ID: (MUS 140)

MUSIC 21B—Intermediate Music Theory, 3 units

Prerequisite: Completion of Music 21A with at least a C or P Hours per term: 54 lecture
Continued development of analytical and compositional techniques; study of modal and tonal counterpoint; introduction to Impressionism and to 20th century concepts of melody, harmony, and form. Not repeatable. MJC equivalent: (MUST 124) Transfer: (CSU/UC-Transfer credit limited. See a counselor.) C-ID: (MUS 150)

MUSIC 21A—Intermediate Music Theory, 3 units

Prerequisite: Completion of Music 20B with at least a C or P Hours per term: 54 lecture
A continuation of the study of the basic structural elements of music such as melody, rhythm, harmony and form with an emphasis on the organization of these elements; also includes a study of chromaticism, chromatic alterations, and complex tertian structures. Not repeatable. MJC equivalent: (MUST 121) Transfer: (CSU/UC)

MUSIC 21B—Intermediate Music Theory, 3 units

Prerequisite: Completion of Music 21A with at least a C or P Hours per term: 54 lecture
Continued development of analytical and compositional techniques; study of modal and tonal counterpoint; introduction to Impressionism and to 20th century concepts of melody, harmony, and form. Not repeatable. MJC equivalent: (MUST 124) Transfer: (CSU/UC-Transfer credit limited. See a counselor.) C-ID: (MUS 150)

MUSIC 31A—Elementary Piano, 1 unit

Hours per term: 54 laboratory
An introduction to the skill of piano playing based on music reading: fundamentals of rhythm, notation, and technique. Basic theory will include knowledge and application of musical terms, scales, key signatures, and chords. Field trips required. Not repeatable. MJC equivalent: (MUSA 151) Transfer: (CSU/UC)

MUSIC 31B—Elementary Piano, 1 unit

Prerequisite: Completion of Music 31A with at least a C or P Hours per term: 54 laboratory
Continuation of the fundamentals of piano performance with emphasis given to the essentials of music reading. Theory will include the presentation of scales and keys, both major and minor, review and application of chords and inversions, and an introduction to improvisation. Piano literature will include both classical and popular compositions as well as exercises and technical studies. Field trips required. Not repeatable. Transfer: (CSU/UC)

MUSIC 36—Elementary Voice, 1 unit

Hours per term: 54 laboratory
Large group instruction in singing for those with little or no vocal solo training. Includes basic singing techniques and songs for improving pitch, building range, endurance, tone, and breath control. Not repeatable. MJC equivalent: (MUSA 152) Transfer: (CSU/UC)

MUSIC 37—Advanced Elementary Voice, 1 unit

Prerequisite: Completion of Music 36 with at least a C or P Hours per term: 54 laboratory
Large group instruction in singing for those with one semester of private or solo class voice. Includes reinforcement of basic singing techniques for building range, endurance, tone, and breath capacity as taught in Music 36. Music includes folk/traditional as well as English and Italian art song. Not repeatable. MJC equivalent: (MUSA 153) Transfer: (CSU/UC)

MUSIC 38—Intermediate Voice, 1 unit

Prerequisite: Completion of Music 37 with at least a C or P Hours per term: 54 laboratory
Individual and small group instruction in the refinement of vocal technique for people with two semesters of class voice. Includes continued development of tone, endurance, and flexibility with an emphasis on solo public performance with traditional and art song literature. Not repeatable. Transfer: (CSU/UC)

MUSIC 39—Advanced Intermediate Voice, 1 unit

Prerequisite: Completion of Music 38 with at least a C or P Hours per term: 54 laboratory
Individual and small group instruction in the development of vocal technique for people with three semesters of class voice. Includes continued development of expression and increased emphasis on public performance. Field trips may be required. Not repeatable. MJC equivalent: (MUSA 154) Transfer: (CSU/UC)
MUSIC 41A — Intermediate Piano, 1 unit
Prerequisite: Completion of Music 31B with at least a C or P
Hours per term: 54 laboratory
Continuation of the fundamentals of piano performance attained in MUSIC 31B with more emphasis given to technique, phrasing, and dynamics as progressively difficult music is presented. Opportunity to accompany instrumentalists and vocalists is offered as well as the performance of two-piano works. Theory will include all key signatures, scales, embellishments, diminished and augmented chords, and study of the Baroque, Classical, Romantic, and Contemporary periods in Music. Not repeatable. MJC equivalent: (CC MUSIC 41A & 41B = MJC MUSA 123) Transfer: (CSU/UC)

MUSIC 41B — Intermediate Piano, 1 unit
Prerequisite: Completion of Music 41A with at least a C or P
Hours per term: 54 laboratory
Continuation of the fundamentals of piano performance attained in MUSIC 31A, 31B, and 41A with more emphasis given to the adaptation of various techniques regarding style, touch, dynamics, and phrasing as they apply to different periods of piano literature. Opportunity to accompany instrumentalists and vocalists is offered as well as the performance of two-piano works. Theory will include all key signatures, scales, embellishments, diminished and augmented chords, and study of the Baroque, Classical, Romantic, and Contemporary periods in Music. Not repeatable. MJC equivalent: (MUSIC 41A+MUSIC 41B = MJC MUSA 123) Transfer: (CSU/UC)

MUSIC 49 — Beginning Guitar, 1 unit
Hours per term: 54 laboratory
Basic guitar techniques, open string chords, right hand string and finger-picking. Introduction to music reading, basic chords, simple song accompaniments and melodic playing in first position. Student must provide a tunable, nylon string acoustic guitar. Not repeatable. MJC equivalent: (MUSA 141) Transfer: (CSU/UC)

Limitations apply to MUSIC 50 - MUSIC 78.
Each course is limited to a maximum of four (4) enrollments.

MUSIC 50 — Private Lessons-Keyboard, ½ unit
Enrollment limited to: students who successfully pass audition during the first week of class
Hours per term: 27 laboratory
Study of performance techniques, interpretation and repertoire in private instruction. Designed primarily for music majors and minors. Outside performance required. Four completions allowed. Transfer: (CSU/UC)

MUSIC 51 — Private Lessons-Keyboard, ½ unit
Enrollment limited to: students who successfully pass audition during the first week of class
Hours per term: 27 laboratory
Study of performance techniques, interpretation and repertoire in private instruction. Designed primarily for music majors and minors. Outside performance required. Four completions allowed. Transfer: (CSU/UC)

MUSIC 52 — Private Lessons-Woodwinds, ½ unit
Enrollment limited to: students who successfully pass audition during the first week of class
Hours per term: 27 laboratory
Study of performance techniques, interpretation and repertoire in private instruction. Designed primarily for music majors and minors. Outside performance required. Four completions allowed. Transfer: (CSU/UC)

MUSIC 53 — Private Lessons-Brass, ½ unit
Enrollment limited to: students who successfully pass audition during the first week of class
Hours per term: 27 laboratory
Study of performance techniques, interpretation and repertoire in private instruction. Designed primarily for music majors and minors. Outside performance required. Four completions allowed. Transfer: (CSU/UC)

MUSIC 54 — Private Lessons-Strings, ½ unit
Enrollment limited to: students who successfully pass audition during the first week of class
Hours per term: 27 laboratory
Study of performance techniques, interpretation and repertoire in private instruction. Designed primarily for music majors and minors. Outside performance required. Four completions allowed. Transfer: (CSU/UC)

MUSIC 55 — Private Lessons- Percussion, ½ unit
Enrollment limited to: students who successfully pass audition during the first week of class
Hours per term: 27 laboratory
Study of performance techniques, interpretation and repertoire in private instruction. Designed primarily for music majors and minors. Outside performance required. Four completions allowed. Transfer: (CSU/UC)

MUSIC 56 — Private Lessons-Voice, ½ unit
Enrollment limited to: students who successfully pass audition during the first week of class
Hours per term: 27 laboratory
Study of performance techniques, interpretation and repertoire in private instruction. Designed primarily for music majors and minors. Outside performance required. May be repeated three times. MJC equivalent: (MUSA 154) Transfer: (CSU/UC)

MUSIC 57 — College Choir, 1 unit
Enrollment limited to: students who successfully pass audition during the first week of class
Hours per term: 54 laboratory
Materials fee required
Instruction and performance in vocal and choral techniques including group tone production, singing, parts, and reading music. Designed for singers with limited or no choir experience as well as intermediate. Repertoire includes selections of various styles. Field trips required. Materials fee required. Four completions allowed. Transfer: (CSU/UC)
MUSIC 64—Jazz Choir, 1 unit
Enrollment limited to: students who successfully pass audition during the first week of class
Hours per term: 54 laboratory
Study and performance of vocal jazz and improvisation in an ensemble of limited size. Four completions allowed. Transfer: (CSU/UC) C-ID: (MUS 180)

MUSIC 66—Columbia College Community Chorus, 1 unit
Enrollment limited to: students who successfully pass audition during the first week of class
Hours per term: 54 to 108 activity
Study and performance of mixed choral works of various styles and periods. Includes development of vocal technique and musicianship. Four completions allowed. MJC equivalent: (MUSE 151) Transfer: (CSU/UC) C-ID: (MUS 180)

MUSIC 72—Jazz Ensemble, 1 unit
Enrollment limited to: students who successfully pass audition during the first week of class
Hours per term: 54 laboratory
Study and performance of instrumental jazz and improvisation; techniques of improvisation will be explored. Four completions allowed. Transfer: (CSU/UC) C-ID: (MUS 180)

MUSIC 75—Jazz Studies, 1 unit
Enrollment limited to: students who successfully pass audition during the first week of class
Hours per term: 54 laboratory
Study and performance of instrumental and vocal jazz in both solo and ensemble (including big band, choir, combos, and solo with accompaniment). Includes beginning jazz theory, improvisation, style, interpretation, performance practice, conducted performance and the development of an individual standard jazz repertoire. Repertoire may vary from semester to semester. Field trips may be required. Four completions allowed. Transfer: (CSU/UC) C-ID: (MUS 180)

MUSIC 76—Community Orchestra, 1 unit
Enrollment limited to: students who successfully pass audition during the first week of class
Hours per term: 54 to 108 activity
Study and performance of orchestral literature of various styles and media. Audition required for wind, brass, and percussion players as needed. May be repeated three times. MJC equivalent: (MUSE 161) Transfer: (CSU/UC) C-ID: (MUS 180)

MUSIC 78—Ensemble: Instrumental Emphasis, 1 unit
Enrollment limited to: students who successfully pass audition during the first week of class
Hours per term: 54 laboratory
Study and performance of music for instrumental ensembles including wind ensemble and small orchestra literature. Four completions allowed. MJC equivalent: (MUSE 166 OR MUSE 176) Transfer: (CSU/UC) C-ID: (MUS 180)

NARTC & NATRE
See FNR (Forestry and Natural Resources)

Columbia College does not offer a Nursing program.
However, within the Yosemite Community College District, Modesto Junior College offers an Associate Degree for Nursing satellite program that operates on the Columbia College campus. See a Columbia College counselor (209) 588-5109 for more information.

OFTEC OFFICE TECHNOLOGY

OFTEC 42/ART 51/CCTDM 51—Publication Design I, 3 units
Recommended for Success: OFTEC 141
Hours per term: 36 lecture and 54 laboratory
An introduction to general publication design theory with emphasis on typography, page layout, graphics, and design. Students will create media for print and digital publishing. Exercises and projects will include the creation of a multi-page booklet, poster, newsletter, brochures and an interactive document formatted for digital publishing. Credit may be earned once for OFTEC 42 or ART 51 or CCTDM 51. Not repeatable. Transfer: (CSU)

OFTEC 43/CCTDM 52/ART 52—Publication Design II, 3 units
Prerequisite: Completion of ART 51/OFTEC 42/CCTDM 51 with at least a C or P
Hours per term: 36 lecture and 54 laboratory
A continuation of study in problems of Publication Design. Areas of focused study will be in advanced problems of page layout, typography, print, and interactive documents for digital publication. Credit may be earned once for OFTEC 43 or ART 52 or CCTDM 52. Not repeatable. Transfer: (CSU)

OFTEC 50—Medical Terminology, 3 units
Hours per term: 54 lecture
An introduction to basic word structure including word roots, prefixes and suffixes used in medical vocabulary; also specialized vocabulary for the various anatomical systems used by allied health fields. Not repeatable. MJC equivalent: (MDAST 321) Transfer: (CSU)
COURSES:  OFTEC

OFTEC 97—Work Experience in Office Technology, 1-4 units

Co-requisite: Must be enrolled in at least seven (7) units, including Work Experience, where 75 employed hours with pay equals 1 unit, or 60 employed hours without pay equals 1 unit

Provides students an opportunity to experience supervised employment in Office Technology. The student's employment must be related to educational or occupational goals. Grading: (P/NP only) May be repeated for no more than a total of 16 units of credit less any units earned in any other Work Experience course. Transfer: (CSU-Transfer credit limited. See a counselor.)

OFTEC 100—Computer Keyboarding I, 1 unit

Hours per term: 54 lecture

Recommended for Success: OFTEC 100

Designed for students wishing to master the touch method of keyboarding. Not repeatable.

OFTEC 125—Records Management and Filing Applications, 3 units

Hours per term: 54 lecture

Recommended for Success: OFTEC 50

This is a basic course in the principles and practices of effective records management systems and includes practice in classifying, arranging, and storing of records for both manual and computerized records systems. Emphasis is placed on practical applications of alphabetic, numeric, geographic and subject filing systems. Meets or exceeds specifications of American Records Management Association. Not repeatable. MJC equivalent (OFADM 304)

OFTEC 130—Business English, 3 units

Hours per term: 54 lecture

Recommended for Success: OFTEC 50

A review of the mechanics of English grammar, punctuation, and sentence structure with emphasis on business applications. Vocabulary development, spelling, and use of the dictionary are also studied. Not repeatable. MJC equivalent (OFADM 304)

OFTEC 131—Office Procedures and Technology, 3 units

Hours per term: 54 lecture

Recommended for Success: OFTEC 50

Application of workforce issues and development of skills including decision making, team building, business ethics, communication, and time management. Introduction to meeting management, travel, and conference planning. Development of presentation skills and an employment portfolio. Not repeatable. MJC equivalent: (OFADM 314)

OFTEC 132—Business Communications, 3 units

Prerequisite: Completion of OFTEC 130 or ENGL 650 with at least a C or P

Hours per term: 54 lecture

Recommended for Success: OFTEC 50

Study and development of a variety of communication skills. Emphasis will be placed on writing skills as well as speaking, listening, and nonverbal skills. Students will learn how to compose and create effective documents typically used in business and personal situations including letters, memos, technology-related messages and reports. Not repeatable.

OFTEC 140—Beginning Word Processing, 2 units

Recommended for Success: OFTEC 100

Hours per term: 36 lecture

Recommended for Success: OFTEC 100

Students receive instruction in a current word processing program which includes editing, saving, changing format, fonts, tabs; using Spell Check; creating headers/footers and footnotes/endnotes; cutting and pasting; and using file management techniques. Not repeatable.

OFTEC 141—Intermediate Word Processing, 3 units

Recommended for Success: OFTEC 140

Hours per term: 36 lecture and 54 laboratory

Students receive instruction in intermediate word processing features which will be applied to creating business documents. Areas of emphasis include text columns, macros, styles, math, merge, repetitive documents, sort and select, and graphics. Not repeatable. MJC equivalent: (CSCI 224)

OFTEC 142/CCTIS 142—Desktop Publishing Essentials, 2 units

Recommended for Success: Basic word processing skills such as editing and formatting text, copy/paste, file saving, Spell Check, etc.

Hours per term: 36 lecture

An introduction to general desktop publishing theory with emphasis on design elements of formatted text, frames, photographs, clipart, lines, and pictures. Students will create sample projects such as newsletters, brochures, flyers, business cards, etc. Not repeatable. Grading: (P/NP only)

OFTEC 149—Electronic Health Records, 2 units

Recommended for Success: OFTEC 142

Hours per term: 36 lecture

Students learn to apply hands-on skills by creating charts for new patients, recording vital signs, managing office visits, and creating letters to patients and healthcare providers. Students experience computer-simulated office management through EHR software. Not repeatable.

OFTEC 150—Medical Law and Ethics, 2 units

Recommended for Success: OFTEC 50

Hours per term: 36 lecture

An introduction to law and ethics in the medical office. The course covers principles, procedures, and regulations involving legal and ethical relationships among physicians, patients, and medical assistants. It also includes current ethical issues and risk management as they relate to the practice of medicine and fiduciary responsibilities. Not repeatable.

OFTEC 151—Medical Office Management, 3 units

Recommended for Success: OFTEC 50

Hours per term: 54 lecture

An introduction to the multiple functions performed by the Medical Office Specialist. Topics include appointment scheduling; verbal, nonverbal, and written communication; interpersonal skills; telephone techniques; managing office supplies, equipment, and personnel; development of organizational and decision-making skills and financial records. A model practice management program is included. Not repeatable.

OFTEC 152A—Medical Billing and Coding, 3 units

Recommended for Success: OFTEC 50

Hours per term: 54 lecture

A fundamental course in medical insurance billing and coding which includes the following elements: governmental and private insurance plans, compliance issues and HIPAA privacy requirements, electronic claims and a practice management program. Not repeatable.
COLUMBIA COLLEGE CATALOG

PHILO (PHILOSOPHY)

PHILO 1—Introduction to Philosophy, 3 units
Recommended for Success: Eligibility for ENGL 1A
Hours per term: 54 lecture
Survey of the field of philosophy, including human nature, meaning in life, and values in ethics, social justice, and art; knowledge, truth, logic, and the scientific method; ultimate reality and philosophy of religion. Not repeatable. MJC equivalent: (PHILO 101) Transfer: (CSU/UC) (CSU-GE: C2) (IGETC: 3B) C-ID: PHIL 100

PHILO 5/HIST 5—Introduction to the History and Philosophy of Science, 3 units
Prerequisite: Completion of ENGL 1A with at least a C or P
Hours per term: 54 lecture
An introduction to the ideas, processes and consequences of science through history. The historical development of philosophies of science will be central throughout. Critical reasoning and extensive writing will be required. Contextual cultural analysis is expected. Credit may be earned once for PHILO 5 or HIST 5. Not repeatable. Transfer: (CSU/UC) (CSU-GE: A3, C2) (IGETC: 1B, 3B)

PHILO 25—Twentieth Century Philosophy, 3 units
Recommended for Success: ENGL 1A
Hours per term: 54 lecture
A brief survey of nineteenth and twentieth century philosophy emphasizing the contributions of various thinkers to our understanding of what it is to be human, the nature of society and the relationship of the individual to it, science, technology and human values, and the meaning of life itself. Not repeatable. MJC equivalent: (PHILO 123) Transfer: (CSU/UC) (CSU-GE: C2) (IGETC: 3B)

PHILO 35—Environmental Ethics, 3 units
Hours per term: 54 lecture
Do we have moral obligations towards nature? Who counts more: ecosystems, species, or individuals? What, if anything, is the value of wilderness? Course will address questions and issues such as these that arise when considering the relationship between human beings and the environment. Topics include animal rights, land use policy, sustainability, bioengineering, climate change, environmental justice. Theoretical approaches include deep ecology, anthropocentrism, eco-feminism, and pragmatism. Field trips may be required. Not repeatable. MJC equivalent: (PHILO 135) Transfer: (CSU/UC) (CSU-GE: C2) (IGETC: 3B)

PHOTOGRAPHY

see ART
COURSES:

PHYCS (PHYSICS)

PHYCS 1—Conceptual Physics, 3 units
Hours per term: 54 lecture
A conceptual investigation of the physics of motion, energy, light and color, gravitation, and an introduction to black holes and relativistic time travel. Not repeatable. MJC equivalent: (PHYS 160) Transfer: (CSU/UC-Transfer credit limited. See a counselor.) (CSU-GE: B1) (IGETC: 5A)

PHYCS 2—Conceptual Physical Science: A Starship Voyage, 3 units
Recommended for Success: MATH 101
Hours per term: 54 lecture
You have been accepted to be a crew member of Earth’s first starship, the Sakarov. Class meetings are simulations of the crew’s orientation seminars and orientation workshops—the textbook being the orientation manual for this first interstellar voyage. During orientation workshops, crew members, working in small groups, will apply elementary physics and astronomy concepts, learned from the seminars, to deal with voyage predicaments. Topics addressed include scale and composition of the local universe; gravitation; how stars and planets form; light; how telescopes work; keys to understanding motion in space; linear momentum; and angular momentum. Not repeatable. Transfer: (CSU/UC-Transfer credit limited. See a counselor.) (CSU-GE: B1) (IGETC: 5A)

PHYCS 4A—Introductory Physics I: Trigonometry Level, 4 units
Prerequisite/Co-requisite: Completion of MATH 8 or MATH 17B with at least a C or P, or concurrent enrollment in either MATH 8 or MATH 17B
Hours per term: 54 lecture and 54 laboratory
A trigonometry-level introduction to the modeling of physical phenomena using Newtonian theory and its extensions. Core topics include: kinematics, dynamics, work and energy, momentum, fluids, and simple harmonic motion. This course requires the student to use algebra, trigonometry, abstract concept assimilation, and critical thinking. Field trips may be required. Not repeatable. MJC equivalent: (PHYS 162) Transfer: (CSU/UC-Transfer credit limited. See a counselor.) (CSU-GE: B1, B3) (IGETC: 5A, 5C) C-ID: (PHYS 105)

PHYCS 4B—Introductory Physics II: Trigonometry Level, 4 units
Prerequisite: Completion of PHYCS 4A with at least a C or P
Hours per term: 54 lecture and 54 laboratory
A trigonometry-level introduction to the modeling of physical phenomena using electrodynamics, magnetostatics, electromagnetic induction, and electric circuit theories. Includes an introduction to optics and modern physics. This course requires the student to use the following college-level skills: algebra, trigonometry, abstract concept assimilation, critical thinking, and a four-stage physics modeling procedure (developed in Introductory Physics I). Not repeatable. MJC equivalent: (PHYS 143) Transfer: (CSU/UC-Transfer credit limited. See a counselor.) (CSU-GE: B1, B3) (IGETC: 5A, 5C) C-ID: (PHYS 110) (PHYCS 4A + PHYCS 4B = CID PHYS 100S)

PHYCS 5A—Introductory Physics I: Calculus Level, 4 units
Prerequisite: Completion of MATH 18A with at least a C or P
Hours per term: 54 lecture and 54 laboratory
A calculus based introduction to the modeling of physical phenomena using Newtonian theory and its extensions. Topics include macroscopic force laws, linear and rotational dynamics, energy, fluids, oscillations, thermal physics, and waves. This course requires the student to use the following college-level skills: algebra, trigonometry, beginning calculus, abstract concept assimilation, and critical thinking. Not repeatable. MJC equivalent: (PHYS 101) Transfer: (CSU/UC-Transfer credit limited. See a counselor.) (CSU-GE: B1, B3) (IGETC: 5A, 5C) C-ID: (PHYS 205)

PHYCS 5B—Introductory Physics II: Calculus Level, 4 units
Prerequisite: Completion of PHYCS 5A and MATH 18B with at least a C or P
Hours per term: 54 lecture and 54 laboratory.
A calculus-level introduction to modeling with electrodynamics, magneto statics, electromagnetic induction, and electric circuit theories. Includes an introduction to optics and modern physics. This course requires the student to use the following college-level skills: algebra, trigonometry, integral calculus, abstract concept assimilation, critical thinking, and a four-stage physics modeling procedure (developed in Introductory Physics I). Not repeatable. MJC equivalent: (PHYS 103) Transfer: (CSU/UC-Transfer credit limited. See a counselor.) (CSU-GE: B1, B3) (IGETC: 5A, 5C) C-ID: (PHYS 210)

PHYCS 5C—Physics III: Calculus Level, 4 units
Prerequisite(s): Completion of PHYCS 5B and MATH 18B with at least a C or P
Recommended for Success: Concurrent enrollment in MATH 18C
Hours per term: 54 lecture and 54 laboratory
PHYCS 5C is a continuation of PHYCS 5B. It emphasizes the laws of thermodynamics, relativity, and topics of modern physics. PHYCS 5C is intended for students majoring in physical sciences and engineering. Since different colleges vary slightly in the order in which the topics are presented, it is strongly recommended that students take the entire sequence at Columbia College. Not repeatable. Transfer: (CSU) C-ID: (PHYS 210)

PHYCS 30/CHEM 30—Survey of Chemistry and Physics, 4 units
Prerequisite: Completion of MATH 101 with at least a C or P
Hours per term: 54 lecture and 54 laboratory
An investigation of basic principles of physics and chemistry including matter, physical and chemical properties, energy, motion, light, atomic structure, bonding, solutions and chemical reactions. The inter-dependence of chemistry and physics will be emphasized. The inquiry-based learning experience is designed to assist students and future science educators in learning how to guide learning by self-discovery. Not repeatable. MJC equivalent: (PHSCI 180) Transfer: (CSU/UC) (CSU-GE: B1, B3) (IGETC: 5A, 5C) C-ID: (CHEM 30 or PHYCS 30 = C-ID CHEM 140)
**POLSC (POLITICAL SCIENCE)**

**POLSC 10—Constitutional Government, 3 units**  
*Hours per term: 54 lecture*

A survey course in the political system of the United States from its inception at the end of the eighteenth century until the present time. Primary focus will be the Constitution, its ideological underpinnings, uses and limitations. Class will also cover the two party system, the process of justice, the specific mechanisms of legislature, and the governmental power at the national, state, and local levels, with specific emphasis on the state of California. The interests and rights of all historically under represented groups will be included in the analysis of the power structure. (UC/CSU) (With HIST 16 or HIST 17 meets California State requirement for United States History, Constitution and American ideals.) MJC equivalent: (POLSC 101) Transfer: (CSU/UC) (CSU-GE: D8) (IGETC: 4H) C-ID: (POLS 110)

**POLSC 12—American Political Thought, 3 units**  
*Hours per term: 54 lecture*

Historical survey of major American political ideas, political processes, ideals and aspirations. The origins, evolution, and current directions of American political thought will be examined through specific American values and beliefs. The course will introduce the major political ideologies, their origins, and the implications and consequences of those in American history. Not repeatable. Transfer: (CSU/UC) (CSU-GE: D8) (IGETC: 4H)

**POLSC 14—International Relations, 3 units**  
*Hours per term: 54 lecture*

Introduction to the principles and practices of international politics, emphasizing problems of war and peace, foreign policies of major powers, problems of developing countries, and global problems. Emphasis placed upon the formulation and execution of American foreign policy within a constitutional and political framework. The dynamics of interstate relations, diplomacy, international law, non-state actors and supra-national organizations will be emphasized. Not repeatable. MJC equivalent (POLSC 110) Transfer: (CSU/UC) (CSU-GE: D8) (IGETC: 4H) C-ID: (POLS 140)

**POLSC 16—Comparative Government and Politics, 3 units**  
*Hours per term: 54 lecture*

Comparative analysis of different kinds of political systems, including their history, political institutions, processes and policies, the environments in which they occur, and their consequences. Not repeatable. Transfer: (CSU) (CSU-GE: D8) (C-ID: (POLS 130)
PSYCH 1—General Psychology, 3 units
Recommended for Success: ENGL 151
Hours per term: 54 lecture
An introductory survey course of the general field of psychology. Topics to be covered include: the scientific method (including the impact of diversity and ethics), conditioning, personality development, aggression, emotions, stress, anxiety, therapy, sexuality, motivation, consciousness, biology and behavior, and abnormal psychology. Not repeatable. MJC equivalent: (PSYCH 101) Transfer: (CSU/UC) (CSU-GE: D9) (IGETC: 4I) C-ID: (PSY 110)

PSYCH 2—Current Issues in Psychology, 3 units
Prerequisite: Completion of PSYCH 1 with at least a C or P
Hours per term: 54 lecture
A look at the more advanced areas of study in psychology concentrating on current theoretical approaches and research findings regarding areas of current interest and controversy. Not repeatable. Transfer: (CSU)

PSYCH 5—Human Sexual Behavior, 3 units
Recommended for Success: Completion of ENGL 151 with at least a C or P
Hours per term: 54 lecture
Exploration of issues in human sexuality from a psychological, social and biological perspective. Study and discussion of sexual behavior, feelings and attitudes as they affect one's self and others. Not repeatable. MJC equivalent: (PSYCH 110) Transfer: (CSU/UC) (CSU-GE: E) (IGETC: 4I) C-ID: (PSY 130)

PSYCH 10—Lifespan Human Development, 3 units
Recommended for Success: PSYCH 1
Hours per term: 54 lecture
An introduction to the scientific study of the human being from conception to death. The interplay of biological, psychological, social and cultural forces on the developing human will be examined. As well as examining universal development, the course will examine individual differences in human development including developmental problems associated with physical, cognitive, social and personality issues. Instruction will include theoretical concepts as well as practical application. Not repeatable. MJC equivalent: (PSYCH 141) Transfer: (CSU/UC) (CSU-GE: E) (IGETC: 4I) C-ID: (PSY 180)

PSYCH 15—Research Methods in Psychology, 3 units
Prerequisites: Completion of PSYCH 1 and MATH 2
Hours per term: 54 lecture
An introduction to basic research methods used in Psychology (and other behavioral sciences). This includes an examination of the scientific method, research design (descriptive, observational, correlational and experimental methods), experimental procedures, the collection, analysis and reporting of research data, the review and evaluation of research articles and ethics in research. Research design and methodology will be illustrated through selected research topics in psychology; for example, neuroscience, learning, memory, development and social psychology. Not repeatable. MJC equivalent: (PSYCH 102) Transfer: (CSU/UC) (CSU-GE: D9) C-ID: (PSY 200)

PSYCH 20—Sport Psychology, 3 units
Hours per term: 54 lecture
Introductory survey of the theoretical and practical applications of psychology to sport and exercise. Cognitive, behavioral, social-psychological and affective factors related to populations and topics in sport and exercise will be covered. Topics include introduction to sport psychology, personality and sport, audience effect, aggression, arousal/stress, anxiety, motivation, team climate, and youth issues/gender issues. Not repeatable. Transfer: (CSU) (CSU-GE: D9, E)

PSYCH 24—Abnormal Psychology, 3 units
Recommended for Success: ENGL 151
Hours per term: 54 lecture
This course is designed to introduce students to the scientific study of psychopathology and atypical psychological behavior. The course will examine psychological disorders from a variety of contemporary psychological perspectives, including the biological and neuroscience perspectives, the psychological perspectives and the sociocultural perspectives. Students will also be introduced to current assessment and diagnostic criteria and the DSM-5, as well as intervention and treatment strategies. An examination of the scientific method and current research are also presented. Not repeatable. Transfer: (CSU/UC) (CSU-GE: D9) (IGETC: 4I) C-ID: (PSY 120)

PSYCH 30—Psychology of Adjustment, 3 units
Recommended for Success: ENGL 151
Hours per term: 54 lecture
This course is designed for students to learn and apply psychological principles and theories to their everyday life and foster their personal and social adjustment. This includes an examination of different psychological perspectives and their theoretical foundations as well as the influence of culture, society, gender, ethnicity, historical cohort and socio-economic status. Furthermore, students shall learn how scientists, clinicians and other practitioners study psychology. Lastly, this course should facilitate student understanding of other social sciences and improve critical thinking skills. Field trips may be required. Not repeatable. MJC equivalent: (PSYCH 130) Transfer: (CSU) (CSU-GE: E) C-ID: (PSY 115)

PSYCH 35—Introduction to Drugs and Behavior, 3 units
Recommended for Success: Completion of PSYCH 1 with at least a C or P
Hours per term: 54 lecture
An introduction to how drugs affect behavior. Instruction in basic pharmacology and neurophsiology as it relates to drug self-administration and resultant altering of behavior. Overview of the history, concepts and theory of drug use. Includes discussion of issues related to drug use such as drug abuse as a disease or disorder, and drug use for specific purposes such as enhancing sports performance. Designed for students who do not possess a technical background. Not repeatable. MJC equivalent: (HUMSR 116) Transfer: (CSU/UC) (CSU-GE: D9, E) (IGETC: 4I)
PSYCH 40—Stress Management, 3 units

Recommended for Success: ENGL 151
Hours per term: 54 lecture

An overview of the psychological, physiological, sociological and behavioral dynamics underlying the management of the human stress response. The class covers the biological and psychological aspects of the stress response, as well as the appraisal and management of stress. This includes time management, lifestyle choices, behavior modification techniques, relaxation training, and interpersonal communication techniques. Not repeatable. Transfer: (CSU) (CSU-GE: E)

PSYCH 52—Introduction to Peer Support for Psychosocial Rehabilitation, 3 units

Hours per term: 54 lecture

This course provides an overview of the knowledge, skills and attitudes that are required for individuals entering the field of Peer Counseling. The individual role of peer counselor is defined, as well as how the peer counselor integrates into a multidisciplinary team. The core values of psychosocial rehabilitation and recovery are reviewed, and students will identify their strengths in relationship to these values. Core skills are defined and demonstrated, such as self-management (using Mary Ellen Copeland’s Wellness Recovery Action Plan), advocacy, boundaries and working from a strengths perspective. In addition, the student learns basic documentation skills and reviews confidentiality regulations under HIPAA. Not repeatable. Transfer: (CSU)

PSYCH 56—Introduction to Psychosocial Rehabilitation, 3 units

Prerequisite: Completion of PSYCH 52 with at least a C or P
Hours per term: 54 lecture

The course reviews the history of the treatment of persons with psychiatric disorders and shows the evolution of thinking and practice in the field. The course provides an overview of the fundamental theories, strategies, practice models and interventions commonly utilized in psychosocial rehabilitation. During the course, the student will review the principles and values of psychosocial rehabilitation, emphasizing consumer empowerment and recovery. The course will cover a brief history of the field, current practice models, and will identify important issues facing the psychosocial rehabilitation practitioner today. The purpose of this course is to present the core values and principles of recovery-oriented, psychosocial rehabilitation practice. Also presented is basic information on psychiatric disorders, current research and how to work in an empowering way with consumers about medication. Not repeatable. Transfer: (CSU)

SAR (SEARCH AND RESCUE)

SAR 10—Introduction to Search Theory, 2 units

Hours per term: 36 lecture

An overview of current search theories as developed by the National Park Service and the National Association for Search and Rescue. National Association for Search and Rescue Certification available to the student. Not repeatable. Transfer: (CSU)

SAR 50/FIRE 50—Low Angle Rope Rescue, 1½ units

Hours per term: 27 lecture

This course is designed to take the student to the basic skill and knowledge levels of Low Angle (not vertical) Rope Rescue. Topics will include, but are not limited to: basic rappelling, rescue of ambulatory and non-ambulatory persons with an emphasis on safety and teamwork. Topics reflect current Urban Search and Rescue and California State Fire Training standards and equipment. Successful students will be certified in Low Angle Rope Rescue by the California State Fire Marshal’s Office. Not repeatable. Grading: (P/NP only) MJC equivalent sequence: (CC FIRE 7, FIRE 50, FIRE 101, FIRE 106 & FIRE 107 = MJC FSCI 362 & FSCI 363) Transfer: (CSU)

SAR 59—Rescue Systems I: Instructor Training, 3 units

Hours per term: 54 lecture

Review and update of heavy duty rescue skills and techniques designed to prepare qualified personnel to teach those skills and techniques to others. Not repeatable. Grading: (P/NP only) Transfer: (CSU)

SAR 62/GEOGR 62/CCTIS 62—GIS Mapping, Introduction to SAR GIS, 1 unit

Hours per term: 18 lecture

Students who take this course will learn how to apply their GIS skills in Search and Rescue (SAR) Mapping. Students will learn SAR incident symbology, data standards and organization, establishing incident locations, search segments, SAR incident map products, and responsibilities of a GIS specialist on SARs and other critical incidents. The course will use a workflow and data model developed by SAR personnel that integrates with ArcGIS 10. Additionally, students will utilize GPS data that they have collected from GPS devices, convert them to shapefiles, and create team and briefing incident maps. During a full-day exercise, students will also live-track SAR teams using satellite tracking devices. This course includes hands-on experience in SAR incident mapping and data organization. Not repeatable. Credit may only be earned once for SAR 62 or GEOGR 62 or CCTIS 62. Grading: (P/NP only) Transfer: (CSU)
SIGN 40A—ASL: Beginning Communication with the Deaf, 3 units  
Hours per term: 54 lecture  
This is the beginning course in American Sign Language (ASL) and Deaf culture. ASL is the language used by culturally Deaf people in the United States. The class focus is on everyday conversations and situations. Emphasis is on both receptive and expressive skills. Not repeatable. Transfer: (CSU/UC) (CSU-GE: C2)

SIGN 40B—ASL: Elementary Communication with the Deaf, 3 units  
Prerequisite: Completion of SIGN 40A with at least a C or P  
Hours per term: 54 lecture  
This is an elementary level course in American Sign Language (ASL) and Deaf culture. ASL is the language used by culturally Deaf people in the United States. The class focus is on everyday conversations and situations. Emphasis is on both receptive and expressive skills. Transfer: (CSU/UC) (CSU-GE: C2) (IGETC: 3B, 6A)

SIGN 40C—ASL: Intermediate Communication with the Deaf, 3 units  
Prerequisite: Completion of SIGN 40B with at least a C or P  
Hours per term: 54 lecture  
This is the third course in American Sign Language (ASL) and Deaf Culture. ASL is the language used by most deaf people in the United States. Emphasis is on improving speed and fluency. Not repeatable. Transfer: (CSU/UC) (CSU-GE: C2) (IGETC: 3B, 6A)

SKLDV 610—Introduction to Computer Access, ½-1 unit  
Prerequisite: Verified disability according to California Community College Title 5 regulations  
Hours per term: 27-55 laboratory  
Designed to provide access to and instruction in specialized computer programs for students with verified learning, developmental, or physical disabilities. Students will work in one or more areas, including adaptive typing and word processing, fundamental academic skills such as reading, spelling, vocabulary, grammar, and mathematics, and/or cognitive exercises and memory-building techniques. Not repeatable. Grading: (P/NP only)

SKLDV 690—Study Skills, ½ unit  
Hours per term: 9 lecture  
An introductory discussion of effective study methods. Topics will include goal setting, time management, learning styles, note taking, textbook analysis, memory/concentration, and test taking.
COURSES:  

SOCIO (SOCILOGY)

SOCIO 1—Introduction to Sociology, 3 units

Introduction to the principal concepts and methods of sociology; survey of interactions, interrelationships and processes of society, such as culture, socialization, stratification, minorities, primary and secondary groups, social change. Not repeatable. MJC equivalent: (SOCIO 101) Transfer: (CSU/UC) (CSU-GE: D0) (IGETC: 4J) C-ID: (SOCI 110)

SOCIO 2—American Society: Social Problems and Deviance, 3 units

A focus on social problems, such as family disorganization, religious conflicts, educational irregularities, poverty, physical and mental health care, political issues, crime and justice, violence and aggression, drug issues, and environmental problems. These problems and others will be studied from the perspective of social institutions, social deviance, and other perspectives of sociology. MJC equivalent: (SOCIO 102) Transfer: (CSU/UC) (CSU-GE: D0) (IGETC: 4J) C-ID: (SOCl 115)

SOCIO 5—Ethnicity and Ethnic Relations in America, 3 units

Hours per term: 54 lecture

This is a multidisciplinary study of ethnicity (belonging to an ethnic group) and ethnic group relations in the United States from an historical and sociological perspective. It emphasizes a challenging field of study with the dynamics of emergence, ethnocentrism, change, marginality and acculturation of major ethnic groups in the United States. The immense diversity of these groups will be explored and analyzed through the methodology of recent sociological research. This course is designed to meet an ethnic studies requirement. Not repeatable. MJC equivalent: (SOCIO 150) Transfer: (CSU/UC) (CSU-GE: D3, D0) (IGETC: 4C, 4J) C-ID: (SOCI 150)
SOCIO 7/ANTHR 7—Gender, Culture and Society, 3 units

Hours per term: 54 lecture

The course takes an inclusive bio-cultural evolutionary perspective on gender, focusing on non-human primate societies as well as primitive (small scale) and modern (large scale) human societies. Factors such as culture, ecological conditions and historical circumstances, forces of stratification (e.g. age, social class), socialization (e.g. rites of passage, conformity and deviance) as well as the science (e.g. concepts, theories and methods) of studying these topics will be addressed. Though course readings will represent many disciplines, the foundation readings reflect the perspectives of bio-cultural anthropology as well as sociology. This emphasis addresses the fundamental assumption that while sex differences are biological, gender encompasses the traits that culture assigns and inculcates (with varying degrees of success) in males and females. Credit may be earned for only one of the following: ANTHR 7 or SOCIO 7. Not repeatable. Transfer: (CSU/UC) (CSU-GE: D4) (IGETC: 4D) C-ID: (SOCI 140)

SOCIO 8/ANTHR 8—Research Methods in the Social and Behavioral Sciences, 3 units

Prerequisite: Completion of SOCIO 1 with at least a C or P

Hours per term: 54 lecture

Surveys research traditions and processes in the social and behavioral sciences. The course addresses: epistemological traditions, research conceptualization, research design, research process, measures, sampling, data collection and analysis, reporting traditions, ethics, as well as implications for theory and public policy. While the primary focus is on Anthropology, Psychology, and Sociology, there will be a secondary focus on the disciplines of Biology, Demography, History, Political Science, and Public Health. Not repeatable. Credit may only be earned once for SOCIO 8 or ANTHR 8. Transfer: (CSU/UC) (CSU-GE: D0) (IGETC: 4J) C-ID: (SOCI 120)

SOCIO 12—Sociology of the Family, 3 units

Hours per term: 54 lecture

Comparative and historical treatment of the family institution. Analysis of kinship and family structure, roles and relationships within the family. Interdisciplinary assessment of the reciprocal relationship between contemporary society and the American family. Not repeatable. MJC equivalent: (SOCIO 125) Transfer: (CSU/UC) (CSU-GE: E) (IGETC: 4J) C-ID: SOCI 130

SOCIO 28—Death and Dying, 3 units

Hours per term: 54 lecture

Principles, concepts and methods of sociology used in examining predominant attitudes and practices regarding death, dying, and grief in the U.S.; included will be interdisciplinary methods and materials relevant to suicide, the terminally ill, bereavement, and various viewpoints about the phenomenon of death. Field trips may be required. Not repeatable. MJC equivalent: (HUMSR 114) Transfer: (CSU) (CSU-GE: E)

SPAN

(SPANISH)

SPAN 1A—Spanish: Beginning, 5 units

Recommended for Success: Completion of ENGL 151 with at least a C or a P, or eligibility for ENGL 1A through the assessment process

Hours per term: 90 lecture

Introduction to the Spanish language, emphasizing natural communications and supported by foundation grammar. For true beginners and students with one year of high school Spanish or the equivalent. Not repeatable. MJC equivalent: (SPAN 101) Transfer: (CSU/UC) (CSU-GE: C2) (IGETC: 6A) C-ID: (SPAN 100)

SPAN 1B—Spanish: Beginning, 5 units

Formerly listed as: SPAN 1B—Spanish: Beginning.

Prerequisite(s): Completion of SPAN 1A or, Hours per term: 90 lecture

Continuation of SPAN 1A, fundamentals of spoken and written Spanish. Not repeatable. MJC equivalent: (SPAN 102) Transfer: (CSU/UC) (CSU-GE: C2) (IGETC: 3B, 6A) C-ID: (SPAN 110)

SPAN 2A—Spanish: Intermediate, 5 units

Prerequisite: Completion of SPAN 1B with at least a C or P or 3 years of high school Spanish or equivalent

Hours per term: 90 lecture

Continuation of SPAN 1B. Includes grammar, conversation and discussion, composition and reading. Not repeatable. MJC equivalent: (SPAN 103) Transfer: (CSU/UC) (CSU-GE: C2) (IGETC: 3B, 6A) C-ID: (SPAN 200)

SPAN 2B—Spanish: Intermediate, 5 units

Prerequisite: Completion of SPAN 2A with at least a C or P

Hours per term: 90 lecture

A continuation of intermediate-level SPAN 2A. MJC equivalent: (SPAN 104) Transfer: (CSU/UC) (CSU-GE: C2) (IGETC: 3B, 6A) C-ID: (SPAN 210)

SPAN 10A—Conversational Spanish: Beginning, 3 units

Hours per term: 54 lecture

Practice in vocabulary, idioms and grammatical usage with emphasis on conversational use of the language as spoken in Hispanic America. Not repeatable. MJC equivalent: (SPAN 51) Transfer: (CSU)
SPAN 20A—Conversational Spanish: Intermediate, 3 units
Recommended for Success: SPAN 1B or 3 years of high school Spanish, or equivalent
Hours per term: 54 lecture
An intermediate-level conversation course designed for the practice of listening and speaking skills in Spanish with a focus on everyday language in a comparative cultural context. Preparation includes reading of assigned material. Not repeatable. Transfer: (CSU)

SPAN 20B—Conversational Spanish: Intermediate, 3 units
Prerequisite: Completion of Span 20A or SPAN 2A with at least a C or P
Hours per term: 54 lecture
An intermediate-level conversation course designed to refine listening and speaking skills through discussion of contemporary issues in a comparative cultural context. Preparation includes reading of assigned material. Not repeatable. Transfer: (CSU)

SPAN 150A—Spanish for the Community, 2 units
Hours per term: 36 lecture
A conversation-based course for beginners. This course will be useful for individuals who work with Spanish-speaking customers or employees, for individuals planning to travel to Spanish-speaking countries, or for those wishing a basic orientation to the structure of Spanish with an eye to continuing language study. Not repeatable. Grading: (P/NP only)

SPAN 150B—Spanish for the Community II, 2 units
Hours per term: 36 lecture
Continuation of an introductory conversational Spanish course for beginning learners. Course will be useful for individuals who work with Spanish-speaking customers or employees, for individuals planning to travel to Spanish-speaking countries, or for those wishing a basic orientation to the structure and use of Spanish. Not repeatable. Grading: (P/NP only)

SPCOM (SPEECH COMMUNICATION)

SPCOM 1—Introduction to Public Speaking, 3 units
Hours per term: 54 lecture
Principles of oral communication including speech composition and techniques of presenting informal and formal speeches. Emphasis given to organization, delivery, critical thinking, and evaluative listening. Not repeatable. MJC equivalent: (COMM 100) Transfer: (CSU/UC) (CSU-GE: A1) (IGETC: 1C) C-ID: (COMM 110)

SPCOM 2—Argumentation and Debate, 3 units
Prerequisite: Completion of SPCOM 1 with at least a C or P
Hours per term: 54 lecture
A study of argumentation and debate. Emphasis is given to analysis of the rules, strategies, and argumentation models central to parliamentary debate. Special consideration will be given to the elements of logic; analysis of opposing arguments and models of refutation and rebuttal. These areas of inquiry are conducted through modes specific to oral traditions and contemporary debate theory. Not repeatable. MJC equivalent: (COMM 104) Transfer: (CSU/UC) (CSU-GE: A3) C-ID: (COMM 120)

SPCOM 4—Introduction to Human Communication, 3 units
Hours per term: 54 lecture
Course material focuses on the history of the study of human communication, basic research methods for the evaluation of human communication phenomena, and ethical perspectives in communication. Recurrent variables in verbal and non-verbal interaction are traced through the intrapersonal, interpersonal, and multi-personal systems. Not repeatable. MJC equivalent: (COMM 102) Transfer: (CSU/UC) (CSU-GE: A1) (IGETC: 1C) C-ID: (COMM 180)

SPCOM 5—Intercultural Communication, 3 units
Hours per term: 54 lecture
A study of intercultural communication with a focus on the analysis and comparisons of message perception and transmission in interactions between people from different cultures. Practical application of skills for effective communication between people of different domestic and international cultures is emphasized. Field trips required. Not repeatable. MJC equivalent: (COMM 130) Transfer: (CSU/UC) (CSU-GE: D3) (IGETC: 4C) C-ID: (COMM 150)

SPCOM 7—Forensics Workshop, 3 units
Hours per term: 54 lecture
Principles of applied speech communication through participation in competitive speech performances. Students will participate in intercollegiate forensics. Competitive events include debate, individual speaking, and interpretive performances. Field trips required. May be repeated three times. MJC equivalent: (COMM 105) Transfer: (CSU) C-ID: (COMM 160B)
SPCOM 9/BUSAD 9—Introduction to Small Group and Team Communication, 3 units

Hours per term: 54 lecture

This course focuses on the intersection between communication and the ability of small groups or teams to effectively achieve objectives. Course includes the study of, and practice in, discussion methodology, types of discussion groups, information gathering, problem solving, decision making, and leadership roles. Not repeatable. Credit may be earned once for SPCOM 9 or BUSAD 9. MJC equivalent: (COMM 106) Transfer: (CSU) C-ID: (COMM 140)

SPCOM 12—Media and American Culture, 3 units

Hours per term: 54 lecture

An overview of the evolution of mass media and its cumulative effects on public perception and American cultural identity. Specific emphasis includes television, newspapers, film, advertising, and the internet. Course content explores the relationship the media has in shaping public perception and behavior. Not repeatable. Transfer: (CSU/UC) (CSU-GE: D7) (IGETC: 4G)

SPCOM 19/DRAMA 19—Exploring Radio Drama, 1½-3 units

Hours per term: 27-54 lecture

An intensive course focused on audio theatre production featuring the expressive use of the voice and sound effects. Students will create, rehearse, perform and provide sound effects for audio plays to be recorded. Not repeatable. Credit may be earned once for SPCOM 19 or DRAMA 19. Transfer: (CSU)

T-AID (TEACHER AIDE TRAINING)

T-AID 97—Work Experience as a Teacher Aide, 1-4 units

Co-requisite: Must be enrolled in at least seven (7) units, including Work Experience, where 75 employed hours with pay equals 1 unit, or 60 employed hours without pay equals 1 unit

Provides students an opportunity to experience supervised employment in Teacher Aide Training. The student's employment must be related to educational or occupational goals. Grading: (P/NP only) May be repeated for no more than a total of 16 units of credit less any units earned in any other Work Experience course. Transfer: (CSU-Transfer credit limited. See a counselor.)
**WKEXP**

(WORK EXPERIENCE)

All CSU campuses will accept Work Experience; see your counselor or work experience coordinator for limitations.

**WKEXP 97—Cooperative Work Experience, 1-4 units**

Co-requisite: Enrollment in a minimum of seven (7) units including Cooperative Work Experience at Columbia College where 75 hours of paid employment equals 1 unit of credit or 60 hours of unpaid employment equals 1 unit of credit.

Provides students an opportunity to experience supervised employment. The student's employment must be related to educational or occupational goals. Grading: (P/NP only). May be repeated for no more than a total of 16 units of credit less any units earned in any other Work Experience course. **Transfer:** (CSU-Transfer credit limited. See a counselor.)

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**WT**

(WELDING TECHNOLOGY)

**WT 97—Work Experience in Welding Technology, 2 -4 units**

Co-requisite: Enrollment in a minimum of seven (7) units including Cooperative Work Experience at Columbia College where 75 hours of paid employment equals 1 unit of credit or 60 hours of unpaid employment equals 1 unit of credit.

Provides students an opportunity to experience supervised employment in Welding Technology. The student's employment must be related to educational or occupational goals. May be repeated to a maximum of 16 units. 3 completions allowed. Grading: (P/NP Only). **Transfer:** (CSU-Transfer credit limited. See a counselor.)

**WT 101—Practical Laboratory, 1 unit**

Prerequisite: Completion of WT 121 with at least a C or P

Hours per term: 54 laboratory

Materials fee required

The student shall gain practical welding experience by working on individual projects (including certification projects). Emphasis is on quality, appearance and function. Not repeatable.

**WT 103/ART 103—Practical Laboratory, Metal Sculpture, 1 unit**

Prerequisite: Completion of WT 166/ART 166 with at least a C or P

Hours per term: 54 laboratory

The student shall gain practical experience by working on individual projects in metal sculpture design and fabrication. Emphasis is on quality, appearance and function. Not repeatable. Credit may be earned once for WT 103 or ART 103.

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**WT 121—Arc/Gas Welding, 3 units**

Formerly offered as: Welding Technology Level I

Hours per term: 36 lecture and 54 laboratory

Materials fee required

Covers welding safety, shielded metal arc welding (SMAW), and metal cutting processes. This course complies with American Welding Society (AWS) and Schools Excelling through National Skills Education (SENSE) curriculum standards. Students are required to supply leathers, safety glasses, and welding gloves. Field trips may be required. Not repeatable. MJC equivalent: (WELD 200)

**WT 122—MIG Welding (GMAW/FCAW), 3 units**

Formerly offered as: Welding Technology Level II

Prerequisite: Completion of WT 121 with at least a C or P

Hours per term: 36 lecture and 54 laboratory

Materials fee required

Covers welding safety, welding symbols and detail drawings, characteristics of metallurgy, Gas Metal Arc Welding (GMAW), Flux Core Arc Welding (FCAW). This course complies with American Welding Society (AWS) and Schools Excelling through National Skills Education (SENSE) curriculum standards. Students are required to supply leathers, safety glasses, and welding gloves. Field trips may be required. Not repeatable. MJC equivalent: (WELD 204)

**WT 123—TIG Welding (GTAW), 3 units**

Formerly offered as: Welding Technology Level III

Prerequisite: Completion of WT 121 with at least a C or P

Hours per term: 36 lecture and 54 laboratory

Materials fee required

Covers welding safety, Gas Tungsten Arc Welding (GTAW), including Mild Steel, Stainless Steel and Aluminum all positions. This course complies with American Welding Society (AWS) and Schools Excelling through National Skills Education (SENSE) curriculum standards. Students are required to supply leathers, safety glasses, and welding gloves. Field trips may be required. MJC equivalent: (WELD 206)

**WT 160/AT 160—Exploring Technical Trades, 6 units**

Hours per term: 18 lecture and 162 laboratory

Students will experience topics and engage in projects from the auto body/collision repair, automotive technology, and welding technology programs. Career and educational pathways will be emphasized. Field trips may be required. Credit may be earned once for ART 160 or WT 160. Not repeatable.

**WT 165/ART 165—Metal Sculpture, 1½ units**

Hours per term: 9 lecture and 54 laboratory

An introduction to various metal working techniques with an emphasis on aesthetic design and quality of metal joining. An introduction to M.I.G. welding will be offered, time being available. Credit may be earned once for WT 165 or ART 165. Field trips may be required. Not repeatable.

**WT 166—Metal Sculpture Projects, 1 unit**

Prerequisite: Completion of WT 165/ART 165 with at least a C or P

Hours per term: 54 laboratory

This course is designed to allow students to expand upon their skills in metal sculpture techniques and to provide for the student a more individualized pursuit in metal sculpturing. Students will work progressively more independently from instructor direction. Credit may be earned once for WT 166 or ART 166. Field trips may be required. Not repeatable.
Non-Credit Courses

ENGL (Non-credit courses in English)

ENGL 705A—English as a Second Language: Low Beginning
Recommended for Success: Recommended Skill: Basic literacy in first language
Elementary course in speaking, listening, reading, and writing English for persons learning English as another language. Emphasis is on vocabulary and sentence structure for practical communication. May be repeated 5 times. Non-graded.

ENGL 705B—English as a Second Language: High Beginning
Recommended for Success: ENGL 705A
High beginning course in speaking, listening, reading and writing English for persons learning English as another language with continued emphasis on practical communication. May be repeated 5 times. Non-graded.

ENGL 705C—English as a Second Language: Intermediate
Recommended for Success: ENGL 705B
Intermediate ESL course in speaking, listening, reading and writing English for persons learning English as another language with continued emphasis on practical communication, and an increased emphasis on written skills. Non-graded. May be repeated 5 time(s).

ENGL 705D—English as a Second Language-Advanced
Recommended for Success: ENGL 705C
Advanced ESL course for students who have completed 705C or assessment-tested into this level. Course covers advanced reading, writing and interpretation of various materials. May be repeated 5 times. Non-graded.

ENGL 705E—English as a Second Language-Proficient
Recommended for Success: ENGL 705D English as a Second Language-Advanced
Top level ESL course; student completing this course and scoring a 250 or higher on the Comprehensive Adult Student Assessment Systems (CASAS) test will, based on the ESL instructor’s recommendation, be able to move into a credit ESL course and complete assessment for placement in English courses. May be repeated 5 time(s).

HHP (Non-credit courses in Health & Human Performance)

HHP 300—Lifelong Health and Fitness
Hours per term: 27 laboratory
Designed to offer lifelong education and promote the health and physical wellbeing of individuals. It includes a comprehensive workout designed to achieve personal fitness goals. Unlimited repeats. Note: 27 to 108 contact hours.

HHP 303—Rehabilitation for Physically Limited
Hours per term: 27 laboratory
Designed to offer individually prescribed fitness to the physically limited with emphasis on the improvements of cardiovascular, flexibility and strength components. Unlimited repeats.

MUSIC (Non-credit courses in music)

MUSIC 302—Choral Singing
Hours per term: 54 laboratory
Study and performance of mixed choral works of various styles and periods for older adults. Includes development of vocal technique and musicianship. Unlimited repeats.

MUSIC 303—Orchestra
Hours per term: 54 laboratory
Study and performance of orchestral literature of various styles and media for older adults. Audition required for wind, brass, and percussion players as needed. Field trips may be required. Unlimited repeats.

MUSIC 305—Jazz Studies
Hours per term: 108 laboratory
Study and performance of instrumental and vocal jazz in both solo and ensemble (including big band, choir, combos, and solo with accompaniment). Includes beginning jazz theory, improvisation, style, interpretation, performance practice and the development of an individual standard jazz repertoire. Repertoire may vary from semester to semester. Field trips may be required. May be repeated or 32 times.

MUSIC 308—Solo Singing
Hours per term: 54 laboratory
Instruction in solo singing including breath support, resonance, interpretation, phrasing, and performance for older adults. Class is taught in a group setting but with time given for individualized instruction. Non-graded. Unlimited repeats.
SKLDV (Non-credit courses in Skills Development)

SKLDV 302—Parenting Strategies and Family Relationships  
Hours per term: 20 lecture and 12 laboratory  
This course examines the importance of family relationships and helps identify strategies that can lead to positive changes within the family. Students will learn strategies for effective parenting, effective communication, stress and anger management, domestic violence resolution and personal boundary maintenance.

SKLDV 410—Supervised Tutoring  
Provides supervised tutoring in a designated laboratory/activity learning center in order to support student success in course(s) in which they are enrolled. Note: Student contact hours may range from 1-10 hours weekly.

SKLDV 700—GED Preparation  
Hours per term: 54 lecture  
Designed to teach the general skills needed to pass the General Educational Development test. Unlimited repeats.

SKLDV 701—Life Strategies for Success  
Hours per term: 20 lecture and 12 laboratory  
Students will learn and practice skills and strategies that will assist them in developing and implementing a personal plan for achieving their life goals.

SKLDV 703—Practical Money Skills for Life  
Hours per term: 20 lecture and 12 laboratory  
This is a basic course in money management. Each student will be introduced to the benefits of budgeting and financial planning. Students will become familiar with recognizing how to best utilize their financial resources, identify the benefits and drawbacks of using credit, learn the various types of checking and savings accounts, identify various consumer scams, and learn how to protect themselves from identity theft.

SKLDV 705—Preparation for Citizenship Test  
Hours per term: 18 lecture  
Review of high-frequency English vocabulary and pronunciation, basic U.S. historical facts and U.S. government principles to prepare for the citizenship test. Requires basic literacy in home language and mid-beginning ESL. May be repeated four times.

SKLDV 792—Applied Skills  
Hours per term: 54 laboratory  
The course is designed for students who need to develop basic skills and personal qualities in preparation for successful employment or enrollment in continuing education. Individualized assistance will be provided to analyze specific learning needs and to plan a program of study to improve skills. Skill areas may include basic arithmetic, reading development, employment/personal skills, time management, problem solving, and communication skills (oral and written). Emphasis on a six-week employment skills/job readiness module will be the focus of activities during the first third of the course and will include use of a performance assessment tool. May be repeated two times.
## PROJECTED Course Offerings 2016-2018

This list of projected course offerings is provided to assist students and counselors in creating educational plans. While the college will do its best to honor these projected course offerings, please note that the list is subject to change due to enrollment constraints. Please consult the Schedule of Classes at apps.gocolumbia.edu/ClassSearch/ for actual course offerings for any given term.

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* Course is cross-listed meaning that course sections are offered under more than one course ID. See the course description for cross-listing information.
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### COURSES:

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**BUSAD 60** | Introduction to ArcGIS | FA16 | FA17 |
**BUSAD 61** | GIS Mapping - Introduction to Fire Incident Mapping | SP17 | SP18 |
**BUSAD 62** | GIS Mapping - Introduction to SAR GIS | FA16 | FA17 |
**BUSAD 63** | GIS and Making Maps: The Essential Skills | SP17 | SP18 |
**BUSAD 64** | ArcGIS: Creating a Basic Map | SP17 | SP18 |
**BUSAD 65** | GIS Applications | SU17 |
**BUSAD 67** | GIS Geocoding | FA16 | FA17 |
**BUSAD 70** | Introduction to Raster-Based GIS | FA16 | FA17 |
**BUSAD 75** | GIS Applications in Resource Management | SP17 | SP18 |
**BUSAD 137 | Presentations Using Computers and Multimedia | SP17 | SP18 |
**BUSAD 138 | Excel Spreadsheets | FA16 | FA17 |
**BUSAD 139 | Access | SP17 | SP18 |
**BUSAD 142** | Desktop Publishing Essentials | FA16 | FA17 |
**BUSAD 210 | Basic Computer Skills for College Success | SU16 | SU17 |
**BUSAD 66** | Web Mapping | |
**CCTPG 5** | Introduction to Programming | FA16 | FA17 | SP18 |
**CCTPG 9** | Operating Systems - Windows-Unix/Linux | FA16 | FA17 |
**CCTPG 22 | Programming Concepts and Methodology I | FA16 | FA17 |
**CCTPG 24 | Programming Concepts and Methodology II | SP17 |
**CCTPG 45 | Applied Java Programming | FA17 |
**CCTPG 47 | C/C++ Programming | SP18 |
**CCTPG 48 | Visual Studio .NET Programming | FA16 |
**CCTPG 51 | Database Management | FA17 |
**CCTSS 11 | Networking Essentials | FA16 | SP17 | FA17 | SP18 |
**CCTSS 12 | Networking - CCNA 2: Routing and Switching Essentials | |
**CCTSS 13 | Networking - CCNA 3: Scaling Networks | |
**CCTSS 14 | Networking - CCNA 4: Connecting Network | |
**CCTSS 12 | PC Assembly, Upgrade and Support (A+) | FA16 | FA17 |
**CCTSS 12 | PC Operating System Installation and Support (A+) | SP17 | SP18 |
**CHEM 2A | General Chemistry I | FA16 | SP17 | SU17 | FA17 | SP18 |
**CHEM 2B | General Chemistry II | SU16 | SP17 | FA17 | SP18 |
**CHEM 2BL | General Chemistry II Laboratory | SU16 | SP17 | FA17 | SP18 |
**CHEM 4A | Organic Chemistry I | FA16 |
**CHEM 4AL | Organic Chemistry I Laboratory | FA16 |
**CHEM 4B | Organic Chemistry II | SP17 |
**CHEM 4BL | Organic Chemistry II Laboratory | SP17 |
**CHEM 5 | Introductory Chemistry: Environmental Emphasis | SU16 | FA16 | SP17 | SU17 | FA17 | SP18 |
**CHEM 5L | Introductory Chemistry Laboratory | SU16 | FA17 | SU17 | SP18 |
**CHEM 14 | Fundamental Chemistry for Allied Health | SU16 | FA16 | SP17 | SU17 | SP18 |
**CHEM 14L | Fundamental Chemistry for Allied Health Laboratory | SU16 | FA16 | SP17 | SU17 | SP18 |
**CHEM 16 | Fundamental Organic and Biochemistry | SU16 | FA16 | FA17 |
**CHEM 16L | Fundamental Organic and Biochemistry Laboratory | SU16 | SP17 | FA17 |
### COURSES: PROJECTED COURSE OFFERINGS

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* Course is cross-listed meaning that course sections are offered under more than one course ID. See the course description for cross-listing information.
COURSES: PROJECTED COURSE OFFERINGS

COURSE ID | COURSE TITLE
---|---
GUIDE 150 | Guidance for Nursing Majors
HHP 2 | Women’s Health Issues
HHP 3 | Introduction to Kinesiology
HHP 5 | Introduction to Recreation and Leisure
HHP 6A | Lifetime Fitness Program I
HHP 6B | Lifetime Fitness Program II
HHP 8A | Aerobic Exercise
HHP 8B | Step Aerobics
HHP 9 | Circuit Cross-Training
HHP 10 | Adaptive Physical Education
HHP 16A | Fitness Walking
HHP 16B | Power Walking
HHP 18A | Yoga I
HHP 18B | Yoga II for Better Health
HHP 19 | Aerobic Spinning
HHP 23 | Contemporary Dance
HHP 25 | Jazz Dance
HHP 32A | Basketball I
HHP 32B | Basketball II
HHP 32C | Basketball III
HHP 38A | Golf I
HHP 38B | Golf II
HHP 45 | Co-Ed Flag Football
HHP 47A | Soccer I
HHP 47B | Soccer II
HHP 47C | Soccer III
HHP 48 | Co-Ed Softball
HHP 50A | Tennis I
HHP 50B | Tennis II
HHP 53A | Volleyball I
HHP 53B | Volleyball II
HHP 53C | Volleyball III
HHP 55A | Fitness Training I for Firefighting
HHP 55B | Fitness Training II for Firefighting
HHP 56A | Weight Training I
HHP 56B | Weight Training II
HHP 59A | Beginning Tai Chi
HHP 60 | Health and Fitness Education
HHP 61 | Activities in Motor Development
HHP 62 | Safety and First Aid Education
HHP 63 | Sociology of Sport
HHP 74 | Introduction to Sport Management
HHP 76 | Sports Conditioning
HHP 80 | Varsity Cross-Country
HHP 82 | Varsity Basketball (Men)
HHP 85 | Varsity Tennis
HHP 86 | Varsity Volleyball (Women)
HHP 91A | Pilates I

COURSE ID | COURSE TITLE
---|---
HHP 4 | Culinary Arts Internship
HHP 94A | Swimming I
HHP 94B | Swimming II
HHP 97 | Work Experience in Health and Human Performance
HHP 100 | Lifelong Health and Fitness
HHP 302 | Cardiovascular Fitness - First Step for Fitness
HHP 383 | Rehabilitation for Physically Limited
HIST 5* | Introduction to the History and Philosophy of Science
HIST 11 | History of California
HIST 13 | World Civilizations: To 1650
HIST 14 | World Civilizations: 1500 to Present
HIST 16 | United States: To 1877
HIST 17 | United States: 1877 to Present
HIST 21 | Women in American History
HIST 49 | The Mother Lode
HPMGT 102 | Introduction to Hospitality Careers and Human Relations
HPMGT 104 | Hospitality Laws and Regulations
HPMGT 112 | Front Office Management/Hotel Catering
HPMGT 114 | Introduction to Maintenance and Housekeeping
HPMGT 120 | Safety and Sanitation
HPMGT 122 | Restaurant Math
HPMGT 126 | Nutrition for Chefs
HPMGT 128 | Kitchen Management
HPMGT 130 | Survey of Commercial Food Service Operations
HPMGT 134 | Commercial Baking: Beginning
HPMGT 135 | Commercial Baking: Advanced
HPMGT 136 | Dining Room Service and Management I
HPMGT 140 | Contemporary Cuisine
HPMGT 141 | Restaurant Desserts
HPMGT 142 | Gastronomy
HPMGT 143 | Advanced Gastronomy
HPMGT 146 | Dining Room Service and Management II
HPMGT 147 | Beverage Management
HPMGT 148 | Introduction to Wines
HPMGT 152 | Restaurant Planning
HPMGT 190 | Culinary Arts Internship
HPMGT 200 | Exploring Culinary and Baking Skills
HPMGT 133A | Introduction to Commercial Food Preparation
HPMGT 133B | Commercial Food Preparation
HPMGT 201A | Basic Baking and Pastry Arts
HPMGT 201B | Intermediate Culinary and Pastry Arts
HUMAN 1 | Old World Culture
HUMAN 2 | Modern Culture
HUMAN 3 | World Culture
HUMAN 4 | World Religions and Spirituality
INDIS 48 | Sustainable Living
INDIS 110 | Peer Tutoring

Although the Culinary Arts facility in the Manzanita building lower level will undergo a remodel beginning in Summer, 2016, the Hospitality program will still offer courses. See a counselor for updates on course offerings.

2016 - 2017 • COLUMBIA COLLEGE CATALOG
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* Course is cross-listed meaning that course sections are offered under more than one course ID. See the course description for cross-listing information.