ARCH 52A. Architectural CADD (2)
Lec-1, lab-4  CR/NC avail.
Prereq.: ARCH 50
First half of ARCH 52
Basic computer-aided design and drafting using CADD software as applied in the design professions. Using a PC and AutoCAD software to develop basic drawings and drafting skills with a special emphasis on architecture. CSU

ARCH 52B. Architectural CADD (2)
Lec-1, lab-4  CR/NC avail.
Prereq.: ARCH 52A
Repeat: max. 4 units
Second half of ARCH 52
Computer-aided design and drafting using AutoCAD as applied in the design profession. Using PC CADD system to develop basic drawings and drafting skills with emphasis on architecture. Introduction to 3D CADD modeling ideas and techniques as applied to an architectural project. CSU

ARCH 90. Field Experience (3)
Work-15, conf-0.5
Coreq.: Min. of 4 units in addition to this course.
Repeat: max. 6 units
Supervised work experience in the fields of architecture, construction management, design firm management, and interior design. CSU

ARCH 156. Construction Cost Estimating I (3)
Lec-3
An introduction to types of cost estimates; job and general office overhead; units of measure; procedures and processes of material quantity surveys based on construction methods, drawings, and specifications. CSU

ARCH 157. Construction Cost Estimating II (3) sp
Lec-3, field trips
Prereq.: ARCH 156
Systematic construction labor and material estimating: total project costing. Routine operations of a construction office or company. Survey of Critical Path Method (cpm) scheduling. CSU

ARCH 158. Building Code Applications (3)
Lec-3
Introduction to the history, development, format, and provisions of the Uniform Building Code (latest adopted edition with San Francisco Amendments). CSU

ARCH 159. Code Review of Structural Plans (3)
Lec-3
Prereq.: ARCH 158

ARCH 160. Professional Practice (3)
Lec-3
Survey of general office administration: contract documents, agreements, business aspects of construction, lien laws, codes and zoning ordinances, bid forms, safety and health ordinances. A familiarization with architects' and contractors' licensing requirements. CSU

IDST 70. Architecture and Diversity (3)
Lec-3, field trips  CR/NC avail.
An introductory critical review of the building and design heritage of women all over the world and of indigenous people's architecture in Africa and Latin America from tribal dwellings to monumental structures, followed by a series of architectural and engineering studios introducing students to basic building and design skills: developing a project, drawing a floor plan, building an architectural model, using drafting tools and computers. Emphasis on hands-on skills. CSU

Art

The City College Art Department offers students a comprehensive lower division program in the areas of Fine Art and Art History, revolving around the basic CORE program. The Art Department prepares students for transfer to upper division courses in colleges and universities or for direct entry into art careers. All of our courses are acceptable for credit at the University of California.

Fine Arts majors are advised to enroll in one art history course, along with general education and studio course(s). For the recommended sequence of courses in specific areas consult the department head or the fine arts coordinator. It is strongly recommended that all art majors take at least one studio class each semester.

Announcement of Courses

Most advanced classes in the Art Department require that prerequisites be completed before taking those classes. Students who have not completed those prerequisites must demonstrate the exit skills required upon completion of the prerequisite(s). (See specific courses for prerequisite requirements.)

MOST ART STUDIO COURSES LISTED WILL REQUIRE A LABORATORY FEE.

CREDIT, DEGREE APPLICABLE COURSES:

Art History Courses

The Art History Curriculum offers a wide selection of courses that aid in the understanding and appreciation of the visual arts around the world (101 through 108), a Telecourse, (Art of the Western World 116); and Selected Topics Courses which offer a more in-depth study of art 101, 122, & 123. All Art History courses may be taken in any sequence. College-level reading and writing skills are advised.

ART 101. Western Art History (3)
Lec-3, field trips
A survey of Western art from 35,000 B.C. to 500 A.D. The course will begin with Paleolithic cave paintings and continue to the Roman and Early Byzantine and Early Medieval periods. Art will be discussed from both a critical and historical perspective, with regard to formal visual elements of style and the social context of the societies, values, and ideas that gave birth to Western art. CSU/UC
ART 102. Western Art History (3)
Lec-3, field trips
A survey of Western art from the sixth to the eighteenth centuries. The course will begin with the Roman era as an introduction, and continue to the Neo-Classical period. Art will be discussed from both a critical and a historical perspective, with regard to formal visual elements of style and the social context of the societies, values, and ideas that gave birth to Western art. CSU/UC

ART 103. Western Art History (3)
Lec-3, field trips
A survey of the developments in modern art from the eighteenth to the twentieth centuries. The course will begin with the period just prior the French Revolution and continue to the present. All art will be discussed from both a critical and a historical perspective, with regard to formal visual elements of style and the values and ideas that gave birth to Western art. CSU/UC

ART 104. Asian Art History (3)
Lec-3, field trips
A survey of the artistic heritages of Asia, from Iran in the west to south-eastern regions of Indonesia, spanning five millennia of Asian art history. Art 104 explores the themes and beliefs which give unity to the art of this part of the world, as well as the diverse cultural characteristics which led to the development of national styles. CSU/UC

ART 105. Ancient Art and Architecture of Latin America (3)
Lec-3, field trips
A survey of the artistic heritage of Pre-Columbian Mexico, Central, and South America. Art 105 explores the themes and beliefs which give unity to the art of this part of the world as well as the diverse cultural characteristics which led to the development of regional styles. CSU/UC

ART 106. Latin American Art History (3)
Lec-3, field trips
A survey of the artistic heritage of Latin America from the sixteenth century AD to the present. All art will be discussed from a critical and historical perspective, with regard to formal visual elements of style and the societies, values, and ideas that gave birth to Latin American art. CSU/UC

ART 107. African American Art History (3)
Lec-3, field trips
A brief survey of the art of West African civilizations and art history of African Americans from the colonial to contemporary time. All art will be discussed from both a critical and historical perspective, with regard to formal visual elements of style and the societies, values and ideas that gave birth to African American art. CSU/UC

ART 108. Women through Art History (3)
Lec-3, field trips
A survey of women in art, investigating their place in society as artists and patrons, as well as subjects in art. The course will introduce women from both European and non-European cultures, from pre-history to the present. All art will be discussed from both a critical and historical perspective, with regard to social context and formal visual elements. CSU/UC

ART 116. Art of the Western World (3)
Lec-3, field trips
CR/NC avail.
A telecourse introduction to art history from the Classical Greek period to the Modern twentieth century. Art will be discussed in its social context and for formal visual elements. The course introduces the societies, values, and ideas that gave birth to Western art, discusses the changing goals of artists and patrons, traces art's relation to power, religion, culture, and the art of the past, and suggests how art defines or contradicts its time. Refer to the Telelesson Schedule for viewing dates and times. CSU/UC

ART 118. Art America (3)
Lec-3, field trips
CR/NC avail.
A history of American art from colonial times to the present. Painting, sculpture, architecture, and crafts will be examined and discussed within the historical, political, and sociocultural background unique to American art. Students will learn to identify major works of art by pivotal artists, recognize the techniques and formal visual elements of art, and critically analyze and evaluate the artwork within the contextual framework in which it was created. Students will write about art through visits to local museums to consider the works of art discussed in the telecourse. CSU

ART 121-122-123. Selected Topics in Art (1-2-3)
Lec-1,2,3
CR/NC avail.
Repeat: if no subject repeat
An in-depth investigation of selected topics in art. These courses were developed in conjunction with the permanent and special exhibitions at the Legion of Honor and De Young Memorial Museums of Art. The content of these courses vary. Students may re-enroll without repeating subject matter. Specific times and topics will be announced in the Time Schedule, in classes and through campus media. CSU/UC

ART 125A. Basic Design (3)
Lec-2, lab-4, field trips
Advise: ART 125A and 130A (both concur.)
Basic design elements; color and the concepts, operations, and methods of the two-dimension design process as related to all well-ordered form. Emphasis on experimentation, exploration, and criticism intended to develop creativity and manipulative ability. CSU/UC/CAN

ART 125B. Advanced Design (3)
Lec-2, lab-4, field trips
Prereq.: ART 125A
Advise: ART 130A
Repeat: max. 6 units
Continuation of basic design with an emphasis on advanced two-dimensional and beginning three-dimensional design. Advanced experimentation in color. Design problems geared to assist the following majors: Fine and applied arts, photography, theater arts, fashion, and interior and architectural design. Further exploration and development of creativity. CSU/UC
ART 130A. Basic Drawing (3)
Lec-2, lab-4, field trips
Advis: Completion/concurrent enrollment in ART 125A
Theory and practice of drawing using a systematic variety of media and subject matter. Examination of drawing through the graphic elements of line, plane, tone, shape, form, volume, rendering, and perspective. Introduction to light and shadow. Beginning problems will be structured to guide the student, and the instructor will assist in this experience through individual attention. Instruction leads to direct the student and encourage subjective self-expression. CSU/UC/CAN

ART 130B. Intermediate Drawing (3)
Lec-2, lab-4, field trips
Prereq.: ART 125A and 130A
Repeat: max. 6 units
Continued development of drawing skills, with additional approaches to drawing, composition, and varied drawing materials. CSU/UC

ART 131A. Museum Drawing (3)
Lec-2, lab-4, field trips
Prereq.: ART 130A
The Legion of Honor Museum will initially act as the studio/atelier for the continuance of the tradition of museum drawing; development of skills and expansion of abilities in the creation of unique drawings through classroom and museum instruction. CSU

ART 131B. Advanced Museum Drawing (3)
Lec-2, lab-4, field trips
Prereq.: ART 130A and 131A
Repeat: max. 6 units
Builds upon skills and techniques already acquired in ART 131A. Development of original sketches and compositions based on major works in the Legion of Honor Museum. CSU

ART 132A. Beginning Figure Drawing (3)
Lec-2, lab-4, field trips
Prereq.: ART 125A and 130A
*ART 132A is strongly recommended for all art majors.*
An introduction to the drawing of the nude human figure. Analysis of basic forms, structure, proportion, symmetry, balance, and rhythm. Introductory anatomy. CSU/UC

ART 132B. Advanced Figure Drawing (3)
Lec-2, lab-4, field trips
Prereq.: ART 125A, 130A, and 132A
Repeat: max. 6 units
Advanced study of the drawing of the nude human figure. Analysis of basic forms, structure, proportion, symmetry, balance, and rhythm. Human anatomy. CSU/UC

ART 136A. Introduction to Illustration (3)
Lec-2, lab-4, field trips
Prereq.: ART 125A and 130A
How to prepare for the profession of illustration and learn the processes by which one gets professional results. Emphasis on ideas and originality, appropriate to the marketplace. Projects include pencil drawing, pen and ink rendering, color posters and some practical projects which may be reproduced on campus. CSU

ART 136B. Illustration in Color (3)
Lec-2, lab-4, field trips
Prereq.: ART 136A
Practical problems in illustrations with emphasis on contemporary approaches to the subject in color media. Projects include design, visualization, and final-image techniques for reproduction. Emphasis on the development of portfolio items suitable for use in the employment or freelance professional interview. Comprehensive layout and the use of type and lettering in illustration. CSU

ART 136C. Advanced Illustration (3)
Lec-2, lab-4, field trips
Prereq.: ART 136B
Repeat: max. 6 units
Problems in contemporary media: visualization and final-image techniques for reproduction. Emphasis on the development of portfolio items suitable for use in the employment or freelance professional interview. Comprehensive layout and the use of type and lettering in illustration. CSU

ART 137. Humorous Illustration (3)
Lec-2, lab-4
Prereq.: ART 130A
Elements of humorous illustration; basics of exaggeration, distortion, and caricature; differentiation of these from the grotesque. Importance of observation and the use of a sketchbook to draw from real life situations. CSU

ART 140A. Beginning Painting (3)
Lec-2, lab-4, field trips.
Prereq.: ART 125A and 130A
Studio course in the technical and conceptual basics of painting both in oils and acrylics. Through hands-on practice, lectures, and critiques the student develops the requisite skills and techniques as well as the underlying conceptual and perceptual abilities necessary to painting. In addition, the student is introduced to the historical traditions and the contemporary context of the field. CSU/UC/CAN

ART 140B. Intermediate Painting (3)
Lec-2, lab-4, field trips.
Prereq.: ART 140A
Repeat: max. 6 units
Development of painting techniques and style into advanced concepts and the processes of painting. Emphasis will be placed on the development of individual style and interest, with exploration in the experimental use of media and technique. Personal creativity will be stressed, and dialogue will be pursued in the broader understanding of aesthetics and contemporary thinking. CSU/UC

ART 140C. Advanced Painting (3)
Lec-2, lab-4, field trips
Prereq.: ART 140B
Focus on the development of a self-directed creative process; building on the concepts, skills, and issues of ART 140B; long-term thematic projects, series projects, and mixed-media assignments leading to advanced-level exploration of contemporary art issues and media. CSU/UC
ART 141. Acrylic Painting (3)
Lec-2, lab-4, field trips
Prereq.: ART 125A and 130A
Repeat: max. 6 units
An introduction to the painting techniques and characteristics of acrylic media. No media requiring volatile solvents will be used. Historic traditions and the contemporary context of painting are introduced. CSU/UC

ART 145A. Introduction to Watercolor Painting (3)
Lec-2, lab-4, field trips
Prereq.: ART 125A and 130A
Instruction and practice in the materials, techniques, concepts, and history of watercolor painting. Through lecture, demonstration, hands-on experience, and critiques, the student will develop the technical, perceptual, and conceptual skills to produce and analyze paintings. Emphasis will be on technical development and personal explorations. CSU/UC

ART 145B. Advanced Watercolor Painting (3)
Lec-2, lab-4, field trips
Prereq.: ART 145A
Repeat: max. 6 units
Continuation of ART 145A. Develop additional skill in painting with the transparent watercolor to introduce techniques in opaque watercolor (gouache) and explore options in paper surfaces. Analyze transparent, sedimentary, and staining pigment groups to extend knowledge of color and texture choices. Study of contemporary and historical art history. Emphasis is on the development of individual styles and interests. CSU/UC

ART 146A. Beginning Chinese Brush Painting (3)
Lec-2, lab-4, field trips
Orientation on the three classic elements of Chinese art (brush painting, calligraphy and seal engraving) with emphasis on Chinese masterpieces both ancient and contemporary, focusing on the concepts of style, line, composition, perspective and stroke. CSU/UC

ART 146B. Advanced Chinese Brush Painting (3)
Lec-2, lab-4, field trips
Repeat: max. 6 units
Continuation of ART 146A utilizing traditional and contemporary Chinese art styles with emphasis on complex landscapes, flowers, animals and figures. CSU/UC

ART 150A. Fine Art Printmaking (3)
Lec-2, lab-4, field trips
Prereq.: ART 130A
Designed to help students explore the theory and practice of printmaking through various printing techniques. Beginning problems will deal with techniques used in various areas of relief, intaglio, lithography, monoprinting and collogography printing. Tools and techniques of printmaking are inherent in the medium and become a part of the creative process. Students will transfer their ideas and artistic expressions into these various print media. Introduction to historical traditions and contemporary issues of the field. CSU/UC/CAN

ART 150B. Fine Art Intaglio Printmaking (3)
Lec-2, lab-4, field trips
Prereq.: ART 150A
Repeat: max. 6 units
Individual and class projects in Intaglio printmaking stressing intermediate and advanced levels of proficiency including color multiple plates, viscosity printing, chine colle, mezzotint, sugar lift, salt, and soft ground. Through lecture/demonstration, studio practice and critiques, students develop the requisite skills and conceptual basis necessary for innovative work in this exciting discipline. CSU/UC

ART 150C. Fine Art Relief Printmaking (3)
Lec-2, lab-4, field trips
Prereq.: ART 150A
Repeat: max. 6 units
The ART 150 series may be taken concurrently and/or out of sequence.
A wider and more complex variety of intermediate and advanced relief printing techniques will be introduced including reduction printing, color multiple plates, varying matrix materials, split fountain roll-ups, segmented plates, and viscosity inking. Emphasis on the student's individual artistic growth and development through the mastery of requisite and conceptual skills. Introduction to historical traditions and contemporary issues of the field. CSU/UC

ART 151A. Beginning Monoprint (3)
Lec-2, lab-4, field trips
Prereq.: ART 130A
Introduction to a wide variety of contemporary monoprint techniques. Through lecture, demonstration, studio practices, and critiques, students develop the skills and concepts necessary for basic work in this exciting area. Monoprint is a cross over discipline that combines skills of drawing and painting with printmaking. Introduction to historical traditions and contemporary issues of the field. CSU/UC

ART 151B. Intermediate/Advanced Monoprint (3)
Lec-2, lab-4, field trips
Prereq.: ART 151A
Repeat: max. 6 units
Focus on more complex and advanced techniques in monoprint; stresses the development of individual artistic growth, building on material covered in ART 151A; planning and execution of long term thematic, mixed media, and self-directed projects; exploration of contemporary issues and approaches. CSU/UC

ART 154. Hand Printed Book: Design and Production (3)
ART 154 = GRPH 154

ART 155. Bookbinding (3)
ART 155 = GRPH 155
ART 156. Mixed Media: Works on Paper (3)
Lec-2, lab-4, field trips
Prereq.: ART 125A and 130A
Repeat: max. 6 units
This course selectively and aesthetically combines various media and techniques of drawing, painting, photography, printing and collage into two and three-dimensional works. Through structured studio experience, lectures and critiques, the student will develop the requisite skills and techniques as well as the conceptual basis of this contemporary art form. Underlying the instruction is a historical component which emphasizes modern and contemporary art to broaden the student's interest and awareness of contemporary trends. CSU/UC

ART 160A. Beginning Ceramics (3)
Lec-2, lab-4, field trips
Introduction to developing ceramic forms in a studio atmosphere. Basic methods of ceramic forming through use of the potter's wheel and hand-construction techniques, glaze application, and kiln-firing processes. Lectures on the historical uses of clay and its relationship to the development of civilizations and industry. Emphasis on technical development and exploration of clay as a means for aesthetic growth. CSU/UC

ART 160B. Intermediate Ceramics (3)
Lec-2, lab-4, field trips
Prereq.: ART 160A
Emphasis on wheel-throwing and hand-building skills, and on surface techniques. Introduction to non-technical glaze experimentation. Further development of aesthetics. CSU/UC

ART 160C. Advanced Ceramics (3)
Lec-2, lab-4, field trips
Prereq.: ART 160B
Repeat: max. 6 units
Advanced development of ceramic forms in a studio atmosphere. Advanced methods of ceramic forming through the use of the potter's wheel and hand-construction techniques, glaze formulation, advanced glaze application techniques and kiln-firing processes. Lectures on the historical uses of clay and its relationship to the development of civilizations and industry. Emphasis on technical and conceptual development and exploration of clay as a means for aesthetic growth. CSU/UC

ART 162A. Ceramic Sculpture I (3)
Lec-2, lab-4, field trips
Prereq.: ART 160A and 160B
Introduction to the basic techniques and concepts of making sculpture with ceramic materials. Emphasis on the development of concepts and content in the execution of ceramic sculpture. Utilization of plaster mold-making and slip casting, basic handbuilding, wheel-throwing, and mold work as applied to sculpture. Exploration of additive and subtractive processes, press molds, surface development and formulation of glazes pertaining to sculpture. Emphasis on technical development and exploration of clay as a means for aesthetic growth. CSU/UC

ART 162B. Ceramic Sculpture II (3)
Lec-2, lab-4, field trips
Prereq.: ART 160A, 160B, and 162A
Repeat: max. 6 units
A continuing exploration of concepts and techniques in making sculpture with ceramic materials. Conceptualizing and creating in three dimensions. Handbuilding, wheel-throwing, and mold work as applied to ceramic sculpture. Continued emphasis on the development of concepts and content in the execution of the ceramic sculpture. Utilization of plaster mold-making and slip casting, basic handbuilding, wheel-throwing, and mold work as applied to sculpture. Surface development and formulation of glazes pertaining to sculpture. Emphasis on technical development and exploration of clay as a means for aesthetic growth. CSU/UC

ART 170A. Beginning Sculpture (3)
Lec-2, lab-4, field trips
An introduction to the historical evolution of sculpture and the basic elements of three-dimensional form. Exploration of carving, modeling, mold making and basic woodworking techniques. Emphasis on technical skill, expression and artistic growth. CSU/UC/CAN

ART 170B. Intermediate Sculpture (3)
Lec-2, lab-4, field trips
Prereq.: ART 170A

ART 170C. Advanced Sculpture (3)
Lec-2, lab-4, field trips
Prereq.: ART 170A and 170B
Repeat: max. 6 units
Further advanced processes of sculpture with emphasis on metal work using the welding process. Students will have an opportunity to decide what areas of sculpture they wish to investigate in depth, with instructors' approval and based on previous experience. The successful completion of Art 170B is required in order to take Art 170C. CSU/UC

ART 180A. Beginning Metal Arts (3)
Lec-2, lab-4, field trips
An introduction to basic fabricating processes, i.e., forming, annealing, and soldering of both common and fine metals. Projects vary from engraving to the setting of gemstones, or the making of small sculptures. Survey of the history of metal arts, from the Bronze Age to the present. Emphasis on the knowledge and development of manual skills to gain personal aesthetic sense. CSU

ART 180B. Intermediate Metal Arts (3)
Lec-2, lab-4, field trips
Prereq.: ART 180A
An introduction to the basic techniques of lost wax metal casting (centrifuge and vacuum), ranging from jewelry to small sculpture. Instruction includes information about waxes, modeling, sprueing, investing, casting, and finishing. CSU
ART 180C. Advanced Metal Arts (3)
Lec-2, lab-4, field trips
Prereq.: ART 180A and 180B
Repeat: max. 6 units
An introduction to production techniques, mold making, and advanced casting techniques. This course involves a close look at the development of the student’s ideas, from conception to completion, including possible marketing ideas. CSU

ART 185. Portfolio Preparation (3)
Lec-2, lab-4, field trips
Repeat: max. 6 units
This course is designed to enable the art student to organize and present a body of work in an effective and professional manner for transfer, advanced study opportunities and/or career preparation. Through hands-on practice, lectures, demonstrations and critiques, the student gains the requisite skills for portfolio development. CSU

ART 187A. Independent Study (2)
Ind st-5, field trips
Prereq: Any advanced level ART course
An opportunity for students to perform specialized studies in art with the guidance of an art instructor of his/her choice. CSU

ART 187B. Independent Study (2)
Ind st-5, field trips
Prereq.: ART 187A
An opportunity for students to continue to perform specialized studies in art with the guidance of an art instructor of his/her choice. CSU

New Courses

ASAM 27. Asian American Race Relations (3)
Lec-3
CR/NC avail.
Understanding of race relations between Asian Americans and other ethnic groups including African Americans and European Americans including theories of race and interaction; and considerations such as class, economics, and social inequities. CSU/UC

ASAM 30. Asian American Issues Through Film (3)
Lec-3
CR/NC avail.
Through films, issues of the Asian American experience will be explored. Films will examine the experience of immigrants to the United States from China, Japan, the Philippines, India, and Southeast Asia. Issues to be discussed include identity, immigration, ties to Asia, work, culture, family, community, political policies, stereotypes and social history. Examination of the lives of Asian American women, using a multi-disciplinary approach which includes literature, poetry, history, political science, anthropology and sociology. Readings, papers and discussions on the social, cultural, political and economic conditions facing Asian American women. CSU/UC

ASAM 35. Asian American Women (3)
Lec-3
CR/NC avail.
Examination of the lives of Asian American women, using a multi-disciplinary approach which includes literature, poetry, history, political science, anthropology and sociology. Readings, papers and discussions on the social, cultural, political and economic conditions facing Asian American women. Field trip may be required. CSU/UC

ASAM 40. The Chinese American Community (3)
Lec-3
CR/NC avail.
(No knowledge of Chinese required)
Description and analysis of the Chinese American community from a sociological point of view. The historical background, family and district organizations, power structure, immigrants, cultural patterns and conflicts, and the socioeconomic problems of the Chinese American community. CSU/UC

ASAM 42. Southeast Asian Community in the U.S. (3)
Lec-3
CR/NC avail
Examination of one of the fastest growing Asian American groups in the United States during the past 15 years: mainland Southeast Asian Americans from Vietnam, Cambodia and Laos. The diversity of the Southeast Asian community in the United States will be examined. Topics such as socioeconomic adaptation, community organization and family life will be discussed from a sociological viewpoint. A local field trip may be required. CSU/UC

ASAM 45. Pacific Islanders in the United States (3)
Lec-3
CR/NC avail.
Examination the experience of Pacific Islanders in the United States. The history, culture, and development of Hawaiian will be surveyed, as well as Hawai‘i’s role as a way station in Pacific Islander migration to the U.S. The cultural heritage and U.S. immigration experience of Pacific Islanders from Samoa, Tonga, Tahiti, Micronesia, Melanesia, Palau, New Zealand, Cook Islands, Marquesans, and the U.S. territory of Guam will be examined. CSU/UC
ASAM 61-62-63. Asian American Community Field Study (1-2-3)
Conf-1, work-5, 10, 15 CR/NC avail.
Repeat: max. 6 units
Based on fieldwork and supervised community participation, participants in this course will examine the local experience of Asian American and Pacific Island communities. CSU

ASAM 65. Individual Study in Asian American Studies (3)
Ind st-15 CR/NC avail.
Repeat: max. 9 units
Supervised individual or group study on topics and issues in Asian American Studies. CSU/UC

Asian Studies
Announcement of Courses

CREDIT, DEGREE APPLICABLE COURSES:

ASIA 1. Modern Pacific Asia: An Introduction (3)
Lec-3, field trips CR/NC avail.
Development of history, economics, politics, and cultures of the Pacific Basin region since the 16th century. Analysis of the emergence of the modern Pacific Asia from the 19th century onward as a principal political and economic center of the upcoming century. CSU/UC

ASIA 11. East Asia Calligraphy: An Introduction (3)
Lec-3, field trips CR/NC avail.
Examination of the historical development and cultural aspects of the East Asian (China, Japan, Korea) calligraphy, with emphasis on Chinese Hanzi but also including Japanese Kana syllabaries and Korean Han’gul characters; critical analysis of their relationship with East Asian philosophy, religion, literature, and art. CSU/UC

ASIA 12. East Asian Literature in Film: Early Modern and Modern Era (3)
Lec-3 CR/NC avail.
Introduction to East Asian (China, Japan, Korean) literature from the early Modern 15th-18th century to the Modern Era 19th-20th century through the media of film. Critical analysis of how literature reflects cultural values and social changes. No knowledge of Chinese, Japanese, or Korean required. CSU/UC

ANTH 19. Ethnology of China (3)
Lec-3 CR/NC avail.
Chinese life-styles, including their historical development through the present day, including language, economics, kinship and marriage patterns. The impact of the Revolution on traditional Chinese culture and resultant changes. CSU/UC

ART 104. Asian Art History (3)
Lec-3, field trips CR/NC avail.
A survey of the artistic heritages of Asia, from Iran in the west to the south-eastern regions of Indonesia, spanning five millennia of Asian art history. Art 104 explores the themes and beliefs which give unity to the art of this part of the world, as well as the diverse cultural characteristics which led to the development of national styles. CSU/UC

ART 146A. Beginning Chinese Brush Painting (3)
Lec-2, lab-4, field trips CR/NC avail.
Orientation on the three classic elements of Chinese art (brush painting, calligraphy and seal engraving) with emphasis on Chinese masterpieces both ancient and contemporary, focusing on the concepts of style, line, composition, perspective and stroke. CSU/UC

ART 146B. Advanced Chinese Brush Painting (3)
Lec-2, lab-4, field trips Repeat: max. 6 units
Continuation of ART 146A with emphasis on artistic development. Investigation of methods of traditional and contemporary Chinese art. Paintings of various subject matter including complex landscapes, flowers, birds, animals and figures. Free brush strokes and meticulous styles. Lectures and demonstrations will be offered with slides and videos. Individual expression will be encouraged by modeling after a series of masterpieces and original works. Group and individual critiques. Outdoor painting and museum visits. CSU/UC CHINESE LANGUAGE COURSES: See Chinese in this section of the catalog.

CHIN 29A-29B. Chinese Literature in Translation (3-3)
Lec-3 CR/NC avail.
Advis: Eligible for ENGL 1A
CHIN 29A not prerequisite to 29B. No knowledge of Chinese required.
Reading and discussion of representative works in English translation. CSU/UC

CHIN 39. Major Achievements of Chinese Thought and Culture (3)
Lec-3 CR/NC avail.
Advis: Eligible for ENGL 1A
No knowledge of Chinese required. Not open to students who are enrolled in or who have completed CHIN 49. A consideration of the humanistic traditions of China, the most recent archaeological discoveries, and their relation to those of other countries in East Asia. CSU/UC

CHIN 49. Major Achievements of Chinese Thought and Culture (3)
Lec-3 CR/NC avail.
No knowledge of Chinese required. Not open to students who are enrolled in or who have completed CHIN 39. A consideration of the humanistic traditions of China, the most recent archaeological discoveries, and their relation to those of other countries in East Asia. CSU

HLTH 50. Tai Chi for Health (3)
Lec-2.5, lab-1.5 CR/NC avail.
Tai Chi Chuan is a form of thought and physical movement that incorporates meditation into motion. Emphasis on the philosophical and practical application of Tai Chi thought as it applies to human health and life. Practice of basic Tai Chi Chuan forms (Yang Style). CSU/UC

HIST 33. History of South Asia (3)
Lec-3 CR/NC avail.
A survey of the history of India, Ceylon, and Pakistan, with emphasis on the development of modern India and its role in international affairs. CSU/UC
HIST 34. History of Japan (3)
Lec-3 CR/NC avail.
A survey of the history of Japan, with emphasis on the more important political, economic, social, artistic, and cultural aspects of Japanese life as well as on the development of modern Japan and its role in world affairs. CSU/UC

HIST 35A-35B. History of China (3-3)
Lec-3 CR/NC avail.
HIST 35A not prerequisite to 35B
HIST 35A. Historical, social, political, intellectual, cultural, artistic, and economic development of China from ancient times to approximately 1900. CSU/UC
HIST 35B. Historical, social, political, intellectual, cultural, artistic, and economic developments in twentieth century China. CSU/UC

HIST 36. History of Southeast Asia (3)
Lec-3 CR/NC avail.
A survey of the history of Southeast Asia, with emphasis on the role of the United States in Southeast Asia. CSU/UC

HIST 44. Comparative History of Overseas Chinese (3)
Lec-3 CR/NC avail.
The history and social organization of overseas Chinese communities in Southeast Asia, Latin America, and North America from the Eastern Han Dynasty to the present. CSU/UC

IDST 27A-27B-27C. Asian Humanities (3-3-1)
Prereq.: IDST 27A Not prerequisite to 27B; For 27C: IDST 27A or 27B
No knowledge of foreign languages required
IDST 27A-27B.
Lec-3 CR/NC avail.
A team-taught survey of Asian civilizations, especially Arabic-Islamic, Hindu, Chinese, and Japanese cultures. Emphasis on literature, philosophy, religion, and the arts. Explanation, through an interdisciplinary and cross-cultural approach, of the differences and underlying unity of Asian cultures and a comparison with their Western counterparts. Use of the best available English translations of Asian literature along with slides, films, recordings and field trips. Each: CSU/UC

IDST 27C.
Ind st-5 CR/NC avail.
An independent study/research course under direction of one or more instructors where focus is placed on a specific area of study. CSU/UC

IDST 28. Current Topics and Issues in the Pacific Rim (3)
Lec-3
Emphasis on current affairs and issues in any of the Pacific rim countries. CSU/UC

IDST 37. Ethnic Minorities in the United States (3)
Lec-3
An interdisciplinary survey of the history, culture, problems, and conditions of American ethnic minorities and the effects of racism, prejudice, and discrimination on emerging minority groups in the United States. CSU/UC JAPANESE LANGUAGE COURSES: See Japanese in this section of the catalog.

JAPA 39. Japanese Culture and Civilization (3)
Lec-3
Advis.: Eligible for ENGL 1A
No knowledge of Japanese required.
Not open to students who are enrolled in or have completed JAPA 49.
A consideration of the major achievements of Japanese culture as reflected in language, literature, art, religion and daily life. CSU/UC

JAPA 49. Japanese Culture and Civilization (3)
Lec-3 CR/NC only
No knowledge of Japanese required.
Not open to students who are enrolled in or have completed JAPA 39.
A consideration of the major achievements of Japanese culture as reflected in language, literature, art, religion and daily life. CSU

KOREAN LANGUAGE COURSES: See Korean in this section of the catalog.

MUS 24. Music of East Asia (3)
Lec-3, lab-1, field trips CR/NC avail.
A cross-cultural, comparative survey of both historical and recent developments in the music of China, Japan, and Korea, including the relationship of East Asian music to other aspects of East Asian cultures—philosophy, religion, theater, and dance. CSU/UC

POLS 35. Government and Politics of East Asia (3)
Lec-3 CR/NC avail.
A survey of political developments and changes in East Asia, with emphasis on the governments and politics of China and Japan. The role of other world powers in this region, including the Soviet Union and the United States. CSU/UC

PSYC 22. Psychology of Race and Ethnic Relations (3)
Lec-3 CR/NC avail.
Not open to students who are enrolled in or who have completed PSYC 23.
Critical evaluation of the concept of race as a biological, social and cultural construct and examination of psychological aspects of race and ethnic relations. Psychohistorical analysis of the treatment of African Americans, Asian Americans, Mexican/Latino Americans, and Native Americans in the USA. Emphasis on the strengths and unique contributions of these and other groups to the USA. CSU

PSYC 23. Psychology of Race and Ethnic Relations (3)
Lec-3 CR/NC avail.
Prereq.: PSYC 1
Not open to students who are enrolled in or who have completed PSYC 22.
Critical evaluation of the concept of race as a biological, social and cultural construct and examination of psychological aspects of race and ethnic relations. Psychohistorical analysis of the treatment of African Americans, Asian Americans, Mexican/Latino Americans, and Native Americans in the USA. Emphasis on the strengths and unique contributions of these and other groups to the USA. CSU/UC
Astronomy
Announcement of Courses

CREDIT, DEGREE APPLICABLE

ASTR 1. Cosmic Evolution (3)
Lec-3
No mathematics background required.
The origin and evolution of the universe of galaxies, stars, planets, and life. Knowledge of stellar properties and evolution coupled with study of the origin and evolution of planets, life and intelligence to estimate the possibilities of intelligence elsewhere in the galaxy. Problems of communication with extraterrestrial civilizations. Conceptual understanding of the universe. CSU/UC

ASTR 12. Celestial Navigation (3)
Lec-3
An introduction to the theory and practice of celestial navigation and piloting emphasizing the use of the pocket calculator. Use of sextant and other navigation equipment under realistic conditions at the College observatory and in the College planetarium. CSU

ASTR 14. Exploring the Universe (3)
Lec-3
(Designed for students who have not completed ASTR 1, 17, 18, or 20 with a final grade of C or higher)
A planetarium-oriented non-math course stressing the observational universe. The universe as seen through the use of telescopes, models, space probes, and other visual aids. The great ideas of ancient and modern astronomy. Fundamental ideas in the physical sciences appropriate to understanding the structure of the universe and the origin of life. CSU

ASTR 16. Observational Astronomy (1)
Lab-3
Advise: Completion/concurrent enrollment in ASTR 1, 14, 17, or 20
Constellation study and star identification, both in the planetarium and under the sky; usage of star finder with star atlas and other sources of information on current aspects of the heavens, including the annual almanac and celestial sphere. Set-up and use of telescopes in the observatory; evaluation and testing of telescopic power and performance, using a wide assortment of accessories, including a CCD camera. CSU/UC

ASTR 17. Solar System (3)
Lec-3
A general introduction to planetary astronomy and the possibility of extraterrestrial life. Emphasis on the history and present characteristics of the planets in our solar system, analysis of the life-support possibilities of the known planets, and the general problem of the origin and probable characteristics of other planetary systems. Recent advances in earth-based and spacecraft research and the challenges of interplanetary and interstellar communication. CSU/UC

ASTR 18. Stars (3)
Lec-3
A general introduction to the characteristics and evolution of stars, the principal producers of energy in the universe. The history, current properties, and future of the sun as a basis for comparison with characteristics of other stars in our galaxy. Energy production by nuclear reactions, synthesis of the elements, and consequences of stellar explosions treated in the context of the physical history of the universe. CSU/UC

ASTR 20. Introduction to Astrophysics (4)
Lec-3, conf-1
Prereq.: ASTR 1, 14, or 16
Designed for students who desire an astronomy course more advanced than the general survey course. Emphasis is on the current state of theoretical astrophysics and research astronomy. An opportunity for students to pursue independent research projects or to develop teaching aids for astronomy. The college planetarium and observatory, including the Celestron 14 inch telescope, a CCD camera, and fiber-optic spectrograph are available for the student. CSU/UC

Automotive Technology
Announcement of Curricula

(Options in Automotive Mechanics and Automotive Metal Repair).

Degree Curriculum

City College offers credit for two years of pre-apprentice training for students seeking employment in the automotive industry. Students may apply the earned credit toward the Associate in Science degree.

Employment. Successful completion of training in this program prepares students for entry employment in the areas of automotive mechanic and body person apprenticeship. Training will be considered in determining level of entry into apprenticeship.

Admission. Applicants for admission must complete an application form which may be obtained from the automotive-technology adviser at 1400 Evans Avenue training center. All applications are reviewed and evaluated, and the results are forwarded to each applicant.

Recommended High-School Preparation. Preparation is recommended in auto shop, electricity, machine shop, mechanical drawing, and welding.

Counseling. The automotive-technology adviser consults individually with students in order to help each student select a program best suited to the student's interests and abilities.

General Education. Instruction in general education is included so that students may satisfy the College graduation requirements in this area.

Associate in Science Degree and Award of Achievement. Students who wish to earn an Associate in Science degree must complete the general-education requirements for graduation from the College and additional electives. Students
who satisfy these requirements and complete either of the options in the Curriculum receive the degree of Associate in Science and the Award of Achievement in Automotive Technology. Such students are advised to consult with a College counselor.

Courses Required for the Award of Achievement in Automotive Technology

Option in Automotive Mechanics

First Semester

Course                                    Units
AUTO 100 Intro to Auto Tech ..............  8
Additional graduation requirements

Second Semester

AUTO 101 Brakes, Suspension, Alignment ....  8
Additional graduation requirements

Third Semester

AUTO 102 Automotive Engines ..............  8
Additional graduation requirements

Fourth Semester

AUTO 103 Auto Elect Systems ..............  8
Additional graduation requirements

Fifth Semester

AUTO 104 Auto Drivetrain Tech ............  8
Additional graduation requirements

Option in Automotive Body and Fender Repair

First Semester

AUTO 120 Automotive Welding ..............  8
Additional graduation requirements

Second Semester

AUTO 121 Metal Repair & Welding ..........  8
Additional graduation requirements

Third Semester

AUTO 122 Panels, Glass, Trim & Hardware ....  8
Additional graduation requirements

Fourth Semester

AUTO 123 Frame Straightening & Aligning ....  8
Additional graduation requirements

Fifth Semester

AUTO 124A Surface Prep and Paint ..........  5
AUTO 124B Surface Prep and Paint ..........  5
Additional graduation requirements

Certificate Program


Admission. Enrollment in either curricula is open to all interested students.

Credit Toward Graduation. All credit that students earn in obtaining the Certificate of Completion in either curricula may also be applied toward satisfaction of the requirements for graduation from the College.

Automotive Mechanics

Program Goal. Prepares students for entry-level employment as automotive mechanics. Curriculum includes overhaul of automotive engines, drive trains, fuel, cooling and electrical systems.

Admission Requirements. High school diploma, GED, or high school proficiency certificate. Demonstration by exam of an 8th grade reading, math, and language level. Remedial instruction may be taken concurrently.

Core Course                                    Units
AUTO 100 Intro to Auto Tech ................  8
AUTO 101 Brakes, Suspension, & Alignment ...  8
AUTO 102 Auto Engines .....................  8
AUTO 103 Electrical Systems ...............  8
AUTO 104 Drive Train Technology ...........  8
SECY 9346 Effective Bus Comm (as needed) ...  5
SECY 9356 Bus Math (as needed) ............  5

Requirements for Completion. Completion of required courses with grade C or higher.

Offered by: Automotive Technology Dept., 1400 Evans Ave., phone: 550-4409

Automotive Body and Fender Repair

Program Goal. Prepares students for entry-level employment as automotive metal (body and fender) mechanics. Curriculum includes body/fender repair, assembly and disassembly of panels and accessories, frame straightening, aligning body-fender surface, and painting.

Admission Requirements. High school diploma, GED, or high school proficiency certificate. Demonstrate by exam an 8th grade reading, math, and language level.

Core Course                                    Units
AUTO 120 Automotive Welding ................  6
AUTO 101 Welding & Auto Body Repair .......  8
AUTO 122 Panels, Glass, Trim, & Hardware ...  8
AUTO 123 Frame Straight & Align ............  8
AUTO 124A Surface Prep & Paint .......... ....  5
AUTO 124B Surface Prep & Paint .......... ....  5
SECY 9346 Effective Bus Comm (as needed) ....  5
SECY 9356 Bus Math (as needed) .............  5

Requirements for Completion. Completion of required courses with grade C or higher.

Offered by: Automotive Technology Dept., 1400 Evans Ave., phone: 550-4409

Automotive Metal Repair

Students may obtain the Certificate of Completion in Automotive Metal Repair by completing the following courses with final grades of C or higher.
### Course Units
- AUTO 120 Automotive Welding ......................... 6
- AUTO 121 Metal Repair & Welding ..................... 8
- AUTO 122 Panels, Glass, Trim & Hardware .......... 8
- AUTO 123 Frame Straightening & Aligning .......... 8
- AUTO 124A Surface Prep and Paint .................... 5
- AUTO 124B Surface Prep and Paint .................... 5

*Courses in this subject area require a special materials fee.*

### Automotive Technology Announcement of Courses

#### CREDIT, DEGREE APPLICABLE COURSES:

**AUTO 90. Introduction to Automotive Technology (3)**
- Lec-3, lab-4, field trips
- Prereq.: ESL 72 or ENGL 90
- Orientation to the automobile, automotive design, construction, operation, and the automotive industry, including ethics. Technical vocabulary, basic automotive components and systems, safety procedures; use and interpretation of automotive references and specifications; use of basic tools used in automotive repair. CSU

**AUTO 91. Automotive Brakes (4)**
- Lec-3, lab-4, field trips
- Prereq.: ESL 72 or ENGL 90; Satisfactory Score on the CCSF Placement Exam in Mathematics or MATH E, BSMA G, H or J; Completion of AUTO 90 or 100 or Demonstration of AUTO 90 or 100 exit skills
- Repeat: max. 12 units
- Principles of construction, mechanical operation, preventive maintenance and repair of vehicle braking systems. Includes computer operated systems, A.B.S. Preparation for A.S.E. Brake Certification and State Brake License. CSU

**AUTO 92. Engine Repair (5)**
- Lec-3, lab-8, field trips
- Prereq.: AUTO 81, 90, 99, or 100 and ESL 72 or ENGL 90; Satisfactory Score on the CCSF Placement Exam in Mathematics or MATH E, BSMA G, H or J
- Repeat: max. 15 units
- Analysis of engine problems and proper steps in repair procedures, including cooling system, exhaust system and timing belt replacements. CSU

**AUTO 95. Auto Heating and Air-Conditioning (3)**
- Lec-2, lab-4, field trips
- Prereq.: ESL 72 or ENGL 90; MATH E or BSMA J, H or J; AUTO 90 or 100; AUTO 105
- Repeat: max. 9 units
- An in-depth study of the heating, ventilating and air-conditioning (HVAC) systems used in cars, pick-ups, light trucks, and utility vehicles. Application of tools and gauges used for repair, maintenance and service of HVAC automotive systems. Hands-on application of diagnosis, repair and service of systems. Environmental regulations, laws, and licensing procedures. Preparation for (ASE) test. CSU

**AUTO 97. Suspension, Steering and Alignment (4)**
- Lec-3, lab-4, 5, field trips
- Prereq.: ESL 72 or ENGL 90; Satisfactory Score on the CCSF Placement Exam in Mathematics or MATH E, BSMA G, H or J; Completion of AUTO 100 or Demonstration of AUTO 100 exit skills
- Repeat: max. 16 units
- Principles of construction, mechanical operation, preventive maintenance and repair of suspension systems, wheel alignment and wheel balancing. Preparation for A.S.E. certification. CSU

**AUTO 100. Introduction to Auto Technology (8)**
- Lec-8, lab-4, field trips
- Prereq.: All students entering the Automotive Technology Program must take the City College placement tests in English and Mathematics and must review these results with a Vocational Counselor.
- An orientation to the automobile, automotive design, construction, operation, ethics, and the automotive industry. Technical vocabulary, basic automotive components and systems, safety procedures, measurement and computational skills; use and interpretation of automotive information and specifications; use of basic tools and measuring devices used in automotive repair; entry level shop practicum. CSU

**AUTO 101. Brakes, Suspension, Alignment (8)**
- Lec-5, lab-10, field trips
- Prereq.: AUTO 100
- Repair, adjustments, and overhaul of passenger car brakes and suspension systems; development of critical thinking skills necessary for analysis and diagnosis of failure and performance problems of these systems. CSU

**AUTO 102. Automotive Engines Repair (8)**
- Lec-5, lab-10, field trips
- Prereq.: AUTO 100
- Repeat: max. 16 units
- Principles of construction and operation of automotive engines and their systems; design and operation of the internal combustion engine. Use of tools and equipment to perform service and repair of mock-ups; A.S.E. test preparation. CSU

**AUTO 103. Automotive Electrical Systems (8)**
- Lec-5, lab-10, field trips
- Prereq.: AUTO 100
- Repeat: max. 16 units
- Maintenance and repair of automotive systems as well as troubleshooting. Sub-system diagnosis and service includes chassis wiring, lighting, starting, charging, ignition, fuel injection, and computer controls. Intended for the Automotive Certificate/Degree students as well as industry professionals seeking updated information and training. CSU
AUTO 104. Automotive Drivetrain Technology (8)
Lec-5, lab-10, field trips
Prereq.: AUTO 100
Repeat: max. 16 units
Hands-on experience in servicing automatic transmissions, manual transmissions, front wheel drive transaxles, 4-wheel drive transfer cases, driveshaft and differentials. Preparation is given for the national certification test on transmissions. Students receive the SCANS certificate indicating they have developed skills requested by employers. CSU

AUTO 105. Auto Electronics I - Advanced Tune-Up (3)
Lec-2, lab-4, field trips
Advis: Eligible for ENGL 94 or ESL 82, and MATH 840
Development of skills and practices used in automotive tune-ups to manufacturers' specifications. Use of electronic scopes, meters, test equipment, diagnosis of malfunctions, the exhaust emission control systems, ignition scopes, power cylinder balance, Tach and Dwell meters, infrared meters, percentages of monoxides, carburation, electricity, and other concepts and practices. CSU

AUTO 106. Auto Electronics II - Electrical Diagnosis (1.5)
Lec-2, lab-4, field trips (8 wks)
Prereq.: AUTO 105
A study of and practice in electronic diagnosis and repair of automotive electrical systems using modern electronic testing equipment, including the use of electrical and electronic testing equipment; the use and interpretation of wiring diagrams, shop manuals, common practices for troubleshooting electrical problems and other practices. CSU

AUTO 107. Auto Electronics III - Fuel Injection (3)
Lec-2, lab-4, field trips
Study of automotive and light truck fuel injection systems emphasizing the basic principles of diagnosis and repair of these systems. Demonstration and practice are offered on bench and operational vehicle systems. Instruction includes the development of a systematic procedure for testing and troubleshooting fuel injection systems. CSU

AUTO 109. Auto Electronics V - Ford Computers (1.5)
Lec-2, lab-4, field trips (8 wks)
Prereq.: AUTO 107, and ESL 82 or ENGL 96
The history, operation, and diagnosis of Ford's Electronic Engine Control systems (EEC). Distributorless Ignition System (DIS), ABS brakes, and other Ford computer controlled systems. Emphasis on the use of special test equipment and proper diagnostic procedures. CSU

AUTO 109A. Advanced Ford Computers (1.5)
Lec-2, lab-4 (8 wks)
Not open to students who have taken AUTO 109
Repeat: max. 4.5 units
Designed for students with basic knowledge of the Ford EEC-TV system. Hands-on practice in retrieving and diagnosing EEC-V and EEC-V systems. Learn how and why of the federal mandated OBD-II differs from OBD-I. The advantages of OBD-II. CSU

AUTO 110. Diesel Engines (8)
Lec-5, lab-10, field trips
Prereq.: AUTO 100, 102
Operational systems in a diesel engine and introduction to the special tools and equipment used in the maintenance; preparation to take the A.S.E. National License Test. CSU

AUTO 111. Auto Electronics VI - G.M. Computers 1.5)
Lec-2, lab-4, field trips (8 wks)
Prereq.: AUTO 107
Diagnosis and repair of General Motors automotive computers and related systems, General Motors including the identification and analysis of problems, trouble shooting practices and maintenance of unit; the procedures for diagnosis of computer units including removal, disassembly, repair, reassembly, and replacement of units in General Motors manufactured vehicles. CSU

AUTO 112. Clean Air Car Course (Basic) (2)
Lec-5, lab-1, field trips (8 wks)
Advis: ENGL 92 or ESL 82 or higher; MATH E or BSMA G, H or J
Repeat: max 6 units
Preparation for the Bureau of Automotive Repair Smog Check Licensing Exam. Smog check rules, regulations and updates; emission systems; test and repair procedures; TAS machine operation; and test (exam) preparation. CSU

AUTO 113. Gasoline Engines Diagnosis and Repair (3)
Lec-2, lab-4
Repeat: max. 6 units
Theory, operation and diagnosis of the four-stroke cycle internal combustion engine, and how different designs and configurations effect power, economy, drivability and smog. Systems covered: cooling, lubrication, fuel, intake, exhaust, and ignition. CSU

AUTO 120. Automotive Welding (6)
Lec-5, lab-10
CR/NC only
Prereq.: ENGL 90 or ESL 72; MATH 840
Development of proficiency in automotive repair welding and experiencing welding and cutting techniques used in the repair. Includes welding and cutting techniques, equipment, and current safety/environmental trade practice. CSU

AUTO 121. Metal Repair and Welding (8)
Lec-5, lab-10, field trips
Principles of modern automobile construction; basic techniques of electric-arc and oxyacetylene welding as applied to automotive metal repair; principles of expansion and contraction applied to reclamation of damaged structures; preparation for A.S.E. Certification. CSU

AUTO 122. Panels, Glass, Trim and Hardware (8)
Lec-5, lab-10, field trips
Procedures related to the assembly and disassembly of automotive body and fender components. Removal and replacement of side panels, bumpers, windshields and windows, broken braces and inner structural members, and trim moldings. CSU
AUTO 123. Frame Straightening and Aligning (8)
Lec-5, lab-10, field trips
Techniques of straightening and aligning automotive frames and structural members using alignment rack and testing equipment. Application of hand tools and equipment to align frames, torsion bars, axles, wheels and steering mechanisms. Preparation for A.S.E. Certification. CSU

AUTO 124. Surface Preparation and Painting (5)
Lec-5, lab-10, field trips
Coreq.: AUTO 124A
Advanced phases of auto body paint/finish repair techniques including preparing metal and plastic surfaces, masking, and painting/finishing. Modern automotive coatings and trim service. Current safety and environmental trade practices. Pending NATEF approval. CSU

AUTO 125. Body Repair and Refinishing (3)
Lec-2, lab-4, field trips
Advis: Eligible for ENGL 94 or ESL 82 and MATH 840
Repair and refinishing of automotive bodies and fenders including recommended practices for repair of body parts, frame straightening and alignment, basic soldering, plastic filler materials and techniques, gas and arc welding, mig welding, preparation of surfaces, painting, finishing and detailing, estimating of labor, materials, parts and supplies for auto body repair. CSU

AUTO 126. Principles of Auto Body Fender Repair and Welding (3)
Lec-2, lab-4, field trips
Repeat: max. 9 units
Metal finishing techniques including mig and oxyacetylene welding, application of plastic fillers and body solder, principles of metal working unibody and frame repair alignment. Preparation for entry level employment in auto repair. CSU

AUTO 127. Preparation and Refinishing (3)
Lec-2, lab-4, field trips
Repeat: max. 9 units
Procedures for removing old finishes, moldings, trim. Preparation of surfaces, sanding, filling scratches, using putty and primers, techniques of mixing paints, applying paints, use of spray and polishing equipment. CSU

AUTO 128. Frame Straightening and Alignment (3)
Lec-2, lab-4, field trips
Repeat: max. 9 units
Techniques and procedures applied to straightening and aligning automotive frames and structural members using alignment rack and equipment. Application of tools and measuring devices to align frames and unibodies. CSU

AUTO 129. Vehicle Accessories, Trim and Hardware (3)
Lec-2, lab-4, field trips
Repeat: max. 9 units
Procedures related to assembly and disassembly of automotive body and fender components. Removal and replacement of side panels, windshields, braces, inner structural members, trim, upholstery, moldings and bumper assemblies. CSU

AUTO 131. Electrical Vehicle Conversion (3)
Lec-2, lab-4, field trips
Repeat: max. 9 units
The history and artistry of early electric vehicles and the impact of American culture and economics on the development of alternative fueled vehicles and vice-versa. How to analyze and evaluate fossil fueled vehicles as candidates for electric power conversion. Hands-on application of basic electrical systems design and diagnosis, electric vehicle control, power train systems theory operation and installation, and vehicle body modification and fabrication of parts. CSU

AUTO 132. Special Paint Applications (3)
Lec-2, lab-4, field trips
Repeat: max. 9 units

AUTO 133. Work Experience (4)
Lec-1, work-240
Prereq.: Concurrent enrollment in at least 7 semester units including this course. Written consent of the instructor
Advis: Completion of at least 8 semester units of automotive program courses with final grades of C or higher.
Repeat: max. 12 units
Supervised employment involving automotive related duties. CSU

AUTO 134. Work Experience - Smog Intern Paid (4)
Lec-1, work-300
Prereq.: AUTO 103 or 112 and 133; Concurrent enrollment in at least 7 semester units including this course. Written consent of the AUTO Mechanics Instructor.
Advis: Completion of at least 8 additional semester units of Automotive program courses with final grades of C or higher.
Repeat: max. 12 units
Supervised employment involving automotive related duties as related to Smog Repairs. Student must provide tune-up hand tools (i.e., spark rockets, ratchets, timing light). CSU

AUTO 135. Domestic Electronic Engine Controls OBD-I-II (3)
Lec-3, lab-3, field trips
Repeat: max. 9 units
An in depth study into Domestic Automotive Engine Computer Control OBD-I-II Systems. Exploration of the operation, diagnosis, and repair of Domestic Automotive Electronic Engine Computer Control Systems. General diagnosis will be emphasized using multimeters, scan tools, manuals, and lab scopes. CSU

AUTO 136. Engine Performance (1.5)
Lec-3, lab-3 (8 wks), field trips
Repeat: max. 4.5 units
An in depth study of the engine subsystems responsible for good engine performance, clean air, and fuel economy. Basic study of ignition, fuel, emission systems, and driveability diagnostics. General diagnosis will be emphasized using multimeters, scan tools, manuals, and lab scopes. CSU
AUTO 137. Gaseous Alternative Fuel Systems (3)
Lec-3, lab-1, field trips
Repeat: max. 9 units
A course to familiarize students with the following as related to gaseous fuels: 1) purpose of alternative fuels, 2) alternative fuels legislation, 3) refueling procedures, 4) fuel system inspection, 5) system components nomenclature, 6) system adjustment, 7) component replacement, 8) drivability and diagnosis. CSU

AUTO 138. Automatic Transmissions and Transaxles (3)
Lec-2, lab-4, field trips
Repeat: max. 9 units
An in-depth study of automatic transmissions and transaxles. Basic study of electronic controls. General diagnosing using manuals, multimeters, flow charts and scan tools, along with pressure gauges. CSU

LABR 96B. Labor Relations in the Automotive Industry (3)
Lec-3, field trips
CR/NC avail.
A study of labor relations in the automotive mechanic and body repair industries, including its history, present status and current issues. Patterns of ownership, workplace structures, the changing work force, management practices, unionization, workers' rights and current concerns. A thorough analysis of automotive industry labor relations. CSU

NONCREDIT COURSES:

TIAU 9510. Advanced Suspension, Alignment and Brakes (108 hrs)
Development of advanced skills in suspension alignment and brake systems. Emphasis is on theory and actual shop experience.

TIAU 9513. Basic Auto Maintenance (54 hrs)
Emphasis is on the proper operation, maintenance, and interdependence of the various units of the automobile. Includes the design and construction of the engine and the various systems of the automobile.

TIAU 9530. Air Conditioning, Automotive (48 hrs)
Advise: TIAU 9512
Repair of automotive air conditioning systems including identifying problems, “trouble-shooting” practices, leak detection and maintenance procedures. Includes diagnosis, removal, repair, reassembly of components and replacement of units for automotive air conditioning systems.

TIAU 9532. Lamp License Preparation, Automotive (48 hrs)
Advise: TIAU 9512
Preparation for the State of California Automotive Lamp Adjusting License. Includes practices and procedures for the installation and adjustment of motor vehicle lamp systems and study of California laws and regulations related to the installation and adjustment of motor vehicle lamp systems.

TIAU 9533. Brake License Preparation, Automotive (48 hrs)
Advise: TIAU 9515
Preparation for the State of California Automotive Brake Adjusting License. Repair and maintenance of automotive brake systems consistent with California regulations pertaining to brake adjusting and station operation, and with industrial standards. Completion of certificates of compliance under California regulations.

TIAU 9535. Smog Control For Levels I & II (16 hrs)
Advise: TIAU 9512, 9511, 9512, and 9515
Study of and practice in automotive smog systems in reference to California Requirements. Level I includes use of smog check inspection & repair manuals, emission control system applications guide, automotive emission control repair manual and completion of the California Inspection worksheet. Level II includes use of a BAR approved TAS analyzer for vehicle inspection, performance of functional test procedures and performance of complete inspections on a minimum of five vehicles.

TIAU 9538. Automotive Electronics VII - Computers/Chrysler (48 hrs)
Advise: TIAU 9512 and 9539
Diagnosis and repair of automotive computers and related systems in Chrysler manufactured vehicles. Instruction includes the identification and analysis of problems, trouble shooting practices and maintenance of units. Also covered are the procedures for diagnosis of computer units, removal, disassembly, repair, reassembly and replacement of units in Chrysler manufactured vehicles.

TIAU 9539. Automotive Electronics IV - Introduction to Computers (48 hrs)
Advise: ABE 2074; TIAU 9523 and 9512
Concepts, principles and practices for automotive computers and control systems including demonstrated use of testing meters and circuit testing devices. Students will demonstrate concepts and practices for diagnosis and testing. Instruction includes reasons for computer controls, solid-state ignition systems, how computers work, twelve (12) computer functions in automobiles and input and output devices used in automobiles.

TIAU 9541. Emission Control and Computer Systems (108 hrs)
Advise: TIAU 9517, 9536 and 9539
Diagnosis and repair of automotive emission control and computer systems

Biological Sciences
Announcement of Curricula

Biotechnology Certificate Program
In addition to their regular course offerings (listed below), the Biology and Chemistry Departments jointly offer a certificate in Biotechnology. This program offers qualified students training as laboratory technicians in the rapidly expanding job market of the biotechnology industry. The curriculum is designed to
give a strong chemistry and molecular biology foundation for
entry level employment in the areas of manufacturing, quality
control, quality assurance, and research and development.

The program combines two years of study at City College of
San Francisco with high school preparatory courses (or City
College equivalents) to give students laboratory, computer, and
communication skills identified by industry scientists as
necessary for employment.

Admission. Completion of the following high school courses
or their equivalents is required to enter the program:

1. one year of high school biology with laboratory (or BIO 9),
2. one year of high school physics (college preparatory or con-
ceptual) with laboratory, or Principles of Technology, or
PHYC 10 and PHYC 10L,
3. one year of high school chemistry (college preparatory or con-
ceptual) with laboratory or CHEM 30 and CHEM 31, or
CHEM 40,
4. one year of high school algebra or MATH 840.

The following are strongly recommended:
• one semester of high school computer science or COMP 9252
• one year of high school geometry or MATH 850 or MATH 855,
• one year of high school intermediate algebra or MATH 860.

Courses Required for the Biotechnology Certificate

First Semester (Fall)

<table>
<thead>
<tr>
<th>Course</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIO 11 Intro to the Science of Living Organisms</td>
<td>4</td>
</tr>
<tr>
<td>CHEM 50 Chemistry for Biotechnology</td>
<td>3</td>
</tr>
<tr>
<td>CHEM 51 Laboratory for Biotechnology</td>
<td>2</td>
</tr>
<tr>
<td>SPCH 12 Fundamentals of Oral Communication</td>
<td>3</td>
</tr>
<tr>
<td>or ESL 79 Adv Speaking and Pronunciation</td>
<td>3</td>
</tr>
<tr>
<td>Additional graduation requirements (for AS)</td>
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Second Semester (Spring)

<table>
<thead>
<tr>
<th>Course</th>
<th>Units</th>
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<tbody>
<tr>
<td>CHEM 52 Chemistry for Biotechnology II</td>
<td>3</td>
</tr>
<tr>
<td>CHEM 53 Laboratory for Biotechnology</td>
<td>2</td>
</tr>
<tr>
<td>ENGL 94 Inter Exposi Read &amp; Writ Tech</td>
<td>3</td>
</tr>
<tr>
<td>or ESL 82 Advanced Composition</td>
<td>3</td>
</tr>
<tr>
<td>BIO 55 or CHEM 55 Ethical Issues in Science</td>
<td>3</td>
</tr>
<tr>
<td>Additional graduation requirements (for AS)</td>
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Third Semester (Fall)

<table>
<thead>
<tr>
<th>Course</th>
<th>Units</th>
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<tbody>
<tr>
<td>BIO 65 Recombinant DNA Biotechnology</td>
<td>5</td>
</tr>
<tr>
<td>CHEM 107 Computers in Chemistry</td>
<td>2</td>
</tr>
<tr>
<td>Recommended technical elective: BIO 81-84</td>
<td>1-4</td>
</tr>
<tr>
<td>or CHEM 81-84 Instrumentation</td>
<td></td>
</tr>
<tr>
<td>Additional graduation requirements (for AS)</td>
<td></td>
</tr>
</tbody>
</table>

Fourth Semester (Spring)

BIO 60 Molecular and Cell Biotechnology ............. 5
Recommended technical elective ... BIO 91, 92 or 93
Biology Work Experience .................................. 1-3
Additional graduation requirements (for AS)
*BIO 1A and BIO 1B may be substituted for BIO 11. Students
should be aware that course choices in biology will affect
transfer to four-year institutions for those seeking a degree in
biology.
†CHEM 101A may be substituted for CHEM 50. Students
should be aware that course choices in chemistry will affect
transfer to four-year institutions for those seeking a degree in
biology or chemistry.
Call the Biotechnology Hotline at (415) 239-3627 for more in-
formation.

**Biological Sciences
Announcements of Courses**

**CREDIT, DEGREE APPLICABLE COURSES:**

**Anatomy**

ANAT 14. Introduction to Human Anatomy and
Physiology (4)

Lec-3, lab-3
Not open to students who have completed ANAT 25 or PHYS 1
or PHYS 12 with a C or higher
An integrated course covering the fundamental principles of
human anatomy and physiology. CSU/UC

ANAT 25. General Human Anatomy (4)

Lec-3, lab-3
CR/NC avail.
Study of the gross and microscopic structure of the human
body. CSU/UC

ANAT 26. Sectional Anatomy (1)

Lab-3
Prereq.: Completion/concurrent enrollment in ANAT 25
Study of the gross structure of the human body according to
region as visualized in cross sections and sagittal sections. CSU

**Anthropology**

ANTH 1. Biological Anthropology (3)

Lec-3
CR/NC avail.
The biological nature of humans and the changes that have
occurred from prehistoric times to the present. The place of
humans in nature, vertebrate and primate evolution, fossil
evidence for human antiquity, individual and population
genetics, mechanisms of evolution, and human variation. CSU/
UC/CAN
**Biology**

**BIO 1A-1B. General Biology (5-5)**

**1A:** Lec-3, conf-1, lab-3
Prereq.: 1 Yr. HS Biology or BIO 11 and completion/concurrent enrollment in CHEM 101A
Classical and population genetics; evolution; form, function and physiology of prokaryotes, plants, fungi, and animals. CSU/UC/CAN

**1B:** Lec-3, conf-1, lab-3
Prereq.: 1 Yr. HS Biology or BIO 11 and completion/concurrent enrollment in CHEM 101A
Biological chemistry; cell structure and function; molecular genetics: DNA replication, transcription, translation. Structure, function and diversity of ecosystems. CSU/UC/CAN

**BIO 9. Human Biology (4)**

Lec-3, lab-3
An introduction to general biological principles through the study of the structure and functions of the human body and directly related organisms. CSU

**BIO 11. Introduction to the Science of Living Organisms (4)**

Lec-3, lab-3, field trips CR/NC avail.
*Not open to students who have taken BIO 1A or 1B*
Introductory level lecture and laboratory course covering the major fundamental concepts required for understanding biological processes, a survey of living organisms, organismic structure and function, and an introduction to the principles of biotechnology. CSU/UC

**BIO 15. The Biology of HIV (3)**

Lec-3, field trips CR/NC avail.
Introductory survey of the biology of human immunodeficiency virus (HIV) and AIDS. The life cycle of HIV and retroviruses; HIV transmission, epidemiology, immunology, and pathogenesis; and HIV prevention and treatment. CSU

**BIO 16. Studying the Biological Sciences (1)**

Lec-2, field trips CR/NC only
An in-depth orientation to the academic life and culture of transfer biology majors. Students will acquire concepts, skills and information necessary for making a successful transition to upper division biology programs at four-year institutions, and for choosing professional careers in science. CSU/UC

**BIO 20. Introduction to Ecology (3)**

Lec-3, field trips
*Not open to students who have completed BIO 20A.*
Ecological principles and methods. Introduction to population, community, and ecosystem ecology. Analysis of the interrelationships between organisms and their environments. Investigation of terrestrial, freshwater, and marine environments. CSU/UC

**BIO 21. Natural History of California (2) Weekend**

Lec-1, lab-3, field trips CR/NC avail.
A series of field trips to specific California ecosystems. Emphasis on the general concepts of ecosystem analysis and the interaction of climate, physiography, and biotic factors in shaping varied habitats within California. CSU

**BIO 22. Natural History of the Sierra Nevada (1)**

Lec-1, lab-3, field trip CR/NC avail.
An examination of the geology, biology, and human history of the Sierra Nevada from Lake Tahoe basin to high altitude. A study of the interrelationships of plants, animals, and humans at high elevation. CSU

**BIO 23. Ecology of Mendocino (1)**

Lec-1, lab-3, field trip CR/NC avail.
*Not open to students who have completed BIO 81, Selected Topic: Ecology of Mendocino.*
An examination of the geology, biology and human history of Mendocino County. A study of the interrelationships of plants, animals and humans to the forests and coastal regions of Northern California. CSU

**BIO 24. Ecology of Point Reyes (1)**

Lec-1, lab-3, field trip CR/NC avail.
*Not open to students who have completed BIO 81, Selected Topic: Ecology of Point Reyes.*
An examination of the geology, biology and human history of Point Reyes National Seashore. A study of the interrelationships of plants, animals and humans to the forests, grasslands and coastal regions of the park. CSU

**BIO 25. Ecology of San Francisco Bay (1)**

Lec-1, lab-3, field trip CR/NC avail.
An examination of the geology, biology, chemistry, and human history of San Francisco Bay. An analysis of the interrelationships of plants, animals, and humans to the diverse ecosystems which comprise the San Francisco Bay. Investigation of the terrestrial, freshwater and marine environments. CSU

**BIO 30. Ecology and the Human Environment (3)**

Lec-3, field trips CR/NC avail.
*Not open to students who have completed BIO 20B.*
Examination of the environment with emphasis on the causes of human-made pollution, health effects, and possible solutions. CSU/UC

**BIO 35. Biological Field Monitoring (3)**

Lec-3 CR/NC avail.
An overview of the theories and practices of field monitoring, as well as its practical applications to ecological research. CSU

**BIO 40. Natural History of Plants and Animals (3)**

Lec-3, lab-1 CR/NC avail.
Behavior, habitats, life histories, and identification of the common plants and animals of California: emphasis on the plant and animals of the Bay Area and Northern California. CSU/UC

**BIO 50. Briefing in Genetic Engineering: Principles, Processes, Products, and Prospects (1)**

Lec-1 CR/NC avail.
Introduction to some of the underlying principles of genetics, enzyme function, chemical processes and laboratory procedures involved in recombinant DNA technology. Examples of new products, processes, and prospects for the future in industry and medicine; implications for society. CSU
BIO 55. Ethical Issues in Science (3)
Lec-3, lab-3
Principles of ethics and their applications in scientific work. Issues to be considered include professional ethical standards, relationship of science to public policy, role of government regulations and rationale for scientific research. Case studies will be drawn from areas of current concern in biotechnology, genetic engineering, and other scientific fields. CSU
BIO 55 = CHEM 55

BIO 60. Molecular and Cell Biotechnology (5)
Lec-3, lab-6 CR/NC avail.
Advis: BIO 11 and CHEM 50, 51, 52, 53
A thorough introduction to the principles and techniques of molecular and cell biology. This is a required course for the Biotechnology Technician Preparation curriculum. CSU

BIO 65. Recombinant DNA Biotechnology (5)
Lec-3, lab-6, field trips CR/NC avail.
Advis: BIO 11 and CHEM 50, 51, 52, 53
An in-depth coverage of recombinant DNA/genetic engineering concepts and principles with a strong emphasis on the laboratory procedures involved in DNA manipulation. CSU

BIO 71-72-73-74. Selected Topics in Biology (1-4)
Lec-1, 2, 3; lab-3; field trips CR/NC avail.
Repeat: if no subject repeat
Investigation in depth of selected topics in biology: considering current issues and innovations; expanding subjects covered briefly in introductory courses; or exploring topics not studied in other classes in biology. CSU

BIO 81-82-83-84. Selected Topics in Biology (1-4)
Lec-1, 2, 3; lab-3; field trips CR/NC avail.
Repeat: if no subject repeat
Investigation in depth of selected topics in biology: considering current issues and innovations; expanding subjects covered briefly in introductory courses; or exploring topics not studied in other classes in biology. CSU

BIO 90. Biology Laboratory (0)
Lab-var
An open laboratory in which students may complete an assignment. CSU

BIO 91-92-93. Biology Work Experience (1-2-3)
Work-5,10,15 CR/NC avail.
Coreq.: Biology Course
On-campus work consists of instruction and experience in the preparation, care, and maintenance of equipment, materials, training aids, and specimens used in the Biology Department. CSU

Botany
BOT 10. Plant Biology (4) sp
Lec-3, lab-3, field trips
Emphasis on the structure, metabolism, life history, and evolutionary relationships of the major groups of plants. Lectures on plant ecology, world vegetation types, and commercial uses of plants. CSU/UC

Genetics
GEN 10. Heredity and Evolution (3) fa
Lec-3 CR/NC avail.
A general survey of the basic principles of organic evolution. Classical and population genetics, molecular genetics, chromosomal aberrations, variation, natural selection, adaptive radiation, theories of the origin of life. CSU/UC

GEN 11. Genetics Laboratory (1)
Lab-3
The laboratory will consist of experiments with primarily Drosophila and microorganisms for studying both principles of Mendelian and molecular genetics. CSU/UC

GEN 15. Human Genetics (3)
Lec-3 CR/NC avail.
Basic principles of human genetics. Genetics in development, health and behavior. Family and population genetics. Effects of mutation, assortive mating, and reproductive rates upon gene distribution. Problems anticipated from projected advances in "human engineering." CSU/UC

Microbiology
M B 12. Introduction to Microbiology (4)
Lec-3, lab-4, field trips CR/NC avail.
Prereq.: CHEM 32
An introduction to microbiology, treating the fundamentals of form and function of microorganisms such as bacteria, fungi, protozoa, and viruses. Emphasis on the role of microorganisms in the transmission of infectious disease and in the development of the immune response. CSU/UC

M B 51. Sanitation Principles and Practices (1)
Lec-1 CR/NC avail.
Principles of buying, storing, preparing, and serving food to insure the safety of food for human consumption; the importance and practice of sanitary habits by food service personnel; causes of food poisoning and food spoilage; the principles and practices of public health and food service managerial procedures to insure sanitary food for the public; public health laws. CSU

Nutrition
NUTR 12. Introduction to Nutrition (3)
Lec-3 CR/NC avail.
The nature and physiological roles of the dietary nutrients, their food sources and requirements. Relation of diet to health and disease, evaluation of dietary adequacy. Examination of current issues and controversies in nutrition. CSU/UC/CAN

NUTR 51. Elementary Nutrition (2)
Lec-2 CR/NC avail.
A nontechnical presentation dealing with foods, the relationship of food to the human body, and a plan for healthful eating. CSU
Physiology
PHYS 1. Introductory Human Physiology (5)
Lec-3, lab-6
Advis: HS chemistry or 3 units of college chemistry
The physiology of cells, muscles, the nervous system, sensation, digestion, circulation, respiration, metabolism, excretion, endocrinology, and reproduction. CSU/UC/CAN

PHYS 12. Introduction to Human Physiology (4)
Lec-3, lab-3
Not open to students who have completed PHYS 1
Fundamental principles of human physiology. CSU/UC

Zoology
ZOOL 10. Animal Biology (4)
Lec-3, lab-3, field trips
ZOOL 10 is designed for students not specializing in biology, zoology, botany, or the medical sciences and is not open for credit to students who have taken BIO 1A, 1B, 11, or PHYS 1
A survey of the biology, ecology and evolution of animals, including both invertebrates and vertebrates. CSU/UC

Broadcast Electronic Media Arts

General Information
The Broadcast Electronic Media Arts department prepares students for university transfer and provides lifelong learners and degree holders the opportunity to upgrade workplace skills and prepare for career transition. Graduates either transfer to a university or seek employment in radio, television, video production, cable, broadcast news, advertising, public relations, sound reinforcement, music recording, interactive media, corporate, and industrial media production.

Program Emphasis. The department offers instruction in the design and creation of content for the electronic media with focus on writing, storytelling, teamwork, leadership, production craft skills, and emerging technologies. Media literacy is emphasized throughout the curriculum.

Admission. Enrollment is open to all interested students. Please note that some classes have prerequisites, corequisites, and advisories.

Work Experience and Internships. Students enrolled in Broadcast Electronic Media Arts classes refine skills in an in-house internship program which provides the College with media services, video production services, programming for education access television, and support for the college public relations office. After basic thinking and production craft skills are mastered, students are supported in internships at industry sites such as radio stations, television stations, video production houses, sound recording studios, and emerging media companies.

Transfer Information. All Broadcast Electronic Media Arts courses are credit and degree applicable, and selected courses transfer to the CSU and/or UC systems. Students are encouraged to work with a college counselor and a department program advisor to establish and education plan during the first semester of study. For additional information consult the “Transfer Information” section of this catalog.

Facilities and Equipment. Broadcast Electronic Media Arts facilities are undergoing extensive upgrades which include installation of a digital video editing lab, digital audio production lab, hybrid sound recording studio, teleproduction studio, and a digital cable FM radio station. San Francisco’s Educational Access Television Channel 27 cable casts citywide from the department’s facilities.

Additional Information. Consult the Department Chair for more information at (415) 239-3527.

Certificate Curricula
The Broadcast Electronic Media Arts certificate program is RECOMMENDED for those seeking to acquire entry-level skills, upgrade and retool skills, and lifelong learners preparing for career transition. The department offers four certificate programs: 1) Broadcast Journalism, 2) Digital Radio, 3) Sound Design and Production, and 4) Video Production and Editing. Each course sequence is designed to provide students with an opportunity to develop and refine essential workforce skills for entry-level employment in the electronic media industry.

Requirements for the Certificate of Completion.
Students may obtain the Certificate of Completion in Broadcast Electronic Media Arts by completing each course in their program of study with a final grade of C or higher.

Broadcast Journalism
This certificate provides students with research, writing, reporting, and packaging skills for entry-level employment in radio, television, cable, syndication, Internet, and satellite news organizations. The Broadcast Journalism certificate is recommended for degree holders seeking to upgrade skills for career transition.

First Semester
Course
BCST 100 Intro to BCST Electronic Media.................. 3
BCST 110 Writing for BCST Electronic Media.............. 3
BCST 115 Announcing and Performance.................... 3
BCST 109 Broadcast Production Lab........................ 0

Second Semester
Course
BCST 113 Broadcast Journalism............................ 3
BCST 112 Investigative Reporting
or BCST 130 Radio News and Public Affairs.............. 3
BCST 109 Broadcast Production Lab........................ 0
BCST 165A/B Industry Internship......................... 2

Digital Radio
This certificate provides students with practical production and performance craft skills for entry-level employment in contemporary radio.

First Semester
Course
BCST 100 Intro to BCST Electronic Media.................. 3
BCST 119 Digital Media Skills.............................. 3
BCST 120 Audio Production................................ 3
BCST 109 Broadcast Production Lab........................ 0

Second Semester
Course
BCST 165A/B Industry Internship.......................... 2
BCST 109 Broadcast Production Lab........................ 0
Option #1:
BCST 110 Writing for BCST Electronic Media and BCST 130 Radio News and Public Affairs .... 6

Option #2:
BCST 115 Announcing and Performance and BCST 131 Radio Production and Perf. ......... 6

**Sound Design and Production**
This certificate combines the study of audio and sound design as used in contemporary professional settings. Students implement sound theory and techniques using the tools of the craft. Graduates are prepared for entry-level positions in radio, television, audio production facilities, sound recording studio seconds, advertisement agency production crews, sound for video, sound reinforcement, on-site music recording, and entrepreneurial sound projects.

**First Semester**
<table>
<thead>
<tr>
<th>Course</th>
<th>Units</th>
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<tbody>
<tr>
<td>BCST 119 Digital Media Skills</td>
<td>3</td>
</tr>
<tr>
<td>BCST 120 Audio Production</td>
<td>3</td>
</tr>
<tr>
<td>BCST 109 Broadcast Production Lab</td>
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**Second Semester**
<table>
<thead>
<tr>
<th>Course</th>
<th>Units</th>
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</thead>
<tbody>
<tr>
<td>BCST 124 Digital Audio Production</td>
<td>3</td>
</tr>
<tr>
<td>BCST 125 Sound Recording Studio</td>
<td>4</td>
</tr>
<tr>
<td>BCST 165A/B Industry Internship</td>
<td>2</td>
</tr>
<tr>
<td>BCST 109 Broadcast Production Lab</td>
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</tbody>
</table>

**Video Production and Editing**
This certificate provides basic video production and editing craft skills for entry-level employment in video production and editing for television, advertising, public relations, multimedia, education, music, theater, film, entrepreneurial projects and media departments of agencies, businesses, and institutions.

**First Semester**
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<tr>
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<tbody>
<tr>
<td>BCST 100 Intro to BCST Electronic Media</td>
<td>3</td>
</tr>
<tr>
<td>BCST 119 Digital Media Skills</td>
<td>3</td>
</tr>
<tr>
<td>BCST 140 Video Production</td>
<td>3</td>
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<tr>
<td>BCST 109 Broadcast Production Lab</td>
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**Second Semester**
<table>
<thead>
<tr>
<th>Course</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>BCST 110 Writing for BCST Electronic Media</td>
<td>3</td>
</tr>
<tr>
<td>BCST 143 Digital Video Editing</td>
<td>3</td>
</tr>
<tr>
<td>BCST 165A/B Industry Internship</td>
<td>2</td>
</tr>
<tr>
<td>BCST 109 Broadcast Production Lab</td>
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</tbody>
</table>

**Multimedia Image and Sound**
Multimedia Studies is a multi-discipline curriculum in the design, development, tools, and production of computer-based interactive media. Four areas of concentration include Multimedia Design and Graphics, Multimedia Image and Sound, Multimedia Performance Arts, and Multimedia Computer Programming. (See Multimedia Studies in the Interdisciplinary Studies section of this catalog for complete details.)

Multimedia Image and Sound combines instruction and practice with concepts, techniques, and technology of audio and video production for interactive digital media. This course of study prepares students for entry-level positions in multimedia image and sound production. Graduates seek employment producing CD ROM titles, world wide web pages, electronic books, and other interactive media.

**Announcement of Courses**
Students enrolled in Broadcast Electronic Media Arts lecture and laboratory courses may be required to purchase additional materials such as audio tape, videotape, headphones, floppy disks, Zip cartridges, Jazz cartridges, DAT tape, and digital multitrack hi-8 tape. Students may be charged a materials use fee.

**CREDIT, DEGREE APPLICABLE**

**BCST 100. Introduction to Broadcast Electronic Media Arts (3)**
Lec-3
*Advised: ENGL 94*
An introduction to major electronic media institutions such as radio, television, and cable. A survey of emerging technologies such as direct satellite broadcast, interactive television, webcasting, and their application to broadcast electronic media. Emphasis on organization history, political development, operation, regulation, programming, business practices, and career orientation. CSU

**BCST 101. Media Literacy (3)**
Lec-3
*Advised: SPCH 1A or 11*
Critical analysis of structure, economics, aesthetics, language, and technical aspects of radio, television, cable, and satellite programming. Methods of interpreting the visual and oral messages present in news, entertainment, and advertising. Impact of emerging technologies on program content and form. CSU

**BCST 102. New Media: Navigating the Information Age (3)**
Lec-3
Survey of new electronic media such as interactive teleconferencing and videoconferencing, direct broadcast satellite, digital radio and television, interactive television, desktop audio and video production, virtual news sets, holographic sportscasts, webcasting, computer-based broadcast news production, multimedia, digital cable, and wireless systems. Application of communication theories and research using technological, historical, social, and political perspectives. Impact of emerging communication technologies on broadcast electronic media. CSU

**BCST 103. Mass Media and Society (3)**
Lec-3
A general interest course covering the history, organization and social role of major mass communication media, such as radio, television, motion pictures, print, recording industries, multimedia, the Internet, and the World Wide Web. Basic theory of communication and communication research. Emphasis on the influence of mass media on the individual and society. CSU/UC
BCST 104. Minorities and the Mass Media (3)
Lec-3, lab-0
Advising: ENGL 94
A historical study of the image of African Americans, Asians, Hispanics, and other minorities as projected through the mass media of print, film, radio, television, and recorded music. Ways in which minorities have responded to these images through general and ethnic media outlets. CSU/UC

BCST 105. Women and Mass Media (3)
Lec-3, field trips
An exploration of the mass mediated messages-radio, television, film, print, and the Internet-about women. A critique of roles given to women. An update on opportunities for women in each of the mainstream and alternative media industries. CSU

BCST 106. Queer TV: Television and Lesbian and Gay Identity (3)
Lec-3
CR/NC avail.
Examination of how gays, lesbians, bisexuals, and transgendered people are represented in and by the mainstream electronic media with strong emphasis on television. CSU

BCST 109. Broadcast Production Laboratory (0)
Lab-8
Coreq.: Enrollment in at least one Broadcast Lab class
Supervised radio, audio, video, television, news, and sound recording production facilities and equipment for students to complete broadcast production assignments given in broadcast electronic media arts production classes. CSU

BCST 110. Writing for Broadcast Electronic Media (3)
Lec-3
Techniques of non-dramatic writing for electronic media including television, radio, cable, satellite, and webcast. Critique of professional and student scripts including commercials, news, public service announcements, infomercials, news services, and information providers. CSU

BCST 112. Investigative Reporting for Broadcast Electronic Media (3)
Lec-3
Prereq.: BCST 110
Investigative techniques used in radio television, cable, and webcast news. Research methods, interviewing methods, reporting techniques, story development techniques, story analysis, and writing methods for electronic media news. Introduction to digital media news gathering skills and news equipment, World Wide Web news gathering, and electronic news reporting by world media services and organizations. CSU

BCST 113. Broadcast Journalism (3)
Lec-3, lab-3
Prereq.: BCST 110 and 115
Repeat: max. 6 units
Writing, announcing, producing, packaging, and evaluating radio, television, cable, and satellite news. An examination of news formats, news judgment, social impact, and broadcast news ethics. Impact of emerging technologies on broadcast news. CSU

BCST 115. Announcing and Performance (3)
Lec-3
Advising: BCST 120
Introduction to interpretation of copy, pronunciation, and announcer's duties for radio, television, cable, and webcast. Practical experience announcing commercials, news, public service, and other kinds of programs. Performance skills are developed through regular use of audio and video facilities and equipment. CSU

BCST 117. Sports Announcing and Production (3)
Lec-3, lab-3
Repeat: max. 6 units
Prereq.: BCST 115 and 131 or 140 or equivalent skills
All aspects of sports announcing and production for radio, television, cable, satellite, and the Internet. An exploration of sports coverage history, issues, technology, production, play-by-play announcing, color announcing, and career opportunities. Students will announce and produce live and live-on-tape broadcasts of City College sports events. CSU

BCST 119. Digital Media Skills (3)
Lec-2, conf-1, lab-1
Repeat: max. 6 units
An overview of computer operations, industry standard software and other equipment common to digital radio, video, audio, and film production and editing. Introduction to the issues and impact of new technology in the audio, radio, video, film industries. An examination of bandwidth, compression, cross-platform movement of audio, video, radio, and film media, media storage, and manipulation of media in the digital realm. CSU

BCST 120. Audio Production (3)
Lec-3, lab-4
Theory and operation of audio production facilities and equipment. Theoretical and aesthetic aspects of sound, acoustics, audio signal flow, sound recording, sound mixing, sound for video, and sound reinforcement. Proper use of microphones, recorders, mixing boards, and other common audio production equipment. Introduction to digital sound design. CSU

BCST 124. Digital Audio Production (3)
Lec-3, lab-3
Prereq.: BCST 120 and 119, or IDST 120 or CIS 100M or equivalent skills
Repeat: max. 6 units
Introduction to the digital audio production process. Basic skills of the entertainment/communications/multimedia industries including techniques and equipment currently used in digital audio production. CSU
BCST 125. Sound Recording Studio (4)
Lec-3, lab-6
Prereq.: BCST 120
Advised: BCST 124
Repeat: max. 8 units
Advanced multitrack digital and analog production techniques such as recording, editing, mixdown and mastering, microphone placement for musical ensembles, instruments, vocals, and voice, multi-output board signal flow, music mixing theory, sampling, equalization, limiting, compression, reverberation systems and recording techniques. Production of various types of multi-track studio packages such as demonstration tapes and compact discs, audio tracks for music videos, interview programs, commercial spots, documentaries, and drama. CSU

BCST 127. Advanced Sound Recording (3)
Lec-3, lab-3, field trip
Repeat: max. 6 units
A theory and project-intensive course examining and implementing those skills required for the production of advanced digital multitrack audio presentations. Students will develop the skills necessary to produce complex digital audio projects for music production, used as sound-for-video and film, and used for audio sweetening. An examination of post-production digital recording and mixing techniques appropriate for sound reinforcement, sound design, and mastering on compact disc. CSU

BCST 130. Radio News and Public Affairs (3)
Lec-2, lab-5
Prereq.: completion/concurrent enrollment in BCST 110
Advised: BCST 100
Repeat: max. 6 units
Practical experience in researching and writing on-air copy for news, public affairs, and promotions. Introduction to specific digital technology created for radio. Composition and development of digitized audio news packages. Web search of story content; developing news beat assignments and sourcing interviews for radio stories. Comprehension of when, why, and how music and sound would enhance or detract from a news package. Students will write all aired content for KCSF 90.9 FM, City College of San Francisco's student managed and student staffed radio station. CSU

BCST 131. Radio Production and Performance (3)
Lec-2, lab-5, field trips
Prereq.: BCST 120
Advised: BCST 115
Repeat: max. 6 units
Practical experience in radio production work and on-air announcing. Students serve as announcers, news reporters, on-air personalities, and air board operators for City College of San Francisco's closed circuit AM and cable FM radio station KCSF. CSU

BCST 132. Radio Management Skills (4)
Lec-2, lab-8
Advised: BCST 130 and 131
Repeat: max. 8 units
Practical experience managing individuals and small groups within a non-commercial and commercial radio station. A laboratory experience for understanding the dynamics of motivating people to perform creatively and skillfully within the skill sets required of a radio management team. Performance of key tasks which operate a digital radio system; supervising the programming and scheduling of radio station formats. CSU

BCST 140. Video Production (3)
Lec-2, lab-4
Theory and operation of video production equipment and facilities. Video production planning and organization, concept development, program design, project documentation, and production management. Production of studio-based video programming for Cable Television Channel 27 and the district's Media Services video production unit. CSU

BCST 142. Television Studio Operations (3)
Lec-2, lab-4
A basic introduction to video production facilities, equipment, and operations for advanced students in advertising, architecture, design and illustration, electronic engineering, film production, journalism, multimedia, graphic communications, and theatre arts. CSU

BCST 143. Digital Video Editing (3)
Lec-3, lab-3
Prereq.: BCST 140 or FILM 24, plus BCST 119, IDST 120 or CIS 100, or demonstration of equivalent skills
Repeat: max. 6 units
Digital video editing for video and film projects using industry standard AVID Xpress and Media Composer software on a Macintosh platform. Organizing the video edit, routing a networked video signal, digitizing video signal, creating the EDL, editing theory, editing principles, editing aesthetics, titling and 2D/3D effects, and output of final product from network to videotape. Students complete several short video editing projects. CSU

BCST 144. Desktop Video/Film (3)
Lec-3, lab-3
Prereq.: BCST 140 or FILM 24, plus BCST 119, IDST 120 or CIS 100, or demonstration of equivalent skills
An introduction to desktop editing skills for video, film, and multimedia projects using Final Cut Pro, and other software on a Macintosh platform. CSU

BCST 145. Advanced Video Production (4)
Lec-3, lab-6
Prereq.: BCST 140
Repeat: max. 8 units
Technical and aesthetic elements of electronic video field production. Concept development, pre-production, production, and post-production. An emphasis on videographing and editing video packages using the following systems: off-line, SMPlE time-code on-line, and non-linear computer-based editing workstation. Creation of video packages for Education Access Television Channel 27 and for patrons of the College's Media Services instructional video production unit. CSU
BCST 146. Digital Video Effects (3)
Lec-3, lab-3
Prereq.: BCST 143
Repeat: max. 6 units
A survey of video and television production effects using studio, field, and post-production equipment. Emphasis on use of Adobe AfterEffects, Boris 3-D, AVID MCXPRESS, Adobe Premiere, and others. Focus is on practical instruction in a video studio and a digital production environment. CSU

BCST 147. Video Post-Production Editing (3)
Lec-3, lab-6
Repeat: max. 6 units
Advanced, computer-based post production editing using EDL-run linear and non-linear editing systems. Emphasis on A-B roll editing, edit list management, digital video effects, integration of graphics and keys, and video layering. Use of systems such as Avid and Media 100 to edit your own pre-shot video or film to create programs for air, theatrical, or multimedia use. CSU

BCST 150. Special Projects (2)
Conf-1, lab-2, work-3, field trips
Repeat: max. 6 units
Work on electronic media communications project acceptable to both the student and the instructor. Only a project having significant value in the field of broadcast electronic media arts will be approved. CSU

BCST 155-156-157 Selected Topics in BCST Electronic Media Arts (1-2-3)
Lec-1, 2, 3
Repeat: if no subject repeat
CR/NC avail.
Selected topics in Broadcast Electronic Media Arts are explored through lectures, discussions, seminars, industry panels, media conferences, satellite downlinks, teleconferences, workshops, film, video, and/or television leading to a critical analysis and understanding of the topic under examination. CSU

BCST 160A-160B-160C. College Internship (2-2-2)
Lec/conf-1.5, work-8
Coreq.: Enrollment in minimum of 7 units of course work (including this course) and consent of instructor
On-campus college internship in an approved media related installation within the college such as Broadcast Media Services, Educational Access Television, KCSF Radio, and the Public Information Office. Resume writing, communication skills, and job interview techniques. CSU

BCST 165A-165B. Industry Internship (2-2)
Lec/conf-1.5, work-8
Coreq.: Enrollment in minimum of 7 units of course work (including this course) and consent of instructor
Repeat: max. 6 units
Observation and supervised off-campus experience in an approved broadcast electronic media industry installation such as a television station, a television station, a video production firm, a radio station, a music recording studio or business, a corporate media production department, or a multimedia production team. Resume writing, communication skills, and job interview techniques. CSU

LABR 96F. Labor Relations in Broadcasting (3)
Lec-3, field trips
CR/NC avail.
A study of labor relations in the broadcasting industry, including its history, present status and current issues. Patterns of ownership, workplace structures, the changing work force, management practices, unionization, workers’ rights and current concerns. A thorough analysis of broadcasting industry labor relations. CSU

Business
Announcement of Curricula

General Information
For students who desire business training leading directly to their employment, City College of San Francisco offers two-year credit courses of study in ten fields: accounting, business office information processing, finance, paralegal/legal studies, merchandising, real estate, supervisory practices, travel and tourism, and word processing.

Admission. Enrollment in the Business Program is open to all interested students. In some curricula, however, students must satisfy prerequisites before being admitted to certain courses.

Instruction in Business and General Education. Training is designed to help students acquire a high degree of technical skill, familiarize themselves with business principles and procedures, and develop the sense of responsibility essential to success. Each curriculum in the Credit Business Programs includes instruction in both a major field and related subjects such as business correspondence, speech, and business mathematics. Instruction in general education is included so that students may satisfy the College graduation requirements in this area.

Work Experience Training. Students enrolled in the Credit Business Program may obtain credit for experience in their major fields by enrolling in work experience courses. Students are supervised by both employers and instructors.

Students may offer toward graduation a maximum of six semester units of credit earned in off- or on-campus work-experience courses or in any combination of both.

Associate in Science Degree and Award of Achievement. The Business Program is designed so that students may satisfy the requirements for graduation from the College. Upon successful completion of the curriculum, students receive the Associate in Science degree. Students who satisfy these requirements and complete any of the curricula with an average final grade of C plus (2.50 grade-point average) or higher receive the Award of Achievement.

Transfer Information. Students in the Business Program who intend to transfer to other colleges or universities should consult their academic advisers and their counselors and should consult the section of this catalog entitled, "Transfer Information."