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# Merced College Catalog

## 2007-2008

3600 M Street  
Merced, CA 95348-2898  
209.384.6000



The online catalog is divided into three parts, each as a separate PDF. This is Part #3, *Course Descriptions*, which includes:

- COURSE NUMBERING
- COURSES BY DIVISION
- CURRENT COURSE DESCRIPTIONS

*Accredited by Western Association of Schools and Colleges*

This web version of the 2007-2008 Merced College Catalog is an adaptation of the official printed publication, and is published for informational purposes. Some content and references have been altered to facilitate posting to the web. Students are advised to consult the current Schedule of Classes and college counselors for supplementary information.

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# Courses by Division

## **I. AGRICULTURE DIVISION**

Agriculture  
Agriculture Business  
Animal Science  
Crop Production  
Dairy Husbandry  
Landscape Horticulture  
Mechanized Agriculture & Diesel  
Equipment Mechanics  
Plant Science  
Forestry  
Soil Science  
Fruit Production

## **II. ALLIED HEALTH DIVISION**

Allied Health  
Diagnostic Radiologic Technology  
Nursing, Registered  
Nursing, Vocational  
Sonography, Diagnostic Medical  
Sports Medicine

## **III. ARTS DIVISION**

Art  
Dance  
Drama  
Music  
Photography

## **IV. BUSINESS DIVISION**

Accounting  
Addiction Studies  
Business  
Child Development  
Computer Studies  
Corrections  
Criminal Justice  
Fire Technology  
Management  
Marketing  
Merchandising Management  
Nutrition  
Office Technology  
Paralegal Studies  
Real Estate

## **V. DEVELOPMENTAL AND EDUCATIONAL STUDIES**

College-Level Reading  
Developmental Math  
Developmental Reading  
Developmental Writing  
Education  
English as a Second Language  
Study Skills  
Tutorial

## **VI. GUIDANCE DIVISION**

Guidance

## **VII. HUMANITIES DIVISION**

Communication Studies  
English  
French  
German  
Hmong  
Honors  
Humanities  
Japanese  
Journalism  
Liberal Studies  
Philosophy  
Spanish

## **VIII. INDUSTRIAL TECHNOLOGY DIVISION**

Automotive Technology  
Drafting Technology  
Electricity/Electronics  
Industrial Technology  
Laser Electro-Optics  
Welding Technology

## **IX. LEARNING RESOURCES CENTER**

Learning Resources

## **X. LIFE, FITNESS, AND HEALTH DIVISION**

Health  
Physical Education  
Recreation

## **XI. SCIENCE, MATH AND ENGINEERING DIVISION**

Archaeology  
Astronomy  
Biology  
Botany  
Chemistry  
Engineering  
Environmental Technologies  
Geology  
Mathematics  
Natural Science  
Physical Science  
Physics  
Science  
Water/Wastewater Technology

## **XII. SOCIAL SCIENCE DIVISION**

Anthropology  
Economics  
Geography  
History  
Human Services  
Political Science  
Psychology  
Social Science  
Sociology  
Student Government

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# Course Descriptions

Courses are listed alphabetically. Each course is listed by number with the course title, the number of units, and the number of hours of lecture and laboratory instruction. Preceding each description are listed the prerequisites and/or corequisites of the course.

All courses listed in this catalog are graded courses and meet the definition of "college credit courses" as stated by Section 55002, Part VI of Title 5 of the California Code of Regulations.

It is the policy of the Merced Community College District that, unless specifically exempted by statute, every course, course section or class, the average daily attendance of which is to be reported for state aid, wherever offered and maintained by the District, shall be fully open to enrollment in and participation by any person who has been admitted to the College and who meets the prerequisites as may be established pursuant to Chapter 11, Division 2, Part VI, Title 5 of the California Administrative Code, commencing with Section 51820.

## Course Numbering

All courses offered at Merced College are considered to be lower division. No upper division credit is granted. Course numbers are assigned as follows:

**Courses numbered 1-49** are certified as transferable to the California State University system. Other four-year institutions may accept courses numbered 1-49 as transferable, but students transferring to colleges outside the CSU system should consult the catalog of that college and confer with a counselor.

**Courses numbered 50-79** and independent letters such as A, B, and C designate courses that apply only to A.A./A.S. Degrees and to certificate programs and are not normally transferable to four-year institutions.

**Courses numbered 80-89** designate intermediate developmental precollegiate basic skills courses OR certain occupational and activity credit courses. These courses do not apply to the Associate Degree or transfer programs.

**Courses numbered 90-99** designate courses that are primary developmental precollegiate basic skills credit courses that do not apply to the Associate Degree or transfer programs.

Computer and Information Literacy Competency areas that a course fulfills are noted in brackets [ ].

California State University Breadth areas are noted in parentheses ( ).

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### ACCOUNTING (Business Division)

#### ACTG-04A FINANCIAL ACCOUNTING

(CAN BUS 2)

4 units: 4 hours lecture.

Advisories: ACTG-51; ENGL-A; MATH-91.

This course provides the student with the knowledge of corporate financial statement reporting and the ability to analyze the reports of a corporation. Basic topics include analysis of transactions and preparation of financial statements related to developing an understanding of the financial condition of a corporation. This accounting course is recommended for students who have knowledge of or equivalent experience in the basics of bookkeeping. (12/06)

#### ACTG-04B MANAGERIAL ACCOUNTING

(CAN BUS 4)

4 units: 4 hours lecture.

One-way corequisite: ACTG-04A or ACTG-51. Advisory: MATH-A or MATH-B.

This course provides students with instruction in managerial accounting. Topics include job-order and process costing, cost-volume-profit relationships, the contribution approach to costing, budgeting, standard costing, capital budgeting and investment decisions, and relevant costs for decision making. (12/06)

#### ACTG-31 COMPUTERIZED ACCOUNTING

2 units: 1 hour lecture, 3 hours lab.

Prerequisite: ACTG-04A or ACTG-51. Advisories: ENGL-A; MATH-80 or MATH-83.

This course provides instruction in computer-assisted accounting. Topics include general ledger setup, accounts receivable setup, accounts payable setup, transactions and reports, financial statement analysis, depreciation, and payroll. (12/06)

#### ACTG-51 APPLIED ACCOUNTING

4 units: 4 hours lecture.

Advisories: ENGL-81; MATH-80 or MATH-83.

This course is an entry-level accounting course emphasizing a preparer approach using manual accounting methods, and comparing them to current computerized accounting. Basic course work during the first half of the semester relates to the sole proprietorship type organization. During the second half of the course the emphasis changes to cover the basics of partnership and corporate accounting. Students will become acquainted with both the theory and terminology associated with the accounting cycle and within an accounting system. Other topics in accounting may also be covered including payroll, cash, inventory, bad debts, and depreciation. (12/06)

#### ACTG-52 PAYROLL RECORDS AND ACCOUNTING

3 units: 3 hours lecture.

One-way corequisite: ACTG-04A or ACTG-51. Advisories: ENGL-A and MATH-80 or MATH-83.

This course acquaints the student with various phases of the Fair Labor Standards Act (FLSA), Social Security Act, and other laws relating to the payment of wages and salaries. Basic payroll accounting systems and procedures as well as the timekeeping methods used to record time worked are described. Computerized accounting systems and pertinent tax forms are also explored. (02/07)

#### ACTG-54 COST ACCOUNTING

3 units: 3 hours lecture.

One-way corequisite: ACTG-04A or ACTG-51. Advisories: ENGL-A; MATH-80; MATH-83.

This course provides a thorough understanding of cost concepts, cost behavior, and cost accounting techniques as applied to manufacturing and service businesses. Students will learn how to accurately determine product and service costs using various costing methods. The student will also become aware of how the cost techniques used can affect the performance of both workers and management. Managerial control through budgeting is also addressed. (12/06)

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**ACTG-56 GOVERNMENTAL AND NOT-FOR-PROFIT ACCOUNTING**

3 units: 3 hours lecture.

Prerequisite: ACTG-04A or ACTG-51. Advisories: ENGL-A; MATH-80, MATH-83.

Accounting theory and practice are applied to governmental and not-for-profit accounting. Topics include practical understanding of budgeting, accounting, and financial reporting as it applies to governmental and not-for-profit organizations. (2/07)

**ACTG-70A-ZZ SPECIAL TOPICS IN ACCOUNTING**

0.5 - 3 units: 0.5 - 3 hours lecture, 0 - 3 hour lab.

Prerequisite: ACTG-04A or ACTG-51.

This course is designed to address special topics in accounting to meet the current needs of students. It will provide accounting students with access to instruction that will assist them in acquiring the up-to-date information and skills necessary to meet their career goals in a rapidly changing business environment. (1/05)

**ADDICTION STUDIES**

(Business Division)

**ADST-41 INTRODUCTION TO ADDICTION STUDIES**

3 units: 3 hours lecture.

Advisory: ENGL-41.

This is an introductory course which provides information on myths, theory, identification of, and the functions of family and social setting in addiction and recovery. Treatment, recovery, and relapse prevention models will be presented. (5/03)

**ADST-42A SCREENING, ASSESSMENT, AND TREATMENT PLANNING IN ADDICTION COUNSELING** (Formerly ADST-42)

3 units: 3 hours lecture.

Prerequisite: ADST-41. Advisory: ENGL-41.

This course is designed to give the student an introduction to counseling skills of screening, clinical evaluation, assessment, and treatment planning. (5/03)

**ADST-42B INTRODUCTION TO ADDICTION COUNSELING SKILLS**

3 units: 3 hours lecture.

Prerequisite: ADST-42A. Advisory: ENGL-41.

This course is oriented to counseling the alcoholic/chemically dependent client. Course work is designed to give the student an introduction to counseling skills and classroom experience in applying basic counseling skills with individuals and groups. (5/03)

**ADST-43 PROFESSIONAL RESPONSIBILITIES AND ETHICAL PRACTICE IN ADDICTION COUNSELING**

3 units: 3 hours lecture.

Prerequisite: ADST-41. Advisory: ENGL-41.

This course focuses on professional responsibilities in addiction counseling. Awareness of state and federal laws and regulations, and the code of conduct governing the behavior of alcohol and drug counselors are examined. Effective approaches and the examination of legal, ethical, and moral responsibilities and referral practices of the alcohol/drug counselor will also be presented. (5/03)

**ADST-44 PHARMACOLOGY OF SUBSTANCE ABUSE**

3 units: 3 hours lecture.

Prerequisite: ADST-41. Advisory: ENGL-41.

This course provides a basic understanding and working knowledge of the classifications of drugs based on their effects on behavior, emotions, perceptions, consciousness, the metabolism of drugs, and neurotransmitter theory. The political, social, and cultural issues will be briefly explored. (5/03)

**ADST-45 LEADERSHIP AND COUNSELING IN ADDICTION GROUPS**

3 units: 3 hours lecture.

Prerequisite: ADST-42B. Advisories: ENGL-A, ENGL-41.

This course is an introduction to the dynamics of group counseling with clients with substance use disorders. The group will study itself, under

supervision, and learn various leadership skills. The factors involved in problems of communication, effective emotional responses, and personal growth will be highlighted. (11/03)

**ADST-46 ADDICTION EDUCATION AND PREVENTION**

3 units: 3 hours lecture.

Prerequisite: ADST-44. Advisories: ENGL-A, ENGL-41; LRNR-30.

This course will review the history, theories, models, and state-of-the-art approaches to the prevention field. Research and evaluation outcomes on epidemiology, environmental risk factors, and the effectiveness of various prevention strategies will be examined. (11/03)

**ADST-49A-ZZ SPECIAL TOPICS IN ADDICTION STUDIES**

0.5 - 4 units: 0.5-4 hours lecture.

Advisories: ENGL-41; LRNR-40.

This course is designed to address special topics in addiction studies to meet the current needs of students. The course will allow pre-service and in-service personnel to maintain the most current education and training standards in the field. (05/03)

**ADMINISTRATIVE OFFICE MANAGEMENT**

(Business Division)

**AOM-50A KEYBOARDING** (Formerly OFCT-50A)

1 unit: .5 hour lecture, 1.5 hours lab.

Advisories: ENGL-81, ENGL-84.

This course includes development of basic computerized keyboarding techniques by touch, and speed and accuracy. (11/06)

**AOM-50B KEYBOARDING AND DOCUMENT FORMATTING**

(Formerly OFCT-50B)

3 units: 2 hours lecture, 3 hours lab.

Advisories: ENGL-81, ENGL-84.

This course includes development of basic computerized keyboarding techniques by touch, fundamental knowledge of word processing software, document formatting (memorandums, letters, reports, tables), and speed and accuracy. (11/06)

**AOM-51 KEYBOARDING/WORD PROCESSING** (Formerly OFCT-51)

3 units: 2 hours lecture, 3 hours lab.

Prerequisite: AOM-50B (35 wpm, 95% accuracy). Advisories: ENGL-81, ENGL-84.

This course provides instruction and review of computerized keyboarding using word processing software; emphasis is placed on formatting memorandums, business letters, business forms, legal and medical documents, tables, and reports, as well as keyboarding with speed and accuracy. (11/06)

**AOM-52A KEYBOARDING SPEED AND ACCURACY**

(Formerly OFCT-52A)

1 unit: .5 hour lecture, 1.5 hours lab.

Advisories: Know the keyboard and be able to key at least 20 wpm with 85% accuracy; ENGL-81, ENGL-84.

This course is designed to increase keyboarding speed and accuracy through the use of individualized evaluation. The course helps bridge the speed gap between each level of keyboarding instruction. It is designed for the person who has been away from keyboarding for an extended period of time and wishes to regain keyboarding speed and accuracy. This course may be repeated two times. (11/06)

**AOM-52B KEYBOARDING SPEED AND ACCURACY**

(Formerly OFCT-52B)

2 units: 1 hour lecture, 3 hours lab.

Advisories: Know the keyboard and be able to key at least 20 wpm with 85% accuracy; ENGL-81, ENGL-84.

This course is designed to increase keyboarding speed and accuracy through the use of individualized evaluation. The course helps bridge the speed gap between each level of keyboarding instruction. It is designed for the person who has been away from keyboarding for an extended period of time and wishes to regain keyboarding speed and accuracy. This course may be repeated two times. (11/06)

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**AOM-53 ADVANCED COMPUTER APPLICATIONS**

(Formerly OFCT-53)

4 units: 3 hours lecture, 3 hours lab.

Prerequisite: AOM-51; CPSC-30. Advisories: BUS-53; ENGL-81.

The student will learn about electronic office concepts, the role of word processing and the Internet in the modern office, and the transformation of ideas into readable forms of communication. This course will include advanced word processing, desktop publishing, multi-media presentations, e-mail, and Internet practices and procedures. (11/06)

**AOM-54 MACHINE TRANSCRIPTION**

(Formerly OFCT-54)

2 units: 1 hour lecture, 3 hours lab.

Prerequisite: AOM-51. Advisories: BUS-53; ENGL-81.

The student will review the principles of good grammar and use this knowledge when transcribing actual business documents. The student will learn to type mailable business documents using transcription machines. (11/06)

**AOM-55A LEGAL OFFICE TECHNOLOGY SEMINAR**

(Formerly OFCT-55A)

1 unit: 18 hours lecture.

Prerequisites: ACTG-51; BUS-43; AOM-53, AOM-54, AOM-57. One-way corequisite: AOM-69. Two-way corequisite: Enrollment in 2 units of Cooperative Education (COOP-41A). Advisories: ENGL-81, ENGL-84; MATH-80.

This course examines situations, questions, and problems related to workplace activities within the Legal Office Technology field. The student will develop a portfolio that may be used as part of their preparation for employment. (11/06)

**AOM-55B MEDICAL OFFICE TECHNOLOGY SEMINAR**

(Formerly OFCT-55B)

1 unit: 18 hours lecture.

Prerequisites: ACTG-51; ALLH-67; BUS-43; AOM-53, AOM-54, AOM-57. One-way corequisite: AOM-68. Two-way corequisite: Enrollment in 2 units of Cooperative Education (COOP-41A). Advisories: ENGL-81, ENGL-84; MATH-80.

This course examines situations, questions, and problems related to workplace activities within the Medical Office Technology field. The student will develop a portfolio that may be used as part of their preparation for employment. (11/06)

**AOM-55C CLERICAL OFFICE ADMINISTRATION AND INFORMATION/WORD PROCESSING OFFICE TECHNOLOGY SEMINAR** (Formerly OFCT-55C)

1 unit: 18 hours lecture.

Prerequisites: ACTG-51; BUS-43; AOM-53, AOM-54, AOM-57. One-way corequisite: AOM-72. Two-way corequisite: Enrollment in 2 units of Cooperative Education (COOP-41A). Advisories: ENGL-81, ENGL-84; MATH-80.

This course examines situations, questions, and problems related to workplace activities within the office technology field. The students will develop a portfolio that may be used as part of their preparation for employment. (11/06)

**AOM-57 RECORDS MANAGEMENT** (Formerly OFCT-57)

2 units: 1 hour lecture, 3 hours lab.

Advisories: ENGL-81, ENGL-84; keyboarding speed of 20 wpm.

This course is planned to provide the student with information concerning manual and computer filing methods, procedures, and equipment. Emphasis is on these basic filing systems: alphabetic, numeric, geographic, subject, and non-correspondence. (11/06)

**AOM-68 MEDICAL OFFICE PRACTICE** (Formerly OFCT-68)

3 units: 2 hours lecture, 3 hours lab.

Prerequisites: AOM-51; ALLH-67. Advisories: BIOL-50; BUS-53; ENGL-81, ENGL-84.

The student will develop the skills required of a secretary in a modern medical office. The student will become acquainted with medical documents,

procedures, forms, and correspondence involved in medical offices and hospitals. The student will integrate previously and concurrently learned skills and theory in simulated medical office procedures, including hospital records, office and hospital reports, insurance forms, and correspondence. The course will help the student develop leadership ability and human relations techniques. (11/06)

**AOM-69 LEGAL OFFICE PRACTICE** (Formerly OFCT-69)

3 units: 2 hours lecture, 3 hours lab.

Prerequisite: AOM-51. Advisories: BUS-53; ENGL-81, ENGL-84.

The student will develop the skills required for a secretary in a modern law office. The course introduces and illustrates client language and the form and style of legal documents, develops skills to handle communications through the use of office technology, and the importance of public relations in the law office. The course will help the student to develop leadership ability and human relations techniques. (11/06)

**AOM-72 OFFICE PRACTICE** (Formerly OFCT-72)

3 units: 2 hours lecture, 3 hours lab.

Prerequisite: AOM-51. Advisories: BUS-53; ENGL-81, ENGL-84.

The student will review office and communications skills needed to prepare for employment, handle communications, keep simple records, and utilize office technology. The student will also integrate previously and concurrently learned office skills and theory in a simulated office operation. This course will help the student to develop leadership ability and human relations techniques. (11/06)

## AGRICULTURE

(Agriculture Division)

(Please refer to the Agriculture Division website for course offering details)

[www.mccd.edu/academics/divisions/ag](http://www.mccd.edu/academics/divisions/ag)

**AGRI-10 AGRICULTURE, ENVIRONMENT, AND SOCIETY**

(CSU breadth area D7)

3 units: 3 hours lecture.

Advisories: AGBS-18; ENGL-A, ENGL-81; LRNR-30.

This course involves an international view of the sociology of agriculture presented through an examination of relationships between societies and their environments, economics, and agriculture. Emphasis will be placed on the analysis of agriculture's use of technology and the corresponding impact on the environment, economy, and society on a global scale. (10/04)

## AGRICULTURE BUSINESS

(Agriculture Division)

(Please refer to the Agriculture Division website for course offering details)

[www.mccd.edu/academics/divisions/ag](http://www.mccd.edu/academics/divisions/ag)

**AGBS-10 INTRODUCTION TO AGRICULTURE BUSINESS**

3 units: 3 hours lecture.

Advisories: ENGL-A: MATH-A or MATH-B.

This course is a survey of the broad scope of agriculture business. It serves as an introduction to economic, accounting, management, sales, leadership, and marketing aspects of agriculture and their impact on producers and consumers. The management principles encountered in the day-to-day operation of an agricultural enterprise are stressed as they relate to the decision-making process. (12/06)

**AGBS-11 AGRICULTURAL ECONOMICS**

(CSU breadth area D2)

3 units: 3 hours lecture.

Advisories: ENGL-A, ENGL-41; MATH-A.

This course serves as an introduction to the economic aspects of agriculture and the implications to local, state, national, and global markets. Students will learn the role of agricultural resources (land, labor, capital, and entrepreneurship), major agricultural resource issues and their policy remedies, and economic factors that affect prices, supply, demand, and allocation of farm commodities. This class will explore the contemporary and historical place of agriculture and farmers in our economic, social, and political systems and their relationship to the consuming public. (10/04)

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**AGBS-12 AGRICULTURAL ACCOUNTING**

3 units: 3 hours lecture.

Advisories: ENGL-A; MATH-A or MATH-B.

This course will focus on the principles of agricultural accounting systems, type of records, their use, and how to compute and use measures of earnings and costs of production to improve agribusiness efficiency. Farm income tax, social security, and employee payroll records will also be covered. (12/06)

**AGBS-13 AGRICULTURAL MARKETING**

3 units: 3 hours lecture.

Advisories: ENGL-A; MATH-A or MATH-B.

This course surveys the nine functions of marketing within the context of the agricultural industry. These functions include: buying, selling, storage, transportation, processing, risk management, market information, grading, and financing. Also included is an overview of the structure and institutional aspects of the marketing system including global agricultural markets. (12/06)

**AGBS-14 FARM MANAGEMENT**

3 units: 3 hours lecture.

Advisories: ENGL-A; MATH-A or MATH-B.

This course will focus on the organization and operation of farm or ranch businesses. Students will assess factors affecting profitability and evaluate opportunities for increased efficiency and profit. Students will apply budgeting principles to the school farm laboratory and perform and independent analysis of a farm. (12/06)

**AGBS-17 AGRICULTURAL SALES AND COMMUNICATION**

3 units: 3 hours lecture.

Advisories: ENGL-A.

This course involves the study of principles and practices of the selling process: selling strategies and approaches, why and how people buy, prospecting, territory management, and customer service. Self-management, communication, and interpersonal skills necessary in developing managerial abilities, leadership qualities, and facilitating teamwork within the agribusiness sector will be explored. Students will gain experience through roleplay, formal sales presentations, and job shadowing. (12/06)

**AGBS-18 AGRICULTURAL COMPUTER APPLICATIONS**

(CAN AG 2) [CILC areas A,B,C,D,E,F,G]

3 units: 2 hours lecture, 3 hours lab.

Advisories: ENGL-A; MATH-A or MATH-B.

This course explores computer use in the workplace with emphasis on agribusiness situations. Computer applications including word-processing, spreadsheets, databases, and presentation managers will be covered. Also included will be accessing information through the Internet and World Wide Web, telecommunications, an introduction to web page design, and other software appropriate to agribusiness. (01/07)

**AGBS-30 AGRICULTURAL LEADERSHIP**

2 units: 2 hours lecture.

Advisories: ENGL-81, ENGL-84.

This course presents leadership theory as well as self-management, communication and interpersonal skills necessary in developing managerial abilities and leadership qualities, while facilitating teamwork within the agricultural industry. Included are group dynamics and human interactions associated with private, governmental, and non-profit agricultural enterprises. Practical experience will be gained through participation in a number of parliamentary, facilitative, and administrative activities with varying degrees of diversity between semesters. This course may be repeated three times. (12/00)

**AGBS-31 AGRICULTURAL AMBASSADORS**

1.5 units: 1 hour lecture, 1.5 hours lab.

Advisories: ENGL-81, ENGL-84.

The purpose of this course is to train effective and efficient Agricultural Ambassadors. This highly specialized team of students will encourage higher education, agricultural awareness, and educational opportunities within Merced College's Agriculture Division. Students will develop

confidence and speaking ability, prepare recruitment and teaching materials, and establish an on-call public relations system for prospective future students and members of the community. This course may be repeated three times. (2/02)

**AGBS-48 AGRICULTURE BUSINESS: PROBLEMS**

(Formerly AGBS-49)

2 units: 6 hours arranged.

Advisories: ENGL-A; MATH-A or MATH-B.

This course is designed for students interested in problems within the field of Agricultural Business. The problem areas will include, but not be limited to, management, marketing, accounting, commodities, market, agriculture economics, taxation, and computer use. (01/07)

**AGBS-70 A-Z SPECIAL TOPICS IN AGRICULTURE BUSINESS**

0.5 - 4 units: 0-4 hours lecture, 0-12 hours lab.

Advisories: ENGL-A; MATH-A or MATH-B.

This course is the study of basic principles, processes, and theories of the special topic being presented during the semester. (12/06)

**ALLIED HEALTH**

(Allied Health Division)

**ALLH-50 EMERGENCY MEDICAL TECHNICIAN I**

6 units: 5 hours lecture, 3 hours lab.

Limitations on enrollment: Negative TB skin test or negative chest x-ray for TB within the last four years; a CPR course based on American Red Cross or American Heart Association that includes one- and two-rescuers CPR plus infant CPR. Advisories: ALLH-67; ENGL-84; a first-aid course equivalent to the course offered by the American Red Cross.

This beginning course is designed to teach basic emergency medical procedures and responsibilities, including stabilization of the sick and injured for transportation to medical facilities, care during transport, communication with base-hospital personnel, and transfer of the injured to the base-hospital emergency room. This course meets the requirements of Title 22, Division of California Administrative Code. Students successfully completing ALLH-50 and ALLH-51 are eligible to take the EMT I certifying exam from any EMS Agency within the State of California. It is recommended that the student take ALLH-50 and ALLH-51 concurrently. (4/05)

**ALLH-51 EMERGENCY MEDICAL TECHNICIAN I, AMBULANCE**

1 unit: 18 total hours lecture, plus 8 hours of field experience.

Limitations on enrollment: Valid California driver's license; negative TB skin test or negative chest x-ray for TB; a CPR course based on American Red Cross or American Heart Association that includes one- and two-rescuer CPR plus infant CPR. Advisories: ALLH-67; ENGL-84; a first-aid course equivalent to the course offered by the American Red Cross.

This course provides the ambulance module of the EMT I certification program. Topics for the course include the roles and responsibilities of ambulance personnel, legal aspects of ambulance operation, radio communications, records and reports, intravenous monitoring techniques, maintenance of medical equipment and supplies, driver licensing requirements, and techniques of ambulance driving. This course *with ALLH-50* satisfies the California Administrative Code requirements for eligibility for certification as an EMT I. It is recommended that the student take ALLH-50 and ALLH-51 concurrently. (2/02)

**ALLH-60 NURSE ASSISTANT (Formerly ALLH-80, ALLH-80L)**

5.5 units: 3 hours lecture, 7.5 hours lab.

Limitations on enrollment: Orientation workshop; CPR card - Module A/C; negative TB screening test within past 6 months or negative chest x-ray within past year; physical within past 6 months; DOJ fingerprint clearance; Penal Code Violations clearance. Advisories: ENGL-80, ENGL-84.

This course provides clinical instruction and practice of basic nursing skills required of nursing assistants employed in skilled nursing facilities and extended care facilities. The course emphasizes care of the older adult client, assistance with the activities of daily living, bathing, dressing, exercise movement, eating, eliminating safety measures, cardiopulmonary

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resuscitation and rehabilitation techniques. Meets State Department of Health Services requirements for eligibility to take the Nursing Assistant Certification examination. (10/06)

#### **ALLH-67 MEDICAL TERMINOLOGY**

3 units: 3 hours lecture.

Advisories: ENGL-A, ENGL-41.

This course is a study of general medical terminology -- diagnostic, operative, and symptomatic terms related to body systems -- with emphasis on proper spelling and pronunciation. (10/03)

### **ANATOMY** (See Biology)

### **ANIMAL SCIENCE**

(Agriculture Division)

(Please refer to the Agriculture Division website for course offering details)

[www.mccd.edu/academics/divisions/ag](http://www.mccd.edu/academics/divisions/ag)

#### **ANSC-10 ELEMENTS OF ANIMAL SCIENCE**

(CAN AG 6)

3 units: 3 hours lecture.

Advisories: ENGL-A, ENGL-41.

This course is a survey of the livestock industry, supply of animal products, and their uses in animal production. There is a special emphasis on the origin, characteristics, adaptation, and contributions of farm animals to the agriculture industry. The student will analyze the economic trends and career opportunities in animal agriculture. Field trips will be required. (12/06)

#### **ANSC-11 ELEMENTS OF ANIMAL NUTRITION**

(CAN AG 12)

3 units: 3 hours lecture.

Advisories: ENGL-A, ENGL-41; MATH-80 or MATH-83.

The science of animal nutrition is the basis for "Livestock Feeding and Nutrition." The fundamentals of digestion and absorption in both ruminants and non-ruminants are discussed in this course. The nutritive value of feeds as they relate to the formulation of livestock rations will be emphasized, including by-product feeding. (12/06)

#### **ANSC-12 LIVESTOCK BREEDING AND SELECTION**

3 units: 3 hours lecture.

Advisories: ENGL-A, ENGL-41.

This course combines the study of basic genetic principles with the study of the anatomical and physiological aspects of reproduction as they relate to animal species significant to agriculture. The genetic principles to be emphasized include basic inheritance, selection techniques, mating systems, heterosis, and performance evaluation. The reproductive aspects to include endocrinology, estrous cycles, mating behaviors, gametogenesis, conception, gestation, parturition, and maternal behaviors. Artificial insemination, embryo manipulation, and current innovations in reproductive biotechnology will also be examined. (12/06)

#### **ANSC-13 ANIMAL DISEASE AND PARASITE CONTROL**

3 units: 3 hours lecture.

Advisories: ENGL-A, ENGL-41.

This course of animal health and sanitation will provide instruction to the student on common livestock diseases and fundamentals of immunity. It will also include coverage of the livestock worker's role in promoting animal health and the foundation of disease control programs. (12/06)

#### **ANSC-15 LIVESTOCK SELECTION**

2 units: 1 hour lecture, 3 hours lab.

Advisories: ENGL-A, ENGL-41.

This is a detailed analysis of various visual and physical methods of appraising beef, sheep, swine, and horses concerning functional and economic value. Written and oral summaries of evaluation will be learned in the class. Specific reference will be made to performance data and factors determining carcass value. The course may be repeated three times for advanced skill and training. (01/07)

#### **ANSC-16 HORSE HUSBANDRY**

(CAN AG 26)

3 units: 2 hours lecture, 3 hours lab.

Advisories: ENGL-A, ENGL-41.

This is a survey of the equine industry encompassing the evolution and role of the equine species throughout history, breed selection and development, nutrition, diseases, preventive health, reproductive management, basic horsemanship, and stabling alternatives. (12/06)+

#### **ANSC-17 BEEF PRODUCTION**

(CAN AG 20)

3 units: 2 hours lecture, 3 hours lab.

Advisories: ENGL-A, ENGL-41.

This is a study of principles and practices of purebred and commercial beef cattle production throughout the world, United States, and California. There will be emphasis placed on the importance of breeds, breeding principles, selection, nutrition, environmental management, health, marketing, and record keeping to ensure scientifically-based management decisions and consumer product acceptance as applied to beef cattle. (12/06)

#### **ANSC-18 SHEEP PRODUCTION**

(CAN AG 22)

3 units: 2 hours lecture, 3 hours lab.

Advisories: ENGL-A, ENGL-41.

This course is a survey of the sheep industry, including management of commercial, purebred, and small farm flocks; selecting, feeding, breeding, and basic care of ewes and lambs, plus the marketing of lambs and wool. (12/06)

#### **ANSC-19 SWINE PRODUCTION**

(CAN AG 24)

3 units: 2 hours lecture, 3 hours lab.

Advisories: ENGL-A, ENGL-41.

This is a study of the principles and practices of purebred and commercial pork production throughout California, the United States, and the world. Emphasis will be placed on the importance of breeds, breeding principles, selection, nutrition, environmental management, health, marketing, and record keeping to ensure scientifically-based management decisions and consumer product acceptance. (12/06)

#### **ANSC-22 APPLIED LIVESTOCK PRACTICES**

3 units: 2 hours lecture, 3 hours lab.

Advisories: ENGL-81, ENGL-84.

This class will provide the selection and completion of an animal project under faculty supervision. The class involves participation in the actual purchase, raising, care and handling, managing, and merchandising of one or a group of project animals. The actual ownership of the livestock is not required as college animals will be used. This course may be repeated once. (3/00)

#### **ANSC-30 FITTING, SHOWING, AND MERCHANDISING LIVESTOCK**

1.5 units: 1 hours lecture, 1.5 hours lab.

Advisory: ENGL-A.

This course is designed for people to develop skills in preparing and marketing beef cattle, sheep, swine, dairy cattle, and horses for competition at fairs and shows. Lessons in exhibiting the animals are given. The course may be repeated three times for advanced skill and training. (1/06)

#### **ANSC-40 BEGINNING HORSEMANSHIP (WESTERN)**

2 units: 1 hour lecture, 3 hours lab.

Advisories: ENGL-81, ENGL-84. (Note: Check with instructor for supplies needed.)

This is a course that deals with the handling and schooling of a horse from the ground, in addition to basic fundamentals of riding. Safety factors for both horse and rider will be emphasized. Other areas of the course will include the proper use of equipment and aids. (11/06)

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**ANSC-41 INTERMEDIATE HORSEMANSHIP (WESTERN)**

2 units: 1 hour lecture, 3 hours lab.

Prerequisite: ANSC-40. Advisories: ENGL-81, ENGL-84. (Note: Check with instructor for supplies needed.)

This is a class in intermediate western riding which will enable a person to school a horse, teach beginning riding, or train another rider in schooling. The student will obtain a working knowledge of the judging of horse shows and obligations involved in the judging of different events. A rider in this class is expected to be able to give a creditable performance in a standard AHSA or AQHA horse show. (11/06)

**ANSC-46A SPECIALIZED HORSE TRAINING**

4 units: 2 hours lecture, 6 hours lab.

One-way corequisite: ANSC-40. Advisories: ENGL-81, ENGL-84.

(Note: Check with instructor for supplies needed.)

This course deals with early schooling of the young horse, in training techniques, breaking to lead, acceptance of snaffle bit, socking out procedures, and developing a good foundation of horse and trainer relationship for elementary ground work and riding. (11/06)

**ANSC-46B SPECIALIZED HORSE TRAINING**

4 units: 2 hours lecture, 6 hours lab.

Prerequisite: ANSC-46A. Advisories: ENGL-81, ENGL-84. (Note: Check with instructor for supplies needed.)

This course is designed for learning advanced training of the young horse including collection, turning, backing, leads, flying leads, trailer loading, rope work, and cattle work. (11/06)

**ANSC-47A BACK COUNTRY ANIMAL MANAGEMENT**

1 unit: 0.5 hour lecture, 1.5 hours lab.

Prerequisite/Advisory: None.

The care and maintenance of horses and mules in back country situations will be the emphasis of this course. Packing skills, load hitches, and load balance of pack animals will be stressed. Trail and pack animal safety will be incorporated.

**ANSC-48 TACK REPAIR**

1 unit: 0.5 hour lecture, 1.5 hours lab.

Prerequisite/Advisory: None.

This class is designed to teach the care and maintenance of tack and accessories. The skills to be learned will include stitching, braiding, splicing, riveting, and proper saddle and miscellaneous tack repair. Repairs, taking into consideration the comfort of the horse, will be stressed.

**ANSC-49 ANIMAL SCIENCE: PROBLEMS**

2 units: 6 hours lab.

Advisories: ENGL-A, ENGL-41.

This course will involve supervised study and practices involving special problems in Animal Science. The areas covered in this course should be areas that are not covered in other Animal Science courses. Emphasis will be placed on the needs and interests of the students. (01/07)

**ANSC-50 HORSESHOEING**

5 units: 2 hours lecture, 9 hours lab.

Advisories: ENGL-81, ENGL-84.

This course is an introduction to the shoeing of horses, utilizing both hot and cold shoes. Also included will be the anatomy and physiology of the horse's foot with the ability to identify blemishes and soundness in horses. Use of the forge and the making of shoes from bar stock will be presented in addition to the instruction of actually shoeing horses. (1/06)

**ANSC-51 ADVANCED HORSESHOEING**

5 units: 2 hours lecture, 9 hours lab.

Prerequisite: ANSC-50. Advisory: ENGL-81.

This is an advanced course in the corrective shoeing of horses. The course is designed to prepare the farrier to handle special problems in correcting foot problems of various types of horses. Use of the forge for the construction of various types of special shoes and weights will be included along with its actual application to the shoeing of problem horses. (1/06)

**ANSC-52 HOOF CARE AND TRIMMING**

2 units: 1 hour lecture, 3 hours lab.

Advisories: ENGL-81, ENGL-84.

This is a class designed to teach the student how to care for and maintain the hooves of horses. (1/06)

**ANSC-54 ARTIFICIAL INSEMINATION**

1 unit: 3 hours lab.

Advisories: ENGL-81, ENGL-84.

This is a hands-on program where the student learns and practices to artificially inseminate. Included in this course is anatomy, heat detection, proper equipment, fertility, insemination records, and determining pregnancy. (1/06)

**ANSC-70AA-Z Z SPECIAL TOPICS IN ANIMAL SCIENCE**

0.5 - 4 units: 0-4 hours lecture, 0-12 hours lab.

Advisories: ENGL-81, ENGL-84.

This course is the study of basic principles, processes, and theories of the special topic being presented during the semester. (01/07)

**ANTHROPOLOGY**

(Social Science Division)

**ANTH-01 PHYSICAL ANTHROPOLOGY**

(CAN ANTH 2) (CSU breadth area B2/B3)

4 units: 3 hours lecture, 3 hours lab.

Advisories: ENGL-A, ENGL-41.

This survey of physical anthropology deals with the study of man's biological heritage and physical variability. The fossil evidence and theories of early man's development will be covered. Students will have the opportunity to study man's behavioral adaptability through contact with authentic stone tools made by our prehistoric ancestors. Human genetics, racial variation, primatology, paleoanthropology, forensic anthropology, and current bioethical issues will also be discussed. The philosophy of science and the scientific method serve as the foundation of this course. The laboratory portion of the course will include exercises in human variation, genetics, skeletal analysis, and primate behavior. (1/05)

**ANTH-02 CULTURAL ANTHROPOLOGY**

(CAN ANTH 4) (CSU breadth area D1)

3 units: 3 hours lecture.

Advisories: ENGL-A, ENGL-41.

This course is an introduction to the study of human culture and the concepts, theories, and methods used in the comparative study of socio-cultural systems. Subjects include subsistence patterns, social and political organization, language and communication, family and kinship, religion, the arts, social inequality, ethnicity, gender, and culture change. The course applies anthropological perspectives to contemporary issues. (1/05)

**ANTH-10 SOUTHEAST ASIAN CULTURE: EMPHASIS HMONG CULTURE**

(CSU breadth area D1)

3 units: 3 hours lecture.

Advisories: ENGL-A, ENGL-41.

This course surveys the basic ideas and social constructs of Southeast Asian cultures, especially the cultures of the new Southeast Asian groups in California: Hmong, Mien, Lao, Cambodian, Vietnamese, etc. Emphasis will be placed on issues of cultural ethnicity, family lifestyle, educational background, and socio-political organization of each group in the past and in the United States. (12/06)

**ANTH-30 MAN, CULTURE, AND SOCIETY**

2 units: 2 hours lecture.

This is a survey course designed to provide the student with an understanding of the cultural, biological, and physical forces that have influenced the historic and contemporary development of man and culture.

**ANTH-32 AN ANTHROPOLOGICAL STUDY OF WOMEN**

3 units: 3 hours lecture.

This course focuses on the contrasting roles of women in traditional and contemporary cultures. The arts and artifacts, beliefs, and traditions of

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various world societies will be studied with regard to their effect on, and interaction with, women. The position of women in decision making, family structure, economics, and other social systems will be investigated.

## ARCHAEOLOGY

(Science, Math and Engineering Division)

### ARCH-01 INTRODUCTION TO ARCHAEOLOGY

3 units: 3 hours lecture.

Advisories: ENGL-A, ENGL-AL, ENGL-41, ENGL-41L.

This course is an introduction to archaeological theory and method. The class examines the historical development of the discipline, various theoretical and methodological approaches, and technical aspects of archaeology such as stratigraphic analysis, relative and absolute dating, lithic analysis and seriation. Artifacts from around the world are used in class to illustrate various concepts of archaeology and prehistory. (2/01)

### ARCH-01L FIELD ARCHAEOLOGY

1 unit: 3 hours lab.

Advisories: ENGL-A, ENGL-AL, ENGL-41, ENGL-41L.

This course provides the student with an opportunity to gain practical experience in archaeological field reconnaissance, archaeological site excavation, laboratory analysis of archaeological data, and preparation of archaeological reports. Students will take part in surveys and excavations on local and historic and prehistoric sites. This course may be repeated three times. (2/01)

### ARCH-31 MUSEUM TECHNOLOGY

2 units: 1 hour lecture, 3 hours lab.

Advisories: ENGL-A, ENGL-AL, ENGL-41, ENGL-41L.

This course is an introduction to the techniques of preservation of those objects which best illustrate the phenomenon of nature and the works of man as well as the utilization of these objects in a museum setting for the increase of knowledge and the enlightenment of the people. Lecture and laboratory work on collection, preservation, and display of such materials and artifacts will be taught. (2/01)

## ART

(Arts Division)

### ART-01 ART HISTORY -- ANCIENT THROUGH GOTHIC)

(CAN ART 2 (CSU breadth area C1)

3 units: 3 hours lecture.

Advisory: ENGL-01A.

This course is a survey of the development of the art, architecture, sculpture, painting, and the minor arts, from pre-history through the Gothic period. (2/04)

### ART-02 ART HISTORY -- RENAISSANCE THROUGH MODERN

(CAN ART 4) (CSU breadth area C1)

3 units: 3 hours lecture.

Advisory: ENGL-01A.

This course is a survey of the development of art, architecture, sculpture, painting, and handicrafts from the Renaissance to the present. (2/04)

### ART-06 ART OF THE 20TH CENTURY

(CSU breadth area C1)

3 units: 3 hours lecture.

Advisory: ENGL-01A.

This course is a survey of prominent artists and movements in world art from Impressionism to Post-Modernism. Major works in painting, sculpture, architecture, and applied arts are covered. (1/05)

### ART-12A SCULPTURE

(CAN ART 12) (CSU breadth area C1)

3 units: 2 hours lecture, 3 hours lab.

Prerequisite/Advisory: None.

This course is a survey of fundamentals of the sculpting process and a study of materials related to sculpture. Work explores projects in 3-D to bas relief and covers styles from realism to abstract. (01/05)

### ART-12B INTERMEDIATE SCULPTURE

3 units: 2 hours lecture, 3 hours lab.

Prerequisite: ART-12A.

Students will explore sculpture materials, methods, techniques, and 3-D project problem-solving related to intermediate-level course work. (1/05)

### ART-12C ADVANCED SCULPTURE

3 units: 2 hours lecture, 3 hours lab.

Prerequisite: ART-12B.

Students will explore sculpture materials, methods, techniques, and 3-D project problem-solving related to advanced-level course work. (1/05)

### ART-15 FUNDAMENTALS OF DESIGN IN ART

(CSU breadth area C1)

3 units: 2 hours lecture, 3 hours lab.

Prerequisite/Advisory: None.

This course is an introduction to the theory and practice of fundamental design elements and principles as applied to fine arts, graphics, and various design fields. (1/05)

### ART-17A CERAMICS - POTTERY

(CAN ART 6)

3 units: 2 hours lecture, 3 hours lab.

Advisory: ENGL-A.

This course is a survey of ceramic materials (clays and glazes) and their function in relation to design as an art form. Basic studio practice in the hand-building processes, decorating, glazing, and firing of ware, and an introduction to the potter's wheel are included. (2/01)

### ART-17B INTERMEDIATE CERAMICS - POTTERY

3 units: 2 hours lecture, 3 hours lab.

Prerequisite: ART-17A. Advisory: ENGL-A.

This is an intermediate course in ceramic pottery and sculpture design and construction, non-technical glaze composition, and kiln firing. Stress is placed upon the attainment of skill on the potter's wheel and organization of construction problems. Students pursue projects of individual interest. (2/01)

### ART-17C ADVANCED CERAMICS - POTTERY

3 units: 2 hours lecture, 3 hours lab.

Prerequisite: ART-17B. Advisory: ENGL-A.

This is an advanced course in ceramic pottery with emphasis on more complicated sculpture and wheel construction and design techniques. Students will participate in glaze composition and experience advanced decorating and glazing techniques. Students will pursue projects of individual interest related to the objectives of the course. (2/01)

### ART-20A PRINTMAKING I

(CAN ART 20)

3 units: 2 hours lecture, 3 hours lab.

Prerequisite/Advisory: None.

This course covers the fundamental printmaking processes including relief and intaglio methods. It includes exploration of black and white as well as an introduction to color techniques. Students will produce limited editions and survey the history of printmaking. (1/05)

### ART-20B PRINTMAKING II: INTAGLIO AND COLOR

3 units: 2 hours lecture, 3 hours lab.

Prerequisite: ART-20A.

This course deals with black and white as well as color printmaking techniques with an emphasis on intaglio processes. (1/05)

### ART-20C PRINTMAKING III: LITHOGRAPHY

3 units: 2 hours lecture, 3 hours lab.

Prerequisite: ART-20B.

This course focuses on the lithographic printmaking techniques in which images are printed from limestone slabs. (1/05)

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**ART-20D PRINTMAKING IV: EXPLORATION**

3 units: 2 hours lecture, 3 hours lab.

Prerequisite: ART-20C.

This course is an advanced study of printmaking techniques with focus on the individual student's ideas. Students will work towards the development of the personal set of aesthetic requisites necessary for advanced study and independent work. (1/05)

**ART-24A DRAWING I**

(CAN ART 8) (CSU breadth area C1)

3 units: 2 hours lecture, 3 hours lab.

Prerequisite/Advisory: None.

This course is an introduction to the principles, theories, and techniques of drawing and composition. Students will explore foundation-level concepts while surveying materials used in drawing as an art form, as well as the history of their development. (1/05)

**ART-24B DRAWING II**

3 units: 2 hours lecture, 3 hours lab.

Prerequisite: ART-24A.

This course is an intermediate-level study of the theories and practice of drawing as an art form. Problems in perspective, proportion, and form will be addressed. A more advanced approach to concept and techniques in media are also included, as well as the history of their development. (1/05)

**ART-24C DRAWING III**

3 units: 2 hours lecture, 3 hours lab.

Prerequisite: ART-24B.

This course is an advanced-level study of drawing as an art form. More advanced problems in the aesthetics and techniques of drawing will be addressed. The approach is individualized. Contemporary as well as historical concepts will be addressed. (1/05)

**ART-25A ACRYLIC PAINTING I**

(CAN ART 10)

3 units: 2 hours lecture, 3 hours lab.

Prerequisite/Advisory: None.

This is a course in the fundamentals of acrylic painting as an art form. Students will address problems in portrayal, proportion, composition, and color. (1/05)

**ART-25B ACRYLIC PAINTING II**

3 units: 2 hours lecture, 3 hours lab.

Prerequisite: ART-25A.

This course is a study of the materials and methods of acrylic painting. Students will explore creative and conceptual solutions to problems in portrayal, composition, and color. (1/05)

**ART-25C ACRYLIC PAINTING III**

3 units: 2 hours lecture, 3 hours lab.

Prerequisite: ART-25B.

This course is an advanced study of acrylic painting techniques. Students will apply these techniques with emphasis on conceptual development and critical evaluation. (1/05)

**ART-25D ACRYLIC PAINTING IV**

3 units: 2 hours lecture, 3 hours lab.

Prerequisite: ART-25C.

This course is an exploration of acrylic painting with focus on the students' individual ideas. Students will work towards the development of the personal set of aesthetic requisites necessary for advanced study and independent work. (1/05)

**ART-26A FIGURE DRAWING I**

3 units: 2 hours lecture, 3 hours lab.

Prerequisite/Advisory: None.

This is a basic course in drawing the human form and proportion. Models are used in both rapid and extended studies with a variety of drawing media. (1/05)

**ART-26B FIGURE DRAWING II**

3 units: 2 hours lecture, 3 hours lab.

Prerequisite: ART-26A.

This is an intermediate study of human form and proportion. Models are used in both rapid and extended studies with a variety of drawing and painting media. (1/05)

**ART-26C FIGURE DRAWING III**

3 units: 2 hours lecture, 3 hours lab.

Prerequisite: ART-26B.

This course is an advanced study of human form and proportions. Models are used in both rapid and extended studies with a variety of drawing and painting media. (1/05)

**ART-28A OIL PAINTING I**

3 units: 2 hours lecture, 3 hours lab.

Prerequisite/Advisory: None.

This is a course in the fundamentals of oil painting as an art form. Students will address problems in portrayal, proportion, composition, and color. (1/05)

**ART-28B OIL PAINTING II**

3 units: 2 hours lecture, 3 hours lab.

Prerequisite: ART-28A.

This course is a study of the materials and methods of oil painting. Students will explore creative and conceptual solutions to problems in portrayal, composition, and color. (1/05)

**ART-28C OIL PAINTING III**

3 units: 2 hours lecture, 3 hours lab.

Prerequisite: ART-28B.

This course is an advanced study of oil painting techniques. Students will apply these techniques with emphasis on conceptual development and critical evaluation. (1/05)

**ART-28D OIL PAINTING IV**

3 units: 2 hours lecture, 3 hours lab.

Prerequisite: ART-28C.

This course is an exploration of oil painting with focus on the students' individual ideas. Students will work towards the development of the personal set of aesthetic requisites necessary for advanced study and independent work. (1/05)

**ART-29A WATERCOLOR PAINTING I**

3 units: 2 hours lecture, 3 hours lab.

Prerequisite/Advisory: None.

This is a course in the fundamentals of watercolor painting as an art form. Students will address problems in portrayal, proportion, composition, and color. (1/05)

**ART-29B WATERCOLOR PAINTING II**

3 units: 2 hours lecture, 3 hours lab.

Prerequisite: ART-29A.

This course is a study of the materials and methods of watercolor painting. Students will explore creative and conceptual solutions to problems in portrayal, composition, and color. (1/05)

**ART-29C WATERCOLOR PAINTING III**

3 units: 2 hours lecture, 3 hours lab.

Prerequisite: ART-29B.

This course is an advanced study of watercolor painting techniques. Students will apply these techniques with emphasis on conceptual development and critical evaluation. (1/05)

**ART-29D WATERCOLOR PAINTING IV**

3 units: 2 hours lecture, 3 hours lab.

Prerequisite: ART-29C.

This course is an exploration of watercolor painting with focus on the students' individual ideas. Students will work towards the development of the personal set of aesthetic requisites necessary for advanced study and independent work. (1/05)

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**ART-40A DIGITAL ART I: INTRODUCTION TO DIGITAL ART**

[CILC area A]

3 units: 2 hours lecture, 3 hours lab.

Advisory: ENGL-A.

This is an introduction to image editing programs. Students will have hands-on experience with the basic elements and tools of the program to create, manage, and edit images and files with an emphasis on real-world applications. (2/01)

**ART-41A GRAPHIC DESIGN I**

3 units: 2 hours lecture, 3 hours lab.

Advisory: ENGL-A.

This course provides an introduction to art with a focus on commercial applications. This includes rendering, lettering, type specifications and figure indication which lead into advertisement layouts, paste-up, and camera-ready art. (2/01)

**ART-41B GRAPHIC DESIGN II**

3 units: 2 hours lecture, 3 hours lab.

Prerequisite: ART-41A. Advisory: ENGL-A.

This is an intermediate course in commercial art with emphasis on exploring and solving problems of an intermediate nature in ideas, techniques, and materials. Students will spend considerable time on the production of projects on both computer and the drawing board. (2/01)

**ART-41C GRAPHIC DESIGN III**

3 units: 2 hours lecture, 3 hours lab.

Prerequisite: ART-41B. Advisory: ENGL-A.

This is an advanced course in commercial art with emphasis on exploring and solving problems of an advanced nature in ideas, techniques, and materials. Students will spend considerable time on the production of projects on both computer and the drawing board. (2/01)

**ART-49 A-Z ADVANCED SPECIAL PROBLEMS IN ART**

3 units: 2 hours lecture, 3 hours lab.

Limitation on enrollment: Before enrolling, the student must complete a contract detailing proposed area of study. Completed contract requires signatures: a) the instructor of the course section the student will be attending; b) the Arts Division Chairperson.

This course is designed to provide students with the opportunity to do advanced, specialized work, under the supervision of an instructor in areas not offered in regular classes. Students must develop an advanced problem in the area of art that they wish to explore. (2/01)

**ART-70A-ZZ FINE AND PERFORMING ARTS -- SPECIAL TOPICS**

0.5-2 units: 0-2 hours lecture, 0-6 hours lab.

Advisory: ENGL-A.

This is a course covering a variety of topics of current interest to students of art. Different topics will be emphasized each time the course is offered. Sections of this course may vary in unit value depending on subject matter, meeting time, and format. (2/01)

**ART-81 ADVANCED CERAMICS LAB**

1 unit: 3 hours lab.

Prerequisite: ART-17A. Advisory: ENGL-A.

This course is an advanced ceramics lab designed to accommodate the student desiring to further his/her skills in ceramics and to give more lab time to the student also enrolled in ART-17BC (Ceramics). Individual instruction is also given to the student. This course may be repeated three times. (2/01)

## ASTRONOMY

(Science, Math and Engineering Division)

**ASTR-01 PRINCIPLES OF ASTRONOMY**

(CSU breadth area B1)

3 units: 3 hours lecture.

Advisories: ENGL-A, ENGL-41.

This is a basic course studying the principles of astronomy beginning with the solar system and continuing through the Milky Way Galaxy and the

galaxies beyond. Throughout the course topics relating to the philosophy of science, history of astronomy, tools of the astronomer, and supporting topics of physics are introduced. The course is designed for students satisfying breadth requirements in science and having a general interest in astronomy. (12/06)

**ASTR-01L INTRODUCTORY ASTRONOMY LABORATORY**

(CSU breadth area B3)

1 unit: 3 hours lab.

One-way corequisite: ASTR-01. Advisories: ENGL-A, ENGL-41; MATH A or MATH B.

This is a basic course in astronomy providing laboratory experience and opportunity for observation of the night sky. Specific topics include observations of the solar system and deep sky objects, time studies, planetary motions, telescopes and their applications, spectroscopy, and basic calculations of the astronomer. (12/06)

## AUTOMOTIVE TECHNOLOGY

(Industrial Technology Division)

**AUTO-04 AUTOMOTIVE MECHANICS**

3 units: 3 hours lecture.

Advisories: ENGL-81, ENGL 84; and MATH-80 or MATH-83.

This class is designed for students without prior experience in automotive mechanics. It is a study of fundamental theory and operation of the components that make up the major automotive systems with the purpose of giving the student general knowledge of the automobile. Major emphasis is given to operational principles of the automobile and related terminology. (12/06)

**AUTO-32 WHEEL ALIGNMENT AND SUSPENSION**

4 units: 3 hours lecture, 3 hours lab.

Advisories: AUTO-04; ENGL-A; MATH-80 or MATH-83.

This course is designed to provide the technical knowledge and experience required for aligning and servicing suspension systems on modern automobiles. Laboratory exercises will provide the student an opportunity to develop entry-level skills in the use of machines and equipment commonly used in wheel alignment, tire service, and front-end repairs. (3/05)

**AUTO-33 AUTOMOTIVE BRAKE SYSTEMS**

4 units: 3 hours lecture, 3 hours lab.

Advisories: AUTO-04, AUTO-62; ENGL-A; MATH-80 or MATH-83.

This course is for students without prior experience in automotive brake repair. The course covers theory, service, and repair of conventional and common anti-lock brake systems (A.B.S.) Laboratory exercises will provide the student the opportunity to develop skills and knowledge in the use of tools and equipment necessary in the repair and service of automotive brake systems. (3/05)

**AUTO-36 AUTOMOTIVE MANUAL TRANSMISSIONS AND DRIVE TRAINS**

4 units: 3 hours lecture, 3 hours lab.

Advisories: AUTO-04; ENGL-A; MATH-80 or MATH-83.

This course is designed for the student without any prior experience in standard transmissions or drive axles. The class will provide technical information required for understanding and repairing of manual transmissions and drive trains. Laboratory exercise will provide the student with proper repair procedures and use of related tools and equipment. Standard transmissions, transaxles, differentials, drivelines, and related components will be covered. (4/04)

**AUTO-40 AUTOMOTIVE MACHINING**

3 units: 2 hours lecture, 3 hours lab.

Advisories: AUTO-04; ENGL-A; MATH-80 or MATH-83.

This is a course designed to teach the theory of machining operations used in automotive engine repair and to develop basic skills in the operation of these machines. Instruction will be given in the following areas: 1) cylinder reconditioning; 2) cylinder head, valve, valve seat, and valve guide reconditioning; 3) connecting rod reconditioning; 4) and repair or reconditioning of other automotive mechanical parts. (3/06)

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**AUTO-41 AUTOMOTIVE ENGINES**

4 units: 2 hours lecture, 6 hours lab.

One-way corequisite: AUTO-04. Advisories: ENGL-A; MATH-80 or MATH-83.

This is a class in the principles and theory of engine repair and rebuilding including the disassembly and assembly of engines. There will be emphasis on inspection, measuring, and comparing worn and rebuilt parts. Testing equipment will be used in comparing and diagnosing engines needing repair. Also included will be minor machining operations that are used in engine rebuilding and repairing. (3/06)

**AUTO-42 AUTOMOTIVE ELECTRICAL SYSTEMS**

3 units: 2.5 hours lecture, 1.5 hours lab.

Prerequisite: AUTO-62. Advisories: AUTO-04; ENGL-81, ENGL-84; MATH-80 or MATH-83.

This course covers automotive electrical systems and includes a review of electron theory, magnetism, and semiconductors. The student will acquire technical and working knowledge of batteries, starter motors, charging components and controls, ignitions circuits, and accessories. The use of special tools and test equipment will be included. (2/00)

**AUTO-43 AUTOMOTIVE FUEL SYSTEMS**

3 units: 2.5 hours lecture, 1.5 hours lab.

One-way corequisite: AUTO-04. Advisories: ENGL-81, ENGL-84; MATH-80 or MATH-83.

This course covers the testing and service of automotive fuel systems, including carburetors, fuel pumps, fuel tanks, gauges and senders, emission control fuel systems, fuel injection systems, and computer controls. (5/06)

**AUTO-44 AUTOMOTIVE AIR CONDITIONING, HEATING SYSTEM, COOLING SYSTEM**

4 units: 3 hours lecture, 3 hours lab.

Advisories: AUTO-04; ENGL-81, ENGL-84; MATH-80 or MATH-83.

This is a basic course in the principles of operation of automotive air conditioning, heating system, and cooling system. The course covers theory, system controls, troubleshooting, service, and repairs. Lab emphasis consists of system diagnosis servicing, repairs, and preventive maintenance on live vehicles. (5/06)

**AUTO-46 AUTOMATIC TRANSMISSIONS**

4 units: 2 hours lecture, 6 hours lab.

Advisories: AUTO-04, AUTO-62; ENGL-A; MATH-80 or MATH-83.

This course will cover domestic and import automatic transmissions and transaxles. Rebuilding will include diagnosis, inspection, repair, and testing. Theory will cover power flow, apply devices, hydraulics, torque converters, and shift controls. (4/04)

**AUTO-47 ENGINE PERFORMANCE**

4 units: 2 hours lecture, 6 hours lab.

Prerequisites: AUTO-42, AUTO-43.

Advisories: ENGL-81, ENGL-84; MATH-80 or MATH-83.

This course is a study of advanced automotive electrical and fuel systems. The course will cover ignition, charging, and starting circuits; fuel pumps; carburetion; fuel injection; and smog-control devices. All systems will be included as they relate to live maintenance procedures. Advanced system diagnosis and maintenance of these circuits will receive special attention. (2/00)

**AUTO-48A SPECIAL PROBLEMS IN AUTOMOTIVE TRANSMISSIONS AND DRIVE TRAINS**

2 units: 6 hours lab.

Prerequisite: AUTO-36, or AUTO-46 and AUTO-62.

This course is designed to permit the student to increase his/her job preparation skills. This additional training will allow the student to specialize and further develop skills in unique areas not covered in other automotive technology classes. AUTO-36 is the prerequisite if the student's emphasis will be on manual transmissions and drive trains. AUTO-46 and AUTO-62 will be required if the student's emphasis will be on automatic transmissions. (9/02)

**AUTO-48B SPECIAL PROBLEMS IN ENGINE PERFORMANCE**

2 units: 6 hours lab.

Prerequisite: AUTO-47. Advisories: ENGL-81, ENGL-84.

This course is designed to permit the student to experience those areas not normally covered in the objectives of AUTO-47. The course will help prepare the student for employment in the trade with entry-level skills. Techniques and information needed for employment in the trade occupations will receive special attention. (9/03)

**AUTO-48C SPECIAL PROBLEMS IN AUTOMOTIVE ENGINES**

2 units: 6 hours lab.

Prerequisite: AUTO-41. Advisories: ENGL-81, ENGL-84.

This course is designed to permit the student to experience those areas not normally covered in the objectives of AUTO-04 and AUTO-41. The course will help prepare the student for employment in the trade with entry-level skills. Techniques and information needed for employment in the trade occupations will receive special attention. (9/03)

**AUTO-48D SPECIAL PROBLEMS IN AUTOMOTIVE SUSPENSION**

2 units: 6 hours lab.

Prerequisite: AUTO-32. Advisories: ENGL-81, ENGL-84; MATH-80 or MATH-83.

This course is designed to permit the student to experience those areas not normally covered in the objectives of AUTO-32. The course will help prepare the student for employment in the trade with entry-level skills. Techniques and information needed for employment in the trade occupations will receive special attention. (9/02)

**AUTO-48E SPECIAL PROBLEMS IN AUTOMOTIVE BRAKES**

2 units: 6 hours lab.

Prerequisites: AUTO-33, AUTO-62.

Advisories: ENGL-81, ENGL-84; MATH-80 or MATH-83.

This course is designed to permit the student to experience those areas not normally covered in the objectives of AUTO-33. The course will help prepare the student for employment in the trade with entry-level skills. Techniques and information needed for employment in the trade occupations will receive special attention. (9/02)

**AUTO-48F SPECIAL PROBLEMS IN AUTO BODY REPAIR AND PAINTING**

2 units: 6 hours lab.

Prerequisite: AUTO-50. Advisories: ENGL-81, ENGL-84; MATH-80 or MATH-83.

This course will provide the student additional time to develop and complete techniques, concepts, and skills learned in AUTO-50 (Auto Body Repair and Painting). The student will be provided with sufficient time to complete projects started in other classes. The course may be repeated once. (2/00)

**AUTO-50 AUTO BODY REPAIR AND PAINTING**

4 units: 2 hours lecture, 6 hours lab.

Advisories: ENGL-81, ENGL-84; MATH-80 or MATH-83; WELD-06/MECH-06.

This course is an introduction to auto body repair and painting. Methods of metal repair will include shrinking, stretching, contouring, and plastic filling. Proper use of specialized hand tools and power tools will be emphasized. Various automotive primers and paints and their application will be covered. Application of paint, spraying techniques, and spray equipment maintenance will receive special attention. (1/00)

**AUTO-51 ADVANCED AUTO BODY REPAIR AND REFINISHING**

4 units: 2 hours lecture, 6 hours lab.

Prerequisite: AUTO-50. Advisories: ENGL-81, ENGL-84; MATH-80 OR MATH-83.

This course involves repairing and refinishing vehicles with body and finish damage. Vehicle panel repair or replacement through proper tools and equipment will be covered. Students will receive instruction in the proper choice of paints, repairing techniques, cost estimating, and customer relations. Training in advanced painting techniques will be included to meet industry standards. (1/00)

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**AUTO-55 BASIC/ENHANCED EMISSION CONTROL DEVICES AND SERVICING** (Formerly AUTO-45)

5 units: 4.5 hours lecture, 1.5 hours lab.

Prerequisite: AUTO-47. Advisories: AUTO-42, AUTO-43, AUTO-62; ENGL-81, ENGL-84; MATH-80 or MATH-83.

This course is California Bureau of Automotive Repair-approved for the basic (EB) and enhanced (EA) emission control licenses. It is designed especially for the automobile technician preparing for the California Smog License. Students who do not have one year of trade experience in emissions/tune-up or required courses and certificates will not be eligible to take the state licensing examination. A review of the automotive electrical system, fuel system, and tune-up procedures will be given. Emphasis will be on operational principles of the emission control components and how to test them. Demonstrations of various pieces of equipment related to emission work will be given with a appropriate industry certified equipment. (5/03)

**AUTO-60 CONSUMER AUTOMOTIVE SERVICE**

2 units: 1 hour lecture, 3 hours lab.

Advisories: ENGL-81, ENGL-84.

This course is designed for the automotive consumer or entry-level technician who is interested in learning about and performing routine maintenance on his/her vehicle. It will cover topics such as tools and equipment, safety, consumer protection, and maintenance procedures ranging from air conditioning inspection and minor service to wiper blade replacement. (3/05)

**AUTO-62 BASIC AUTOMOTIVE ELECTRONICS FOR TECHNICIANS**

3 units: 2.5 hours lecture, 1.5 hours lab.

Advisories: MATH-80 or MATH-83; ENGL-81 and ENGL-84.

This course is designed to provide the automotive student with a strong background in basic electrical concepts. This will help the student to troubleshoot electrical system problems with the aid of technical information and test equipment. The class will also provide the necessary electrical theory for the more advanced automotive classes. (01/07)

**AUTO-65 AUTOMOTIVE PARTS AND SERVICE ADVISING**

4 units: 3.5 hours lecture, 1.5 hours lab.

Prerequisite: AUTO-04. Advisories: ENGL-81, ENGL-84; BUS-53; MATH-80 or MATH-83.

This course will cover the duties and responsibilities of automotive parts and service advisors working at independent and dealership-based stores. Course content will include service and parts merchandising and communication skills, integrated computer management software, cost estimation, enhancing customer satisfaction, scheduling, inventory control, hazardous materials, warranties, lemon laws, and documentation requirements. (3/05)

## BIOLOGY

(Science, Math and Engineering Division)

**BIOL-01 GENERAL BIOLOGY FOR NON-MAJORS**

(CSU breadth area B2/B3)

4 units: 3 hours lecture, 3 hours lab.

Advisories: ENGL-A, ENGL-41. Note: This course is not available to students having a grade of "C" or better in BIOL-04 or BIOL-04H.

This is an introductory-level course designed for non-majors. Areas stressed include the origin of life, structure and function of cells, basic processes of life, reproduction, ecology, microbiology, evolution, classification, genetics, and metabolic processes. (11/04)

**BIOL-04 PRINCIPLES OF BIOLOGY FOR SCIENCE MAJORS**

(CSU breadth area B2/B3)

4 units: 3 hours lecture, 3 hours lab.

One-way corequisite: CHEM-04A. Advisories: BIOL-01; ENGL-A, ENGL-41.

This course is a study of the principles of biology. Areas of study will include aspects of the philosophy of science, chemistry of life, cellular organization, biological membranes, energy transfer, including photosynthesis and cellular metabolism, reproduction, Mendelian and molecular genetics, taxonomy and classification, evolution, bio-diversity, and ecology. This

course is intended for science majors. (11/04)

**BIOL-04H HONORS PRINCIPLES OF BIOLOGY FOR SCIENCE MAJORS**

(CSU breadth area B2/B3)

4 units: 3 hours lecture, 3 hours lab.

Limitation on enrollment: Enrollment in the Honors Program. See the college catalog for a description of enrollment requirements. One-way corequisite: CHEM-04A. Advisories: BIOL-01; ENGL-A, ENGL-41.

This course is a study of the principles of biology and is intended for the honors student. Course emphases include cellular and molecular biology, biological membranes, bioenergetics, storage, processing, and expression of genetic information, classification and taxonomy, evolution, bio-diversity, and ecology. There will be an emphasis on collaborative learning, research, and scientific writing. (11/04)

**BIOL-06 ENVIRONMENTAL SCIENCE**

(CSU breadth area B2)

3 units: 3 hours lecture.

Advisories: ENGL-A, ENGL-41.

This introductory course examines Earth as an ecosystem composed of biological, chemical, and physical processes with emphasis on man's impact on the planet. Topics include the structure and function of ecosystems, bio-diversity, the impact of industrialization and urbanization, energy, populations, resources, pollution, pesticides, and risk/benefit assessment. (10/04)

**BIOL-08 CONSERVATION OF NATURAL RESOURCES**

(CSU breadth area B2)

3 units: 3 hours lecture.

This course is a study of human interactions with our physical and biological environment. Included in this course are a survey of human use of resources, the history of ideas about resources, the role of ecology as a basis for wise decisions, and current environmental problems. Maintenance and improvement of long-term productivity and quality of the environment will be emphasized.

**BIOL-09 INTRODUCTION TO GENETICS** (Formerly GENE-10)

(CSU breadth area B2)

3 units: 3 hours lecture.

Prerequisite: BIOL-01 or BIOL-04 or BIOL-04H. Advisories: ENGL-A, ENGL-41.

This course is an introductory study of genetic principles, inheritance, variation, and evolution in plants and animals. This course includes the study of Mendelian genetics, molecular genetics, and population genetics. Recent research innovations explored include genetic engineering. (12/06)

**BIOL-13 GENERAL ZOOLOGY** (Formerly ZOO-01)

(CAN BIOL 4) (CSU breadth area B2/B3)

5 units: 3 hours lecture, 6 hours lab.

Prerequisite: BIOL-04 or BIOL-04H. Advisories: ENGL-A, ENGL-41.

This course is an introduction to the principles of animal biology. The phylogenetic series, structure, function, heredity, comparative relationships, and evolution of the invertebrates and vertebrates will be studied. This course is designed for life science majors and students in pre-professional programs. (Note: The laboratory portion of this course includes required field trips.) (12/06)

**BIOL-16 GENERAL HUMAN ANATOMY** (Formerly ANAT-25)

(CAN BIOL 10) (CSU breadth area B2/B3)

4 units: 2 hours lecture, 6 hours lab.

Prerequisite: BIOL-50 or BIOL-01. Advisories: ENGL-A, ENGL-41.

This course is an intensive study of the structure of the human body. Consideration is given to the skeletal, muscular, circulatory, respiratory, digestive, excretory, reproductive, and nervous systems. Special emphasis is placed on the needs of students majoring in biology, nursing, physical education, and medical sciences. (12/06)

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**BIOL-18 PRINCIPLES OF PHYSIOLOGY** (Formerly PHYO-01)

(CSU breadth area B2/B3)

4 units: 3 hours lecture, 3 hours lab.

Prerequisites: BIOL-16 or BIOL-01; CHEM-02A. Advisories: ENGL-A, ENGL-41.

This course is a general lecture and laboratory course in human physiology, including a study of blood and circulation, respiration, muscle activity, endocrine glands, digestion, excretion, and the functions and activities of the brain, nerves, and sense organs. (12/06)

**BIOL-20 MICROBIOLOGY**

(CAN BIOL 14) (CSU breadth area B2/B3)

4 units: 2 hours lecture, 6 hours lab.

Prerequisite: BIOL-01 or BIOL-04 or BIOL-04H. Advisories: Chem-02A; ENGL-A, ENGL-41.

This is an introductory course familiarizing students with basic laboratory techniques and fundamental topics of microbiology. Laboratory work includes aseptic techniques, staining procedures, biochemical characterization, serology, and DNA technology used in the identification of microorganisms. Lecture topics consist of a historical overview, genetics, metabolism, cell physiology, growth requirements, immunology, and host-parasite interactions between humans and bacteria, viruses, protozoa, and helminths. The course is designed for students in any of the allied health professions. (1/07)

**BIOL-25 THE OCEANS**

(CSU breadth area B2)

3 units: 3 hours lecture.

This is an introductory study of the modern biology of the oceans. The marine world is treated as man's last frontier on earth; various discoveries, problems and methods of the marine biologist will be emphasized. Lecture topics will include classification of marine environments, ocean currents, tides, continental drifts, sea floor spreading, marine resources, pollution, and the biology of important marine fishes and invertebrates. A number of these topics will be related to the marine ecology of the California coast.

**BIOL-31 INTRODUCTION TO BIOTECHNOLOGY I**

[CILC areas C,F]

4 units: 2 hours lecture, 6 hours lab.

Prerequisite: BIOL-01 or BIOL-04; CHEM-02A, CHEM-02B or CHEM-04A, CHEM-04B. One-way corequisite: BIOL-09. Advisories: BIOL-20; ENGL-A, ENGL-41; MATH-A or MATH-B.

This is an introductory course in biotechnology theory and techniques. This course will cover safety and good lab practices; preparation of solutions; DNA isolation, manipulation, transformation, and quantization; isolation of RNA, PCR and analysis of PCR products; and electrophoresis. The primary focus of the course will be the development of laboratory skills and principles underlying them. This course is recommended for students seeking a certificate in biotechnology, for students majoring in biotechnology or a related field, or for students transferring to a university who are interested in undergraduate research. (10/00)

**BIOL-33 BIOTECHNOLOGY II: ADVANCED LABORATORY TECHNIQUES**

4 units: 2 hours lecture, 6 hours lab.

Prerequisite: BIOL-31. Advisories: BIOL-20; ENGL-A, ENGL-41; MATH-A or MATH-B.

This is an advanced course on techniques in biotechnology. This course is designed to build upon the skills developed in BIOL-31. It will provide both discussion of theory along with the extensive hands-on experience in a laboratory setting. Topics will cover techniques in the isolation, detection, and manipulation of bio-molecules, including RNA, DNA, and proteins. Field trips may be required. (11/00)

**BIOL-50 SURVEY OF ANATOMY AND PHYSIOLOGY**

(Formerly ANAT-50)

3 units: 3 hours lecture.

Advisories: ENGL-A, ENGL-41.

This is a course in basic anatomy and physiology of the human body. It is designed as an elementary course for students with limited background in science or biology. (12/06)

**BOTANY***(Science, Math and Engineering Division)***BOT-01 PRINCIPLES OF BOTANY**

(CAN BIOL 6) (CSU breadth area B2/B3)

5 units: 3 hours lecture, 6 hours lab.

Prerequisite: BIOL-04 or BIOL-04H. Advisories: ENGL-A, ENGL-41.

This course is a study of prokaryotes, algae, fungi, and plants, including structure, physiology, development, genetics, ecology, and evolution. Emphasis is given to the economic importance of various plant groups. Laboratory includes required field trips. (11/00)

**BUSINESS***(Business Division)***BUS-10 INTRODUCTION TO BUSINESS**

3 units: 3 hours lecture.

Advisories: ENGL-A, ENGL-41, ENGL-41L.

This foundation course is the only one giving an overview of all aspects of business. It covers economic foundations, business organization, and finance including accounting and computers. Production and marketing, management styles and principles, and human resource management are studied. An understanding of business and its relationship with social, political, legal, and international realms will be developed. (1/02)

**BUS-18A BUSINESS LAW (CAN BUS 8)**

4 units: 4 hours lecture.

Advisories: ENGL-A, ENGL-41, CPSC-24 or CPSC-30; LRNR-30.

This course is a study of legal principles that govern the conduct of business. Included in this study are surveys of the essential elements of legal history, jurisprudence, business crime, torts, contracts, agency relationships, UCC-sales, legal ethics, administrative law, labor and employment law, and the legal environment of international law. Introduction to legal research and brief writing is also included. (11/06)

**BUS-34 INVESTMENTS AND SECURITIES**

3 units: 3 hours lecture.

Advisories: ENGL-A, ENGL-41.

This course deals with the study of corporate stocks and bonds, time deposits, government securities, mutual funds, real estate, commodity futures, and various other types of investment media. The course will examine the basic concepts of investing, how to analyze the economy, how to analyze financial statements, and how to make investment decisions. (3/00)

**BUS-35 MONEY MANAGEMENT**

3 units: 3 hours lecture.

Advisories: CPSC-30; ENGL-A, ENGL-41; MATH-80 or MATH-83.

This course offers instruction in principles and practices of business from the consumer's point of view. Areas of study include income and wealth distribution; occupational earnings; wise buying; consumer rights, legislation and protective agencies; credit and borrowing; financial services; automobiles; property liability, health, life and disability insurance; Social Security, pensions, annuities; housing; savings and investments; and taxes and estate planning. (10/06)

**BUS-43 BUSINESS COMMUNICATION**

3 units: 3 hours lecture.

Prerequisite: BUS-53. Advisory: ENGL-A.

This course covers development of letter-, memo- and report-writing principles and techniques; development of general business vocabularies; and basic training in speaking, listening, and non-verbal communication in order to develop the skills needed in everyday communication in business. (3/06)

**BUS-49A-ZZ SPECIAL TOPICS IN BUSINESS**

.5-3 units: ½ -3 hours lecture.

Advisory: ENGL-A

This is a course designed to address special topics in business to meet the current needs of students. It will provide the students with access to instruction that will assist them in acquiring the most up-to-date information

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possible in order to cope with the rapidly changing business and economic environment. (2/07)

### **BUS-53 BUSINESS ENGLISH**

3 units: 3 hours lecture.

Advisories: ENGL-81, ENGL-84.

This course covers the mechanics of English as specifically applied to the field of business. It covers sentence structure, spelling, punctuation, grammar, business vocabulary, and the application of appropriate writing techniques to business communication. (11/02)

### **BUS-70A-ZZ SPECIAL TOPICS IN BUSINESS**

0.5 - 3 units: 0.5-3 hours lecture, 0-9 hours lab.

This is a course designed to address special topics in business to meet the current needs of students. It will provide the students with access to instruction that will assist them in acquiring the most up-to-date information possible in order to cope with the rapidly changing business and economic environment. (5/99)

## **CHEMISTRY**

*(Science, Math and Engineering Division)*

### **CHEM-02A INTRODUCTORY CHEMISTRY**

(CAN CHEM 6) (CSU breadth area B1/B3)

4 units: 3 hours lecture, 3 hours lab.

Advisories: ENGL-A, ENGL-41; MATH-A or MATH-B.

This is an introduction to the general principles of inorganic chemistry, atomic and molecular structure, states of matter, solutions, and radioactivity. The class is designed for students majoring in liberal studies, nursing, or agriculture. (11/03)

### **CHEM-02B INTRODUCTORY CHEMISTRY: INTRODUCTION TO ORGANIC AND BIOCHEMISTRY**

(CAN CHEM 8) (CSU breadth area B1/B3)

4 units: 3 hours lecture, 3 hours lab.

Prerequisite: CHEM-02A. Advisories: ENGL-A, ENGL-41; LRNR-30; MATH-A or MATH-B.

This is a continuation of CHEM-02A with emphasis on organic and biochemistry. The structure, nomenclature, and properties of the common building blocks of organic chemistry are covered. These same principles are applied to more complex organic compounds, such as carbohydrates, proteins, lipids, and nucleic acids, to illustrate the chemical basis of biological actions. This course is intended for students in liberal studies, agriculture, and health-related fields. It is not for chemistry or science majors. (11/03)

### **CHEM-04A GENERAL CHEMISTRY (Formerly CHEM-01A)**

(CAN CHEM 2) (CSU breadth area B1/B3)

5 units: 3 hours lecture, 6 hours lab.

Prerequisites: CHEM-02A; MATH-C. Advisories: ENGL-A, ENGL-41.

This course is designed to teach general principles of chemistry emphasizing atomic structure, bonding, periodic properties, kinetic theory, and solution chemistry. It is designed for the student majoring in chemistry, physics, biology, engineering, pre-med, or related fields. The student who has not successfully completed the prerequisite of CHEM-02A but has completed a high school chemistry course with a grade of "C" or higher should consider submitting a prerequisite challenge. (11/03)

### **CHEM-04B GENERAL CHEMISTRY (Formerly CHEM-01B)**

(CAN CHEM 4) (CSU breadth areas B1/B3)

5 units: 3 hours lecture, 6 hours lab.

Prerequisite: CHEM-04A. Advisories: ENGL-A, ENGL-41.

This is a continuation of the general principles of chemistry, with emphasis on chemical equilibria, thermodynamics, and electro-chemistry. An introduction to the principles of organic chemistry is included. The lab provides the student with both quantitative and qualitative experiments with an emphasis on quantitative analysis. (11/03)

### **CHEM-12A ORGANIC CHEMISTRY I**

5 units: 3 hours lecture, 6 hours lab.

Prerequisite: CHEM-04B. Advisories: ENGL-A, ENGL-41.

This course is a study of the theory and practice of organic chemistry examining the bonding, structure, properties, and reactions of the hydrocarbons and organic halides. Nucleophilic substitution, electrophilic substitution and elimination reaction mechanisms are examined. Aromaticity, stereochemistry, and applications of spectroscopy are introduced. The laboratory includes the study of basic organic laboratory techniques: synthesis, separation, identification, and purification of organic substances, separation of natural products, and includes the use of related instrumentation. This course is directed toward students in science and pre-professional preparation. (5/03)

### **CHEM-12B ORGANIC CHEMISTRY II**

5 units: 3 hours lecture, 6 hours lab.

Prerequisite: CHEM-12A. Advisories: ENGL-A, ENGL-41.

This course is a continuation of CHEM-12A, expanding the study of organic chemistry to include aldehydes and ketones, acids and esters, amines and amides, with an introduction to biochemistry issues, carbohydrates, lipids, proteins, and nucleic acids. Included is a further examination of the use of spectroscopy, IR Mass Spec., and NMR in the identification of organic substances. In the laboratory portion of the course, emphasis is placed on the synthesis of organic substances and qualitative analysis. This course is directed toward students in science and pre-professional preparation. (5/03)

### **CHEM-35A MATH PREPARATION FOR GENERAL CHEMISTRY**

1 unit: 1 hour lecture.

This course is designed to develop the computational skills necessary for success in CHEM-02A or CHEM-04A. Emphasis is placed on math, nomenclature, and basic concepts. This course is designed specifically for students who are taking CHEM-02A or CHEM-04A.

### **CHEM-35B MATH PREPARATION FOR GENERAL CHEMISTRY**

1 unit: 1 hour lecture.

This course is designed to develop the computational skills necessary for success in the CHEM-04A/CHEM-04B sequence. Emphasis is placed on math, nomenclature, and basic concepts. This course is designed specifically for students who have completed CHEM-35A and are currently enrolled in CHEM-04A or CHEM-04B.

## **CHILD DEVELOPMENT**

*(Business Division)*

### **CLDV-08 FAMILIES AND SOCIETIES (Formerly FCSC-08)**

(CSU breadth area E)

3 units: 3 hours lecture.

Advisories: ENGL-A, ENGL-41.

This course studies the importance of the socialization of children and how society supports and empowers families. Emphasis will include the role of family, peers, school/child care, media, community and culture, and the influence these socializing agents have on children from diverse backgrounds. (11/05)

### **CLDV-09 HUMAN DEVELOPMENT (Also: PSYC-09)**

(CSU breadth area E)

3 units: 3 hours lecture.

Advisories: ENGL-A, ENGL-41.

This course is an introduction to the scientific study of human development from conception through death. It examines interplay of biological, psychological, social, and cultural forces on the developing human being. (3/05)

### **CLDV-11 INTRODUCTION TO EARLY INTERVENTION**

3 units: 2 hours lecture, 3 hours lab.

Limitation on enrollment: Students must have a negative result on a TB test within the past four years. Prerequisites: CLDV-29, CLDV-31. Advisory: ENGL-A.

This course is designed for the Early Intervention Assistant certificate. The student will study infants and toddlers with disabilities, atypical development

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or other special needs, both in the early intervention setting and the child care setting. The student will explore strategies and interventions used in the field of early intervention. Current theories in early intervention, early relationships, family systems, family grief, and stressors will be examined. (11/05)

**CLDV-29 CHILD GROWTH AND DEVELOPMENT** (Formerly FCSC-29)  
(CAN FCS 14)  
3 units: 3 hours lecture.  
Advisory: ENGL-A.

The growth and development patterns of all children from prenatal life through adolescence will be studied. There will be a strong integration of theory and practice. There will be directed observations of children from newborn through adolescence. (2/07)

**CLDV-30A PRESCHOOL CURRICULUM A** (Formerly FCSC-30A)  
2 units: 2 hours lecture.  
Advisories: CLDV-29; ENGL-A.

This course is designed to help Child Development students and practicing child care personnel create developmentally appropriate curriculum ideas in art, math, and science for children in early childhood programs, ages two- to five-years old. Students will do hands-on work with materials. (12/04)

**CLDV-30B PRESCHOOL CURRICULUM B** (Formerly FCSC-30B)  
2 units: 2 hours lecture.  
Advisories: CLDV-29; ENGL-A.

This course is designed to help Childhood Development students and practicing child care professionals create developmentally appropriate curriculum ideas and provide an opportunity-rich program of interesting and appropriate developmental language arts, music, and movement activities. (12/04)

**CLDV-30C INFANT/TODDLER CURRICULUM** (Formerly FCSC-30C)  
2 units: 2 hours lecture.  
Advisories: CLDV-35; ENGL-A.

This course is designed to help Early Childhood Education students and practicing infant/toddler personnel provide an opportunity-rich program of interesting and age-appropriate activities for infants and toddlers. (1/05)

**CLDV-30D SCHOOL-AGE CURRICULUM**  
2 units: 2 hours lecture.  
Advisories: CLDV-29; ENGL A.

This course is designed to help Early Childhood Education students and practicing child care professionals create developmentally appropriate curriculum ideas for children in school-age programs, ages 5-12 years old. Students will do hands-on work with materials. (12/04)

**CLDV-31 INTRODUCTION TO EARLY CHILDHOOD EDUCATION**  
(Formerly FCSC-31)  
3 units: 3 hours lecture.  
One-way corequisite: CLDV-29. Advisory: ENGL-A.

This course is the foundation course of the ECE major and certificate training program. Topics covered include the philosophy of early childhood education, and developmentally appropriate practices and principles for teachers in programs serving children ages zero to eight years old. (11/05)

**CLDV-32 PRACTICES IN EARLY CHILDHOOD EDUCATION**  
(Formerly FCSC-32)  
2 units: 2 hours lecture.  
Prerequisite: CLDV-31.

Early childhood preschool programs will be studied for purposes of planning experiences which encourage physical, mental, social, and emotional growth. The optional laboratory will consist of supervised work in a selected preschool program and is designed to offer students continued and increased opportunities in working with children ages two-to-five years old in a teaching capacity. (12/04)

**CLDV-32L PRACTICES IN EARLY CHILDHOOD EDUCATION LAB**  
(Formerly FCSC-32L)  
2 units: 6 hours lab.

Limitation on enrollment: Students must have a negative result on a TB test within the past four years. One-way corequisite: CLDV-32.

Early childhood programs will be studied for purposes of planning experiences which encourage physical, mental, social, and emotional growth. The laboratory will consist of supervised work in a selected preschool program and is designed to offer students continued and increased opportunities in working with young children ages two-to-five years old. (12/04)

**CLDV-33 WORKING EFFECTIVELY WITH FAMILIES**  
(Also: PSYC-33 and SOC-33) (Formerly FCSC-33)  
1 unit: 1 hour lecture.

Advisory: ENGL-A.

This is a course designed to teach students how to work with parents in school settings. Students will examine current ways of parent involvement, parent rights and responsibilities, and ways of keeping parents informed. (11/05)

**CLDV-34A ADMINISTRATION AND SUPERVISION OF ECE PROGRAMS: LICENSING AND STAFFING** (Formerly FCSC-34A)  
3 units: 3 hours lecture.  
Advisory: ENGL-A.

This class is designed to introduce students to the basic skills necessary to become administrators in child development centers. Focus will be placed on requirements for starting a child care program, organizational development and supervision, health and safety requirements, and working with parents. (1/05)

**CLDV-34B ADMINISTRATION AND SUPERVISION OF ECE PROGRAMS: MANAGING PEOPLE, TIME, AND RESOURCES**  
(Formerly FCSC-34B)  
3 units: 3 hours lecture.  
Advisory: ENGL-A.

This class is designed to give students an in-depth look at administration problems of child development centers. Emphasis will be placed on fiscal management policy-making, personnel management, and developing staff relationships. (1/05)

**CLDV-35 INFANT AND TODDLER DEVELOPMENT**  
(Formerly FCSC-35)  
2 units: 2 hours lecture.  
Prerequisite: CLDV-31. Advisory: ENGL-A.

This course is the study of the development of children from birth to age three. This will include growth and development, health and nutrition needs, social and emotional needs, and cognitive and language development. Focus will be on care giving, education, curriculum, and developmentally appropriate programs/environments for infants and toddlers. Adult relationships with families, parents, and staff will also be studied. (11/05)

**CLDV-35L INFANT AND TODDLER LAB**  
2 units: 6 hours lab.

Limitation on enrollment: Students must have a negative result on a TB test within the past four years. One-way corequisite: CLDV-35.

The laboratory experience offers students the opportunity to work with infants and toddlers in programs on group and individual projects in a supervised early childhood program dealing with children from birth up to three years. (12/04)

**CLDV-37 SUPERVISING ADULTS IN ECE SETTINGS**  
(Formerly FCSC-37)  
2 units: 2 hours lecture.  
Advisory: ENGL-A.

This course is a study of the methods and principles of supervising student teachers, assistant teachers, parents, and volunteers in ECE classrooms that are prepared for children who are typically and atypically developing and include basic methods of accommodating children with special needs. Emphasis is on the role of classroom teachers who function as mentors for new teachers while simultaneously addressing the needs of others. This is

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a required course for ECE professionals interested in obtaining a "Master Teacher" child development permit. (11/05)

**CLDV-38 CHILDREN WITH SPECIAL NEEDS** (Formerly FCSC-38)

3 units: 3 hours lecture.

Advisories: CLDV-29; ENGL-A.

This course provides knowledge and skills that early childhood teachers need to serve developmentally delayed and disabled preschoolers. The focus will be on working with comprehensive family services, identification of special needs children, and the inter/multi-disciplinary approach to early intervention. (11/05)

**CLDV-39 NUTRITION FOR YOUNG CHILDREN (Also: NUTR-39)**

3 units: 3 hours lecture.

Advisories: ENGL-A, ENGL-41, ENGL-41L.

This course offers a study of nutrients and their function with an emphasis on the needs of children -- birth through adolescence. Cultural and socioeconomic influences on food practices and methods of teaching good nutrition to children will be covered. Emphasis will be on improving the nutritional status of children. This course is designed for Early Childhood Education majors to fulfill state requirements for a Children's Learning Center permit. The course is also for parents who wish to become more knowledgeable about nutrition for their children and for food service workers in child care programs. (11/06)

**CLDV-40A ECE SUPERVISED FIELD EXPERIENCE**

(Formerly FCSC-36)

2 units: 1 hour lecture, 3 hours lab.

Limitation on enrollment: Students must have a negative result on a TB test within the past four years. Prerequisites: CLDV-32L or CLDV-35L OR CLDV-56L.

Students will be placed as student teachers in volunteer or paid preschool field sites. An overview of developmentally appropriate preschool practices will be presented. Students will review guidance techniques, observation techniques, and programming/curriculum ideas as they relate to their field placement. Students will learn interpersonal communication skills and team building. (3/05)

**CLDV-40B ECE SUPERVISED FIELD EXPERIENCE**

(Formerly FCSC-36)

3 units: 1 hour lecture, 6 hours lab.

Limitation on enrollment: Students must have a negative result on a TB test within the past four years. Prerequisites: CLDV 32L or CLDV 35L OR CLDV 56L.

Students will be placed as student teachers in volunteer or paid preschool field sites. An overview of developmentally appropriate preschool practices will be presented. Students will review guidance techniques, observation techniques, and programming/curriculum ideas as they relate to their field placement. Students will learn interpersonal communication skills and team building. (3/05)

**CLDV-41A ECE ADVANCED SUPERVISED FIELD EXPERIENCE**

(Formerly FCSC-36A1)

2 units: 1 hour lecture, 3 hours lab.

Limitation on enrollment: Students must have a negative result on a TB test within the past four years. Prerequisite: CLDV-40A or CLDV-40B. Advisory: ENGL-A.

Students will be placed as student teachers in volunteer or paid field sites. Students will continue to perfect guidance techniques, observation techniques, and programming/curriculum ideas as they relate to their field placement. Students will perfect and continue to learn interpersonal communication skills and team building. (3/05)

**CLDV-41B ECE ADVANCED SUPERVISED FIELD EXPERIENCE**

(Formerly FCSC-36A2)

3 units: 1 hour lecture, 6 hours lab.

Limitation on enrollment: Students must have a negative result on a TB test within the past four years. Prerequisite: CLDV-40A or CLDV-40B. Advisory: ENGLA.

Students will be placed as student teachers in volunteer or paid field sites. Students will continue to perfect guidance techniques, observation

techniques, and programming/curriculum ideas as they relate to their field placement. Students will perfect and continue to learn interpersonal communication skills and team building. (3/05)

**CLDV-42A ECE SUPERVISED FIELD EXPERIENCE: INFANT/TODDLER** (Formerly FCSC-36B1)

2 units: 1 hour lecture, 3 hours lab.

Limitation on Enrollment: Students will be required to obtain a negative result on a TB test within the past four years. Prerequisites: CLDV-35 and CLDV-32L, CLDV-35L or CLDV-56L.

Students will be placed in an infant/toddler, volunteer or paid, field site. An overview of developmentally appropriate infant/toddler practices will be presented. Students will continue to review guidance techniques, observation techniques, and programming/curriculum ideas as they relate to their field placement. Students learn interpersonal communication skills and team building at an infant/toddler program. (3/05)

**CLDV-42B ECE SUPERVISED FIELD EXPERIENCE INFANT/TODDLER** (Formerly FCSC-36B2)

3 units: 1 hour lecture, 6 hours lab.

Limitation on Enrollment: Students will be required to obtain a negative result on a TB test within the past four years. Prerequisites: CLDV-35 and CLDV-32L, CLDV-35L, or CLDV-56L.

Students will be placed in an infant/toddler, volunteer or paid, field site. An overview of developmentally appropriate infant/toddler practices will be presented. Students will continue to review guidance techniques, observation techniques, and programming/curriculum ideas as they relate to their field placement. Students learn interpersonal communication skills and team building at an infant/toddler program. (3/05)

**CLDV-43A ECE SUPERVISED FIELD EXPERIENCE: SPECIAL NEEDS** (Formerly FCSC-36C1)

2 units: 1 hour lecture, 3 hours lab.

Limitation on enrollment: Students must have a negative result on a TB test within the past four years. Prerequisite: CLDV-38.

Students will be placed in a special needs classroom, volunteer or paid field site. An overview of developmentally appropriate practices for children with special needs will be presented. Students will review guidance techniques, observation techniques, and programming/curriculum ideas as they relate to their field placement. Students learn interpersonal communication skills and team building. (3/05)

**CLDV-43B ECE SUPERVISED FIELD EXPERIENCE FOR EARLY INTERVENTION** (Formerly FCSC-36C2)

3 units: 1 hour lecture, 6 hours lab.

Limitation on enrollment: Students must have a negative result on a TB test within the past four years. Prerequisite: CLDV-11.

Students will be placed in a special needs classroom, volunteer or paid field site. An overview of developmentally appropriate practices for children with special needs will be presented. Students will review guidance techniques, observation techniques, and programming/curriculum ideas as they relate to their field placement. Students learn interpersonal communication skills and team building. (11/05)

**CLDV-44A ECE SUPERVISED FIELD EXPERIENCE: SCHOOL-AGE CARE** (Formerly FCSC-36D1)

2 units: 1 hour lecture, 3 hours lab.

Limitation on Enrollment: Students will be required to obtain a negative result on a TB test within the last four years. Prerequisites: CLDV-56 and CLDV-32L, CLDV-35L, or CLDV-56L.

Students will be placed in a school-age care center, volunteer or paid, field site. An overview of developmentally appropriate school-age care practices will be presented. Students will continue to review guidance techniques, observation techniques, and programming/curriculum ideas as they relate to their field placement. Students learn interpersonal communication skills and team building at an infant/toddler program. (3/05)

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**CLDV-44B ECE SUPERVISED FIELD EXPERIENCE: SCHOOL-AGE CARE** (Formerly FCSC-36D2)

3 units: 1 hour lecture, 6 hours lab.

Limitation on Enrollment: Students will be required to obtain a negative result on a TB test within the last four years. Prerequisites: CLDV-56 and CLDV-32L, CLDV 35L, or CLDV 56L.

Students will be placed in a school-age care center, volunteer or paid, field site. An overview of developmentally appropriate school-age care practices will be presented. Students will continue to review guidance techniques, observation techniques, and programming/curriculum ideas as they relate to their field placement. Students learn interpersonal communication skills and team building at an infant/toddler program. (3/05)

**CLDV-50 GUIDANCE TECHNIQUES FOR YOUNG CHILDREN**

(Formerly FCSC-50)

1 unit: 1 hour lecture.

Advisory: CLDV-29.

This course is designed for Childhood Development students to gain insight and practical knowledge about appropriate discipline techniques to use with children two-to-eight years old. The course will include strategies for working with children with challenging behaviors. (12/04)

**CLDV-51 EARLY LITERACY FOR YOUNG CHILDREN**

(Formerly FCSC-51)

1 unit: 1 hour lecture.

Advisories: ENGL-81, ENGL-84.

This course gives Early Childhood Education students the basic elements of early literacy appropriate for young children. (1/05)

**CLDV-52 DIVERSITY CURRICULUM IN EARLY CHILDHOOD EDUCATION** (Formerly FCSC-52)

1 unit: 1 hour lecture.

Advisories: ENGL-81, ENGL-84.

This course covers the philosophy and implementation of a curriculum that supports diversity in the early childhood classroom and gives tools for teachers to help empower themselves and children to resist bias. (1/05)

**CLDV-53 HEALTH AND SAFETY IN CHILD CARE SETTINGS**

(Formerly FCSC-53)

2 units: 2 hours lecture.

Advisory: ENGL-A.

This course provides information on health and safety issues for young children as well as staff working in child care settings. It includes the 15 hours of training required for child care workers. (11/05)

**CLDV-54 SEXUAL DEVELOPMENT OF YOUNG CHILDREN**

1 unit: 1 hour lecture.

Prerequisite: CLDV 29. Advisory: ENGL-A.

This course offers students knowledge about healthy sexual development of young children from infancy to age 12. It addresses concerns such as teaching body parts, gender roles, playing doctor, and preparing for puberty. (11/06)

**CLDV-55 DAY CARE ISSUES** (Formerly FCSC-55)

1 unit: 1 hour lecture.

Advisories: ENGL-81, ENGL-84.

This course is designed to address issues related to operating a family day care center. Students will learn how to open and administer their own centers. (1/05)

**CLDV-56 SCHOOL-AGE DEVELOPMENT**

2 units: 2 hours lecture.

Prerequisite: CLDV-31

This introductory course on school-age development covers an overview of school-age care; the school-age professional; school-age theory and development ages 5-13; current issues facing school-age children; guidance of school-age children; regulations and program quality; and developing partnerships with communities and families. Students will participate in observations of school-age children and programs. (12/04)

**CLDV-56L SCHOOL-AGE DEVELOPMENT LAB**

2 units: 6 hours lab.

Limitation on Enrollment: Students must have a negative result on a TB test within the past four years. One-way corequisite: CLDV-56.

School-age programs will be studied for purposes of planning experiences which encourage physical, mental, social and emotional growth. The laboratory will consist of supervised work in a selected school-age care program and is designed to offer students continued and increased opportunities in working with children ages 5-12 years old. (12/04)

**CLDV-57 CHILDREN ABUSE AND NEGLECT**

1 unit: 1 hour lecture.

Advisory: CLDV-29; ENGL-A

This course is designed to help Child Development students and practicing child care professionals understand that the educator has a vital role in the identification, treatment, and prevention of child abuse and neglect. (11/06)

**CLDV-70A-ZZ SPECIAL TOPICS IN CHILD DEVELOPMENT**

(Formerly FCSC-70A-ZZ)

1-3 units: 1-3 hours lecture, 0-9 hours lab.

Prerequisite/advisory: None.

This is a course designed to address special topics in Child Development to meet current needs of students. Specific classes will be offered to help them cope with the rapidly-changing environment and its effect on everyday living. (12/04)

**CLDV-81A MENTOR TEACHER SEMINAR A** (Formerly FCSC-81A)

0.5 unit: 0.5 hour lecture.

Limitation on enrollment: Students must be selected as a mentor teacher in the "Mentor Teacher Program."

Beginning Early Childhood Education mentors attend monthly seminars to explore issues related to their new role as supervisors of ECE student teachers. Seminar content will be individualized to meet the needs of each mentor. (1/05)

**CLDV-82A-Z FOSTER CARE EDUCATION** (Formerly FCSC-82A-Z)

1 unit: 1 hour lecture.

Prerequisite/Advisory: None.

This practical lecture class is designed specifically to train foster parents and Kinship Care providers interested in becoming foster parents. Topics to be covered are an introduction to foster parenting, discipline, communication techniques, the court system, child abuse, sexual abuse, drug abuse, the role of the agency, children's rights, and foster parents' rights. Additional Kinship topics to be covered include legal rights of Kinship Care providers, parenting skills, and divided loyalties. (1/05)

## COMMUNICATION STUDIES

(Humanities Division)

**COMM-01 FUNDAMENTALS OF SPEECH**

(CAN SPCH 4) (CSU breadth area A1)

3 units: 3 hours lecture.

Prerequisite: ENGL-A. Advisory: ENGL-41.

This course is designed to instruct students in the fundamentals of preparing and giving speeches in front of audiences. The focus will be on speeches to inform and persuade. By the end of the course, students should be speaking confidently and skillfully and should be able to transfer their understanding and skills from the classroom to "real world" situations. (10/04)

**COMM-01H HONORS FUNDAMENTALS OF SPEECH**

(CSU breadth area A1)

3 units: 3 hours lecture.

Limitation on enrollment: Enrollment in the Honors Program. See the college catalog for a description of admission requirements.

This course is designed to increase students' understanding and to improve their skills as public speakers, both in and outside the classroom. In order to help students become aware of and think critically about current issues, and to defend and advocate positions, the course will focus on argumentation and persuasion. (2/01)

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**COMM-02 ORAL INTERPRETATION (Also: ENGL-02)**

3 units: 3 hours lecture.

Prerequisite: ENGL-A. Advisory: ENGL-41.

This course is designed to help students understand, appreciate, and convey the power of the written word through performance. A variety of writings will be analyzed in their rhetorical, historical, and cultural contexts, and will be brought to life by students communicating them to others through their voices and bodies. (2/01)

**COMM-04 SMALL GROUP DISCUSSION AND PROBLEM SOLVING**

(CAN SPCH 10) (CSU breadth area A1)

3 units: 3 hours lecture.

Prerequisite: ENGL-A. Advisory: ENGL-41.

This is a course designed to help students develop critical thinking skills for communication and working together on small group tasks. Emphasis is placed on problem solving, reasoning, conflict resolution, and leadership. (10/04)

**COMM-05 INTERPERSONAL COMMUNICATION**

(CAN SPCH 8) (CSU breadth area A1)

3 units: 3 hours lecture.

Prerequisite: ENGL-A. Advisory: ENGL-41.

The focus of this course is to examine successful communication in interpersonal relationships. Communication theory and skills will be investigated in order to help students interact more effectively in personal and professional relationships. Specific skills that will be examined for usefulness and appropriateness are self-concept, perception, verbal and nonverbal communication, culture, and conflict resolution. (4/07)

**COMM-30 INTRODUCTION TO INTERCULTURAL COMMUNICATION**

[CILC areas D, G] (CSU breadth area D7)

3 units: 3 hours lecture.

Prerequisite: ENGL-A. Advisory: ENGL-41.

This course is designed to examine the basic concepts, principles, and their application to communication between persons from different minority, ethnic, and co-cultural backgrounds within the United States and in the international arena through the scope of interpersonal communication skills. This class will assist in the understanding and evaluation of barriers to communicating with peoples from other cultures, which include egocentrism, prejudice, and lack of awareness. (4/02)

**COMM-50 ACCENT REDUCTION**

3 units: 3 hours lecture.

Advisories: ENGL-81, ENGL-84.

This course is for non-native speakers of English who speak English well, but would like to reduce their accent. The course emphasizes stress rhythm and intonation patterns that enable students to be understood by native speakers. It also addresses problematic consonant and vowel sounds. Use of the language lab may be required. This course may be repeated once. (12/03)

## COMPUTER STUDIES

(Business Division)

**CPSC-01 INTRODUCTION TO MANAGEMENT INFORMATION SYSTEMS (CAN BUS 6)**

[CILC areas A,B,C,D,E,F]

4 units: 3 hours lecture, 3 hours lab.

Advisories: ENGL-A, ENGL-41; MATH-C or MATH-D.

This is an entry-level course for business majors, students majoring in Computer Science or Management Information Systems, or anyone interested in the fundamentals of computer information systems and gaining an understanding of fundamental programming concepts. Algorithm design, logic diagrams, coding, and debugging are introduced using a third generation programming language. (12/02)

**CPSC-05 VISUAL BASIC PROGRAMMING**

3 units: 2 hours lecture, 3 hours lab.

Prerequisite: CPSC-01.

This is an introduction to event-driven programming using Visual Basic for

the Windows environment. The course will cover the standard Windows interface, the graphical Visual Basic development environment, design of the graphical user interface as well as concepts of programming, problem solving, and programming logic. Stand alone applications will be created for various studies. (1/03)

**CPSC-06 PROGRAMMING CONCEPTS AND METHODOLOGY I**

(CAN CSCI 22)

3 units: 2 hours lecture, 3 hours lab.

Prerequisite: MATH C. Advisories: CPSC-01; ENGL-A, ENGL-41.

This course introduces the discipline of computer science using a high-level language, and provides an overview of computer organization and an introduction to software engineering. Topics include methodologies for program design, development, style, testing, and documentation, algorithms, control structures, sub-programs, and elementary data structures. These skills will be used to solve a variety of application problems. (12/02)

**CPSC-12 FORTRAN PROGRAMMING (Also: ENGR-12 and MATH-12)**

3 units: 2 hours lecture, 3 hours lab.

Prerequisite: MATH-02, or MATH-25 and MATH-26. Advisories: ENGL-A, ENGL-41.

This course teaches students to use the FORTRAN programming language to solve problems in a wide variety of areas. Program design, problem-solving, and debugging techniques are emphasized throughout the course. (1/07)

**CPSC-24 INTRODUCTION TO COMPUTER STUDIES AND TECHNOLOGY**

(CAN CSCI 2) [CILC areas A,B,C,D,E,F]

3 units: 3 hours lecture.

Advisories: ENGL-41; MATH-80 or MATH-83; AOM-50B.

This entry-level, theory-dominant course is for non-computer majors who wish to become computer and information technology literate. This course explores computer and software use in the workplace with emphasis on business and industrial situations, education, science, and within the humanities. Computer applications including word-processing, spreadsheets, databases, and presentation managers will be covered. Students will discuss the social and legal implications of these uses. This course is also designed, whenever possible, to meet many of the provisions found in California State Technology Requirements Preliminary and Professional Clear Credential Candidates Required assignments, such as email use, email with attachment, news group use, chat room location and use, virtual bulleting usage, the creation of a web page, the creation and use of at least one computer program, perform research on the Internet following a prescribed methodology, and perform a search and use of a data CD. (04/03)

**CPSC-30 COMPUTER APPLICATIONS**

[CILC areas A,B,C,D,E,F]

3 units: 2 hours lecture, 3 hours lab.

Advisories: ENGL-81, ENGL-84; AOM-50A or AOM-50B; (keyboard at a minimum of 20 GWAM), MATH-80 or MATH-83.

This course is intended for students seeking an introduction to application software used in the workplace with emphasis on business situations. Computer applications including word-processing, spreadsheets, databases, and presentation managers will be covered. Also included will be accessing information through the intranet, Internet and World Wide Web and telecommunications. This course meets the Computer and Information Literacy Competency (CILC) the A-F requirements for graduation. (See the current schedule or catalog.) (2/07)

**CPSC-31 WORD PROCESSING**

[CILC areas A,B,C,D]

1 unit: 0.5 hour lecture, 1.5 hours lab.

Advisories: ENGL-81, ENGL-84; MATH-80 or MATH-83; AOM-50B.

This course is intended for students seeking an introduction to word process application software for microcomputers. Topics and laboratory experiences will emphasize the computer as a tool in a variety of personal and business environments. A current word processing application software will be taught. This course may be repeated three times. (12/02)

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**CPSC-32 SPREADSHEET**

[CILC areas B,C]

1 unit: 0.5 hour lecture, 1.5 hours lab.

Advisories: ENGL-81, ENGL-84; MATH-80 or MATH-83; AOM-50B.

This course is intended for students seeking an introduction to spreadsheet application software for microcomputers. Topics and laboratory experiences will emphasize the computer as a tool in a variety of personal and business environments. A current spreadsheet application software will be taught. This course may be repeated three times. (12/02)

**CPSC-33 DATA BASE**

[CILC areas B, C,D,E,F]

1 unit: 0.5 hour lecture, 1.5 hours lab.

Advisories: ENGL-81, ENGL-84; MATH-80 or MATH-83; AOM-50B.

This course is intended for students seeking an introduction to database application software for microcomputers. Topics and laboratory experiences will emphasize the computer as a tool in a variety of personal and business environments. A current data base management application software will be taught. This course may be repeated three times. (12/02)

**CPSC-39 INTRODUCTION TO OBJECT-ORIENTED PROGRAMMING**

4 units: 3 hours lecture, 3 hours lab.

Prerequisite: CPSC-06.

This course is a continuation course in computer science which introduces further aspects of software design and implementation, abstract data types, fundamental data structures and associated algorithms, lists, stacks, queues, and trees. Students will be expected to design, implement, test, and analyze a number of programs. (1/03)

**CPSC-40A CISCO CERTIFIED NETWORKING ASSOCIATE (CCNA) COURSE I (Also: ELCT-40A)**

[CILC areas A,B,C,D,E,F]

3 units: 2 hours lecture, 3 hours lab.

Advisories: ELCT-36, ELCT-51; ENGL-81; MATH-80 or MATH-83.

This is the first of four semester courses (or four 9-week courses) designed to provide students with classroom and laboratory experience in current and emerging networking technologies and initial preparation for CCNA testing. The complete series of training experiences will empower them to enter employment and/or further education and training in the computer-networking field. Instruction includes, but is not limited to, electrical safety, network terminology and protocols, network standards, local area networks (LANs), wide area networks (WANs), open system interconnection (OSI) models, physical cabling, cabling tools, electronics test equipment, routers, router programming, star topology, transmission control protocol/Internet protocol (TCP/IP) addressing, and network standards. (11/00)

**CPSC-40B CISCO CERTIFIED NETWORKING ASSOCIATE (CCNA) COURSE II (Also: ELCT-40B)**

[CILC areas A,B,C,D,E,F]

2 units: 1 hour lecture, 3 hours lab

Prerequisite: CPSC/ELCT-40A.

This second course is designed to provide students with classroom and laboratory experience in current and emerging networking technologies and initial preparation for CCNA testing. The complete series of training experiences will empower them to enter employment and/or further education and training in the computer-networking field. Instruction includes electrical safety, network terminology and protocols, and network standards. Local area networks (LANs), wide area networks (WANs), open system interconnection/Internet operating systems (OSI/ISO) models, physical cabling, cabling tools, electronics test equipment, routers, router programming, star topology, transmission control protocol/Internet protocol (TCP/IP) addressing, and network standards are also covered. (11/00)

**CPSC-40C CISCO CERTIFIED NETWORKING ASSOCIATE (CCNA) COURSE III (Also: ELCT-40C)**

[CILC areas C,E,F]

2 units: 1 hour lecture, 3 hours lab

Prerequisite: CPSC/ELCT-40B.

This third course is designed to provide students with classroom and laboratory experience in electrical safety, network technology and

protocols, and network standards. Local area networks (LANs), virtual LANs (VLANs), wide area networks (WANs), open system interconnection (OSI) models, Internet work packet exchange (IPX), Ethernet operation, spanning tree protocol, physical cabling, cabling tools, electronics test equipment, bridges, routers, switches, transmission control protocol/Internet protocol (TCP/IP) addressing, network standards, and network troubleshooting are also covered. (11/00)

**CPSC-40D CISCO CERTIFIED NETWORKING ASSOCIATE (CCNA) COURSE IV (Also: ELCT-40D)**

[CILC areas C,E,F]

2 units: 1 hour lecture, 3 hours lab

Prerequisite: CPSC/ELCT-40C.

This fourth course is designed to provide students with knowledge concerning electrical safety, network terminology and protocols, and network standards. Local area networks (LANs), wide area networks (WANs), open system interconnection (OSI) models, point-to-point protocol (PPP), integrated services digital network (ISDN) protocol, physical cabling, cabling tools, electronics test equipment, routers, router programming, transmission control protocol/Internet protocol (TCP/IP) addressing, frame relay operation, network standards, and network troubleshooting are also covered. This course also reviews the entire level 1 training that has been accomplished to this point in preparation for Network+ and CCNA examinations. (11/00)

**CPSC-49A-ZZ SPECIAL TOPICS IN COMPUTER STUDIES**

0.5 - 3 units: 0.5 - 3 hours lecture, 0 - 6 hours lab.

Advisory: ENGL-A.

This series of courses is designed to provide opportunities for students to further develop their computing skills. (4/05)

**COOPERATIVE EDUCATION***(Business Division)***COOP-41A COOPERATIVE EDUCATION IN (SUBJECT)**

1-4 units: hours by arrangement.

Advisories: ENGL-A, ENGL-41.

Cooperative work experience education is a process of education which combines work experience with regular college instruction as an integral part of the community college curriculum. Cooperative Education allows students the opportunity to benefit from practical application in a job setting within their major area, or will allow students to sample an experience in a career field the student may be considering. A student may enroll in Cooperative Education for a maximum of four semesters, and no more than 16 units may be earned at Merced College. Seventy-five hours of work experience (or 60 hours volunteer work) equal one unit of college credit. Cooperative education units are offered in all areas. The number of units (1, 2, 3, or 4) the student will be enrolled in will be determined by the number of hours the student will work during the semester. In order to participate in the Cooperative Education Program, a student must (a) have on-the-job experience that contributes to occupational or educational goals; (b) be enrolled in, and complete, no fewer than seven units including Cooperative Education; (c) have the approval of the Cooperative Education Coordinator; and (d) have the cooperation of the employer in including new or expanded responsibilities or learning opportunities on the job in which the student is enrolled in Cooperative Education. (12/00)

**COOP-41B COOPERATIVE EDUCATION IN (SUBJECT)**

1-4 units: hours by arrangement.

Prerequisite: COOP-41A. Advisories: ENGL-A, ENGL-41.

See COOP-41A above. (12/00)

**COOP-41C COOPERATIVE EDUCATION IN (SUBJECT)**

1-4 units: hours by arrangement.

Prerequisite: COOP-41B. Advisories: ENGL-A, ENGL-41.

See COOP-41A above. (12/00)

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**COOP-41D COOPERATIVE EDUCATION IN (SUBJECT)**

1-4 units: hours by arrangement.

Prerequisite: COOP-41C. Advisories: ENGL-A, ENGL-41.

See COOP-41A above. (12/00)

**CORRECTIONS**

(Business Division)

**CORR-01 INTRODUCTION TO CORRECTIONS**

3 units: 3 hours lecture.

Advisory: ENGL-41.

This course is designed to provide the student with an overview of the history and trends of adult and juvenile corrections, including probation and parole. It will focus on the legal issues, specific laws, and general operation of correctional institutions. The relationship between corrections and other components of the judicial system will also be examined. (5/03)

**CORR-04 CONCEPTS OF CRIMINAL LAW FOR CORRECTIONS**

3 units: 3 hours lecture.

Advisories: CORR-01 or current employment as a correctional officer; ENGL-41.

This course covers historical development, philosophy, and practice of law and Constitutional provisions: definitions and classifications of crime, legal research, study of case law, methodology, and concepts of law as a social force. Law as it affects the correctional component of the justice system will be clearly identified. (5/03)

**CORR-30 PROBATION AND PAROLE**

3 units: 3 hours lecture.

Advisories: ENGL-41; CORR-01; CRIM-01, or CRIM-02.

This course encompasses the background, structure, and procedures of probation, parole, and the criminal court process. (5/03)

**CORR-32 ADULT CORRECTIONAL OFFICER CORE ACADEMY**

6 units: 4 hours lecture, 6 hours lab.

Limitations on Enrollment: Students must be cleared by the California Department of Justice (DOJ) to participate. DOJ clearance is evaluated through the LiveScan fingerprint process. This clearance will reveal a qualifying/disqualifying criminal history background; absence of medical conditions that would prevent strenuous physical training, and arrest control methods training. Physicians' clearance indicating good physical health must be presented to instructor at first class meeting. Student must possess a valid California Driver License. Advisories: ENGL A, ENGL-41.

This course meets the requirements of the State of California, Board of Corrections, and Standards and Training for Corrections (STC). It covers the specific performance and instructional objectives for local and county jails, probation institutions, and community correctional facilities, it covers topics such as: booking, receiving, and releasing of inmates; supervising inmates; medical and psychological services; hygiene; verbal communication; fire and life safety; defensive tactics; cell extractions; restraint devices; record keeping and report writing; searching and transporting of inmates. (10/06)

**CORR-41 CORRECTIONAL WRITING**

3 units: 3 hours lecture.

Prerequisite: CORR-04. Advisory: ENGL-41.

This is an introductory course emphasizing the practical aspects of gathering, organizing, and preparing written reports for correctional activities on local, state, and federal levels. It will cover the techniques of communicating facts, information, and ideas effectively in a simple, clear, and logical manner for various types of criminal justice system reports, letters, memoranda, directives, and administrative reports. Students will gain practical experience in note-taking, report writing, and presenting testimony in court. (5/03)

**CORR-42 CONTROL AND SUPERVISION IN CORRECTIONS**

3 units: 3 hours lecture.

Advisories: ENGL-41; CORR-01; CRIM-01, or CRIM-02.

This course offers an overview of supervision of inmates in local, state, and federal correctional institutions. The issues of control in a continuum from institutional daily living through crisis situations will be introduced and

discussed. The course will emphasize the role played by the offender and the correctional worker. Topics will include inmate subculture, violence, and effects of crowding on inmates and staff, and coping techniques for correctional officers in a hostile prison environment. The causes and effects of abusive tactics will also be discussed. (5/03)

**CORR-43 CORRECTIONAL INTERVIEWING AND COUNSELING**

3 units: 3 hours lecture.

Advisories: ENGL-41; prior completion or concurrent enrollment in CORR-01; or current employment as a peace officer in the field of corrections.

This class provides an overview of the techniques available to practitioners in corrections counseling and interviewing. The student will learn the use of appropriate techniques and theories in confidence building which may be used by the correctional employee in client interviews and counseling. This is a basic course for students planning to enter or who are already employed within the Correctional Science field. (5/03)

**CORR-44 LEGAL ASPECTS OF CORRECTIONS**

3 units: 3 hours lecture.

One-way corequisite: CORR-01. Advisories: ENGL-A, ENGL-41; or current employment as a correctional officer.

This course provides students with an awareness of the historical framework, concepts, and precedents that guide correctional practice. Course material will broaden the individual's perspective of the corrections environment, the civil rights of prisoners, and responsibilities and liabilities of corrections officials. (3/04)

**CORR-49A-ZZ SPECIAL TOPICS IN CORRECTIONS**

0.5 - 7 units: 0.5 - 7 hours lecture.

Advisory: ENGL-41.

This is a course designed to address special topics in corrections to meet the current needs of students. The course will allow pre-service and in-service personnel to maintain the most current training standards in the field. (5/03)

**CRIMINAL JUSTICE**

(Business Division)

**CRIM-01 CRIMINOLOGY**

(CSU breadth area D0)

3 units: 3 hours lecture.

Advisories: ENGL-A, ENGL-41.

This course is an analysis of the nature and patterning of criminality and theories of criminal behavior. Crime control policies are critically examined regarding linkages among 1) social conflicts and inequalities, 2) criminal laws and enforcement practices, and 3) social deviance. (10/03)

**CRIM-02 INTRODUCTION TO CRIMINAL JUSTICE**

(CAN AJ 2)

3 units: 3 hours lecture.

Advisories: ENGL-A, ENGL-41.

This course pertains to the history and philosophy of criminal justice in America. The course will emphasize the three major components of the system: court, corrections, and law enforcement. It will then examine the role of each. (10/03)

**CRIM-03 CRIMINAL PROCEDURES**

3 units: 3 hours lecture.

One-way corequisite: CRIM-01 or CRIM-02. Advisories: ENGL-A, ENGL-41.

This course covers the legal processes from pre-arrest through trial, sentencing, and correctional procedures; a review of the history of case and common law; conceptual interpretations of law as reflected in court decisions; a study of case law methodology and case research as the decisions impact upon the procedures of the justice system. (10/03)

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**CRIM-04 CRIMINAL LAW**

(CAN AJ 4)

3 units: 3 hours lecture.

One-way corequisite: CRIM-01 or CRIM-02. Advisories: ENGL-A, ENGL-41.

This course covers historical development, philosophy of law, and constitutional provisions; definitions, classifications of crimes and their applications to the system of criminal justice; legal research; review of case law; and methodology and concepts of law as a social force. The course also explores crimes against persons, property, and the state as a social, religious, and historical ideology. (10/03)

**CRIM-05 COMMUNITY AND HUMAN RELATIONS**

3 units: 3 hours lecture.

One-way corequisite: CRIM-01 or CRIM-02. Advisories: ENGL-A, ENGL-41.

This course covers the relationship of criminal justice agents and the community; causal and symptomatic aspects of community understanding; lack of cooperation and mistrust; study of behavioral causes; and ways to develop and maintain amicable relationships. (10/03)

**CRIM-06 INTRODUCTION TO EVIDENCE**

3 units: 3 hours lecture.

One-way corequisite: CRIM-01 or CRIM-02. Advisories: ENGL-A, ENGL-41.

This course is a study of the origin, development, philosophy and constitutional basis of evidence; constitutional and procedural considerations affecting arrest, search and seizure; kinds and degrees of evidence and rules governing admissibility; judicial decisions interpreting individual rights; and case studies viewed from a conceptual level. (10/03)

**CRIM-08 INTRODUCTION TO INVESTIGATION**

(CAN AJ 8)

3 units: 3 hours lecture.

Advisories: ENGL-A, ENGL-41.

This course covers the fundamentals of investigation; techniques of crime scene search and recording; collection and preservation of physical evidence; modus operandi processes; sources of information; interview and interrogation; and follow-up investigation. (10/03)

**CRIM-10 WRITING FOR CRIMINAL JUSTICE**

3 units: 3 hours lecture.

Prerequisite: CRIM-04. Advisories: ENGL-A, ENGL-41.

This course covers the techniques of communicating facts, information, and ideas effectively in a simple, clear, and logical manner in the various types of criminal justice system reports -- letters, memoranda, directives, and administrative reports. Emphasis is placed on criminal justice terminology, use of English, and the organization of information. The student will also receive practical experience in note-taking and report writing; and the preparation for the presentation of testimony in court. (10/03)

**CRIM-30 JUVENILE PROCEDURES**

3 units: 3 hours lecture.

One-way corequisite: CRIM-01 or CRIM-02 or CORR-01. Advisories: ENGL-A, ENGL-41.

This course relates to the organization, functions, and jurisdiction of juvenile agencies in the criminal justice system. The course will concentrate on detention facilities and the juvenile court process. (10/03)

**CRIM-32 TRAFFIC INVESTIGATION AND ENFORCEMENT**

3 units: 3 hours lecture.

Advisories: ENGL-A, ENGL-41; CRIM-01 or CRIM-02; or current employment as a law enforcement officer.

This course covers accident prevention, accident investigation, enforcement of traffic statutes, and testifying in court regarding the knowledge and methodologies addressed. (10/03)

**CRIM-33 VIOLENCE IN THE FAMILY**

3 units: 3 hours lecture.

Advisories: ENGL-A, ENGL-41.

This course is an examination of criminal law and the psycho-dynamics of child abuse, elder abuse, spousal abuse, and spousal rape. (10/03)

**CRIM-35 NARCOTICS**

3 units: 3 hours lecture.

Advisories: ENGL-A, ENGL-41; CRIM-01 or CRIM-02.

This course is a review of the laws restricting and governing the use of narcotics and dangerous drugs, the psychological and physiological effects of the use and addiction to narcotics and dangerous drugs, and the procedures used to combat the problems facing law enforcement and society in relation to narcotics and dangerous drugs. (10/03)

**CRIM-36 PATROL PROCEDURES**

3 units: 3 hours lecture.

Advisories: ENGL-A, ENGL-41; CRIM-01 or CRIM-02.

This course explores the theories, philosophies, and concepts related to the role expectations of the line enforcement officer. A special emphasis is placed upon the patrol, traffic, and public service responsibilities. (10/03)

**CRIM-37 COMMUNICATION AND ETHICS IN LAW ENFORCEMENT**

3 units: 3 hours lecture.

Advisories: ENGL-41, ENGL-41L, ENGL-A; CRIM-01 or CRIM-02 or current employment as a law enforcement officer.

This course covers the ethical issues created by the congruent and incongruent match of criminal justice philosophy and law enforcement practice. Effective communication styles for courtroom, testimony, interrogation, and verbal judo will be examined, evaluated, and practiced. (11/06)

**CRIM-39 POLICE TACTICS**

1 unit: 0.5 hour lecture, 1.5 hours lab.

Advisories: ENGL-A, ENGL-41.

This course is designed for pre-service and in-service law enforcement personnel and is designed to teach defensive tactics. A special emphasis will be placed on disarming assailants, takedowns, holds, and baton. Officer safety and the moral and ethical application of defensive tactics will also be stressed. This course may be repeated three times. (3/99)

**CRIM-42A 832 PC ARREST METHODS**

[CILC area D]

3 units: 49.5 total hours lecture, 13.5 total hours lab.

Limitations on enrollment: Students must be cleared by the California Department of Justice to participate. DOJ clearance is evaluated through the LiveScan fingerprint process -- this clearance will reveal a qualifying/disqualifying criminal history background; adequate physical health for moderate physical activity during arrest and control methods training. Advisories: ENGL-A, ENGL-41, ENGL-41L.

This course meets the requirements of California Penal Code 832 requiring individuals having peace officer powers to complete a training course prescribed by the Commission on Peace Officer Standards and Training (POST). It satisfies POST's Level 3 - Part 1 of the Basic Course (Police Academy) modular format. It covers topics such as: ethics, courts, community relations, laws of arrest, use of force, search and seizure, investigations and arrest/control methods. Students missing more than 5% of class time will not be allowed to complete the class (POST regulations). (3/02)

**CRIM-42B 832 PC FIREARMS**

[CILC area D]

1 unit: 14 total hours lecture, 12 total hours lab.

Limitations on enrollment: Students must be cleared by the California Department of Justice to participate. DOJ clearance is evaluated through the LiveScan fingerprint process -- this clearance will reveal a qualifying/disqualifying criminal history background; adequate physical health for moderate physical activity during firearms training. Prerequisite: CRIM-42A. Advisories: ENGL-A, ENGL-41, ENGL-41L.

This course meets the requirements of California Penal Code 832 requiring

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individuals having peace officer powers to complete a training course prescribed by the Commission on Peace Officer Standards and Training. It satisfies the firearms portion of POST's Level 3- Part 1 of the Basic Course (Police Academy) modular format. It covers topics such as firearms safety, basic firearms operation, ammunition, cleaning and maintenance, and principles of shooting accuracy. Students missing more than 5% of class time will not be allowed to complete the class (POST regulations). (3/02)

### **CRIM-42C RESERVE PEACE OFFICER MODULE LEVEL 3**

[CILC area D]

7 units: 108 total hours lecture, 54 total hours lab.

Limitations on enrollment: Students must be cleared by the California Department of Justice (DOJ) to participate. DOJ clearance is evaluated through the LiveScan fingerprint process. This clearance will reveal a qualifying/disqualifying criminal history background. In addition, there must be an absence of medical conditions that would prevent strenuous physical training during arrest and control methods training, use of force, and crimes in progress. A physician's clearance indicating good physical health must be presented to the instructor at the first class meeting. Students must possess a California Driver's License. Advisories: ENGL-A, ENGL-41, ENGL-41L.

This course meets the requirements of the State of California Commission on Peace Officer Standards and Training (POST). It covers topics such as: ethics, professionalism, the criminal justice system, criminal law, property crimes, crime against persons, laws of arrest, laws of search and seizure, investigative report writing, vehicle operations, use of force, crimes in progress, traffic enforcement, preliminary investigation, custodial issues, arrest and control methods including baton, first aid, CPR, chemical agents, information systems, and cultural diversity. In accordance with POST regulations, students missing more than 5% of class time will not be certified in this course. (12/06)

### **CRIM-42D RESERVE PEACE OFFICER MODULE LEVEL 2**

[CILC area D]

13.5 units: 234 total hours lecture, 27 total hours lab.

Limitations on enrollment: Students must be cleared by the California Department of Justice to participate. DOJ clearance is evaluated through the LiveScan fingerprint process - this clearance will reveal a qualifying/disqualifying criminal history background; adequate physical health for moderate physical activity during arrest/control methods, use of force, and crimes in progress training; must possess a valid Class 3 or above California Driver's License. Prerequisite: CRIM-42C. Advisories: ENGL-A, ENGL-41, ENGL-41L.

This course satisfies the Level 2 modular format Basic Course training requirements of the Commission on Peace Officer Standards and Training (POST). It covers community relations, victimology, crisis intervention, property crimes, crimes against persons, general criminal statutes, laws of arrest, laws of search and seizure, presentation of evidence, investigative report writing, use of force, patrol techniques, vehicle pullovers, crimes in progress, traffic enforcement, unusual occurrences, preliminary investigation, and arrest and control methods including baton, firearms, chemical agents, persons with disabilities, crimes against the justice system, weapons violations, hazardous materials, cultural diversity, and discrimination issues. Students missing more than 5% of class time will not be allowed to complete the class (POST regulations). (3/02)

### **CRIM-49A-ZZ SPECIAL TOPICS IN CRIMINAL JUSTICE**

0.5 - 5 units: 0.5 - 3 hours lecture.

Advisories: ENGL-A, ENGL-41.

This is a course designed to address special topics in criminal justice to meet the current needs of students. The course will allow pre-service and in-service personnel to maintain the most current training standards in the field. (10/03)

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## **CROP PRODUCTION**

(Agriculture Division)

(Please refer to the Agriculture Division website for course offering details)

[www.mccd.edu/academics/divisions/ag](http://www.mccd.edu/academics/divisions/ag)

### **CROP-10 ELEMENTS OF CEREAL GRAIN PRODUCTION**

3 units: 2 hours lecture, 3 hours lab.

Advisories: ENGL-A; MATH-80 or MATH-83.

This is a study of production principles, which include botany, taxonomy, soil tillage, fertilization, variety and seed selection, pest management, harvest, processing, storage, and marketing for important fiber, food, and cereal crops in California. Covered crops will include cotton, sugar beets, wheat, rice, barley, sorghum, corn, oats, safflower, legumes for seed, and potatoes. A field trip to a major production area is required. (9/04)

### **CROP-12 COMMERCIAL VEGETABLE AND GARDEN PRODUCTION**

3 units: 2 hours lecture, 3 hours lab.

Advisories: ENGL-A; MATH-80 or MATH-83.

This course is a study of vegetable production covering the botany, cultural production, harvesting, processing, growth characteristics, fertility, pests, and marketing of the major warm season and cool season vegetable crops in California. A field trip into a major vegetable production region is required. (9/04).

### **CROP-13 FORAGE CROPS**

3 units: 2 hours lecture, 3 hours lab.

Prerequisite/Advisory: None.

This course will cover production, harvesting, and utilization of principal California forage crops. The importance of forage crops as a supplement to livestock enterprises will also be covered. The use of forage crops as soil enhancers, and irrigated and range pastures, will be discussed.

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## **DAIRY HUSBANDRY**

(Agriculture Division)

(Please refer to the Agriculture Division website for course offering details)

[www.mccd.edu/academics/divisions/ag](http://www.mccd.edu/academics/divisions/ag)

### **DAIR-10 ELEMENTS OF DAIRY**

(CAN AG 28)

3 units: 2 hours lecture, 3 hours lab.

Advisories: ENGL-A, ENGL-41.

This is a study of history, development, and projections of the dairy industry. General information on the economics of dairying, facts, trends, selection, culling, fitting, showing, judging, pedigrees, feeding, and basic management skills will be learned and also information on employment opportunities and requirements. (12/06)

### **DAIR-11 DAIRY CATTLE SELECTION**

2 units: 1 hour lecture, 3 hours lab.

Advisories: ENGL-A, ENGL-41.

There will be selection of dairy cattle based on type conformation and the correlation between type and production. Pedigree evaluation, animal analysis, linear classification, and body condition scoring will be learned. Written and oral evaluation on selection will be done. The course may be repeated once for advanced skill and training. (01/07)

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## **DANCE**

(Arts Division)

### **DNCE-14A DANCE CHOREOGRAPHY (Also: PHED-14A)**

1 unit: 0.5 hour lecture, 1.5 hours lab.

Prerequisite/Advisory: None.

This is a course teaching the student of dance how to use the "language of the body" to communicate an idea, theme, or story. Utilizing time, space, and energy, the student learns to conceive, develop, and put movement together. May be repeated three times.

### **DNCE-14B MODERN DANCE (Also: PHED-14B)**

1 unit: 0.5 hour lecture, 1.5 hours lab.

Prerequisite/Advisory: None.

This is a course designed for students to express themselves creatively through various modern dance forms, and to increase skills of body posture, flexibility, coordination and strength. Students will study technical

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components which include time, effort, and kinetic awareness. May be repeated three times.

**DNCE-14C BALLET (Also: PHED-14C)**

1 unit: 0.5 hour lecture, 1.5 hours lab.

Prerequisite/Advisory: None.

This is a course designed to teach the basic steps and skills of ballet. Students will have the opportunity to learn and perform routines. History and terminology will also be covered. May be repeated three times.

**DNCE-14D1 BEGINNING JAZZ DANCE (Also: PHED-14D1)**

1 unit: 0.5 hour lecture, 1.5 hours lab.

Advisories: Good general health; absence of medical conditions that would prevent planned physical activity.

This is a course designed to introduce the basic techniques, rhythms, and combinations of jazz movement. The class will include stretching exercises, coordination exercises, and general body conditioning exercises. This course may not be repeated. (3/06)

**DNCE-14D2 INTERMEDIATE JAZZ DANCE (Also: PHED-14D2)**

1 unit: 0.5 hour lecture, 1.5 hours lab.

Prerequisite: PHED-14D1. Advisories: Good general health; absence of medical conditions that would prevent planned physical activity.

Students will be introduced to intermediate dance techniques. Basic skills will be reviewed along with an emphasis on conditioning and flexibility. Additional technical study includes double pirouettes, chaîne and piqué turns. Students will be required to develop and perform short routines in class. This course may not be repeated. (3/06)

**DNCE-14D3 ADVANCED JAZZ DANCE (Also: PHED-14D3)**

1 unit: 0.5 hour lecture, 1.5 hours lab.

Prerequisite: PHED-14D2. Advisories: Good general health; absence of medical conditions that would prevent planned physical activity.

This course emphasizes advanced conditioning, control, stage presence and dance quality performances. Students must be available for rehearsal and performances of productions to which they may be assigned. This course may not be repeated. (3/06)

**DIAGNOSTIC RADIOLOGIC TECHNOLOGY  
(FORMERLY RADIOLOGIC TECHNOLOGY)**

(Allied Health Division)

**RADT-40 RADIOLOGIC SCIENCE I**

3 units: 2 hours lecture, 3 hours lab.

Limitation on enrollment: Enrollment in the Radiography Program.

Prerequisite: CHEM-02A; MATH-A or MATH-B.

This course covers the theory and application of basic physics and radiation physics to diagnostic radiology. Emphasis will be the fundamentals of x-ray generating equipment and the production, emission, and interaction with matter of x-rays. The laboratory portion of this course will focus on solving radiographic technique problems and verification of the basic laws of physics. This course is part of the second semester of the 29-month program in Diagnostic Radiologic Technology, and is only offered during spring semester. (12/05)

**RADT-41 INTRODUCTION TO MEDICAL IMAGING**

4 units: 3 hours lecture, 3 hours lab.

Limitation on enrollment: Enrollment in the Radiography Program; Student Supplied Criminal Background Clearance; Negative TB Screen Test or Chest X-ray within last six months.

Prerequisites: ENGL-A, ENGL-41, ENGL-41L; ALLH-67; RADT-50.

This course covers an overview of radiography and its role in health care delivery. Students will be oriented to academic and administrative structure, key departments and personnel, and to the profession as a whole. Emphasis will be placed on medical terminology; ethics and law, patient care, computers, pharmacology, and human diversity in the radiologic sciences. The basic principles of radiation protection, computer literacy and study skills will also be identified. The laboratory portion of this course will include: safety and transfer positioning; evaluation physical needs; infection control; values clarification; presentation software (power-point); and a student orientation to the use of the library and available reference

material. This course is part of the first semester of a twenty-nine month program in Diagnostic Radiologic Technology and is only offered during fall semester. (12/05)

**RADT-42 RADIOLOGIC PROCEDURES I**

4 units: 3 hours lecture, 3 hours lab.

Limitations on enrollment: Enrollment in the Radiography Program and minimum of 2.35 GPA in prerequisite course. Prerequisites: BIOL-16.

This course is designed to provide closer examination and understanding of human anatomy as it relates to radiographic anatomy and positioning of the thoracic viscera, abdomen, upper extremities, shoulder girdle, lower extremities, hip & pelvis and upper gastrointestinal tract. The laboratory portion of this course will include positioning exercises and image evaluation of these areas to achieve both accuracy and speed. This course is part of the first semester of a twenty-nine month program in Diagnostic Radiologic Technology and is only offered during fall semester. (12/05)

**RADT-43A RADIOLOGIC PROCEDURES II**

4 units: 3 hours lecture, 3 hours lab.

Limitation on enrollment: Enrollment in the Radiography Program.

This course covers basic radiographic anatomy and positioning of the lower gastrointestinal tract, gallbladder, urinary system, vertebral column, bony thorax, cranium, long bone measurements, foreign body localization, pediatric, geriatric, mobile, surgical and trauma guideline. The laboratory portion of this course will include positioning exercises and film evaluation of these areas to achieve both accuracy and speed. This course is part of the second semester of a twenty-nine month program in Diagnostic Radiologic Technology and is only offered during spring semester. (12/05)

**RADT-43B CLINICAL EDUCATION I**

5 units: 15 hours lab (270 total hours).

Limitation on enrollment: Enrollment in Radiography Program. One-way corequisite: RADT-43A.

This course provides clinical experience for application of theoretical principles and concepts covered in previous and current didactic course work. Clinical experience in patient care and handling, positioning skills, equipment utilization, radiation protection application, patient information management, work efficiency and image evaluation is provided. This course is part of the second semester of a twenty-nine month program in Diagnostic Radiologic Technology and is only offered during spring semester. (12/05)

**RADT-44A PRINCIPLES OF RADIOGRAPHIC EXPOSURE**

2 units: 27 total hours lecture, 27 total hours lab.

Limitation on enrollment: Satisfactory progression in the Radiologic Technology program.

This course covers theory and application of factors that govern and influence the production of the radiographic image on radiographic film. The evaluation of radiographic systems to assure consistency in the production of quality images will also be introduced. The laboratory component of this course will provide "live lab" experience conducting radiation exposure experiments that demonstrate clinical applications of the theoretical principles and concepts presented. This course is part of the first summer session of a 29-month program in Diagnostic Radiologic Technology and is offered only during summer session, approximately 12 weeks in duration. (3/00)

**RADT-44B CLINICAL EDUCATION II**

4 units: 216 total hours lab.

Limitation on enrollment: Satisfactory progression in the Diagnostic Radiologic Technology program.

This course provides clinical experience for application of theoretical principles and concepts covered in previous and current didactic course work. Clinical experience in patient care and handling, positioning skills, equipment utilization, radiation protection application, work efficiency, and image evaluation is provided. This course is part of the first summer session of a 29-month program in Diagnostic Radiologic Technology and is offered only during summer session, approximately 12 weeks in duration. (3/00)

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**RADT-45A PRINCIPLES OF RADIOLOGIC TECHNOLOGY III**

3 units: 2 hours lecture, 3 hours lab.

Limitation on enrollment: Satisfactory progression in the Diagnostic Radiologic Technology program.

This course covers advanced radiographic positioning of the skull, non-vascular advanced procedures, and special x-ray equipment and procedures. The laboratory portion will include positioning exercises and film evaluation of these areas to achieve both accuracy and speed. Appropriate experiments using phantom parts utilizing the tomographic unit will be demonstrated. This course is part of the third semester of a 29-month program in Radiographic Technology and is offered only during fall semester. (4/00)

**RADT-45B CLINICAL EDUCATION III**

7 units: 21 hours lab (378 total hours).

Limitation on enrollment: Satisfactory progression in the Diagnostic Radiologic Technology program.

This course provides clinical experience for application of theoretical principles and concepts covered in previous and current didactic course work. Clinical experience in patient care and handling, positioning skills, equipment utilization, radiation protection application, work efficiency, and image evaluation is provided. This course is part of the third semester of a 29-month program in Diagnostic Radiologic Technology and is only offered during fall semester. (3/00)

**RADT-50 CAREER EXPLORATION IN MEDICAL IMAGING**

(Formerly Coop-41ART)

1 unit: 3 hours lab.

Limitation on enrollment: Negative TB Screening Test or Chest X-ray within last 6 months.

This course allows students to sample an experience in a radiographic clinical setting in order to enhance a student's understanding of the challenges and opportunities in considering a career in radiography. The instructor of record will be responsible for arranging the student's clinical placement during the course's orientation meeting. (12/05)

**RADT-67A ADVANCED RADIOLOGIC PROCEDURES I**

2 units: 2 hours lecture.

Limitation on enrollment: Satisfactory progression in the Diagnostic Radiologic Technology program.

This course covers vascular special procedures including anatomy and special equipment. Equipment and applications of the following imaging modalities will also be studied: digital vascular imaging, computerized tomography, magnetic resonance imaging, ultrasonography, cardiac catheterization, and interventional radiology. This course is part of the fourth semester of a 29-month program in Diagnostic Radiologic Technology and is only offered during spring semester. This course is the first of three phases of internship. (3/00)

**RADT-67B ADVANCED CLINICAL EDUCATION I**

10 units: 540 total hours lab.

Limitation on enrollment: Satisfactory progression in the Diagnostic Radiologic Technology program.

This course provides clinical experience for application of theoretical principles and concepts covered in previous and current didactic course work. Clinical experience in patient care and handling, positioning skills, equipment utilization, radiation protection application, work efficiency, and image evaluation is provided. This course is part of the fourth semester of a 29-month program in Diagnostic Radiologic Technology and is only offered during spring semester. This course is the first of three phases of internship. (3/00)

**RADT-67C RADIOGRAPHIC PATHOLOGY**

1 unit: 1 hour lecture.

Limitation on enrollment: Satisfactory progression in the Diagnostic Radiologic Technology program.

The course presents an introductory study of basic disease processes, the nature and causes of disease and injury, and their related radiographic significance. This course is part of the fourth semester of a 29-month

program in Diagnostic Radiologic Technology and is only offered during spring semester. This course is the first of three phases of internship. (3/00)

**RADT-68A PRINCIPLES OF RADIATION PROTECTION AND BIOLOGY**

2 units: 36 total hours lecture.

Limitation on enrollment: Enrollment in the Diagnostic Radiologic Technology program.

The course covers principles of radiation protection and cell radiation interaction. The course will present and discuss radiation protection responsibility by the radiographer to patients, personnel, and the public; maximum permissible dose and regulatory involvement; radiation effects on cells and factors affecting cell response; and acute and chronic effects of radiation. This course is part of the second summer session of a 29-month program in Diagnostic Radiologic Technology and is offered only during summer session, approximately 12 weeks in duration. This course is the second of three phases of internship. (5/01)

**RADT-68B ADVANCED CLINICAL EDUCATION II**

7 units: 378 total hours lab.

Limitation on enrollment: Enrollment in the Diagnostic Radiologic Technology program.

This course provides clinical experience for re-application of theoretical principles and concepts covered in previous and current didactic course work. Clinical experience in patient care and handling, positioning skills, equipment utilization, radiation protection application, work efficiency, and image evaluation is provided. This course is part of the second summer session of a 29-month program in Diagnostic Radiologic Technology and is offered only during summer session, approximately 12 weeks in duration. This course is the second of three phases of internship. (5/01)

**RADT-69A INTEGRATIVE STUDY IN RADIOLOGIC TECHNOLOGY**

2 units: 2 hours lecture.

Limitation on enrollment: Enrollment in the Diagnostic Radiologic Technology program.

This course covers a comprehensive analysis and assessment of all previous radiologic technology instructional course work in preparation for writing the state certification and national registry examinations. Job market readiness skills will also be presented. This course is part of the fifth semester of a 29-month program in Diagnostic Radiologic Technology and is only offered during fall semester. (5/01)

**RADT-69B ADVANCED CLINICAL EDUCATION III**

9 units: 486 total hours lab.

Limitation on enrollment: Enrollment in the Diagnostic Radiologic Technology program.

This course provides clinical experience for re-application of theoretical principles and concepts covered in previous and current didactic course work. Clinical experience in patient care and handling, positioning skills, equipment utilization, radiation protection application, work efficiency, and image evaluation is provided. This course is part of the fifth semester of a 29-month program in Diagnostic Radiologic Technology and is only offered during fall semester. This course is the third and last phase of internship. (5/01)

**RADT-69C SECTIONAL ANATOMY**

1 unit: 1 hour lecture.

Limitation on enrollment: Enrollment in the Diagnostic Radiologic Technology program.

This course covers introduction to sectional anatomy. Emphasis will be the major anatomic structures normally seen in transverse sections. Current imaging applications will also be included. This course is part of the fifth semester of a 29-month program in Diagnostic Radiologic Technology and is only offered during fall semester. (5/01)

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**RADT-70L ABC TOPICS IN RADIOLOGIC TECHNOLOGY**

1-3 units: 3-9 hours lab.

Limitation on enrollment: Current or previous student in the Diagnostic Radiologic Technology program. (Note: The second letter designation indicates unit value, "A" being for 1 unit, "B" for 2 units, and "C" for 3 units.)

This course covers ancillary laboratory experience in an affiliated hospital or classroom/laboratory setting for those individuals seeking an expanded view of a particular area of interest. Specific areas may include cardiac catheterization, computerized axial tomography, diagnostic medical radiography, independent study, mammography, nuclear medicine, radiation oncology, and ultrasonography. Multiple sections of RADT-70LABC may be taken concurrently to provide students with required lab hours. The units for this course do not count toward graduation. (3/00)

## **DRAFTING TECHNOLOGY**

(Industrial Technology Division)

**DRFT-04A FUNDAMENTALS OF COMPUTER-AIDED DRAFTING (AutoCAD)**

3 units: 2 hours lecture, 3 hours lab.

Advisories: ENGL-81, ENGL-84; MATH-80 or MATH-83.

This course uses the current release of AutoCAD. The student will progress through the fundamental and some intermediate commands. Included will be the drawing setup, drawing, editing, drawing text, and dimension practices. The student will also construct multi-view drawings as used in industry. All drawing plates will be plotted in either model space or paper space. (1/02)

**DRFT-04B INTERMEDIATE COMPUTER-AIDED DRAFTING (AutoCAD)**

3 units: 2 hours lecture, 3 hours lab.

Prerequisite: DRFT-04A.

Advisories: ENGL-81, ENGL-84; MATH-80 or MATH-83.

This course uses AutoCAD's most current release. The student will progress through the intermediate commands. Included will be the Mview setup, isometric drawing, editing, and advanced dimension practices. The student will also construct multi-view drawings in paper space with different scales as used in industry. All drawing plates will be plotted in paper space. (1/02)

**DRFT-04C SOLID MODELING AND RENDERING (AutoCAD)**

3 units: 2 hours lecture, 3 hours lab.

Prerequisite: DRFT-04B. Advisories: ENGL-81, ENGL-84.

This course uses the latest AutoDesk solid modeling software. Students will create, modify, and render solid objects. 3-D primitive and 3-D regions are generated and manipulated with the program commands and options to produce 3-D solids with mass properties. (1/02)

**DRFT-05 COMPUTER GRAPHICS (Also: ENGR-05)**

3 units: 2 hours lecture, 3 hours lab.

Prerequisite: DRFT-04A.

Advisories: ENGL-81, ENGL-84; MATH-80 or MATH-83.

This course utilizes computer graphics to prepare engineering drawings including geometric constructions, multi-view drawing, sectioning, auxiliary views, pictorial drawing, and developments. (1/02)

**DRFT-25 GRAPHICS (Also: ENGR-25)  
(CAN ENGR 2)**

3 units: 2 hours lecture, 3 hours lab.

Prerequisite: DRFT-04A. Advisory: MATH-04A.

This course involves the use of computer-aided drafting and hand sketching to solve problems and communicate ideas. The course is also an introduction to descriptive geometry using computers and more traditional methods of problem solving through the auxiliary view and two-view methods. The development of graphical methods in their application to graphs, charts, and spatial and vector geometry will be studied. (1/02)

**DRFT-42A ARCHITECTURAL DRAFTING - AutoCAD**

3 units: 2 hours lecture, 3 hours lab.

Prerequisite: DRFT-04A.

This course covers the drafting techniques used in the preparation of working drawings for building construction, with special emphasis on house planning, house construction, and building codes and regulations. The course includes the drawing of a short set of house plans, floor plan, plot plan, elevation, and a perspective. (12/02)

**DRFT-42B ARCHITECTURAL DRAFTING -- SOLID BUILDER**

3 units: 2 hours lecture, 3 hours lab.

Advisory: DRFT-42A.

This course covers the techniques used in the making of working drawings for building construction. The program used creates a 3-D drawing of a house. A detailed cutting list and bill of materials is also generated relative to the drawings. There will be special emphasis on a complete set of house plans adequate for bidding purposes. Also included will be sections, details, interior elevations, foundation plan, heating and air conditioning, specification, and a model. Previous computer aided experience is not a requisite. AutoCAD commands are not used. (1/02)

**DRFT-44 PRINT READING AND SKETCHING**

3 units: 2 hours lecture, 3 hours lab.

Advisories: ENGL-81, ENGL-84; MATH-80 or MATH-83.

This course is for technical students and other personnel who must be skilled in reading industrial prints. The student will become familiar with industrial prints, industry standards, and current practices. There will be a basic coverage of sketching as it applies to the communication skills of reading prints. (1/02)

**DRFT-48A SPECIAL PROBLEMS - ARCHITECTURAL DRAFTING**

2 units: 6 hours lab.

Prerequisite: DRFT-42B.

This course is designed to allow the student to gain experience in those areas not covered in the objectives of DRFT-42B. The course will help prepare the student for employment in the architectural trade with necessary computer-aided drafting skills. Techniques and information needed for employment in the trade occupations will receive special emphasis. (1/02)

**DRFT-48B SPECIAL PROBLEMS IN CAD - SOFTWARE MODIFICATION**

2 units: 6 hours lab.

Prerequisites: DRFT-04C, DRFT-05/ENGR-05.

This course is designed to permit the student to experience those topics not covered in the objectives of DRFT-04ABC and DRFT-05/ENGR-05. The course will help prepare the student for employment in the trade with AutoCAD entry-level skills. Techniques and information needed for employment in the trade occupations will receive special attention. (1/02)

**DRFT-48C SPECIAL PROBLEMS IN CAD - TODAY'S TECHNOLOGY**

2 units: 6 hours lab.

Prerequisites: DRFT-04C, DRFT-05/ENGR-05.

This course is designed to permit the student to experience those areas not normally covered in the objectives of DRFT-04ABC and DRFT-05/ENGR-05. The course will help prepare the student for employment in the trade with entry-level skills. Techniques and information needed for employment in the trade occupations will receive special attention. (1/02)

**DRFT-59 BASIC DRAFTING**

3 units: 2 hours lecture, 3 hours lab.

Advisories: ENGL-81, ENGL-84; MATH-80 or MATH-83.

This course covers principles of mechanical drawing and drafting. It is designed to help students communicate through sketching and drawing. The communication is covered as a presentation of ideas through drawings. (1/02)

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## DRAMA

(Arts Division)

### DRAM-01 INTRODUCTION TO THEATER

(CAN DRAM 18) (CSU breadth area C1/C2)

3 units: 3 hours lecture.

Advisory: ENGL-A, ENGL-41.

This course is an introduction to the art of theater that delves into the nature of theatrical presentation, elements of dramatic structure, and the contributions of the playwright, actor, director, designer, technician, and audience. (2/07)

### DRAM-02 DRAMA PRODUCTIONS

3 units: 2 hours lecture, 3 hours lab.

Advisory: ENGL-A.

This course is a workshop in modern theater practice through an examination of production for college or public performance. Stage management, direction, rehearsal procedures, and possible solutions to technical problems are stressed. Students must be available for rehearsals and performances of productions to which they are assigned. This course may be repeated three times. (2/07)

### DRAM-03 HISTORY OF DRAMATIC LITERATURE (Also: ENGL-03)

(CSU breadth area C1)

3 units: 3 hours lecture.

Prerequisite: ENGL-01A. Advisory: ENGL-01B.

This course is a study of dramatic literature as a reflection of theater history, including the influence of staging, acting styles, scene design, and culture upon the playwright and his/her work. Classical to contemporary drama is examined. (11/04)

### DRAM-04 ACTOR'S WORKSHOP

3 units: 2 hours lecture, 3 hours lab.

Advisory: ENGL-A.

This course is an individual examination of basic acting techniques as applied to laboratory scenes and in actual public performance. Critical evaluation, demonstration, and written reviews are required. This course may be repeated three times. (2/07)

### DRAM-09 VOICE PRODUCTION FOR THE PERFORMER

(CAN DRAM 6)

3 units: 3 hours lecture.

Advisory: ENGL-A.

This course is designed to offer the student formal training in voice for the stage by providing the opportunity to develop a critical awareness of the vocal requirements of proper stage diction and projection. (2/07)

### DRAM-10 BEGINNING ACTING (CAN DRAM 8)

3 units: 3 hours lecture.

Advisory: ENGL-A.

This course is designed to serve the needs of the beginning student in acting. Emphasis will be on stage techniques and character development for stage performance. The development of scene repertoire is also studied by choosing scenes to be memorized from various periods of dramatic literature. Critical evaluation, demonstration, and written reviews are required. (2/07)

### DRAM-11 INTERMEDIATE ACTING

3 units: 3 hours lecture.

Prerequisite: DRAM-10. Advisory: ENGL-A.

This course provides an in-depth application of techniques explored in Beginning Acting with an emphasis on characterization. Role analysis and auditioning techniques will also be explored. Critical evaluation, demonstration, and written reviews are required. (2/07)

### DRAM-15 BEGINNING THEATER CRAFTS (CAN DRAM 12)

3 units: 2 hours lecture, 3 hours lab.

Advisory: ENGL-A.

This course is a study of the physical aspects of theater crafts, including makeup, stagecraft, lighting, costuming, and sound production. Laboratory experience is gained in the application of principles of technical theater in actual productions. (2/07)

### DRAM-16 INTERMEDIATE THEATER CRAFTS

3 units: 2 hours lecture, 3 hours lab.

Prerequisite: DRAM-15. Advisory: ENGL-A.

This course provides for a more advanced study of the physical aspects of theater production. Students are introduced to more advanced elements of design within technical theater and gain experience through actual application of design concepts and techniques of a minimum of one drama production. (2/07)

### DRAM-23 INTRODUCTION TO READER'S THEATER

3 units: 3 hours lecture.

Advisory: ENGL-A.

The course is designed to introduce students to the principles and performance of Reader's Theater. Students will explore diverse forms of literature and learn to select and analyze material, adapt it to script form, prepare a script for performance, and use the voice and body effectively on stage. Scripts will be performed as in-class activities and, finally, in a public presentation. (2/01)

### DRAM-70A-ZZ FINE AND PERFORMING ARTS -- SPECIAL TOPICS

0.5 - 2 units: 0 - 2 hours lecture, 0 - 6 hours lab.

Advisory: ENGL-A.

This is a course covering a variety of topics of current interest to students of art. Different topics will be emphasized each time the course is offered. Sections of this course may vary in unit value depending on subject matter, meeting time, and format. Each letter may be taken only once. (2/01)

## ECONOMICS

(Social Science Division)

### ECON-01A INTRODUCTION TO MACROECONOMICS

(CAN ECON 2) (CSU breadth area D2)

3 units: 3 hours lecture.

Advisories: ENGL-A, ENGL-41; MATH-A.

ECON-01A is an introductory course in macroeconomic theories including the determination of income, output, employment, and prices in the economy; the monetary system; governmental fiscal, monetary, and income policies; economic growth; international trade; and economic development. (1/06)

### ECON-01B INTRODUCTION TO MICROECONOMICS

(CAN ECON 4) (CSU breadth area D2)

3 units: 3 hours lecture.

Advisories: ENGL-A, ENGL-41; MATH-A.

ECON-01B is an introductory course in microeconomic theories including maximization, benefit versus cost, rational choice, the analysis of demand and supply, the role of price in free markets, consumer behavior, market structure, production cost, competitive business models, and resource pricing. The course examines the nature of production, distribution, market outcomes, and the role of government in the market. (1/06)

## EDUCATION

(Developmental and Educational Studies)

### EDUC-47 COLLEGE PLANNING AND LEARNING SYSTEMS

3 units: 3 hours lecture.

Advisory: ENGL-84.

This course is designed to help students improve study techniques for succeeding in college. The course will emphasize effective reading of textbooks, improving concentration and memory, getting the main idea, summarizing and outlining information, taking notes, listening to lectures, preparing for and taking exams, strengthening vocabulary, using the library, documenting and recording research, and managing time. (3/00)

### EDUC-70 A-ZZ SPECIAL TOPICS IN EDUCATION

0.5 - 3 units: 0.5 - 3 hours lecture.

Prerequisite/Advisory: None.

This course is designed to address special topics in education to meet current needs of students. Specific classes will be offered to help students understand the educational environment and their relationship to it. (11/96)

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**EDUC-80 COMPUTER ACCESS EVALUATION**

0.5 unit: 9 total hours of individualized assessment activities.  
Prerequisite/Advisory: None.

This course is designed to provide a means for in-depth computer access evaluation in order to determine an appropriate access environment for a student with a disability or multiple disabilities. Likely participants in this course would include students who are multiply handicapped, severely physically disabled, have acquired brain injuries resulting in secondary orthopedic and/or visual disabilities, re-entering disabled older students, blind students, or other students on recommendation of instructional staff. This course is offered on a credit/no credit basis. This is an open entry/open exit course.

**EDUC-81 ADAPTED KEYBOARDING**

1 unit: 3 hours lab.  
Prerequisite/Advisory: None.

This course is designed to teach keyboarding basics to disabled students who must use adaptive technologies for successful access to the keyboard or screen and/or are unable to complete mainstream typing classes successfully. This course is offered on a credit/no credit basis.

**EDUC-82A COMPUTER ACCESS I**

1 unit: 3 hours lab.  
Prerequisite/Advisory: None.

This course is designed for students with learning, visual, or physical disabilities. It provides training in the use of computer access technologies, within the context of word processing, to enhance a disabled student's ability to access and use microcomputers. Students will be familiarized with basic concepts of word processing used by the majority of industry-standard word processors. This course is offered on a credit/no credit basis.

**EDUC-82B COMPUTER ACCESS II**

1 unit: 3 hours lab.  
Prerequisite/Advisory: None.

This course is designed for disabled students who have successfully completed Computer Access I. Students will enhance their computer access skills through completion of assignments or projects. This course is offered on a credit/no credit basis.

**EDUC-82C COMPUTER ACCESS PROJECTS**

1 unit: 3 hours lab.  
Prerequisite/Advisory: None.

This course is designed for students who require access to specialized adaptive technologies in order to complete assignments for classes in which they are concurrently enrolled. This course is offered on a credit/no credit basis.

**EDUC-87 STUDY SKILLS**

3 units: 3 hours lecture.  
Advisories: ENGL-80, ENGL-80L.

This course is designed to help improve study skills for succeeding in college. The course will emphasize effective reading of textbooks, improving concentration and memory, getting the main idea, summarizing and outlining information, taking notes, listening to lectures, preparing for and taking exams, and managing time.

**EDUC-88 INFORMATION MANAGEMENT STRATEGIES**

2 units: 1 hour lecture, 3 hours lab.  
Prerequisite/Advisory: None.

This course is designed to develop or enhance students' ability to manage and organize information. Multimedia instruction is utilized. Individualized computer-assisted instruction, specific to word processing skill development, is available in the lab setting. This course is offered on a credit/no credit basis.

**EDUC-89 IMPROVING LEARNING POTENTIAL**

2 units: 1 hour lecture, 3 hours lab.  
Prerequisite/Advisory: None.

This course is designed to offer specialized computer-assisted instruction

for students with learning disabilities or acquired brain injuries. It will provide these students with an opportunity to maximize their learning potential and increase their academic efficiency. This course is offered on a credit/no credit basis only and may be repeated five times.

**ELECTRICITY -- ELECTRONICS**

(Industrial Technology Division)

**ELCT-30 INTRODUCTION TO ELECTRICITY AND ELECTRONICS**

3 units: 3 hours lecture.  
Advisories: ENGL-A, ENGL-41; MATH-80 or MATH-83.

This is an introductory course in electrical and electronic fundamentals including past, present, and future applications in the home, automobile, medicine, and industry. Also included will be computer technology, direct and alternating current circuits, magnetics, circuit applications, and test equipment. (1/04)

**ELCT-31 DIRECT CURRENT AND ALTERNATING CURRENT CIRCUITS (FOUNDATIONS OF ELECTRONICS)**

5 units: 3 hours lecture, 6 hours lab.  
Advisories: ENGL-A, ENGL-41; MATH-80 or MATH-83.

This is a course in basic electronics/electricity theory that investigates the behavior of resistance, capacitance, inductance, and transformer action in direct and alternating current circuits. Network analysis of series, parallel and series-parallel circuits is accomplished through basic circuit formulas according to Ohm's and Kirchoff's laws, nodal analysis, loop equations, and by using Thevenin's, Norton's, and superposition theorems. The principles of magnetism, electromagnetic field and the behavior of reactive components as inductors, capacitors, (and resistors) in AC circuits are also studied. (3/06)

**ELCT-31A DIRECT CURRENT CIRCUITS (FOUNDATIONS OF ELECTRONICS)**

3 units: 1.5 hours lecture, 4.5 hours lab.  
Advisories: ENGL-A, ENGL-41; MATH-80 or MATH-83.

This course in basic electronics/electricity theory investigates the behavior of resistance in direct current circuits. Network analysis of series, parallel, and series-parallel circuits is accomplished through basic circuit formulas using Ohm's and Kirchoff's laws, nodal analysis, loop equations, and by Thevenin's, Norton's, and superposition theorems. Circuit construction techniques and the utilization of electronic equipment in circuit construction and troubleshooting are also covered. The use of electronics circuit simulation software for direct current circuit analysis is an integral part of this course. (3/00)

**ELCT-31SL DC/AC ELECTRONIC CIRCUITS SOFTWARE LAB (Formerly ELCT-49A)**

1 unit: 3 hours lab.  
One-way corequisite: ELCT-31. Advisories: ENGL-A, ENGL-41.

This course is designed to supplement electronics course ELCT-31, but can be taken by any student desiring instruction in the use of computer-aided instruction (CAI) software for DC/AC circuit simulation and virtual instrumentation. This course may be repeated once. (3/06)

**ELCT-31B ALTERNATING CURRENT CIRCUITS (FOUNDATIONS OF ELECTRONICS)**

3 units: 1.5 hours lecture, 4.5 hours lab.  
Prerequisite: ELCT-31A. Advisories: ENGL-A, ENGL-41; MATH-80 or MATH-83.

This is a course in AC electronics/electricity theory that investigates the behavior of resistance, inductance, and capacitance in alternating current circuits, including transformer action and AC test equipment. Also covered are AC circuit construction techniques and the utilization of electronic equipment in circuit construction and troubleshooting. The use of circuit simulation software for alternating current circuit analysis is an integral part of this course. (3/00)

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**ELCT-32 SEMICONDUCTORS AND INTEGRATED CIRCUITS  
(FOUNDATIONS OF ELECTRONICS)**

5 units: 2 hours lecture, 9 hours lab.

Prerequisite: ELCT-31. Advisories: ENGL-A; MATH-80 or MATH-83.

This course introduces students to fundamentals of semiconductor devices and analog integrated circuits. The course covers circuit analysis of diodes, BJTs, FETs, and MOSFETs transistors with emphasis on their practical applications as rectifiers, single and multiple stage amplifiers, oscillators and power amplifiers. Integrated circuits as operational amplifiers, timers, instrumentation amplifiers, active filters, digital-to-analog (ADC) and analog-to-digital (DAC) converters are also covered. Laboratory activities equip students with real job skills in the utilization of various electronic test equipment during circuit construction and troubleshooting. (3/06)

**ELCT-32SL SEMICONDUCTORS AND INTEGRATED CIRCUITS  
SOFTWARE LAB (Formerly ELCT-49B)**

2 units: 6 hours lab.

One-way corequisite: ELCT-32. Advisories: ENGL-A; MATH-80 or MATH-83.

This course is designed to supplement the electronics course ELCT-32 but can be taken concurrently or after ELCT-32 by any student desiring instruction in the use of computer-aided instruction (CAI) software for semiconductors and integrated circuits, circuit simulation, and virtual instrumentation. (3/06)

**ELCT-34 DIGITAL LOGIC, CIRCUITS, AND SYSTEMS  
(FOUNDATIONS OF ELECTRONICS)**

3 units: 2 hours lecture, 3 hours lab.

Advisories: ENGL-A; MATH-80 or MATH-83.

The course covers the theory of digital logic circuits and systems. Analog and digital conversion circuits, number systems and codes, Boolean algebra, Karnaugh maps, logic gates, counters, multi-vibrators, registers, decoders, counters, memories, and clock and timing circuits are also studied. Programmable logic devices and microprocessors will be introduced. (3/06)

**ELCT-34SL DIGITAL LOGIC CIRCUITS AND SYSTEMS  
SOFTWARE LAB (Formerly ELCT-49D)**

1 unit: 3 hours lab.

On-way corequisite: ELCT-34. Advisory: ENGL-A.

This course is designed to supplement digital electronics course ELCT-34 but can be taken by any student desiring instruction in use of computer-aided instruction (CAI) software for digital logic circuit and digital system simulation and virtual instrumentation. The course may be repeated once. (3/06)

**ELCT-35 MICROCONTROLLERS, PROGRAMMING, AND  
INTERFACING WITH ROBOTICS APPLICATIONS  
(FOUNDATIONS OF ELECTRONICS)**

4 units: 2 hours lecture, 6 hours lab.

Prerequisite: ELCT-34. Advisories: ENGL-A, ENGL-41.

This course covers basic constructing and programming 8-bit Programmable Intelligent Computer (PICmicro) microcontrollers found in computerized systems with emphasis on robotics applications. Characteristics, capabilities, and limitations of other microcontrollers are discussed. RISC (Reduced Instructions Set Computing), hardware structure, programming, and interfacing methods are also covered. (3/06)

**ELCT-36 NETWORKING TOPOLOGIES AND CABLING  
(FOUNDATIONS OF ELECTRONICS)**

3 units: 2 hours lecture, 3 hours lab.

Advisories: ENGL-A; MATH-80 or MATH-83.

This is a course designed to provide the student with information and knowledge to prepare for the industry-standard Building Industry Consulting Service International (BICSI) Register installer. Level I exam, and employment as a telecommunications cabling installer. Students will gain an understanding of the cabling industry, U.S. and international standards, basic networking, signal transmission, copper cabling, fiber optics, installation, safety, structured cabling system basics, cable management, cable testing, and emerging technologies. Students will also be prepared to read network design documentation, architectural blueprints, set up part

parts lists, purchase components, pull and mount cable, choose wiring closets, install jacks, and perform cable testing. This course is repeatable three times. (3/06)

**ELCT-37 LASER ELECTRONICS (Also: LEOT-37)**

3 units: 2 hours lecture, 3 hours lab.

Prerequisites: ELCT-32, ELCT-33.

This electronics application course covers the electronics segments of laser equipment. Subjects studied include laser high voltage power supplies, flashlamps and arc lamp circuits, electro-optic and acousto-optic circuits, optical detectors, and electro-optic electronic instrumentation. (12/00)

**ELCT-40A CISCO CERTIFIED NETWORKING ASSOCIATE (CCNA)  
COURSE I (Also: CPSC-40A)**

[CILC areas A,B,C,D,E,F]

3 units: 2 hours lecture, 3 hours lab. Advisories: ELCT-36, ELCT-51; ENGL-81; MATH-80 or MATH-83.

This is the first of four semester courses (or four 9-week courses) designed to provide students with classroom and laboratory experience in current and emerging networking technologies and initial preparation for CCNA testing. The complete series of training experiences will empower them to enter employment and/or further education and training in the computer-networking field. Instruction includes, but is not limited to, electrical safety, network terminology and protocols, network standards, local area networks (LANs), wide area networks (WANs), open system interconnection (OSI) models, physical cabling, cabling tools, electronics test equipment, routers, router programming, star topology, transmission control protocol/Internet protocol (TCP/IP) addressing, and network standards. (10/00)

**ELCT-40B CISCO CERTIFIED NETWORKING ASSOCIATE (CCNA)  
COURSE II (Also: CPSC-40B)**

[CILC areas A,B,C,D,E,F]

2 units: 1 hour lecture, 3 hours lab.

Prerequisite: CPSC/ELCT-40A.

This second course is designed to provide students with classroom and laboratory experience in current and emerging networking technologies and initial preparation for CCNA testing. The complete series of training experiences will empower them to enter employment and/or further education and training in the computer-networking field. Instruction includes electrical safety, network terminology and protocols, and network standards. Local area networks (LANs), wide area networks (WANs), open system interconnection/Internet operating systems (OSI/ISO) models, physical cabling, cabling tools, electronics test equipment, routers, router programming, star topology, transmission control protocol/Internet protocol (TCP/IP) addressing, and network standards are also covered. (11/00)

**ELCT-40C CISCO CERTIFIED NETWORKING ASSOCIATE (CCNA)  
COURSE III (Also: CPSC-40C)**

[CILC areas C,E,F]

2 units: 1 hour lecture, 3 hours lab.

Prerequisite: CPSC/ELCT-40B.

This third course is designed to provide students with classroom and laboratory experience in electrical safety, network technology and protocols, and network standards. Local area networks (LANs), virtual LANs (VLANs), wide area networks (WANs), open system interconnection (OSI) models, Internet work packet exchange (IPX), Ethernet operation, spanning tree protocol, physical cabling, cabling tools, electronics test equipment, bridges, routers, switches, transmission control protocol/Internet protocol (TCP/IP) addressing, network standards, and network troubleshooting are also covered. (11/00)

**ELCT-40D CISCO CERTIFIED NETWORKING ASSOCIATE (CCNA)  
COURSE IV (Also: CPSC-40D)**

[CILC areas C,E,F]

2 units: 1 hour lecture, 3 hours lab.

Prerequisite: CPSC/ELCT-40C.

This fourth course is designed to provide students with knowledge concerning electrical safety, network terminology and protocols, and network standards. Local area networks (LANs), wide area networks (WANs), open system interconnection (OSI) models, point-to-point protocol (PPP), integrated services digital network (ISDN) protocol, physical cabling,

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cabling tools, electronics test equipment, routers, router programming, transmission control protocol/Internet protocol (TCP/IP) addressing, frame relay operation, network standards, and network troubleshooting are also covered. This course also reviews the entire level 1 training that has been accomplished to this point in preparation for Network+ and CCNA examinations. (11/00)

**ELCT-41 INDUSTRIAL MOTOR AND EQUIPMENT CONTROL  
(APPLICATIONS OF ELECTRONICS)**

3 units: 2 hours lecture, 3 hours lab.

Advisories: ENGL-81, ENGL-84; ELCT-31 or ELCT-52.

This course is designed to present the principles and applications of electrical motor and equipment control techniques used in industry. Ladder logic diagrams, contactors, motor starters, and electronic controls and sensors are among the subjects to be studied. Lectures, demonstrations, and laboratory experiments will be the methods used to present and enrich the material to be learned. (01/07)

**ELCT-42A PRINCIPLES AND APPLICATIONS OF PROGRAMMABLE  
LOGIC CONTROLLERS (APPLICATIONS OF ELECTRONICS)**

2 units: 1 hour lecture, 3 hours lab.

Advisories: ELCT 41; ENGL-81, ENGL-84.

This course provides electrical and industrial electronic students with basic skills and technical exposure to programmable logic controllers (PLCs). The subjects studied include terminology, programming methods, and operation of the programmable logic controller. The students will program and operate modern PLCs as a part of laboratory assignments.

**ELCT-42B ADVANCED PROGRAMMING AND INDUSTRIAL  
APPLICATIONS OF PROGRAMMABLE LOGIC CONTROLLERS**

1 unit: 0.5 hour lecture, 1.5 hours lab.

Advisory: ELCT-42A.

This course will provide advanced exposure to programmable logic controllers (PLCs). The subjects studied will include advanced topics in PLC programming, industrial applications, operator interfaces, PLC networking, and communications protocols. The student will program and operate modern PLCs as a part of laboratory assignments. (3/01)

**ELCT-43A INDUSTRIAL INSTRUMENTATION AND PROCESS  
CONTROL (APPLICATIONS OF ELECTRONICS)**

3 units: 2.5 hours lecture, 1.5 hours lab.

Advisories: ELCT-31 or ELCT-31B or ELCT-52; ENGL-A, ENGL-41.

This course is designed to study instrumentation sensors and controls that are used in industrial process control and automation. The course includes the study of the principles of operation and the practical applications of instrumentation in industry. Topics such as decibels, micro-controllers, levers, friction, clutches and brakes, tooth rotor tachometers, vision sensors, dynamic braking of DC motors, and flux vector AC drives will be addressed. (2/02)

**ELCT-43B GRAPHICAL PROGRAMMING FOR ELECTRONICS  
DATA ACQUISITION**

1.5 units: 0.5 hours lecture, 3 hours lab.

Advisories: CPSC-01; ELCT-43A; MATH-C or MATH-D (preferred).

This course is designed to teach the basic functionality of analysis and instrumentation programming software using National Instruments graphics software package, LabVIEW™. This software not only reinforces basic scientific, mathematical, and engineering principles but also provides students with theoretical knowledge necessary to develop their own instrumentation and data acquisition solutions. LabVIEW™ is a real-world, hands-on experience in graphical programming for industrial and scientific applications. (2/02)

**ELCT-44 ELECTRONIC SHOP PRACTICES: TECHNIQUES OF  
FABRICATION, SOLDERING, REWORK AND EQUIPMENT  
REPAIR**

3 units: 2 hours lecture, 3 hours lab.

Advisories: ENGL-81, ENGL-84.

This course provides students with a basic understanding of the fabrication, soldering, rework, and repair techniques necessary to prepare them for entry-level employment in the fields of electronic fabrication, assembly,

and repair. There will be emphasis on techniques needed for a broad range of non-destructive electronic repairs once the diagnostic procedures have been completed. This course emphasizes techniques commonly used in industry. (2/02)

**ELCT-47 ELECTRICAL MOTORS, GENERATORS, TRANSFORMERS,  
AND AC DISTRIBUTION (APPLICATIONS OF ELECTRONICS)**

3 units: 2 hours lecture, 3 hours lab.

Advisories: ENGL-81, ENGL-84; ELCT-31 or ELCT-52, ELCT-41.

This course covers principles of AC and DC motors, generators, transformers, three-phase generation, and AC distribution systems. The course content will include lecture, demonstration, and laboratory projects using motors and transformers. (01/07)

**ELCT-51A PERSONAL COMPUTER CONFIGURATION, ASSEMBLY  
AND REPAIR**

3 units: 2 hours lecture, 3 hours lab.

Advisories: ENGL-81, ENGL-84.

This is a course designed to provide the student with a working knowledge of the hardware of the IBM personal computer (PC), its clones, and successors. The course will cover basic principles of operation, established standards for maintaining compatibility between components and boards, use of diagnostic software and hardware, various types of operating systems, and standard troubleshooting techniques. (3/01)

**ELCT-51B A+ CERTIFICATION TRAINING**

[CILC area A]

3 units: 2 hours lecture, 3 hours lab.

Advisory: ELCT-51A.

This course provides the electronics student with advanced knowledge of the system hardware and software available for personal computers (PCs). The course will cover the principles of operation, standards for maintaining compatibility between computer systems, the use of advanced diagnostic software and hardware, various types of operating systems, and standard troubleshooting techniques. The course will also cover networking principles, and software and hardware as they apply to the personal computer. (3/01)

**ELCT-52 INTRODUCTION TO ELECTRICITY AND ELECTRONICS**

3 units: 2.5 hours lecture, 1.5 hours lab.

Advisories: ENGL-81, ENGL-84; MATH-80 or MATH-83.

This is an introductory course in basic electronics/electricity theory and covers resistance, inductance, capacitance in the series, parallel, and series-parallel circuits with DC and AC power sources. Circuit analysis is accomplished through basic circuit formulas according to Ohm's and Kirchoff's laws. Fundamentals of magnetism, DC and AC motors, diodes, transistors and integrated circuits, and the utilization of basic test equipment in electrical circuit construction and troubleshooting are also covered. (3/06)

**ELCT-55A-Z ELECTRICAL CONDUIT BENDING THEORY AND  
TECHNIQUES**

1 unit: 0.5 hour lecture, 1.5 hours lab.

Advisories: ENGL-81, ENGL-84; MATH-B.

This course covers theory and techniques necessary to bend and install electrical conduit. Conduit types discussed will include electrical metallic tubing (EMT), galvanized rigid conduit (GRC), rigid aluminum, intermediate metallic conduit (IMC), various polyvinyl chloride (PVC), and flexible plastic and metallic conduit. Wiring in accordance with the National Electrical Code (NEC) will be stressed. This course may be repeated when the course number letter changes reflecting National Electrical Code (NEC) changes. (1/00)

**ELCT-71A-Z ELECTRONICS/INDUSTRIAL ELECTRONICS  
TECHNOLOGY SPECIAL TOPICS**

0.5 - 4 units: 1.5 - 12 hours lab.

Prerequisite/Advisory: None.

This course is the study of principles, processes, and theories of the special topic being presented. (3/96)

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## ENGINEERING

(Science, Math and Engineering Division)

### ENGR-05 COMPUTER GRAPHICS (Also: DRFT-05)

3 units: 2 hours lecture, 3 hours lab.

Prerequisite: DRFT-04A. Advisories: ENGL-81, ENGL-84; MATH-80 or MATH-83.

This course utilizes computer graphics to prepare engineering drawings including geometric constructions, multi-view drawing, sectioning, auxiliary views, pictorial drawing, and developments.

### ENGR-10 ENGINEERING MATERIALS

(CAN ENGR 4)

3 units: 3 hours lecture.

Prerequisites: CHEM-04A; PHYS-04A. Advisories: ENGL-A, ENGL-41.

This course is an introduction to the atomic and microscopic structure of modern engineering materials. The effects of structure and manufacturing processes on the mechanical, electrical, and other physical properties of materials are studied. Metals, alloys, ceramics, polymers, and composites are explored. (1/07)

### ENGR-12 FORTRAN PROGRAMMING (Also: CPSC-12 and MATH-12)

3 units: 2 hours lecture, 3 hours lab.

Prerequisite: MATH-02, or MATH-25 and MATH-26. Advisories: ENGL-A, ENGL-41.

This course teaches students to use the FORTRAN programming language to solve problems in a wide variety of areas. Programming design, problem-solving, and debugging techniques are emphasized throughout the course. (1/07)

### ENGR-14 C++ PROGRAMMING (Also: MATH-14)

3 units: 2 hours lecture, 3 hours lab.

One-way corequisite: MATH-02, or MATH-25 and MATH-26. Advisories: ENGL-A, ENGL-41.

This is the entry-level comprehensive concepts course for computer science majors, and recommended for science and math majors. Algorithm design, logic diagrams, problem-solving, coding, and debugging are emphasized using a structured language such as C++. (1/07)

### ENGR-15 ELEMENTARY MECHANICS (STATICS)

(CAN ENGR 8)

3 units: 3 hours lecture.

Prerequisite: PHYS-04A. One-way corequisite: MATH-04C. Advisories: ENGL-A, ENGL-41.

This course is the study of rigid bodies when acted upon by forces and couples in 2-D and 3-D space. Included are trusses, frames, machines, beams, friction, centroids, centers of mass, and moments of inertia. (1/01)

### ENGR-18 ELECTRICAL CIRCUITS ANALYSIS

(CAN ENGR 6)

4 units: 3 hours lecture, 3 hours lab.

Prerequisite: PHYS-04B. One-way corequisite: MATH-04C. Advisories: ENGL-A, ENGL-41.

This course covers basic circuit analysis emphasizing resistive circuits, natural and forced response of inductive and capacitive circuits, phasor analysis, and semiconductor elements. Lab involves construction and measurement of circuits using power supplies, breadboards, multimeters, oscilloscopes, and function generators. (1/01)

### ENGR-25 GRAPHICS (Also: DRFT-25)

(CAN ENGR 2)

3 units: 2 hours lecture, 3 hours lab.

Prerequisite: DRFT-04A. Advisory: MATH-04A.

This course involves use of computer-aided drafting and hand sketching to solve problems and communicate ideas. The course is also an introduction to descriptive geometry, using computers and more traditional methods of problem solving through the auxiliary view and two-view methods. The development of graphical methods in their application to graphs, charts, and spatial and vector geometry will be studied. (1/02)

### ENGR-30 INTRODUCTION TO ENGINEERING

[CILC area C]

2 units: 1 hour lecture, 3 hours lab.

Advisories: ENGL-A, ENGL-41; MATH-C or MATH-D.

This course covers three areas: a description of engineering careers, a factual comparison of engineering degrees and transfer universities, and a discussion of the academic skills required to earn an engineering degree. Successful students will be able to articulate their engineering career goals. The course includes laboratory activities and field trips to engineering companies. (10/04)

### ENGR-49A-ZZ SPECIAL TOPICS IN ENGINEERING

0.5 - 3 units: 0-3 hours lecture, 0-9 hours lab.

Advisories: ENGL-A, ENGL-41.

This course covers special topics in engineering to meet needs that cannot be included in the current engineering courses. It will assist students in acquiring the most up-to-date information possible in order to cope with the rapidly changing world of technology and design. (2/01)

## ENGLISH

(Humanities Division)

### ENGL-A BASIC COMPOSITION AND READING

[CILC area G]

3 units: 3 hours lecture.

Prerequisites: ENGL-81, ENGL-84. Two-way corequisite: ENGL-AL.

This course is designed for students not qualified for ENGL-01A and for students who desire a review of the conventions of written communication. It offers a review of grammar and usage in conjunction with the writing assignments. Reading assignments cover a variety of subjects for class discussion and provide a means for increasing reading comprehension. Writing assignments include an introduction to library research skills. (1/03)

### ENGL-AL PRE-COLLEGIATE WRITING LAB

1 unit: 3 hours lab.

Two-way corequisite: ENGL-A. Advisory: AOM-50B.

The writing lab is required of all students registered in ENGL-A. It is designed to improve writing skills by providing individualized assistance through a prescriptive program based on individual writing strengths and needs. (12/02)

### ENGL-B INTRODUCTION TO APPLIED WRITING

3 units: 3 hours lecture.

Advisory: LRNR-30.

This course is designed for students who desire to learn or polish skills in writing for the workplace or public arena. Writing assignments include reports, inter-office memos, public relations letters, public announcements, and other workplace documents for a variety of vocational occupations and public situations. (11/04)

### ENGL-L WRITING PRACTICE AND IMPROVEMENT

1 unit: 3 hours lab.

Advisories: ENGL-A; LRNR-30; AOM-50B.

This course provides computer-assisted writing instruction designed to improve writing skills. (1/05)

### ENGL-01A COMPOSITION AND READING I

(CAN ENGL 2) (CSU breadth area A2) [CILC area G]

3 units: 3 hours lecture.

Prerequisite: ENGL-A or appropriate assessment process. One-way corequisite: ENGL-41. Advisory: LRNR-30.

ENGL-01A is a course that stresses critical readings, scholarly compositions, and research applications. Students write exploratory and argumentative essays—at least one of which is fully annotated—based on class readings and discussions. Students are expected to understand basic English skills upon entering the course and are expected to acquire more sophisticated reading and composition skills throughout the term. Students apply matters and measures of critical thinking skills to their assignments. (11/03)

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**ENGL-01B INTRODUCTION TO LITERATURE**

(CAN ENGL 4) (CSU breadth area C2)

3 units: 3 hours lecture.

Prerequisite: ENGL-01A.

This is a course in writing and literary analysis based upon reading and studying major literary types: short story, novel, drama, and poetry. Writers of various countries and periods are read in order to encourage an appreciation of literature's range, artistry, and insight into the human experience. (5/06)

**ENGL-02 ORAL INTERPRETATION (Also: COMM-02)**

3 units: 3 hours lecture.

Prerequisite: ENGL-A. Advisory: ENGL-41.

This course is designed to help students understand, appreciate, and convey the power of the written word through performance. A variety of writings will be analyzed in their rhetorical, historical, and cultural contexts, and will be brought to life by students communicating them to others through their voices and bodies. (4/99)

**ENGL-03 HISTORY OF DRAMATIC LITERATURE (Also: DRAM-03)**

(CSU breadth area C1)

3 units: 3 hours lecture.

Prerequisite: ENGL-01A. Advisory: ENGL-01B.

This course is a study of dramatic literature as a reflection of theater history, including the influence of staging, acting styles, scene design, and culture upon the playwright and his/her work. Classical to contemporary drama is examined. (11/04)

**ENGL-04A INTRODUCTION TO WORLD LITERATURE:****ANCIENTS TO 1650**

(CSU breadth area C2)

3 units: 3 hours lecture.

Prerequisite: ENGL-01A. Advisory: ENGL-01B.

This course examines the origins and subsequent developments of world literatures and cultures from the ancients to 1650 through various literary genres and cultural traditions. Primary focus will fall on major works of certain periods and of geographic origins. Students will engage in comparative analysis and evaluation of the literary works as well as close study of the works in addition to the study of each text's merits. (5/05)

**ENGL-04B INTRODUCTION TO WORLD LITERATURE: 1650 TO PRESENT**

(CSU breadth area C2)

3 units: 3 hours lecture.

Prerequisite: ENGL-01A. Advisory: ENGL-01B.

This course examines the origins and subsequent developments of world literatures and cultures from 1650 to the present through various literary genres and cultural traditions. Primary focus will fall on major works of certain periods and of geographic origins. Students will engage in comparative analysis and evaluation of the literary works as well as close study of the works in addition to the study of each text's merits. (5/05)

**ENGL-05 INTRODUCTION TO FICTION**

(CAN ENGL 18)

3 units: 3 hours lecture.

Prerequisite: ENGL-01A. Advisory: ENGL-01B.

This course traces the origins and subsequent developments of short fiction and longer fiction (novels), and signals the specific characteristics of respective genres. Students will read a number of books of short fiction and three to five novels in order to study the various developments of style, form, structure, and other artistic choices associated with the history of fiction. (12/04)

**ENGL-06A MAJOR ENGLISH WRITERS**

(CAN ENGL 8) (CSU breadth area C2)

3 units: 3 hours lecture.

Prerequisite: ENGL-01A. Advisory: ENGL-01B.

This course introduces students to the history and variety of English literature from its beginnings to the early 18<sup>th</sup> century. Representative works of major authors are read as examples of the various genres, literary trends, and historical eras in which they were written. (12/04)

**ENGL-06B MAJOR ENGLISH WRITERS**

(CAN ENGL 10) (CSU breadth area C2)

3 units: 3 hours lecture.

Prerequisite: ENGL-01A. Advisory: ENGL-01B.

This course introduces students to the history and variety of English literature from the eighteenth to the twentieth, to the twenty-first centuries. Representative works of major authors are read as examples of the various genres, literary trends, and historical eras in which they were written. (12/04)

**ENGL-07 STUDIES IN LITERATURE: POETRY**

3 units: 3 hours lecture.

Prerequisite: ENGL-01A. Advisory: ENGL-01B.

This course traces origins and developments of the poem as a major literary genre. Assignments include an intensive study of the poetic process. Poems from ancient times to the present are analyzed in terms of form, idea, and language. (1/05)

**ENGL-08 INTRODUCTION TO SHAKESPEARE**

3 units: 3 hours lecture.

Prerequisite: ENGL-01A. Advisory: ENGL-01B.

Introduction to Shakespeare is a course of literary analysis based on reading and studying the major works of William Shakespeare. The course focuses on a number of Shakespeare's plays, especially the most widely-known ones, from the categories Comedy, History, and Tragedy, as well as a survey of his non-dramatic poetry. As this course is an introductory course, students will receive the opportunity to learn about Elizabethan England -- the England of the time of Shakespeare. (12/04)

**ENGL-10 AMERICAN LITERATURE FROM BEGINNINGS TO CIVIL WAR**

(CAN ENGL 14) (CSU breadth area C2)

3 units: 3 hours lecture.

Prerequisite: ENGL-01A. Advisory: ENGL-01B.

This course is designed to introduce students to the history and variety of literature from American Literature's beginnings to the Civil War. Representative works are read as examples of various genres, literary trends, and historical eras. (11/04)

**ENGL-11 AMERICAN LITERATURE FROM POST-CIVIL WAR TO PRESENT**

(CAN ENGL 16) (CSU breadth area C2)

3 units: 3 hours lecture.

Prerequisite: ENGL-01A. Advisory: ENGL-01B.

This is a course designed to introduce students to the history and variety of American literature from the end of 1865 to the present. Representative works are read as examples of various genres, literary trends, and historical eras. (11/04)

**ENGL-12 CREATIVE WRITING**

(CAN ENGL 6)

3 units: 3 hours lecture.

Prerequisite: ENGL-01A. Advisory: ENGL-01B.

This is a course designed to provide experience in the writing of poetry, drama, fiction, and essay and to aid the student in becoming aware of the craft of writing as described and/or demonstrated by professional writers. The class is conducted primarily as a workshop in which students read their materials for constructive criticism. (11/04)

**ENGL-13 CRITICAL REASONING AND WRITING (Also: PHIL-13)**

(CSU breadth area A3) [CILC area G]

3 units: 3 hours lecture.

Prerequisite: ENGL-01A.

ENGL-13/PHIL-13 meets the IGETC critical thinking/composition requirement. The course emphasizes the development of critical thinking skills through instruction in reading and writing arguments. Readings feature mostly non-fictional essays and books that reflect diverse cultural and gender perspectives on a variety of contemporary political and social issues, especially those involving race, ethnicity, and gender. (1/05)

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**ENGL-13H HONORS CRITICAL REASONING AND WRITING**

(Also: PHIL-13H)

(CSU breadth area A3) [CILC area G]

3 units: 3 hours lecture.

Prerequisite: ENGL-01A.

Limitation on enrollment: Enrollment in the Honors Program.

This course emphasizes the development of critical thinking skills through instruction in reading and writing arguments. Readings feature mostly non-fictional essays and books that reflect diverse cultural and gender perspectives on a variety of contemporary political and social issues, especially those involving race, ethnicity, and gender. (5/06)

**ENGL-14 INTRODUCTION TO FILM**

(CSU breadth area C1)

3 units: 2 hours lecture, 3 hours lab.

Prerequisite: ENGL-01A. Advisory: ENGL-01B.

This course includes critical and popular approaches to film. Students will study film form, genre, style, criticism, and history. They will read screenplays and film criticism and theory, and view the films under consideration to obtain a better understanding of the film discipline. (1/03)

**ENGL-18 AFRICAN AND AFRICAN-AMERICAN LITERATURE**

(Also: HUM-18)

(CSU breadth area C2)

3 units: 3 hours lecture.

Prerequisite: ENGL-01A. Advisory: ENGL-01B.

This is an introductory course in African literature written in English or translated from African languages or French into English. It will represent a survey of major works from colonial and post-colonial literature to introduce students to African literature and films of merit, cultural relevance, and universal application. In addition to enabling students to view African works within a global context, its goal will be to show the connection of themes, issues, and styles between African and African-American literature and experience as well. Works studied will include epics and narratives, poetry and song lyrics, short fiction, novels, essays, films, and drama in an effort to assist students in acquiring an appreciation of important literary voices that have heretofore been neglected in literature studies. (11/00)

**ENGL-22 RESEARCH, COMPOSITION, AND BIBLIOGRAPHY**

1 unit: 1 hour lecture.

Advisory: ENGL-A.

This course introduces students to the research and composing processes of the discipline-specific writing conventions of their fields. Students will be introduced to Internet search engines, library catalogs, indices, abstracts, bibliographies, reference books, and specialized sources. Research and writing include an annotated bibliography and an article-length essay. (11/04)

**ENGL-30A BEGINNING AMERICAN SIGN LANGUAGE**

3 units: 3 hours lecture.

Prerequisite/Advisory: None.

This course is an introduction to understanding and signing American Sign Language and appreciating the basic elements of the deaf culture. Emphasis is on obtaining a practical command of the language, including major grammatical components, basic ASL sentence structures, non-manual gestures, expression of spatial relationships in a visual-gestural language, and beginning conversational skills. (12/05)

**ENGL-30B INTERMEDIATE AMERICAN SIGN LANGUAGE**

3 units: 3 hours lecture.

Prerequisite: ENGL-30A.

This course provides intermediate practice understanding and signing American Sign Language and appreciating the basic elements of the deaf culture. Emphasis is on obtaining a practical command of the language including major grammatical components, basic ASL sentence structures, non-manual gestures, expression of spatial relationships in a visual-gestural language, and intermediate conversational skills. (12/05)

**ENGL-30C ADVANCED AMERICAN SIGN LANGUAGE**

3 units: 3 hours lecture.

Prerequisite: ENGL-30B.

This course provides advanced practice in understanding and signing American Sign Language and appreciating the basic elements of the deaf culture. Emphasis is on obtaining a practical command of the language, including major grammatical components, basic ASL sentence structures, non-manual gestures, expression of spatial relationships in a visual-gestural language, and advanced conversational skills. (12/05)

**ENGL-31 CHILDREN'S LITERATURE**

3 units: 3 hours lecture.

Prerequisite: ENGL-01A.

This course explores children's literature as a special topic of English literature. Students will read and write about children's literature, exploring a range of cultures for both literary elements and structural features. The class will identify themes derived from cultural patterns and symbols from rituals, mythologies, and traditions by identifying and evaluating structural and organizational devices in prose and poetry. Students will read various literary genres, including but not limited to novels, short stories, folk and fairy tales, and poetry. (5/05)

**ENGL-39 INDEPENDENT STUDY/TUTORING**

2 units: 1 hour lecture, 3 hours lab.

Prerequisite: ENGL-01A.

The course is designed to give pre-professional training to prospective teachers. It provides practical experience in a tutorial workshop atmosphere helping basic writers become more proficient. Tutors will work with full-time English teachers in the writing center at Merced College to establish and apply teaching and tutorial methods. (3/00)

**ENGL-41 COLLEGE-LEVEL READING**

2 units: 2 hours lecture.

Prerequisite: ENGL-81, ENGL-A. Two-way corequisite: ENGL-41L.

This class emphasizes critical reading and thinking skills appropriate to college reading needs. This course is for students who already have a knowledge of word analysis and comprehension techniques but need work in applying critical reading and thinking strategies to college-level material. (12/02)

**ENGL-41L COLLEGE-LEVEL READING LABORATORY**

1 unit: 3 hours lab.

Prerequisite: ENGL-81L. Two-way corequisite: ENGL-41.

The reading lab is required of all students registered in ENGL-41. It is designed to improve college-level critical reading and thinking skills by providing individualized assistance through a prescriptive program based on individual reading strengths and needs. (12/02)

**ENGL-47ABCD SPECIAL TOPICS IN LANGUAGE AND LITERATURE**

(Also: HUM-47ABCD)

3 units: 3 hours lecture.

Prerequisite: ENGL-A.

This course engages students in the study of language and literature, and topics will vary from semester to semester. (1/05)

**ENGLISH, DEVELOPMENTAL**

*(Developmental and Educational Studies)*

**ENGL-80 BASIC READING TACTICS I**

3 units: 3 hours lecture.

Prerequisite: ENGL-90 or ESL-91. Two-way corequisite: ENGL-80L.

This course is designed to diagnose reading deficiencies and improve basic reading skills, primarily comprehension. This course is for students who already have a basic understanding of phonics and word analysis but who need additional work in building basic comprehension skills. This course will emphasize identifying the main idea and supporting details, improving factual recall, recognizing context clues, making inferences, and drawing conclusions. Vocabulary improvement will also be stressed. (2/04)

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**ENGL-80L READING TACTICS LABORATORY**

1 unit: 3 hours lab.

Prerequisite: ENGL-90 or ESL-91. Two-way corequisite: ENGL-80.  
Advisory: Concurrent enrollment in ENGL-83.

The reading lab is required of all students registered in ENGL-80. It is designed to improve reading skills by providing individualized assistance through a prescriptive program based on individual reading strengths and needs. (4/04)

**ENGL-81 BASIC READING TACTICS II**

3 units: 3 hours lecture.

Prerequisite: ENGL-80, 80L. Two-way corequisite: ENGL-81L.  
Advisory: Concurrent enrollment in ENGL-84.

This class emphasizes comprehension and critical thinking skills at a pre-college reading level. This course is for students who need to work applying reading comprehension skills and critical reading/thinking skills to pre-college level reading materials. Instruction will focus on strategies used to build reading skills. (11/04)

**ENGL-81L READING TACTICS LABORATORY**

1 unit: 3 hours lab.

Prerequisite: ENGL-80, ENGL-80L. Two-way corequisite: ENGL-81.  
Advisory: Concurrent enrollment in ENGL-84.

The reading lab is required of all students registered in ENGL-81. It is designed to improve reading skills by providing individualized assistance through a prescriptive program based on individual reading strengths and needs. (4/04)

**ENGL-83 BASIC WRITING I - SENTENCE TO PARAGRAPH**

5 units: 5 hours lecture.

Prerequisite: ENGL-90 or ESL-94. Advisories: Concurrent enrollment in ENGL-80, ENGL-80L; concurrent enrollment in ESL-85 is also recommended for non-native speakers.

This course is devoted to developing competency in basic English grammar, sentence construction, and paragraph development. The student will have practice in constructing original sentences and paragraphs which demonstrate comprehension and application of basic grammatical concepts and patterns of standard English sentences and paragraphs. (2/04)

**ENGL-83L SENTENCE STRUCTURE**

1 unit: 3 hours lab.

Advisory: ENGL-83.

This course is a laboratory experience to help students at developmental levels to improve their sentence structure. The program is basically self-paced. (4/04)

**ENGL-84 BASIC WRITING SKILLS II - PARAGRAPH TO ESSAY**

5 units: 5 hours lecture.

Prerequisite: ENGL-83. Advisory: Concurrent enrollment in ENGL-81.

This course is devoted to developing competency in writing paragraphs and short essays by means of intensive practice in writing, including paragraph structure and development, focusing on short essays. (01/07)

**ENGL-86L SPELLING**

1 unit: 3 hours lab.

Advisory: ENGL-90 or ENGL-94B.

This course is designed to provide additional instruction or reinforcement for students who have difficulty in spelling. This course is generally tailored to the individual student's needs and is basically self-paced. (4/04)

**ENGL-87L VOCABULARY**

1 unit: 3 hours lab.

Advisory: ENGL-90 or ESL-91.

This course is a laboratory experience to help students at developmental levels to enlarge their vocabularies. This program is basically self-paced. (4/04)

**ENGL-89ABCD COMMUNICATION SKILLS LABORATORY**

0.5 - 2 units: 1.5 - 6 hours lab.

Advisory: ENGL-80 or ENGL-83. (Note: The letter designation indicates unit value, "A" being for 0.5 unit, "B" for 1 unit, etc., in 0.5-unit increments.)

This course is a laboratory experience primarily to help students who have taken a writing class but who still need additional work before they progress to the next writing class. It is designed to provide individualized assistance and assignments to improve a student's deficient areas. The number of hours and the number of assignments vary based on the units enrolled in. Each letter (i.e., A, B, C, or D) may be taken only once. (4/04)

**ENGL-90 BASIC LANGUAGE AND LEARNING SKILLS**

4 units: 4 hours lecture.

Prerequisite/Advisory: None.

This course is to assist language skill development of students. Instruction will place emphasis on phonics, fundamental reading comprehension, and basic sentence writing skills. It will also cover basic spelling and vocabulary skills. (2/00)

**ENGLISH AS A SECOND LANGUAGE****(Developmental and Educational Studies)**

This three-level ESL program helps students whose primary language is not English to acquire the English language skills and cultural awareness necessary to begin a program of study that prepares them to succeed in college level courses. Separate courses in grammar and linguistic competence, pronunciation and speaking, reading, and paragraph development prepare students to enter developmental reading and writing classes and do not count toward graduation. Because credit ESL courses begin on an intermediate level, it is recommended that students have three years of prior instruction in ESL, or speak, read, and write English regularly in their daily lives.

**ESL-85 HIGH-INTERMEDIATE ESL GRAMMAR II**

3 units: 3 hours lecture.

Prerequisite: ESL-96.

This is the second part of a high-intermediate English grammar course (ESL) for students whose native language is not English. This course focuses on understanding time in compound and complex sentences, adjective clauses, noun clauses and conditionals. It introduces the coordinating and subordinating conjunctions and transitions words. Use of the language lab to complete some assignments may be required. It is recommended that this course be taken concurrently with ENGL-83. (12/02)

**ESL-90 INTERMEDIATE ESL: READING**

3 units: 3 hours lecture.

Advisories: Student has completed Non-credit ESL Level 5 or at least three years of the study of ESL/ELD in a high school or adult school program; OR the student 1) has the ability to use complete English sentences to carry on a telephone conversation with a native speaker, 2) is able to read English magazines and newspapers, and 3) is able to write complete sentences (although they may have some grammatical errors).

This is an intermediate reading course for students whose native language is not English (ESL). This course focuses on strategies for recognizing the main idea, topic sentence, and details in a variety of contexts. It stresses using context to understand the meaning of vocabulary, and presents the use of suffixes to understand the functions of words. It is recommended that this course be taken concurrently with ESL-93. (12/02)

**ESL-91 HIGH-INTERMEDIATE ESL: READING**

3 units: 3 hours lecture.

Prerequisite: ESL-90.

This is a high-intermediate reading course for students whose native language is not English (ESL). This course focuses on vocabulary development, including word roots and affixes, and reading strategies, including previewing, predicting, identifying main ideas and details, inferences, outlines, and summaries. It is recommended that this course be taken concurrently with ESL-94. (12/02)

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**ESL-93 INTERMEDIATE ESL: WRITING**

3 units: 3 hours lecture.

Advisories: Student has completed Non-credit ESL Level 5 or at least three years of the study of ESL/ELD in a high school or adult school program; OR the student 1) has the ability to use complete English sentences to carry on a telephone conversation with a native speaker, 2) is able to read English magazines and newspapers, and 3) is able to write complete sentences (although they may have some grammatical errors).

This is an intermediate writing course for students whose native language is not English (ESL). Students will read short essays and write about them. This course focuses on using a step-by-step process to write well ordered paragraphs. It is recommended that this course be taken concurrently with ESL-90 and ESL-95. Students may be required to use the language lab a minimum of one hour per week. (12/02)

**ESL-94 HIGH-INTERMEDIATE ESL: WRITING**

3 units: 3 hours lecture.

Prerequisite: ESL-93. Advisories: ESL-90, ESL-95.

This is a high-intermediate writing course for students whose native language is not English (ESL). Students will read short essays and write about them. This course focuses on using a step-by-step process to write well ordered paragraphs and short essays that contain a variety of sentence structures. It is recommended that this course be taken concurrently with ESL-91 and ESL-96. Students may be required to use the language lab a minimum of one hour per week. (12/02)

**ESL-95 INTERMEDIATE ESL GRAMMAR**

3 units: 3 hours lecture.

Advisories: Student has completed Non-credit ESL Level 5 or at least three years of the study of ESL/ELD in a high school or adult school program; OR the student 1) has the ability to use complete English sentences to carry on a telephone conversation with a native speaker, 2) is able to read English magazines and newspapers, and 3) is able to write complete sentences (although they may have some grammatical errors).

This is an intermediate English grammar course (ESL) for students whose native language is not English. Focusing on the simple sentence, this course deals with five basic sentence patterns. It also deals with nouns, pronouns, verb tense and form, adjectives, and adverbs. Use of the language lab to complete some assignments may be required. It is recommended that this course be taken concurrently with ESL-93. (12/02)

**ESL-96 HIGH-INTERMEDIATE ESL GRAMMAR I**

3 units: 3 hours lecture.

Prerequisite: ESL-95.

This is a high-intermediate English grammar course (ESL) for students whose native language is not English. This course focuses on the proper use of verb forms, phrasal verbs, passive voice, descriptive phrases, participles, gerunds and infinitives. Use of the language lab to complete some assignments may be required. It is recommended that this course be taken concurrently with ESL-94. (12/02)

**ESL-98 ESL PRONUNCIATION AND SPEAKING**

3 units: 3 hours lecture.

Advisories: Completion of non-credit ESL Level 5; or at least three years of the study of ESL/ELD in high school or adult school programs; or use complete English sentences to carry on a conversation with a native speaker while using the telephone, read English magazines and newspapers, and write complete sentences that may have some grammatical errors.

This is an intermediate level pronunciation and speaking course. In this course students will practice the consonant and vowel sounds as well as learn how stress and intonation affect a person's ability to understand what is said. Students will use the pronunciation skills and vocabulary presented while practicing conversations on topics related to assigned readings. It is recommended that students take this course concurrently with ESL-93 Reading. Use of the language lab may be required. (12/02)

For Accent Reduction see Communication Studies, COMM-50.

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**ENVIRONMENTAL TECHNOLOGIES**

(Science, Math and Engineering Division)

**ENTC-30 INTRODUCTION TO ENVIRONMENTAL TECHNOLOGY**

3 units: 3 hours lecture.

Advisories: ENGL-A, ENGL-41.

This course will provide the student with an overview of the history and effects of pollution, and an examination of the early legislation that was formulated in attempts to clean up the environment. The course provides students with an introduction to ecological principles and an overview of the biological effects on humans and other organisms of toxins and other pollutants. The course focuses on two approaches to resolving environmental issues, attacking the problems through the legal process by application of regulations and by use of scientific control and clean-up techniques through modern technology. This course will provide an introduction to the basic scientific principles as they relate to monitor pollution control equipment. Students will be introduced to techniques of monitoring and sampling the three regions of the environment and the importance of working toward compliance as guided by federal, state, and local regulations. (12/02)

**ENTC-32 INDUSTRIAL PROCESSES AND WASTE STREAM MANAGEMENT**

3 units: 3 hours lecture.

One-way corequisite: CHEM-02A. Advisories: ENGL-A, ENGL-41; MATH-A or MATH-B.

In this course students will study a variety of processes used by the industry in the production of goods and the provision of services. Early legislation will be examined in its historical setting as the Federal government responded to ecological catastrophes in attempts to halt pollution and protect environmental systems. Treatment technologies will be examined as methods to reduce hazardous waste, and issues of pollution (P2) will be examined. Students will view industrial operations with visits to local manufacturing and waste reduction facilities. A minimum of four specific industries will be examined, following the process of conversion of raw materials into finished products with special attention to the generation of waste, and the Best Available Technology (BAT) for minimizing impact on air, land, and water resources. (3/06)

**ENTC-34 HEALTH EFFECTS OF HAZARDOUS MATERIALS**

3 units: 3 hours lecture.

Prerequisite: ENTC-30. Advisories: ENGL-A, ENGL-41.

This course covers the acute and chronic health effects produced by exposure to chemical, physical, and biological agents. Emphasis will be on those hazardous materials commonly associated with industrial operations, waste disposal, and remediation sites. Topics will include routes of entry, toxic effects, risk evaluation, permissible exposure limits, medical surveillance, control methods for reducing exposure, and understanding Material Safety Data Sheets (MSDS). (1/07)

**ENTC-36 HAZARDOUS WASTE MANAGEMENT APPLICATIONS**

4 units: 3 hours lecture, 3 hours lab.

Prerequisite: ENTC-30. Advisories: BIOL-06; CHEM-02B; ENGL-A, ENGL-41.

This course provides an overview of hazardous waste regulation with emphasis in generator compliance, site investigation and remediation, permitting, enforcement, and liability. The lecture portion of the course explains the hazardous waste regulatory framework, introduces the student to the wide variety and types of environmental resources available, and develops research skills in the hazardous waste area. The laboratory portion of the course complements the lectures by providing hands-on application of regulations at the technician level. Proper methods of preparing a hazardous waste manifest, labeling of storage containers, sampling and analysis, preparing a Phase I Environmental Audit, and selecting environmental consultants are among the many skills developed in the laboratory. (1/07)

**ENTC-38 SAFETY AND EMERGENCY RESPONSE**

4 units: 3 hours lecture, 3 hours lab.

Prerequisites: ENTC-30, ENTC-34. Advisories: ENGL-A, ENGL-41.

This course is designed to provide students with hands-on instruction in safety and emergency response to chemical and physical exposures in

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industrial and field settings. Topics include: hazard analysis, contingency planning, housekeeping and safety practices, including proper use and selection of PPE, site control and evaluation, handling drums and containers, field sampling and monitoring, proper use of instruments, incident response planning, emergency response including field exercises in the use of PAPR and SCBA, and an understanding of the ICS system. This course, along with ENTC-34, satisfies the requirements for 40-hour employee training under OSHA[1910.120]. (1/07)

#### **ENTC-40 HAZARDOUS MATERIALS MANAGEMENT APPLICATIONS**

4 units: 3 hours lecture, 3 hours lab.

Prerequisite: ENTC-30. Advisories: BIOL-06; CHEM-02B; ENGL-A, ENGL-41.

This course is a study of requirements and applications of federal, state, and local laws relating to hazardous materials. The course will emphasize compliance with Department of Transportation, OSHA Hazard Communication, SARA Title III Community Right-to-Know, Underground Tank, Asbestos, Proposition 65, and Air Toxics Regulations. The lecture portion of the course will provide the student with an understanding of the legal framework of hazardous materials laws; the laboratory portion will focus on applications of these laws, such as proper labeling, shipping and handling of hazardous materials, obtaining and interpreting MSDSs, permitting and monitoring functions, as well as planning and reporting functions. (1/07)

### **FAMILY AND CONSUMER SCIENCE**

(See *Child Development or Nutrition*)

### **FIRE TECHNOLOGY**

(Business Division)

#### **FIRE-30 FIRE PROTECTION ORGANIZATION**

3 units: 3 hours lecture.

Advisories: ENGL-A, ENGL-41.

This course provides an introduction to fire protection; career opportunities in fire protection and related fields; philosophy and history of fire protection; fire loss analysis; organization and function of public and private fire protection services; fire departments as part of local government; laws and regulations affecting the fire service; fire service nomenclature; specific fire protection functions; basic fire chemistry and physics; introduction to fire protection systems; and introduction to fire strategy and tactics. (11/04)

#### **FIRE-31 FIRE BEHAVIOR AND COMBUSTION**

3 units: 3 hours lecture.

One-way corequisite: FIRE-30. Advisories: ENGL-A, ENGL-41.

This course presents the theory and fundamentals of how and why fires start, spread, and are controlled; an in-depth study of fire chemistry and physics; fire characteristics of materials; extinguishing agents; and fire control techniques. (11/04)

#### **FIRE-32 FIRE PREVENTION TECHNOLOGY**

3 units: 3 hours lecture.

One-way corequisite: FIRE-30. Advisories: ENGL-A, ENGL-41.

This course provides fundamental information regarding the history and philosophy of fire prevention, organization and operation of a fire prevention bureau, use of fire codes, identification and correction of fire hazards, and the relationship of fire prevention with fire safety education and detection and suppression systems. (11/04)

#### **FIRE-33 FIRE PROTECTION EQUIPMENT AND SYSTEMS**

3 units: 3 hours lecture.

One-way corequisite: FIRE-30. Advisories: ENGL-A, ENGL-41.

This course provides information relating to features of design and operation of fire detection and alarm systems, heat and smoke control systems, special protection and sprinkler systems, water supply for fire protection, and portable fire extinguishers. (11/04)

#### **FIRE-34 BUILDING CONSTRUCTION FOR FIRE PROTECTION**

3 units: 3 hours lecture.

One-way corequisite: FIRE-30. Advisories: ENGL-A, ENGL-41.

This course is the study of components of building construction that relate to

fire safety. The elements of construction and design of structures are shown to be key factors when inspecting buildings, preplanning fire operations, and operating at fires. The development and evolution of building and fire codes will be studied in relationship to past fires in residential, commercial, and industrial occupancies. (11/04)

#### **FIRE-35 FIREFIGHTING TACTICS AND STRATEGY**

3 units: 3 hours lecture.

Prerequisite: FIRE-30. Advisories: ENGL-A, ENGL-41.

This course is a review of fire chemistry, equipment and manpower, basic firefighting tactics and strategy, methods of attack, and pre-planning. (11/04)

#### **FIRE-36 HAZARDOUS MATERIALS**

3 units: 3 hours lecture.

One-way corequisites: FIRE-30, FIRE-31, FIRE-33. Advisories: ENGL-A, ENGL-41.

This course introduces the student to the world of hazardous chemicals including their physical properties, uses in industry, and characteristics when involved in spills, fires, and accidents. Basic information regarding emergency procedures, legal requirements, compliance to regulations, health effects and treatment, and fire department protocols and responsibilities are also covered. (11/04)

#### **FIRE-37 FIRE HYDRAULICS**

3 units: 3 hours lecture.

Prerequisite: FIRE-30. Advisories: ENGL-A, ENGL-41; MATH-80 or MATH-83.

This course is a basic review of mathematics, hydraulic laws and formulas, and water supply and pump requirements as applied to fire service. (11/04)

#### **FIRE-38 FIRE APPARATUS AND EQUIPMENT**

3 units: 3 hours lecture.

Prerequisite: FIRE-30. Advisories: ENGL-A, ENGL-41; MATH-80 or MATH-83.

This course pertains to driving laws and driving techniques, and the construction and operation of pumping engines, ladder trucks, aerial platforms, specialized equipment, and apparatus maintenance. (11/04)

#### **FIRE-39 FIRE COMPANY ORGANIZATION AND PROCEDURE**

3 units: 3 hours lecture.

Prerequisite: FIRE-30. Advisories: ENGL-A, ENGL-41.

This course is a review of fire department organization, fire company organizations, the company officer, fire equipment, maintenance training, fire prevention, firefighting, company firefighting capability, and records and reports. (11/04)

#### **FIRE-47A FIRE INVESTIGATION - IA**

2 units: 40 total hours lecture.

Prerequisite: FIRE-30 or current volunteer, paid call, or seasonal or full-time firefighter for a certified fire protection department. Advisories: ENGL-A, ENGL-41.

This course is an introduction to arson, laws related to arson, types of incendiary fires, and methods of determining fire cause and recognizing and preserving evidence. A special emphasis will be placed on report-writing techniques. (12/04)

#### **FIRE-47B FIRE INVESTIGATION - IB**

2 units: 40 total hours lecture.

Prerequisite: FIRE-47A. Advisories: ENGL-A, ENGL-41.

This course covers evidence related to arson and fire deaths, interviewing, and interrogating. Investigation of structure, wildland, and vehicle fires are covered as well as fire scene documentation; search and seizure laws are also covered. (12/04)

#### **FIRE-49A-ZZ SPECIAL PROBLEMS IN FIRE TECHNOLOGY**

0.5 - 4 units: 0.5 - 4 hours lecture, 0 - 12 hours lab.

Prerequisite: FIRE-30. Advisory: ENGL-84.

This course is designed to address special topics in fire technology to meet current needs of students. The course will allow pre-service and in-

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service personnel to maintain the most current training standards in the field. (12/04)

**FIRE-61 EMT 1 - NA/FS - EMERGENCY MEDICAL TECHNICIAN I  
NON-AMBULANCE/FS**

5 units: 4 hours lecture, 3 hours lab.

Prerequisites: FIRE-30. Limitation on enrollment: Current CPR and First Aid card.

This Emergency Medical Technician Training and Certificate program is designed to prepare fire service personnel to render pre-hospital basic life support services under field emergency conditions, and to extricate and prepare victims for transport to an acute care hospital. In contrast to other EMS Authority-approved programs, the EMT-1 NA/FS program emphasizes those skills most used in the fire service, including extrication skills. (12/04)

**FIRE-63A BASIC FIREFIGHTER I, ACADEMY**

8 units: 7 hours lecture, 3 hours lab.

Prerequisite: FIRE-30. Limitation on enrollment: Physician's clearance for strenuous activity. Advisories: ENGL-A, ENGL-41.

This course provides manipulative and technical training in basic concepts of fire department organization, miscellaneous equipment and tools, fire behavior and extinguishment theory, fire fighter safety, self-contained breathing apparatus, and portable fire extinguishers. The course also provides training in ropes, knots, hitches, hoses, nozzles, appliances, ground ladders, forcible entry, and confined space rescue. The student is responsible for obtaining an EMT or first responder rating. Students must supply instructor-approved personal protective equipment (required instructional material). (11/02)

**FIRE-63B BASIC FIREFIGHTER I, ACADEMY**

8 units: 7 hours lecture, 3 hours lab.

Prerequisite: FIRE-63A. Limitation on enrollment: Physician's clearance for strenuous activity. Advisories: ENGL-A, ENGL-41.

This course provides manipulative and technical training in basic concepts of ventilation, fire control, salvage and overhaul operations, fire protection water systems, fire protection systems, fire prevention and investigation, communications, vehicle extrication, wildland fire fighting, urban interface, and hazardous materials. The student is responsible for obtaining an EMT or first responder rating. Students must supply instructor-approved personal protective equipment (required instructional supply). (11/02)

**FIRE-64 BASIC FIREFIGHTER II, ACADEMY**

4 units: 3.5 hours lecture, 1.5 hours lab.

Prerequisite: FIRE-63B. Advisories: ENGL-A, ENGL-41.

The Firefighter II course emphasizes inspection and maintenance of fire department stations and equipment, laws and regulations of fire service, fire prevention, fire characteristics, water supplies, apparatus and equipment inspection, and the use of apparatuses and heavy equipment.(12/04)

**FIRE-65C WILDLAND FIREFIGHTING STRATEGY AND TACTICS**

1 unit: 1 hour lecture.

Prerequisite: FIRE-30 or current volunteer, paid call, or seasonal or full-time firefighter for a certified fire protection department. Advisory: ENGL-84.

This course stresses the fundamentals of initial-attack wildland firefighting and how to apply wildland firefighting strategy and tactics during the suppression effort. The course also includes live fire control. Students must have instructor-approved fire protective gear. (12/04)

**FIRE-65D WILDLAND FIREFIGHTING CONTROL**

3 units: 3 hours lecture.

Prerequisite: FIRE-30 or current volunteer, paid call, or seasonal or full-time firefighter for a certified fire protection department. Advisory: ENGL-84.

This course provides fundamental principles of wildland fire control and management. Topics to be covered include firefighter safety, wildland fire behavior, strategy and tactics, wildland-urban intermix fires, the Incident Command System, and large fire organization. Special attention will be focused on the role fulfilled by individual engine companies during fire control operations. (12/04)

**FIRE-65E INTRODUCTION TO HAZARDOUS MATERIALS  
AWARENESS**

0.5 unit: 0.5 hour lecture.

Prerequisite: FIRE-30 or current volunteer, paid call, or seasonal or full-time firefighter for a certified fire protection department. Advisory: ENGL-41.

This course is a general introduction to hazardous materials awareness with emphasis on placards, identification and recognition, decision-making in emergencies, detecting hazardous materials presence, and estimating the likely harm without intervention. (12/04)

**FIRE-65F HAZARDOUS MATERIALS – FIRST RESPONDER  
OPERATIONS (HAZ MAT FRO)**

1 unit: 20 total hours lecture.

Advisories: ENGL-A, ENGL-41; FIRE-30 or currently a paid call, seasonal, or full-time firefighter.

This course covers how hazardous materials can harm people, the environment, and property, and how the first responder may use clues to recognize a hazardous materials incident and implement actions to protect themselves and the public. (11/05)

**FIRE-65G FIRST RESPONDER OPERATIONS –  
DECONTAMINATION (DECON FRO)**

0.5 unit: 0.5 hour lecture. Advisories: ENGL-41; FIRE-30, FIRE-65F.

This course covers how to safely and competently perform "Fully/Primary" decontamination in at least "Level B" personal protective equipment based on agency or generic Decon SOP. This course builds upon FRO competencies to perform decontamination functions within the contamination reduction zone. (11/05)

**FIRE-66A VOLUNTEER FIREFIGHTER BASIC SKILLS**

2.5 units: 2.5 hours lecture.

Advisories: ENGL-41, ENGL-84.

This course provides the firefighter with basic knowledge of fire behavior and control and basic skills to safely perform essential fire ground tasks with minimal supervision. Students must supply instructor-approved personal protective equipment (a required instructional supply). (12/04)

**FIRE-66D EQUIPMENT OPERATOR FOR VOLUNTEER  
FIREFIGHTERS**

2 units: 2 hours lecture.

Prerequisite: FIRE-30 or current volunteer, paid call, or seasonal or full-time firefighter for a certified fire protection department. Advisory: ENGL-84. Limitations on enrollment: Full-time firefighter or minimum of one continuous year as a paid-call firefighter; valid California Class B (commercial or firefighter) permit with tank and air brake endorsements. If the student has a commercial California Driver's License, it must indicate manual transmission and have a current health questionnaire.

This course provides the firefighter with basic knowledge of radio communications use regarding size-up and report conditions. Forms and reports related to operating equipment and incidents are covered as well as emergency equipment placement, and strategy and tactics for structure, wildland, and vehicle fires. Auto extrication and defensive driving and pump theory are included. (12/04)

**FIRE-67A ROPE RESCUE**

1 unit: 1 hour lecture.

Prerequisite: FIRE-30. Advisory: ENGL-84.

This course is designed to introduce the novice to the basics of equipment nomenclature, rope design and construction, care and maintenance, and knots and webbing as they apply to rope rescue emergencies. (12/04)

**FIRE-67B AUTO EXTRICATION**

0.5 unit: .5 hours lecture.

Advisories: ENGL-A, ENGL-41; FIRE-30 or currently a paid call, seasonal, or full-time firefighter.

This course provides classroom instruction of vehicle rescue concepts. It introduces students to common vehicle rescue tools and hands-on practice of basic techniques used to free persons entrapped in vehicles

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as a result of traffic collisions. To successfully complete the skills portion, students must have the ability to lift tools that may weigh in excess of 50 pounds and perform other rigorous physical tasks. Students must supply instructor-approved personal protective equipment (required instructional material) equivalent to that of a structural firefighting ensemble. This shall, at a minimum, include a helmet with face shield and/or goggles, leather gloves, turnout coat and pants, and turnout boots (or steel-toed lace-up leather boots at least 8" in height with lugged soles). This course is repeatable three times. (11/05)

#### **FIRE-68B BASIC INCIDENT COMMAND SYSTEM (I-200)**

1 unit: 1 hour lecture.

Limitation on enrollment: Student must have instructor-verified ICS (I-100) completion.

This course is designed for the entry-level and veteran firefighter. The subject matter relates to principles and features of ICS, organization, incident facilities, incident resources, and responsibilities associated with ICS assignments. (12/04)

#### **FIRE-68C INCIDENT COMMAND SYSTEM - INTERMEDIATE (I-300)**

1.5 units: 1.5 hours lecture.

Prerequisite: FIRE-68B. Advisory: ENGL-84.

This course is designed for the entry-level and veteran firefighter. The subject matter relates to organization and staffing for incidents or events, incident resources management, air operations, and incident event planning. (12/04)

#### **FIRE-68D ADVANCED INCIDENT COMMAND SYSTEM (I-400)**

2 units: 2 hours lecture.

Prerequisite: FIRE-68C. Advisories: ENGL-A, ENGL-41.

This is an advanced course in Incident Command System. (01/05)

#### **FIRE-69A FIRST RESPONDER**

2.5 units: 2.5 hours lecture.

Prerequisite: FIRE-30 or currently a paid call, seasonal, or full-time firefighter. Advisories: ENGL-A, ENGL-41.

This course is designed to meet the state requirements for emergency medical personnel. The course relates to patient assessment, cardiovascular systems, fractures, splinting, childbirth, and environmental emergencies. (11/05)

#### **FIRE-69B FIRST RESPONDER RE-CERTIFICATION**

1.5 units: 1.5 hours lecture.

Limitation on enrollment: Must possess a current valid CPR card in Basic Life Support of Health Care Providers (or equivalent) as outlined by the American Heart Association. Prerequisite: FIRE-69A. Advisory: ENGL-84.

This course is designed to meet the state re-certification requirements for emergency medical personnel. The course relates to patient assessment, cardiovascular systems, fractures, splinting, childbirth, and environmental emergencies. This course may be repeated three times. (12/04)

#### **FIRE-70 FIRE DEPARTMENT ADMINISTRATION**

3 units: 3 hours lecture.

Prerequisite: FIRE-30 or current volunteer, paid call, or seasonal or full-time firefighter for a certified fire protection department. Advisory: ENGL-84.

This course is designed to cover all subject matter necessary to organize and administer a fire department. (12/04)

#### **FIRE-71A FIRE INSTRUCTOR I -- MODULE A**

2 units: 40 total hours lecture.

Prerequisite: FIRE-30 or current volunteer, paid call, or seasonal or full-time firefighter for a certified fire protection department. Advisory: ENGL-84.

This course is designed for the fire company officer who conducts in-service training programs. The course provides a variety of methods and techniques to help personnel select, develop, and organize material for in-service programs. Methods of evaluation and opportunity to apply the major principles of learning through demonstrations are stressed. The course is certified by the office of the California State Fire Marshal. (12/04)

#### **FIRE-71B FIRE INSTRUCTOR I -- MODULE B**

2 units: 2 hours lecture.

Prerequisite: FIRE-71A.

This course is designed for the fire company officer who conducts in-service training programs. The course provides instruction in the use of visual aids, test construction, and teaching demonstrations. The successful completion of this course and the State Fire Marshal's examination will result in State certification. (12/04)

#### **FIRE-72A FIRE COMMAND I -- MODULE A**

2 units: 40 total hours lecture.

Prerequisite: FIRE-35. Advisory: ENGL-84.

This course is designed to provide the fire company officer with information and experience in command and control techniques at the scene of an emergency. (12/04)

#### **FIRE-72B FIRE COMMAND I -- MODULE B**

2 units: 40 total hours lecture.

Prerequisite: FIRE-72A. Advisories: ENGL-A, ENGL-41.

This course is designed to provide the fire company officer with information and experience in command and control techniques at the scene of a hazardous materials emergency. (12/04)

#### **FIRE-73A FIRE PREVENTION I -- MODULE A**

2 units: 40 total hours lecture.

Prerequisite: FIRE-30 or current volunteer, paid call, or seasonal or full-time firefighter for a certified fire protection department.

Advisory: ENGL-84.

This course will provide instruction in basic fire prevention management for company officers and fire prevention personnel. The students will learn responses to a variety of fire prevention situations in a professional and effective manner. This course will prepare the first-level fire officer to deal with responsibilities of fire prevention in his/her jurisdiction. (12/04)

#### **FIRE-73B FIRE PREVENTION I -- MODULE B**

2 units: 40 total hours lecture.

Prerequisite: FIRE-73A. Advisory: ENGL-84.

This course will provide instruction in basic fire prevention management for company officers and fire prevention personnel. It will teach the response to a variety of fire prevention situations in a professional and effective manner. The course will prepare first-level fire officers to deal with responsibilities of fire prevention in his/her jurisdiction. (12/04)

#### **FIRE-75 FIRE MANAGEMENT I**

2 units: 40 total hours lecture.

Prerequisite: FIRE-30 or current volunteer, paid call, or seasonal or full-time firefighter for a certified fire protection department. Advisory: ENGL-84.

This course will provide instruction to improve the student's managerial effectiveness and will require demonstration of growth and development in the use of managerial skills. The course will stress resource identification and utilization. (12/04)

#### **FIRE-76A FIRE APPARATUS DRIVER/OPERATOR 1A (EMERGENCY VEHICLE OPERATIONS)**

2 units: 40 total hours lecture.

Limitations on enrollment: Must possess a valid California Drivers License, Class B, firefighter restricted (minimum); must be physically fit per department standards; must not have a hearing loss of 25 decibels or more in 3 of 4 frequencies; must have vision better than, or corrected to, far visual acuity of 20/30 with contact lenses or spectacles; and must be a paid call, volunteer, or full-time firefighter at a certified fire protection agency. Prerequisites: FIRE-63A, FIRE-63B. Advisories: ENGL-A, ENGL-41.

This course will provide fire service personnel with knowledge of the laws and requirements that pertain to emergency vehicle operation, basic maintenance and troubleshooting, and documentation of fire apparatus. (1/05)

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**FIRE-76B FIRE APPARATUS DRIVER/OPERATOR 1B (EMERGENCY VEHICLE OPERATIONS)**

2 units: 40 total hours lecture.

Limitations on enrollment: Must possess a valid California Drivers License, Class B, firefighter restricted (minimum); must be physically fit per department standards; must not have a hearing loss of 25 decibels or more in 3 of 4 frequencies; must have vision better than, or corrected to, far visual acuity of 20/30 with contact lenses or spectacles; and must be a paid call, volunteer, or full-time firefighter at a certified fire protection agency. Prerequisite: FIRE-76A. Advisories: ENGL-A, ENGL-41; MATH-83.

This course will provide fire service personnel with information on pump construction, theory of pump operation, and methods of performing basic hydraulics. Further, students will receive information and techniques on basic inspections, documentation, maintenance, and troubleshooting fire pumps. This course will provide fire service personnel with the knowledge of the laws and requirements that pertain to emergency vehicle operation and basic maintenance, troubleshooting, and documentation of fire apparatus. (1/05)

**FORESTRY**

(Agriculture Division)

(Please refer to the Agriculture Division website for course offering details)  
[www.mccd.edu/academics/divisions/ag](http://www.mccd.edu/academics/divisions/ag)

**FORS-10 ELEMENTS OF FORESTRY**

3 units: 2 hours lecture, 3 hours lab.

Prerequisite/Advisory: None.

This course provides the student with an understanding of complexities of the forest industry and management. Fire protection, the lumber industry, nursery and planting practices, and parks and recreation will be studied.

**FRENCH**

(Humanities Division)

**FREN-01 ELEMENTARY FRENCH**

(CSU breadth area C2)

5 units: 5 hours lecture.

Advisory: ENGL-84.

This is a beginner's course. The course will focus on the development of listening, speaking, reading, and writing in a cultural context, with primary emphasis on communicative competency. Students will learn how to express in French the most basic functions of everyday life. This course is not recommended for native speakers. (10/06)

**FREN-02 ELEMENTARY FRENCH**

(CSU breadth area C2)

5 units: 5 hours lecture.

Prerequisite: FREN-01 or 1 year of high school French.

Fren-02 is the continuation of Fren-01. This course will focus on the further development of listening, speaking, reading, and writing in a cultural context, with primary emphasis on communicative competency. Students will learn how to express in French basic functions of everyday life. (10/06)

**FREN-03 INTERMEDIATE FRENCH**

(CSU breadth area C2)

5 units: 5 hours lecture.

Prerequisite: FREN-02 or two years of high school French. Advisory: LRNR-30.

FREN-03 is a continuation of FREN-02. This course reviews and further develops grammatical concepts introduced in FREN 01 and FREN 02, as well as introduces the student to new concepts. Through varied readings, composition, and discussion, the student will increase with his or her vocabulary and cultural knowledge. (10/06)

**FREN-04 INTERMEDIATE FRENCH**

(CSU breadth area C2)

5 units: 5 hours lecture.

Prerequisite: FREN-03. Advisory: LRNR-30.

This course is thorough review of the fundamentals of reading, writing, speaking and understanding French, designed to aid the student in preparing for advanced studies in French composition, grammar, and

conversation as well as literature and French, history and culture. (10/06)

**FREN-39 ADVANCED FRENCH**

1 unit: 1 hour lecture.

Prerequisite: FREN-04. Advisory: LRNR-30.

This course is designed to acquaint the advanced student with specific items of French language, literature, and culture, including history, political thought, and sociological change. The student will engage in activities that will reinforce knowledge of these areas and critical analysis of current Francophone intellectual and social thinking. The course may be repeated for a total of four units. (10/06)

**FRUIT PRODUCTION**

(Agriculture Division)

(Please refer to the Agriculture Division website for course offering details)  
[www.mccd.edu/academics/divisions/ag](http://www.mccd.edu/academics/divisions/ag)

**FPRO-12 VINEYARD PRODUCTION AND MANAGEMENT**

3 units: 2 hours lecture, 3 hours lab.

Advisories: ENGL-A; MATH-80 or MATH-83.

The production and management decisions for grapes, berries, and kiwi fruit will be presented. Topics will include climate zones, soil selection, financing, farm organization, irrigation systems, field layout, variety selection, nutritional needs, harvesting, labor management, marketing, and budgeting. Students will be required to prepare a budget and calendar of operations. (12/06)

**FPRO-13 FRUIT TREE MAINTENANCE**

3 units: 2 hours lecture, 3 hours lab.

Advisories: ENGL-A; MATH-80 or MATH-83.

This course is designed to evaluate management decisions for fruit and nut trees. Management topics will include studies of climate zones, soil selection, financing, farm organization, irrigation systems, field layout, varietal selection, nutritional needs, harvesting, labor management, marketing, and budgeting. The student will be required to prepare a budget and calendar of orchard operations. (9/04)

**GENETICS**

(See Biology)

**GEOGRAPHY**

(Social Science Division)

**GEOG-01 PHYSICAL GEOGRAPHY**

(CAN GEOG 2) (CSU breadth area B1)

3 units: 3 hours lecture.

Advisories: ENGL-A, ENGL-41.

In this course, the basic physical elements of the world are presented. Topics to be covered include topographic maps, earth-sun relationships, and time. Weather processes and climates are correlated to human environments. The forces creating and shaping landforms including volcanism, earthquakes, water, ice, wind, and wave erosion are also topics covered in the class. The location of major physical and cultural places in the world will also be studied. (5/03)

**GEOG-01L PHYSICAL GEOGRAPHY LABORATORY**

(CSU breadth area B3)

1 unit: 3 hours lab.

One-way corequisite: GEOG -01. Advisories: ENGL-A, ENGL-41.

This course focuses on the development of skills and analytic thinking in explaining landform processes, weather phenomena, climate patterns, and vegetation patterns. Exercises include contour map drawing, analysis of data and drawing graphs, study of weather maps, stereo photo interpretation, and landform processes. (5/03)

**GEOG-02 WORLD GEOGRAPHY (CAN GEOG 4)**

(CSU breadth area D5)

3 units: 3 hours lecture.

Advisories: ENGL-A, ENGL-41.

GEOG-02 is a survey of the geography of the world's regions. The study includes the ways in which environmental resources are utilized to satisfy

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the needs of mankind. There is emphasis on economic development, population, and food problems. Knowledge of the cultural and economic interaction between regions will enable the student to better understand contemporary world problems and potentials. (5/03)

### **GEOG-30 GEOGRAPHY OF CALIFORNIA**

3 units: 3 hours lecture.

Advisories: ENGL-A, ENGL-AL, ENGL-41, ENGL-41L.

This is a survey course of California's physical regions and cultural and economic patterns. The development of the state's varied landscapes as they have occurred in recent history will be covered. The dynamic utilization of unique resources by ambitious settlers will be presented as a lesson in developmental geography. (11/99)

## **GEOLOGY**

*(Science, Math and Engineering Division)*

### **GEOLOG-01 PHYSICAL GEOLOGY**

(CAN GEOL 2) (CSU breadth area B1/B3)

4 units: 3 hours lecture, 3 hours lab.

Advisories: ENGL-A, ENGL-41.

This is a beginning course in geology stressing the beneficial and destructive forces of nature and their causes. The course includes a study of the development of landscapes, origin of minerals and rocks, geologic work of ground water, the phenomena of earthquakes, volcanism, metamorphism, and other fundamental concepts of geology. Lab work includes the identification and study of rocks and minerals, study of topographic and geologic maps and aerial photographs, and an introduction to cross-section and profiles of topographic maps. (2/01)

### **GEOLOG-02 HISTORICAL GEOLOGY**

3 units: 3 hours lecture.

Prerequisite: GEOL-01. Advisories: ENGL-A, ENGL-41.

This course covers the geological history of the earth and the development of plant and animal life as traced through rock and fossil records. The correlation between geologic changes through time and the formation of economic mineral deposits is emphasized throughout the course. (2/02)

## **GERMAN**

*(Humanities Division)*

### **GERM-01 ELEMENTARY GERMAN**

(CSU breadth area C2)

5 units: 5 hours lecture.

Advisory: ENGL-84.

This is a beginner's course. The course will focus on the development of listening, speaking, reading, and writing in a cultural context, with primary emphasis on communicative competency. Students will learn how to express in German the most basic functions of everyday life. (11/03)

### **GERM-02 ELEMENTARY GERMAN**

(CSU breadth area C2)

5 units: 5 hours lecture.

Prerequisite: GERM-01 or two years of high school German.

GERM-02 is a continuation of GERM-01. This course will focus on the further development of listening, speaking, reading, and writing in a cultural context, with primary emphasis on communicative competency. Students will learn how to express in German basic functions of everyday life. (11/03)

### **GERM-03 INTERMEDIATE GERMAN**

(CSU breadth area C2)

5 units: 5 hours lecture.

Prerequisite: GERM-02. Advisory: LRNR-30.

GERM-03 is a continuation of GERM-02. This course reviews and further develops grammatical concepts introduced in GERM-01 and GERM-02, as well as introduces the student to new concepts. Through varied readings, composition, and discussion, the student will increase his or her vocabulary and cultural knowledge. (11/03)

### **GERM-04 INTERMEDIATE GERMAN**

(CSU breadth area C2)

5 units: 5 hours lecture.

Prerequisite: GERM-03. Advisory: LRNR-30.

This course is a review of the fundamentals of reading, writing, speaking, and understanding German, designed to aid the student in preparing for advanced studies in German composition, grammar, and conversation, as well as literature in German, history, and culture. (11/03)

### **GERM-39 ADVANCED GERMAN**

1 unit: 5 hour lecture, 1.5 hours lab.

Prerequisite: GERM-04. Advisory: LRNR-30.

This course is designed to acquaint the advanced student with specific items of the German language, literature, and culture, including history, political thought, and sociological change. The student will engage in activities that will reinforce knowledge of these areas and critical analysis of current German intellectual and social thinking. This course may be repeated three times. (9/04)

## **GUIDANCE**

*(Guidance Division)*

### **GUID-30 FOUNDATIONS AND STRATEGIES FOR COLLEGE SUCCESS**

(CSU breadth area E)

3 units: 3 hours lecture.

Advisory: ENGL-A.

This comprehensive course integrates the cultivation of skills, values, and attitudes indicative of confident, capable students/individuals with problem solving and critical/creative thinking. The course focuses on the following topics: life management, goal setting, career decision making, educational planning, college expectations and opportunities, instructor-student relationships, cultural diversity, lifestyle choices affecting health maintenance, stress management, campus resources, learning styles and strategies, and study skills. This course is recommended for all new students. (10/03)

### **GUID-47 CAREER GUIDANCE**

0.5 unit: 9 total hours lecture.

Prerequisite/Advisory: None.

This is an introductory course in career planning for high school students. The importance of post-secondary education will be explained and various options will be introduced. Students will develop an understanding of a wide assortment of career information resources, both written and computer-assisted. This course is offered on a credit/no credit basis. (2/98)

### **GUID-48 LIFE AND CAREER PLANNING**

3 units: 3 hours lecture.

Advisory: ENGL-A.

This is a structured sequential course in life and career planning. Experiences are provided that encompass education, occupation, and job trends. The total individual is explored; issues such as life roles, values, goals, life styles, preferences, coping skills, and personal barriers as they relate to decisions will be covered. (4/03)

### **GUID-48A CAREER SELF-ASSESSMENT**

1 unit: 1 hour lecture.

Advisory: ENGL-A.

In this course students will learn to appraise their self-esteem, values, skills and personality, and understand the implication of these factors in the selection of a vocational/educational goal. (4/03)

### **GUID-48B CAREER RESEARCH**

1 unit: 1 hour lecture.

Advisory: ENGL-A.

Research is a necessary component in career decision making. In this course the student will develop an understanding of a wide assortment of career information resources, both written and computer-assisted. The focus of the course is to introduce the student to the use of the most recent career-related technologies. (4/03)

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**GUID-48C EMPLOYMENT SEARCH AND READINESS SKILLS**

1 unit: 1 hour lecture.

Advisory: ENGL-A.

In this course the student will be introduced to the importance and preparation of job applications, resume types, cover letters, interviewing techniques, and other strategies for successfully obtaining employment. (4/03)

**GUID-49A-ZZ SPECIAL TOPICS IN GUIDANCE**

0.5 - 3 units: 0.5 - 3 hours lecture, 0-9 hours lab.

Advisory: ENGL-A.

This course is designed to address special topics in guidance to meet the needs of students. Specific classes will be offered to help students understand and develop personal, social, and academic skills useful in the educational environment. (11/05)

**GUID-52 COLLEGE SUCCESS STRATEGIES FOR STUDENT ATHLETES**

3 units: 3 hours lecture.

Advisories: ENGL-81, ENGL-84.

This course provides the student athlete with an opportunity to cultivate the skills, values, and attitudes necessary to become a confident, capable, and successful student and athlete. The student will identify his/her educational and athletic goals and will develop an appropriate plan for achieving those goals. Through learning and study strategy inventories the student will assess his/her attitude, motivation, time management skills, basic study skills, test anxiety, etc. Each student will develop an individualized action plan to remediate problem areas. Students will examine the roles of procrastination, self-responsibility, and multiple intelligences and will be introduced to various problem solving and decision-making strategies. Appropriate classroom behavior and personal conduct will be stressed and behavior modification techniques will be studied. National Collegiate Athletic Association and National Association for Intercollegiate Athletics eligibility and transfer rules will be discussed, as will the California Community College athletic eligibility rules. This course is strongly recommended for all student athletes. (11/05)

**GUID-54 FOUNDATIONS AND STRATEGIES FOR ACADEMIC RECOVERY**

3 units: 3 hours lecture.

Advisories: ENGL-81, ENGL-81L, ENGL-84.

This course is appropriate for students wishing to improve their academic standing. In this course the students will have an opportunity to cultivate the skills, values, and attitudes necessary to become confident, capable students. Each student will identify his/her educational goal and develop an appropriate plan for achieving that goal. Using a learning and study strategies inventory, each student will assess his/her attitude, motivation, time management skills, test anxiety, etc., and will develop an action plan to remediate problem areas. Students will examine the roles of procrastination, multiple intelligences, self-responsibility and health and wellness related to academic success. Academic policies will be addressed and strategies to get off and stay off probation, such as informed decision-making, problem-solving, and classroom behavior. Behavior modification will also be studied. This course is recommended for all students on academic and/or progress probation. (11/03)

**GUID-70A-ZZ SPECIAL TOPICS IN GUIDANCE**

0.5 - 3 units: 0.5 - 3 hours lecture, 0-9 hours lab.

Advisories: ENGL-81, ENGL-84.

This course is designed to address special topics in guidance to meet the needs of students. Specific classes will be offered to help students understand and develop personal, social, and academic skills useful in the educational environment. (11/05)

**GUID-80 COLLEGE SURVIVAL**

1 unit: 1 hour lecture.

Advisories: ENGL-80, ENGL-83.

College Survival is a course designed to increase the student's success in college and/or employment by assisting the student in obtaining information and skills necessary to reach his/her educational or employment objectives. (12/05)

**HEALTH**

(Life Fitness and Health Division)

**HLTH-10 CONTEMPORARY HEALTH**

(CSU breadth area E)

3 units: 3 hours lecture.

Advisories: ENGL-A, ENGL-41.

This course surveys the human condition from birth to death. Emphasis is placed on the impact of personal choice throughout life. Mental health, stress, alcohol, drugs, tobacco, disease processes, nutrition, fitness, sexuality, aging, environmental issues, and other related topics are studied and examined. The student is challenged to assume responsibility for his or her own health, well being, and lifestyle. (4/01)

**HLTH-11 ADVANCED FIRST AID AND EMERGENCY CARE**

3 units: 3 hours lecture.

Advisory: ENGL-A, ENGL-41.

This is a class designed to teach theory and practice in the techniques of administering first aid to victims of accidents and illness. This class fulfills requirements for Advanced First Aid and Emergency Care, Red Cross Certificates, and CPR Certification. (12/06)

**HLTH-15 DRUGS, ALCOHOL, AND TOBACCO**

3 units: 3 hours lecture.

Advisories: ENGL-A, ENGL-41.

This course will give students a basic understanding of the psycho-physiological effects of drugs, alcohol, and tobacco. Included in the study will be use patterns, individual and societal problems that arise from abuse, and the medicinal effects. Personal coping skills will be included that can help individuals develop drug-free lifestyles. (12/06)

**HLTH-16 HEALTH EDUCATION**

(CSU breadth area E)

1 unit: 1 hour lecture.

Advisory: ENGL-A.

This course covers the basics of physiological and sociological effects of alcohol, tobacco, narcotics, and drug use. Basic nutrition will also be covered. (1/06)

**HISTORY**

(Social Science Division)

**HIST-04A HISTORY OF CIVILIZATION: PART I**

(CSU breadth area C2/D6)

3 units: 3 hours lecture.

Advisories: ENGL-A, ENGL-41.

This course provides a broad historical survey of mankind's social, political, and intellectual experiences for all major world civilizations from pre-history through approximately 1650. (11/02)

**HIST-04B HISTORY OF CIVILIZATION: PART II (CAN HIST 4)**

(CSU breadth area C2/D6)

3 units: 3 hours lecture.

Advisories: ENGL-A, ENGL-41.

This course provides a broad historical survey of humanity's social, political, economic and intellectual experiences for all major world civilizations from the 17<sup>th</sup> century to the present. (2/06)

**HIST-05 HISTORY OF EUROPE FROM 1901 TO THE PRESENT**

3 units: 3 hours lecture.

Advisories: ENGL-A, ENGL-41.

HIST-05 is a one-semester survey course on 20<sup>th</sup> century and early 21<sup>st</sup> century European history (1901 to the present). The political, economic, cultural, and social development of 20<sup>th</sup> century and recent European history will be covered. There will be emphasis on the traumatic changes brought about by political realignment, colonialism, war, revolution, and economic upheaval. (12/06)

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**HIST-08A HISTORY OF THE AMERICAS PART I: PREHISTORY TO INDEPENDENCE**

(CSU breadth area C2/D3/D6)

3 units: 3 hours lecture.

Advisories: ENGL-A; LRNR-30; PHIL-10.

This course provides a broad historical survey of Latin America from pre-history to independence. The course covers pre-Columbia Amerindian civilizations and cultures; Iberian background, New World conquests, and New World occupation; and colonial development of Latin America's Hispanic cultures and institutions. (12/03)

**HIST-08B HISTORY OF THE AMERICAS PART II: INDEPENDENCE TO THE PRESENT**

(CSU breadth area C2/D6)

3 units: 3 hours lecture.

Advisories: ENGL-A, ENGL-41; LRNR-30; PHIL-10.

This course provides a broad historical survey of modern American nations with emphasis on Latin America from 1821 to the present. Special emphasis is given to the political evolution of these nations and the social and economic institutions that characterize the region. (2/06)

**HIST-09A INTRODUCTION TO EAST ASIAN CIVILIZATION: CHINA**

(CSU breadth area C2)

3 units: 3 hours lecture.

Advisories: ENGL-A; LRNR-30; PHIL-10.

This course provides a broad historical survey of China, the Far East's oldest civilization, from prehistoric times to the present, with emphasis on China's cultural achievements and contributions to both Eastern and Western civilizations. (12/03)

**HIST-09B INTRODUCTION TO EAST ASIAN CIVILIZATION: JAPAN**

(CSU breadth area C2)

3 units: 3 hours lecture.

Advisories: ENGL-A, ENGL-AL, ENGL-41, ENGL-41L.

This course provides a broad historical survey of Japan from pre-historic times to the present. The course includes the study of traditional and modern Japan's significant institutions, cultural achievements, and contributions to both Eastern and Western civilizations. (10/99)

**HIST-17A UNITED STATES HISTORY AND UNITED STATES CONSTITUTION**

(CAN HIST 8) (CSU breadth area C2/D6)

3 units: 3 hours lecture.

Advisories: ENGL-01A, ENGL-41.

This is an extensive survey course of United States history from the period of exploration to the Reconstruction Period. The course covers the social, political, economic, and constitutional development of the nation. (4/05)

**HIST-17AH HONORS UNITED STATES HISTORY AND UNITED STATES CONSTITUTION**

(CSU breadth area C2/D6)

3 units: 3 hours lecture.

Limitation on enrollment: Enrollment in the Honors Program. (See the college catalog for a description of enrollment requirements.)

Advisories: ENGL-01A, ENGL-41; PHIL-13H/ENGL-13H.

This course covers the social, political, economic and constitutional development of the nation. There will be an emphasis on academic rigor, analytical research, writing, critical thinking, and collaborative learning. (11/03)

**HIST-17B UNITED STATES HISTORY AND CALIFORNIA STATE AND LOCAL GOVERNMENT**

(CAN HIST 10) (CSU breadth area C2/D6)

3 units: 3 hours lecture.

Advisories: ENGL-01A, ENGL-41.

This course is a continuation of HIST-17A from the end of the Reconstruction Period in 1877 to the present. It examines our national, state, and local history and government from the late 19<sup>th</sup> century to the present. The course covers the social, political, economic, and constitutional development of the nation. (4/05)

**HIST-17BH HONORS UNITED STATES HISTORY AND CALIFORNIA STATE AND LOCAL GOVERNMENT**

(CSU breadth area C2/D6)

3 units: 3 hours lecture.

Limitation on enrollment: Enrollment in the Honors Program. (See the college catalog for a description of enrollment requirements.)

Advisories: ENGL-01A, ENGL-41; PHIL-13H/ENGL-13H.

This course examines our national, state, and local history and government from the late 19<sup>th</sup> century to the present. There will be an emphasis on academic rigor, analytical research, writing, critical thinking, and collaborative learning. (11/03)

**HIST-21 THE HISTORY OF MINORITIES IN AMERICA -- ETHNIC GROUPS, 19th CENTURY TO PRESENT**

(CSU breadth area D3/D6)

3 units: 3 hours lecture.

Advisories: ENGL-01A, ENGL-41.

This course surveys the historical and legal position of ethnic groups 1800 to the present in America. Emphasis is placed on the role of minorities in American society, the development of ethnic identity, and the contributions of minority Americans. (1/06)

**HIST-22 HISTORY OF MINORITIES -- BLACK EMPHASIS**

(CSU breadth area D3/D6)

3 units: 3 hours lecture.

Advisories: ENGL-A; LRNR-30; PHIL-10.

This course is a political and social history of American society and culture as seen from the Black perspective. It is a survey course covering the period from 1600 to the present. This course presents in-depth the historical background and development of American institutions and ideals. (11/03)

**HIST-23 THE HISTORY OF HISPANIC-AMERICANS IN THE SOUTHWEST U.S.**

(CSU breadth area D3/D6)

3 units: 3 hours lecture.

Advisories: ENGL-A, ENGL-41.

This course is an introduction to the history of the Mexican-American, and is designed to examine the contributions of Hispanics to the U.S. Emphasis will be placed upon the exploration, settlement, and ideology of Hispanics throughout the U.S. The course has pragmatic and relevant historical coverage that includes pre-Columbian to Hispanic civil rights movements. (4/06)

**HIST-24 HISTORY OF THE NATIVE AMERICAN**

(CSU breadth area D3/D6)

3 units: 3 hours lecture.

Advisories: ENGL-01A, ENGL-41.

This course is an ethnic historical survey of Native Americans. Special emphasis will be placed on major Native American groups, the impact of European contact, social-cultural patterns and organizations, government policies, reservation status, Native American contributions to the development of American societies, and contemporary issues and problems. (1/06)

**HIST-29 HISTORY OF CALIFORNIA**

(CSU breadth area D6)

3 units: 3 hours lecture.

Advisories: ENGL-A, ENGL-41.

This course surveys the historical development of California from pre-Columbian Indians through Spanish, Mexican, and American rule to the present. (11/02)

**HIST-39ABC EXPLORING CALIFORNIA'S PAST: PRE-EUROPEAN CONTACT TO THE 20<sup>TH</sup> CENTURY**

1 unit: 18 total hours

Internet/MC computer laboratory assigned activity. Advisories: ENGL-A; LRNR-30.

"Exploring California's Past" is a series of three one-unit six-week Internet courses surveying California's history from before European contact to the 20<sup>th</sup> century. HIST-39A explores California's peoples, cultures, and historical developments from before European contact through the

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Mexican-American War; HIST-39B, the Gold Rush to the completion of the transcontinental railroads; and HIST-39C, the 1870s through World War II. The course requires Internet literacy and actual visits to California historic sites. (2/99)

#### **HIST-40ABCD CALIFORNIA FIELD STUDIES**

0.5 - 1 unit: 0 - 9 hours total lecture, 0 - 27 hours lab.

Advisories: ENGL-A, ENGL-AL, ENGL-41, ENGL-41L; HIST-29.

This course consists of weekend field studies of specific California historical sites. (12/99)

#### **HIST-80AB BASIC AMERICAN HISTORY**

3 units: 3 hours lecture.

Prerequisite/Advisory: None.

This course is a basic American history course for non-transfer students. HIST-80A includes the period from the discovery of America to the Reconstruction Period. HIST-80B covers the period from Reconstruction to the present.

### **HMONG**

(Humanities Division)

#### **HMNG-01 ELEMENTARY HMONG**

(CSU breadth area C2)

5 units: 5 hours lecture.

Advisory: ENGL-84.

This course is a study of the fundamentals of pronunciation, audio-lingual training, and phonology; syllabication; appreciation of basic elements of the Hmong culture; use of the most frequent words in Hmong; basic sentences in conversation; reading and mastery of verb forms; practical vocabulary through conversation and practice in class and at home; elementary composition. (5/06)

#### **HMNG-02 ELEMENTARY HMONG**

(CSU breadth area C2)

5 units: 5 hours lecture.

Prerequisite: HMNG-01.

This course is a continuation of HMNG-01. The focus will be on the further development of listening, speaking, reading, and writing in a cultural context. There will be intensive use of Hmong grammar, written composition, and oral communication. Selections from Hmong literature and history will be read and discussed in Hmong. Stress is given to reading, writing, speaking, and understanding Hmong as these communication skills apply to practical situations. (1/02)

### **HONORS**

(Humanities Division)

#### **HNRS-39 CREATIVE LEADERSHIP**

1 unit: 1 hour lecture.

The nature of being human, in ALL its potential, is exemplified by an individual that has solved the mystery of learning to be one's own leader. The more one knows about one's potential and limitations, the more effectively one can use it. This course will explore the application and understanding of human potential as a resource in creative leadership, uniting leadership skills and a leader's way of life. This course also examines and compares the traditional models of leadership and models of creative leadership with particular emphasis on the role and the thinking processes of the leader. (12/88)

#### **HNRS-40 HONORS SEMINAR**

2 units: 2 hours lecture.

Limitation on enrollment: Enrollment in the Honors Program.

This course will focus on the in-depth discussion and analysis of a topic of interest to honors program students. Students may repeat the class three times. (11/04)

### **HUMAN SERVICES**

(Social Science Division)

#### **HMSV-50 SURVEY AND UTILIZATION OF COMMUNITY RESOURCES**

3 units: 3 hours lecture.

Advisories: ENGL-A, ENGL-41; LRNR 30.

This course is designed to introduce students who are seeking careers in Human Services to community resources that facilitate the helping process. Students will become acquainted with various agencies, organizations (profit & nonprofit), and institutions that offer PROMOTION, PREVENTION, TREATMENT, AND REHABILITATION within the community. Other components of this course address the importance of advocating for community empowerment, participation, and change. Students will also begin the process of gaining a sense of self in relationship to community, and develop an understanding of social dynamics as they relate to power structures. (12/06)

#### **HMSV-51 HUMAN BEHAVIOR AND THE HELPING PROCESS**

3 units: 3 hours lecture.

Advisories: ENGL-A, ENGL-41; LRNR 30.

This course examines the history and philosophies of human services; identifies what constitutes genuine and empathic relationships; analyzes the role of conflict in individual and societal systems; demonstrates a broad range of relevant communication skills and strategies, and assists students in designing integrated services using innovative practices in diverse settings. The course includes components on personality development; social and political influences that shape interactive behavior, and guidelines for identifying normal and exceptional behavior, as well as, practical ways of helping people who have problems in living. (12/06)

#### **HMSV-61 SOCIAL WELFARE & SOCIAL WORK**

3 units: 3 hours lecture.

Advisories: ENGL-A, ENGL-41; LRNR 30.

A practical and general study of theoretical concepts and institutional frameworks that guide social welfare policy and practice. This course provides an overview of the social work profession and the social welfare system within which it operates, including federal, state, and county organizations. Students will also review employment opportunities and requirements in social welfare. (12/06)

### **HUMANITIES**

(Humanities Division)

#### **HUM-01 STUDIES IN HUMANITIES -- ANCIENT TO EARLY**

**RENAISSANCE**

(CSU breadth area C2)

3 units: 3 hours lecture.

Prerequisite: ENGL-A. Advisory: ENGL-01A.

The principal aims of this course are to examine human existence and cultural endeavors from earliest ancient civilizations to the beginnings of the Renaissance. Students will examine the continuities of human endeavor through fine arts, literatures, philosophies, religions, and the sciences, with an integration of certain non-Western cultures. (12/04)

#### **HUM-01H HONORS STUDIES IN HUMANITIES -- ANCIENT TO EARLY**

**RENAISSANCE**

(CSU breadth area C2)

3 units: 3 hours lecture.

Limitation on enrollment: Enrollment in the Honors Program. See the college catalog for a description of enrollment requirements.

The principal aim of this course is to examine human existence and cultural endeavor from the earliest ancient civilizations to the beginnings of the Renaissance. Students will examine developments in the fine arts, literature, philosophy, religion, and the sciences from a variety of cultures, both Western and non-Western. There will be an emphasis on collaborative learning, research, and writing. (1/03)

#### **HUM-02 STUDIES IN HUMANITIES -- RENAISSANCE TO PRESENT**

(CSU breadth area C2)

3 units: 3 hours lecture.

Prerequisite: ENGL-A. Advisory: ENGL-01A.

The principal aims of this course are to examine human existence and

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cultural contributions from the Renaissance to the present. Students will examine the continuities of human endeavor through fine arts, literatures, philosophies, religions, and the sciences, with an integration of certain non-Western and/or multi-cultural influences. (12/04)

**HUM-02H HONORS STUDIES IN HUMANITIES -- RENAISSANCE TO PRESENT**

(CSU breadth area C2)  
3 units: 3 hours lecture.

Limitation on enrollment: Enrollment in the Honors Program. See the college catalog for a description of enrollment requirements.

The principal aim of this course is to examine human existence and cultural endeavor from the Renaissance to the present. Students will examine developments in the fine arts, literature, philosophy, religion, and the sciences from a variety of cultures, both Western and non-Western. There will be an emphasis on collaborative learning, research, and writing. (1/03)

**HUM-15 COMPARATIVE CULTURES**

(CSU breadth area C2/D3)

3 units: 3 hours lecture.

Advisory: ENGL-01A.

This course surveys the historical development and social structures of several different cultures in the United States. Cultures discussed will normally include African American, Asian American, Hispanic American, and Native American. Emphasis will be placed on issues of ethnicity and pluralism. (12/05)

**HUM-18 AFRICAN AND AFRICAN-AMERICAN LITERATURE**

(Also: ENGL-18)

(CSU breadth area C2)

3 units: 3 hours lecture.

Prerequisite: ENGL-01A. Advisory: ENGL-01B.

This is an introductory course in African literature written in English or translated from African languages or French into English. It will represent a survey of major works from colonial and post-colonial literature to introduce students to African literature and films of merit, cultural relevance, and universal application. In addition to enabling students to view African works within a global context, its goal will be to show the connection of themes, issues, and styles between African and African-American literature and experience as well. Works studied will include epics and narratives, poetry and song lyrics, short fiction, novels, essays, films, and drama in an effort to assist students in acquiring an appreciation of important literary voices that have heretofore been neglected in literature studies. (11/00)

**HUM-21 HUMANITIES AND FILM**

(CSU breadth area C2/D3)

3 units: 2 hours lecture, 3 hours lab.

Advisory: ENGL-01A.

This course is an introduction to the humanities through the study of film. Film criticism will be combined with the analysis of philosophical, literary, and/or artistic themes. Feature-length films will be screened. (12/05)

**HUM-47ABCD SPECIAL TOPICS IN LANGUAGE AND LITERATURE**

(Also: ENGL-47ABCD)

3 units: 3 hours lecture.

Prerequisite: ENGL-A.

This course engages students in the study of language and literature, and topics will vary from semester to semester. (1/05)

**INDUSTRIAL TECHNOLOGY**  
(Industrial Technology Division)

**INDT-10 INDUSTRIAL TECHNICAL SKILLS (Also: MECH-10)**

(CAN AG 4)

3 units: 2 hours lecture, 3 hours lab.

Advisories: ENGL-81, ENGL-84; MATH-80 or MATH-83.

This course provides an introduction to basic technical skills required throughout the industrial areas. The course includes identification and

use of tools and materials, tool sharpening and care, hot and cold metal work, pipefitting, electrical wiring fundamentals, basic woodworking, concrete materials and mixes, and sketching and estimating. (3/06)

**INDT-15 SMALL GAS ENGINES (Also: MECH-15)**

3 units: 2 hours lecture, 3 hours lab.

Advisories: ENGL-A; MATH-83.

This course is a complete introduction to the operation, construction, maintenance, repair, and adjustment of two-cycle and four-cycle engines. It is designed for persons without prior experience in small engines. Theory and practical work including safety and the care and use of specialized tools used in small engine repair and maintenance will be covered. Examples of types of engines to be used will include lawn mower, power saw, pump, conveyor, self-propelled small carts, and any other small engines. (10/04)

**INDT-20 MICROCOMPUTER OPERATING SYSTEMS FOR INDUSTRIAL TECHNOLOGY**

[CILC areas A,B]

1 unit: 1 hour lecture.

Advisories: ENGL-81, ENGL-84; MATH-80 or MATH-83.

This course will provide students with a working knowledge of file manipulation and DOS operating systems as related to AutoCAD, Windows applications, and technical software. Features such as the basic commands, file management, control of the work flow, print control functions, file configurations, and pathing as related to AutoCAD and associated industrial technology software will be discussed and explored. (2/00)

**INDT-25 FLUID POWER**

3 units: 2 hours lecture, 3 hours lab.

This course covers the operational theory and practical applications of hydraulics, pneumatics, and vacuum components and systems. This includes adjustment, service, and functional operation of pumps, controls, transmission systems, actuators, and fluidics. The design and application of fluidic systems as they relate to industrial machinery will be covered together with systematic methods of troubleshooting. (4/99)

**INDT-32 BUILDING CONSTRUCTION CONCEPTS**

3 units: 2 hours lecture, 3 hours lab.

Advisories: ENGL-81, ENGL 84; MATH-80 or MATH-83.

This course will provide the student with an understanding of construction concepts by building scaled modulars of each area of house construction (floor, wall, and roof framing; installation of windows and doors). The student will learn the concepts of stairwell and fireplace framing. (3/06)

**INDT-36A-Z ELECTRICAL WIRING: RESIDENTIAL AND INDUSTRIAL**

3 units: 2 hours lecture, 3 hours lab.

Advisories: ENGL-81, ENGL-84; MATH-80 or MATH-83.

This course covers basic residential and industrial theory. Topics include electrical theory, wiring in accordance with the latest version of the National Electrical Code, blueprint reading, layout of electrical circuits according to blueprints, switches, electrical connections, grounding and electrical safety, materials, appliance connections, industrial wiring and components, power poles, and low voltage remote control devices. This course may be repeated when the course number letter changes that reflects National Electrical Code changes. (1/00)

**INDT-38 INDUSTRIAL TECHNOLOGY COMPUTER APPLICATIONS AND LITERACY**

[CILC areas A,B,C,D,E,F]

3 units: 2 hours lecture, 3 hours lab.

Advisories: ENGL-A, ENGL-41; MATH-80 or MATH-83 (preferred); AOM-50B.

This course explores computer usage in the workplace with emphasis on industrial technology (IT) situations and applications. Computer applications including word processing, spreadsheets, databases, and presentation managers will be covered. Included will be methods of accessing information through various formats and levels including standard print resources and the Internet. Also included will be an introduction to web page design and other software and hardware appropriate to industrial technology. (2/02)

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**INDT-40 COMMERCIAL REFRIGERATION SYSTEMS:  
INSTALLATION, SERVICE, AND MAINTENANCE**

3 units: 2 hours lecture, 3 hours lab.

Advisories: ENGL-81, ENGL-84.

This course presents commercial refrigeration systems to students. Systems studied will range from fractional to large tonnage refrigeration units. Medium and low temperature units, multiple defrost methods, and energy efficiency will be studied. Diagnostic and repair procedures on commercial systems and related equipment will be covered. (3/06)

**INDT-41 POWER TRANSMISSION**

3 units: 2 hours lecture, 3 hours lab.

Advisories: ENGL-81, ENGL-84; MATH-80 or MATH-83.

This course covers theory and application of power transmission through chains, belts, gear trains, and augers, including system layout, setup, alignment, adjustment, timing, and maintenance. The student will study peripheral components and systems typical of industrial applications and their related components, such as bearings, seals, shafts, and safety devices. Requirements of preventive maintenance, system troubleshooting, and lubrication schedules are also covered. (2/00)

**INDT-42 PROCESS VACUUM TECHNOLOGY (Also: LEOT-42)**

3 units: 2 hours lecture, 3 hours lab.

Advisory: INDT-25 or PHYS-10.

This course is designed to provide the student with classroom and laboratory experience in creation and control of the vacuum process environment. The course will cover rough to ultra-high vacuum environments used in the fluid power, semiconductor manufacturing, and laser generation processes. Instruction includes vacuum safety, gas laws, vacuum measurement, pressure and flow control, viscous flow, molecular flow, conductance, pumping systems, connectors, base pressure, cleanliness, vacuum gauging, mass flow control, vacuum processes, residual gas analysis, and process troubleshooting. (2/02)

**INDT-49A-Z ELECTRICAL CODES AND ORDINANCES**

3 units: 3 hours lecture.

Advisory: ENGL-A.

This is a course in the interpretation and application of the National Electrical Code (NEC), and other national, state, and local electrical codes and ordinances which regulate the installation, alteration, and maintenance of electrical circuits, systems, and equipment. Each letter (i.e., A,B,C, etc.) may be taken only once and represents, when changed, the latest version of the National Electrical Code being taught. (3/05)

**INDT-50 HVAC -- HEATING AND CONTROL SYSTEMS**

6 units: 4 hours lecture, 6 hours lab.

Advisories: ENGL-81, ENGL-84; MATH-80 or MATH-83.

This course will enable students to identify and understand the operation of the various components found in heating and air conditioning units. Students will perform diagnostic and repair procedures on the above units and apply basic electrical concepts as they relate to HVAC industry heating and control technology. (11/02)

**INDT-51 HVAC -- VENTILATION AND AIR CONDITIONING SYSTEMS**

6 units: 4 hours lecture, 6 hours lab.

Advisories: ENGL-81, ENGL-84; INDT-50, INDT-52; MATH-80 or MATH-83.

This course will enable students to identify and understand the operation of various components and systems found in air conditioning refrigeration systems. Students will perform diagnostic and repair procedures on air conditioning refrigeration systems and related equipment. Thermodynamic and psychometric principles as they relate to air conditioning systems will be covered. (11/02)

**INDT-52 REFRIGERANT USAGE CERTIFICATION --ENVIRONMENTAL  
PROTECTION AGENCY (EPA) EQUIREMENTS**

1 unit: 1 hour lecture.

Advisory: ENGL-81.

This course prepares students for EPA certification in refrigerant handling. The Clean Air Act and Montreal protocol will be discussed. Types I, II, and

III certification test requirements will be discussed. EPA testing will be accomplished as a component of the course. A testing fee will be required for those who wish certification. (3/06)

**INDT-71AA-ZZ INDUSTRIAL TECHNOLOGY SPECIAL TOPICS**

0.5-4 units: lecture/lab hours will vary, depending on topic.

Prerequisite/Advisory: None.

This course is the study of basic principles, processes, and theories of the special topic being presented during the semester. (11/90)

**INDT-85 BASIC INDUSTRIAL TECHNICAL SKILLS (Also: MECH-85)**

3 units: 2 hours lecture, 3 hours lab.

Advisories: ENGL-81, ENGL-84; MATH 80 or MATH-83.

This course provides a basic introduction to technical skills required throughout the industrial areas. The course includes identification and use of tools and materials, tool sharpening and care, hot and cold metal work, pipefitting, electric wiring fundamentals, basic woodwork, concrete materials and mixes, and sketching and estimating. (3/06)

**JAPANESE**

(Humanities Division)

**JPNS-01A ELEMENTARY JAPANESE**

(CSU breadth area C2)

2.5 units: 2.5 hours lecture.

Advisory: ENGL-84.

This course will focus on the development of listening, speaking, reading, and writing in a cultural context, with primary emphasis on communicative competency. Students will learn to express in Japanese the most basic functions of everyday life. (11/02)

**JPNS-01B ELEMENTARY JAPANESE**

(CSU breadth area C2)

2.5 units: 2.5 hours lecture.

Prerequisite: JPNS-01A.

This course will continue the focus on the development of listening, speaking, reading, and writing in a cultural context, with primary emphasis on communicative competency. Students will learn how to express in Japanese the most basic functions of everyday life. (5/06)

**JPNS-02 ELEMENTARY JAPANESE**

(CSU breadth area C2)

5 units: 5 hours lecture.

Prerequisite: JPNS-01B.

JPNS-02 is a continuation of JPNS-01B. This course will focus on the further development of listening, speaking, reading, and writing in a cultural context, with primary emphasis on communicative competency. Students will learn how to express in Japanese basic functions of everyday life. (1/03)

**JOURNALISM**

(Humanities Division)

**JOUR-01 MASS MEDIA AND SOCIETY**

(CAN JOUR 4)

3 units: 3 hours lecture.

Prerequisite: ENGL-A. Advisory: AOM-50B.

This is a general, non-technical survey of the media which includes the history, organization, social role, functions, limitations, and responsibilities of newspapers, magazines, radio, television, public relations, advertising, and the Internet. Emphasis is placed on the political, social, and economic impact of the media upon government and public opinion. (2/04)

**JOUR-08 INTRODUCTION TO NEWSWRITING AND REPORTING**

(CAN JOUR 2)

3 units: 3 hours lecture.

Prerequisite: ENGL-01A. Advisory: AOM-50B.

This is a beginning course providing instruction and practice in language and style of news writing and reporting. Basic skills will be taught in the balanced and objective writing of news events, interviews, speeches,

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meetings, and features. Instruction will be given in copy reading, and the class will include a brief review of the laws of libel and the responsibilities of the mass media. This course may be repeated once. (02/04)

#### **JOUR-32 NEWSPAPER STAFF**

3 units: 2 hours lecture, 3 hours lab.

Advisories: ENGL-A; JOUR-08; AOM-50B; PHOT-10A.

This is a practical course in gathering news, judging news value, writing or photographing news events and features while working as a staff member or editor of the Merced College student newspaper. This course may be repeated two times. (2/04)

### **LANDSCAPE HORTICULTURE**

(Agriculture Division)

(Please refer to the Agriculture Division website for course offering details)

[www.mccd.edu/academics/divisions/ag](http://www.mccd.edu/academics/divisions/ag)

#### **LAND-10A PLANT IDENTIFICATION AND USAGE: FALL**

3 units: 2 hours lecture, 3 hours lab.

Advisory: ENGL-A.

This course covers the identification, growth habits, culture and ornamental use of landscape and indoor plants adapted to climates of California. Plants emphasized will come from the current California Association of Nursery and Garden Centers (CAN & GC), and California Landscape Contractors Association (CLCA) plant lists. Topics include botanical nomenclature, plant hardiness and growth zones, growth habits, plant structural characteristics, and soil nutritional requirements. Landscape uses are stressed along with cultural practices. Plants covered are those best observed and identified in the fall of the year. (1/06)

#### **LAND-10B PLANT IDENTIFICATION AND USAGE: SPRING**

3 units: 2 hours lecture, 3 hours lab.

Advisory: ENGL-A.

This course covers the identification, growth habits, culture and ornamental use of landscape and indoor plants adapted to climates of California. Plants emphasized will come from the current California Association of Nursery and Garden Centers (CAN & GC), and California Landscape Contractors Association (CLCA) plant lists. Topics include botanical nomenclature, plant hardiness and growth zones, growth habits, plant structural characteristics, and soil nutritional requirements. Landscape uses are stressed along with cultural practices. Plants covered are those best observed and identified in the spring of the year. (1/06)

#### **LAND-11 ELEMENTS OF LANDSCAPE HORTICULTURE**

3 units: 2 hours lecture, 3 hours lab.

Advisories: ENGL-A; MATH-80 or MATH-83.

This is a course in the study of landscape horticulture with emphasis on nursery operations, landscaping, turf management, and floral industries. Topics include basic botany, cultural practices, propagation, structures and layout, pest management, planting, container gardening and houseplants, floral design, plant identification, turf grass installation and care, and survey of career opportunities. (12/06)

#### **LAND-12 LANDSCAPE DESIGN**

3 units: 2 hours lecture, 3 hours lab.

Advisories: ENGL-80; MATH-80 or MATH-83.

This course includes the principles of landscape design and studies in form, space, color, texture, scale, balance, utility, and contrast. Materials used in landscape developments, site analysis, problems of design, correct use of plant material relating to ecology and function of landscape structures in the plan will be encompassed in this course. Basic irrigation design is also a component of the course. (1/06)

#### **LAND-14 LANDSCAPE CONSTRUCTION AND INSTALLATION**

3 units: 2 hours lecture, 3 hours lab.

Advisories: ENGL-A; MATH-80 or MATH-83.

This course covers the fundamentals of landscape construction including soil preparation, paving and construction materials, hand and power tool use, turf and plant installation, plan reading, estimating and bid preparation. The course also covers local codes and state requirements and prepares students to pass the C-27 Landscaping Contractor's License Exam. (10/05)

#### **LAND-15 LANDSCAPE MAINTENANCE**

3 units: 2 hours lecture, 3 hours lab.

Advisories: ENGL-A; MATH-80 or MATH-83.

This course prepares students to enhance the function and aesthetic value of public and private landscapes by applying appropriate maintenance techniques. Topics include planting, pruning, watering, soil fertility, pest management, weed control, and landscape maintenance business practices. (10/05)

#### **LAND-17 NURSERY AND GARDEN CENTER PRACTICE**

3 units: 2 hours lecture, 3 hours lab.

Advisories: ENGL-A; MATH-80 or MATH-83.

This course is a study of commercial retail nursery and garden center operations dealing with wholesale and retail nursery practices, including plant care, merchandising, and management practices. (1/06)

#### **LAND-50 RESIDENTIAL GARDENING**

3 units: 3 hours lecture.

Advisory: ENGL-81.

This course teaches basic needs in residential gardening. Included in this course are plant identification, basic landscape design, sprinkler installation and care, fumigation and lawn installation, pruning, pest and disease recognition and control, soils, fertilization, and weed control. Also included will be foliage plant care for interiors. (1/06)

### **LASER ELECTRO-OPTICS TECHNOLOGY**

(Industrial Technology Division)

#### **LEOT-30 INTRODUCTION TO LASER ELECTRO-OPTICS TECHNOLOGY**

3 units: 2 hours lecture, 3 hours lab.

Advisories: ENGL-A, ENGL-41; MATH-C or MATH-D.

This course presents the principles and equations that are needed to understand the operation of lasers and how to modify their outputs. The course is designed for technologists who will design, build, modify, install, operate, troubleshoot and repair lasers and laser systems. (11/00)

#### **LEOT-32 LASER TECHNOLOGY**

3 units: 2 hours lecture, 3 hours lab.

Prerequisite: LEOT-30.

This course is a continuation of topics presented in *LEOT-30 Introduction to Laser Electro-Optics Technology* with an emphasis on light sources, optics, and experimental optics methods. The student will continue to develop laser electro-optics systems troubleshooting and problem solving. (12/00)

#### **LEOT-34 LASER ELECTRO-OPTICS COMPONENTS AND DEVICES**

3 units: 2 hours lecture, 3 hours lab.

Prerequisite: LEOT-32.

This course is a continuation of the topics presented in the previous Laser Technology course with emphasis at the component level. Troubleshooting and problem-solving skills will also be emphasized at the component level. Subjects covered include optical, electro-optic, and photographic equipment and methods. (12/00)

#### **LEOT-36 LASER APPLICATIONS**

3 units: 2 hours lecture, 3 hours lab.

Prerequisite: LEOT-34.

This course applies the material covered in previous Laser Electro-Optics classes to actual equipment and test configurations. The student will apply troubleshooting and problem-solving skills to laser equipment and laser systems in practical applications. (12/00)

#### **LEOT-37 LASER ELECTRONICS (APPLICATIONS OF ELECTRONICS) (Also: ELCT-37)**

3 units: 2 hours lecture, 3 hours lab.

Prerequisites: ELCT-32, ELCT-33.

This electronics application course covers the electronics segments of laser equipment. Subjects studied include laser high-voltage power supplies, flashlamps and arc lamp circuits, electro-optic and acousto-optic circuits,

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optical detectors, and electro-optic electronic instrumentation. (12/00)

#### **LEOT-42 PROCESS VACUUM TECHNOLOGY (Also: INDT-42)**

3 units: 2 hours lecture, 3 hours lab.

Advisory: INDT-25 or PHYS-10.

This course is designed to provide the student with classroom and laboratory experience in creation and control of the vacuum process environment. The course will cover rough to ultra-high vacuum environments used in the fluid power, semiconductor manufacturing, and laser generation processes. Instruction includes vacuum safety, gas laws, vacuum measurement, pressure and flow control, viscous flow, molecular flow, conductance, pumping systems, connectors, base pressure, cleanliness, vacuum gauging, mass flow control, vacuum processes, residual gas analysis, and process troubleshooting. (2/02)

### **LEARNING RESOURCES**

(Learning Resources Center)

#### **LRNR-30 INFORMATION COMPETENCY IN THE ELECTRONIC AGE**

[CILC areas A,B,C,D,E,F,G]

3 units: 3 hours lecture.

Advisories: ENGL-A; AOM-50B.

This course follows the guidelines of the California Community College's Academic Senate Information Competency Initiative and the Computer and Information Literacy requirements of Merced College. It is designed to introduce students to library research and resources including information retrieval tools. Course work will include library literacy, research methods, and information technology literacy, including database applications, as well as consideration of ethical and legal implications of computer applications and information use. This course also presents techniques for successful research including documentation and citation of resources, evaluation of information resources, and bibliography production. (2/04)

#### **LRNR-40 RESEARCH ON THE INTERNET**

1 unit: 1 hour lecture.

Prerequisite: LRNR-30. Advisories: CPSC-24; ENGL-A.

This course provides college-level knowledge and skills necessary for effective research on the Internet, including information technology literacy, evaluating, documenting, and using Internet resources, developing research frameworks for the Internet, using Internet subject directories and search engines, developing strategies for accessing information not found through typical Internet search engines (the "hidden web"), and integrating Internet research into academic assignments. Course work will include advanced Internet research methods and information technology research. (11/02)

#### **LRNR-49A-ZZ SPECIAL TOPICS IN LEARNING RESOURCES**

0.5-1 unit: 0.5-1 hour lecture.

Advisories: CPSC-24; ENGL-A.

This is a course designed to address special topics in Learning Resources to meet current needs of students. It will provide students with access to instruction that will assist them in acquiring up-to-date information and skills in order to cope with the rapidly changing world of learning resources, particularly information and technology and information applications. (9/00)

### **LIBERAL STUDIES**

(Humanities Division)

#### **LBST-10 CAREER EXPLORATION: TEACHING I**

3 units: 2 hours lecture, 3 hours lab.

Limitations on enrollment: Students must obtain a fingerprint clearance and negative TB clearance. Advisories: ENGL-01A; CPSC-30; MATH-A.

Students are introduced to the profession of teaching through an understanding of the California State Content Standards, the credential program, the role of the public school teacher, and the personal qualities necessary to be a successful teacher. Practical experiences in the classroom will include tutoring in area schools. Students will share observations with faculty and peers in weekly meetings to note differences in students and in tutoring/learning styles and to reflect on their personal experiences. This course is intended for students who plan to teach in the K-8 grade levels; the course is intended for students in the first year of the

CSU Stanislaus Transfer Liberal Studies "Blended Program" and for other selected four-year colleges. Students must provide their own transportation to off-campus school sites and must dress professionally as determined by their school sites. Tutoring placements will not be available for students with felony convictions. Insufficient tutoring exposure will negatively affect grades. All students will be required to attend an orientation session the first week of school. (3/03)

#### **LBST-20 CAREER EXPLORATION: TEACHING II**

3 units: 2 hours lecture, 3 hours lab.

Limitations on enrollment: Students must obtain a fingerprint clearance and a negative TB clearance. Prerequisite: LBST-10.

Students are provided additional opportunities to explore the teaching profession and how their personalities will fit with their career choice. Students will observe students and teachers in K-8 classroom environments and share observations with faculty and peers in weekly meetings to note differences in students, in teaching/learning styles, and in their personal reactions to the classroom setting. Placements for LBST-20 will be in a classroom setting different from placements for LBST-10 so students may obtain maximum variety of experience. This course is intended for students who plan to teach in the K-8 levels; the course is required of students in their second year of the CSU Stanislaus Transfer Liberal Studies "Blended Program" and selected other four-year schools. Students must provide their own transportation to off-campus school sites and must dress professionally as determined by their school sites. Observation placements are required for class and will not be available for students with felony convictions. Insufficient tutoring exposure will negatively affect grades. All students will be required to attend an orientation session the first week of school. (3/03)

### **MANAGEMENT**

(Business Division)

#### **MGMT-31 PRINCIPLES OF MANAGEMENT**

3 units: 3 hours lecture.

Advisory: ENGL-A.

This course is designed to develop the techniques and capabilities of those in supervisory positions and for those aspiring toward supervisory positions in business and industry. Topics covered include managerial functions of supervisors, motivation and management styles, problem-solving and decision-making, communication skills, planning, time management, organizing, employee training, employee appraisal and compensation, directing, controlling and labor/management relations. (1/05)

#### **MGMT-32 HUMAN RESOURCES MANAGEMENT**

3 units: 3 hours lecture.

Advisory: ENGL-A.

This course involves the study of the principles and methods involved in effective human resource utilization in organizations. It provides an overview of responsibilities and practices involved in recruiting, selecting, promoting, terminating and retiring employees, performance appraisal, job development and analysis, wage and salary administration, and effective working relationships. (1/03)

#### **MGMT-33 ELEMENTS OF EFFECTIVE LEADERSHIP**

3 units: 3 hours lecture.

Advisory: ENGL-A.

This course deals primarily with the techniques of leadership in organizational settings. Topics discussed include leadership styles, the behavioral aspects of leadership, and effective leadership characteristics. (1/03)

#### **MGMT-34 EMPLOYMENT LAW**

3 units: 3 hours lecture.

Advisories: ENGL-A, ENGL-41, ENGL-41L.

This course is designed to give the student an in-depth understanding of employment law. The student will have an opportunity, via court simulations, case presentations, mock negotiations, etc., to apply the knowledge and skills learned. These experiences will include the preparation of materials necessary for trial, mediation, arbitration, and implementation of labor-management rules and regulations. (12/01)

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**MGMT-37 SMALL BUSINESS MANAGEMENT**

3 units: 3 hours lecture.

Advisories: CPSC-30; ENGL-A, ENGL-41; LRNR-30.

This course is designed to assist small business and prospective small business owners through the utilization of an entrepreneur's business plan. Topics include the environment and management of the small enterprise, legal considerations in starting a small business, financing a business, business record keeping and budgeting, insurance, marketing, and credit policies and procedures. Students will use microcomputers in the decision-making and business-planning process. (12/04)

**MGMT-50A THE CHALLENGE OF SUPERVISION**

0.5 unit: 0.5 hour lecture.

Advisories: ENGL-81, ENGL-84.

This course is designed to acquaint the student with various concepts of supervision needed to be successful. The basic skills needed by supervisors, a supervisor's major responsibilities, and how the supervisor fits into the organization will be emphasized. This course is repeatable two times. Credit/No Credit only. (5/04)

**MGMT-50B FOUNDATION ESSENTIALS: VALUES AND ETHICS**

0.5 unit: 0.5 hour lecture.

Advisories: ENGL-81, ENGL-84.

This course is designed to acquaint the student with the importance of values and ethics in the workplace. The importance of values and ethics involved in the supervisor's carrying out his/her duties will be emphasized. This course is repeatable two times. Credit/No Credit only. (1/02)

**MGMT-50C TIME MANAGEMENT**

0.5 unit: 0.5 hour lecture.

Advisories: ENGL-81, ENGL-84.

This course is designed to introduce the student to time management principles and specific tools that assist in making maximum use of time. Basic concepts of managing space will also be covered. This course is repeatable two times. Credit/No Credit only. (1/02)

**MGMT-50D COMMUNICATING WITH PEOPLE**

0.5 unit: 0.5 hour lecture.

Advisories: ENGL-81, ENGL-84.

This course is designed to introduce the student to key elements in communication within business organizations. Topics will include verbal and non-verbal communication, listening skills, and specific supervisory communication skills. This course is repeatable two times. Credit/No Credit only. (1/02)

**MGMT-50F TEAM BUILDING**

0.5 unit: 0.5 hour lecture.

Advisories: ENGL-81, ENGL-84.

This course is designed to provide the student with an understanding of how teams work together, common problems teams encounter, and how to solve them. Students will learn to recognize various team player styles. Students will be introduced to team building in the workplace. This course is repeatable two times. Credit/No Credit only. (1/02)

**MGMT-50G DECISION MAKING AND PROBLEM SOLVING**

0.5 unit: 0.5 hour lecture.

Advisories: ENGL-81, ENGL-84.

This course is designed to introduce the student to decision-making and problem-solving as a supervisor. This course is repeatable two times. Credit/No Credit only. (1/02)

**MGMT-50H CUSTOMER SERVICE**

0.5 unit: 0.5 hour lecture.

Advisories: ENGL-81, ENGL-84.

This course is designed to provide the student with certain key skills and attitudes in order to effectively meet the needs of customers. The student will be introduced to the concept of internal and external customers, customer satisfaction, and customer retention. Topics will also include

communicating with customers, developing a positive attitude, handling complaints, and sales skills. This course is repeatable two times. Credit/No Credit only. (1/02)

**MGMT-50I ATTITUDE IN THE WORKPLACE**

0.5 unit: 0.5 hour lecture.

Advisories: ENGL-81, ENGL-84.

This course is designed to provide students with certain key skills in the area of attitude so that they may effectively maintain a positive attitude at the workplace and at home. Students will be introduced to the concepts of how attitudes are communicated, the three types of attitudes, and how to adjust one's attitude. Topics will also include the primary causes of a bad attitude, turnaround strategies to battle these bad attitudes, and specific techniques to raise the attitude of others. This course is repeatable two times. Credit/No Credit only. (1/02)

**MGMT-50J THRIVE AND SURVIVE IN THE WORKPLACE**

0.5 unit: 0.5 hour lecture.

Advisories: ENGL-81, ENGL-84.

This course focuses on the qualities that employers desire in employees and what it takes to thrive and survive in the workplace. Attitude, communication, and work ethics will be stressed. This course is repeatable two times. Credit/No Credit only. (4/04)

**MGMT-51B MOTIVATION AND MORALE**

0.5 unit: 0.5 hour lecture.

Advisories: ENGL-81, ENGL-84.

This course is designed to provide an analysis of human behavior as it is related to the workplace. The student will be provided with various alternatives that can be utilized to motivate employees and improve employee morale. This course is repeatable two times. Credit/No Credit only. (11/03)

**MGMT-51C LEADERSHIP**

0.5 unit: 0.5 hour lecture.

Advisories: ENGL-81, ENGL-84.

This course is designed to acquaint the student with the leadership role of the supervisor and introduce various leadership models to aid the student in developing his/her own leadership style. The attributes of a good leader will be discussed. This course is repeatable two times. Credit/No Credit only. (11/97)

**MGMT-51F CONFLICT RESOLUTION**

0.5 unit: 0.5 hour lecture.

Advisories: ENGL-81, ENGL-84.

This course is designed to provide the student with an analysis of attitudes and behavior which create conflict between individuals and groups within an organization. This course is repeatable two times. Credit/No Credit only. (1/02)

**MGMT-51G STRESS MANAGEMENT**

0.5 unit: 0.5 hour lecture.

Advisories: ENGL-81, ENGL-84.

This course is designed to acquaint the student with various skills the supervisor needs to help employees. Included is the recognition of stress and how to manage it, job burnout and what to do about it, and counseling employees in various situations. This course is repeatable two times. Credit/No Credit only. (1/02)

**MGMT-52B WRITING SKILLS FOR MANAGERS**

0.5 unit: 0.5 hour lecture.

Advisories: ENGL-81, ENGL-84.

This course is designed to provide the student with the skill necessary to effectively write various business documents. Topics will include the guidelines necessary to produce effective written communications, introduction to various communication devices used internally in an organization, preparation of written communications for use outside the organization, and business communication and the law. This course is repeatable two times. Credit/No Credit only. (3/06)

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**MGMT-52C SUCCESSFUL BUSINESS SPEAKING**

0.5 unit: 0.5 hour lecture.

Advisories: ENGL-81, ENGL-84.

This course is designed to assist the student in developing the skills necessary to successfully speak in a variety of business situations. Topics will include speaking and listening skills, speaking one-to-one, giving oral presentations, and conducting effective meetings. This course is repeatable two times. Credit/No Credit only. (12/97)

**MGMT-52D MANAGING ORGANIZATIONAL CHANGE**

0.5 unit: 0.5 hour lecture.

Advisories: ENGL-81, ENGL-84.

This course is designed to provide the student with an understanding of change and the influence it has on an organization and the individuals in that organization. Topics will include understanding organizational change, theoretical models of change, stages of change, and how to manage organizational change. This course is repeatable two times. Credit/No Credit only. (1/02)

**MGMT-52E EMPLOYEE RECRUITING, INTERVIEWING AND HIRING**

0.5 unit: 0.5 hour lecture.

Advisories: ENGL-81, ENGL-84.

This course is designed to provide the student with the skills and knowledge necessary to find the best candidates to fill positions of employment. Topics will include job design and analysis, sources of qualified personnel, recruitment methods, interviewing techniques, and the selection process. This course is repeatable two times. Credit/No Credit only. (4/04)

**MARKETING**  
(Business Division)**MKTG-30 MARKETING**

3 units: 3 hours lecture.

Advisories: ENGL-A.

This course provides a broad understanding of the promoting, pricing, and distribution of products and services. Promotional mixes are studied including sales promotion, advertising, packaging, personal selling, public relations, and publicity. A study is made of understanding customer needs and behaviors; developing a product and/or service mix to satisfy customer needs, and profitability. Legal, political, cultural, social, economic, competitive, and ethical aspects of marketing are discussed. (12/06)

**MKTG-31 RETAIL MANAGEMENT (Also: MDSE-31)**

3 units: 3 hours lecture.

Advisories: ENGL-A, ENGL-41.

This course is a study of the principles and practices of retail merchandising. It is designed to help develop skills in organizing, operating, and managing in the retail merchandising industry. It will also provide students with the knowledge necessary to enter the field of merchandising and to provide a basis for advancement for those currently employed in the field. (4/04)

**MKTG-32 SALESMANSHIP (Also: MDSE-32)**

3 units: 3 hours lecture.

Advisories: ENGL-A, ENGL-41.

This course is designed to provide the student with a theoretical and practical background in salesmanship. Included in this course is the study of the psychology of selling, selling principles and techniques, advertising and sales promotion, and development of the individual for entry into the field of salesmanship. (3/00)

**MKTG-33 ADVERTISING (Also: MDSE-33)**

3 units: 3 hours lecture.

Advisories: ENGL-A, ENGL-41.

This is an introductory course in advertising principles and techniques. Areas of study will include advertising agencies; preparation of advertisements, including copywriting, illustration, and layouts; media selection; budgeting for advertising; psychology and persuasion of advertisements; and the use of advertising as a tool in sales promotion. (11/03)

**MATHEMATICS**

(Science, Math and Engineering Division)

**MATH-A BEGINNING ALGEBRA**

5 units: 5 hours lecture.

Prerequisite: MATH-80 or MATH-83. Advisories: ENGL-A, ENGL-41.

This course covers the basic operations of addition, multiplication, division, squaring, and taking the square root of real numbers and algebraic expressions. It also includes solving and graphing first and second degree equations, inequalities and systems of linear equations, factoring and simplifying fractions, radicals, exponents, irrational expressions, and complex fractions. Mathematical terminology and written problems will be emphasized throughout the course. (3/01)

**MATH-B APPLIED MATHEMATICS**

5 units: 5 hours lecture.

Prerequisite: MATH-80 or MATH-83. Advisories: ENGL-A, ENGL-41.

This course will explore mathematical applications from various vocational and technical areas. It can be taken by a non-vocational student. It is intended for those who have not had algebra, or need a review of their beginning algebra skills. It will be an intense course covering measurement, basic algebra, plane and solid geometry, trigonometry, and graphs. Assignments will be application-oriented as these topics are covered. Some sections of this course may be taught with a lab component. If so, students would need to register concurrently for a separate math lab course. (2/02)

**MATH-C INTERMEDIATE ALGEBRA**

5 units: 5 hours lecture.

Prerequisite: MATH-A or MATH-B. Advisories: ENGL-A, ENGL-41.

This course covers the algebra of real numbers using set notation and the real number line, functions and graphs, polynomials, rational expressions and equations, first and second degree equations and inequalities, exponents and roots, radical expressions and equations, systems of equations in two or three unknowns, introductions to matrices and determinants, conic sections, and exponential and logarithmic equations. (3/01)

**MATH-D BASIC TECHNICAL MATHEMATICS**

5 units: 5 hours lecture.

Prerequisite: MATH-A or MATH-B. Advisories: ENGL-A, ENGL-41.

This is a course in intermediate algebra and basic trigonometry which is designed to meet the needs of students in technical or engineering technology fields. Applications are stressed throughout and are drawn from a variety of vocational and technical areas. (2/07)

**MATH-02 COLLEGE ALGEBRA AND TRIGONOMETRY**

(CAN MATH 16) (CSU breadth area B4)

4 units: 4 hours lecture.

Prerequisite: MATH-C. Limitation on enrollment: This course is not open to students having credit in MATH-17, MATH-25, or MATH-26. Advisories: ENGL-A, ENGL-41.

This course covers the system of real numbers, functions, trigonometric functions, the complex numbers, theory of equations, system of equations, matrices, composite and inverse functions, trigonometric equations, topics in analytic geometry, and vectors. (11/03)

**MATH-04A ANALYTICAL GEOMETRY AND CALCULUS**

(CAN MATH 18) (CSU breadth area B4)

4 units: 4 hours lecture.

Prerequisite: MATH-02 or both MATH-25 and MATH-26. Advisories: ENGL-A, ENGL-41.

This course covers limits, continuity, differentiation and integration of algebraic and trigonometric functions along with their respective applications. (12/06)

**MATH-04B ANALYTICAL GEOMETRY AND CALCULUS**

(CAN MATH 20)

4 units: 4 hours lecture.

Prerequisite: MATH-04A. Advisories: ENGL-A, ENGL-41.

This course is a continuation of MATH-04A, addressing conic sections, transcendental functions, methods of integration, hyperbolic functions, improper integrals, Taylor's Formula, infinite series, and plane curves and polar coordinates. (12/06)

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**MATH-04C ANALYTICAL GEOMETRY AND CALCULUS**

(CAN MATH 22)

4 units: 4 hours lecture.

Prerequisite: MATH-04B. Advisories: ENGL-A, ENGL-41.

This course covers vectors and solid analytic geometry, vector-valued functions, partial differentiation, multiple integrals, and topics in vector calculus including Green's and Stokes' theorems. (12/06)

**MATH-05A APPLIED CALCULUS**

(CAN MATH 30) (CSU breadth area B4)

3 units: 3 hours lecture.

Prerequisite: MATH-02, or MATH-25 and MATH-26. Advisories: ENGL-A, ENGL-41.

This course is designed for the beginning calculus student majoring in the life sciences and/or students majoring in the areas of business, economics, management, and the social sciences. Students majoring in mathematics, engineering, or physical science should enroll in a more rigorous calculus series. This course will cover functions, differentiation, and exponential and natural logarithms, but the emphasis will be on using these topics as tools to solve applied problems in the areas listed above. (1/07)

**MATH-05B APPLIED CALCULUS**

(CSU breadth area B4)

3 units: 3 hours lecture.

Prerequisite: MATH-05A or MATH-04A. Advisories: ENGL-A, ENGL-41.

This course is designed as a continuation of MATH-05A, the study of beginning calculus for the student majoring in the areas of business, economics, management, and the social sciences. The major topic of this course is the study of integration and the applications of integration in the areas described above. Other topics include trigonometry, differential equations, probability, Taylor polynomials and infinite series. This course is not intended for the student majoring in mathematics, engineering, or the physical sciences. (1/07)

**MATH-06 ELEMENTARY DIFFERENTIAL EQUATIONS**

(CAN MATH 24)

3 units: 3 hours lecture.

Prerequisite: MATH-04C. Advisories: ENGL-A, ENGL-41; MATH-08.

This course covers definitions, eliminations of arbitrary constants, equations of order one, elementary applications, linear differential equations, non-homogeneous equations, linear systems, the Laplace transforms, the power series method, numerical methods and Fourier series. (11/00)

**MATH-08 LINEAR ALGEBRA**

(CAN MATH 26)

3 units: 3 hours lecture.

Prerequisite: MATH-04B. Advisories: ENGL-A, ENGL-41.

This course is suggested for computer science, engineering, math, and science majors. It is an introduction to systems of linear equations, matrix and determinant operations, vector spaces, linear transformations, eigenvalues, and eigenvectors with a strong emphasis on applications. (1/07)

**MATH-10 ELEMENTARY STATISTICS**

(CAN STAT 2) (CSU breadth area B4)

3 units: 3 hours lecture.

Prerequisite: MATH-C. Advisories: ENGL-A, ENGL-41.

This course covers descriptive statistics, including organization and presentation of data; elementary probability including permutations, combinations, binomial and normal distributions; inferential statistics, including random sampling, hypothesis testing, regression, and correlation and chi-square distribution. (9/06)

**MATH-12 FORTRAN PROGRAMMING (Also: CPSC-12 and ENGR-12)**

3 units: 2 hours lecture, 3 hours lab.

Prerequisite: MATH-02, or MATH-25 and MATH-26.

Advisories: ENGL-A, ENGL-41.

This course teaches students to use the FORTRAN programming language to solve problems in a wide variety of areas. Program design,

problem-solving, and debugging techniques are emphasized throughout the course. (1/07)

**MATH-14 C++ PROGRAMMING (Also: ENGR-14)**

3 units: 2 hours lecture, 3 hours lab.

One-way corequisite: MATH-02, or MATH-25 and MATH-26.

Advisories: ENGL-A, ENGL-41.

This is the entry-level comprehensive concepts course for computer science majors, and is recommended for science and math majors. Algorithm design, logic diagrams, problem-solving, coding, and debugging are emphasized using a structured language such as C++. (1/07)

**MATH-15 FINITE MATHEMATICS**

(CAN MATH 12) (CSU breadth area B4)

3 units: 3 hours lecture.

Prerequisite: MATH-C. Advisories: ENGL-A, ENGL-41.

This course covers algebra review, linear models, systems of linear equations, matrices, linear programming, mathematics of finance, set theory, and probability. This course includes applications to business, economics, psychology, and sociology. (3/00)

**MATH-17 PRE-CALCULUS TECHNICAL MATHEMATICS**

4 units: 4 hours lecture.

Prerequisite: MATH-C or MATH-D. Advisories: ENGL-A, ENGL-41.

This is a pre-calculus mathematics course designed for students considering a career in a technical or engineering technical field. Topics include algebraic and transcendental functions, right-angle trigonometry, trigonometric functions, vectors, formulas and identities, complex numbers, analytic geometry, sequences and series, and an introduction to statistics. Technical applications will be stressed throughout the course. (12/06)

**MATH-20A BASIC STRUCTURE OF MATHEMATICS I**

(CAN MATH 4) (CSU breadth area B4)

3 units: 3 hours lecture.

Prerequisite: MATH-C. Advisories: ENGL-A, ENGL-41.

This course is designed to complete the first course of a two-course sequence in basic concepts of mathematics required for students preparing to teach at the elementary school level. It covers elementary set theory, numeration systems, number theory, the set of integers, the set of rational numbers, and the set of real numbers. (12/06)

**MATH-20B BASIC STRUCTURE OF MATHEMATICS II**

(CSU breadth area B4)

3 units: 3 hours lecture.

Prerequisite: MATH-C. Advisories: ENGL-A, ENGL-41; MATH-20A.

This course is designed to complete the second course of a two-course sequence in basic concepts of mathematics required for students preparing to teach at the elementary school level. This course covers the structure of plane and solid geometry, measurement, introduction to coordinate geometry, elementary probability, and statistics. (01/07)

**MATH-21 INTRODUCTION TO MATHEMATICAL REASONING**

(CAN MATH 2) (CSU breadth area B4)

3 units: 3 hours lecture.

Prerequisite: MATH-C. Advisories: ENGL-A, ENGL-41.

This course is for the general student, such as a student majoring in University Studies. It will explore the mathematics involved in a variety of general topics from other disciplines. Rather than mere manipulations, the use of mathematics will be stressed as a tool to achieve other goals and to solve applied problems. Topics will include a history of mathematics, logic, number theory, geometry, consumer mathematics, probability, and statistics. This course is not designed for students entering elementary school teaching. (11/03)

**MATH-25 TRIGONOMETRY**

(CAN MATH 8) (CSU breadth area B4)

3 units: 3 hours lecture.

Prerequisite: MATH-C. Limitations on Enrollment: This course is not open to students having credit in MATH-02 or MATH-17. Advisories: ENGL-A, ENGL-41.

This course is a review of right triangle geometry, real numbers, functions

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and graphs, trigonometric functions and their graphs, identities, inverse trigonometry functions, trigonometric equations, right angle trigonometry, the laws of sines and cosines, and application of polar and rectangular forms, including vectors and complex numbers. (2/02)

### **MATH-26 COLLEGE ALGEBRA**

(CAN MATH 10) (CSU breadth area B4)

3 units: 3 hours lecture.

Prerequisite: MATH-C. Advisories: ENGL-A, ENGL-41. (Note: This course is not open to students having credit in MATH-02 or MATH-17.)

This is an advanced course in algebra including the study of real numbers, polynomials, equations and inequalities, factoring, rational expressions, exponents, roots, radicals, systems of equations, functions (including logarithmic and exponential) sequences and series, progressions and the binomial expansion. (12/06)

### **MATH-49ABCDEF (1-2) LABORATORY EXPERIENCE IN MATHEMATICS (TRANSFER-LEVEL)**

0.5 - 1 unit: 1.5 - 3 hours lab.

Prerequisite: MATH-C. Advisories: ENGL-A, ENGL-41.

This course provides individualized instruction and technology-based mathematics instruction at the lower-division college level. Technological applications may include a combination of work on computer algebra systems, graphing calculators, interactive CD-ROM, and computer tutorials and/or videotapes on mathematics subjects. Sections of MATH-49 may be scheduled to augment and enhance specific transfer-level math classes, or they may be offered independently of other math courses. Topics will enhance critical thinking, visualization of mathematical concepts, and/or computational skills. Each letter (i.e., ABCDEF) may be taken only once. (3/04)

### **MATH-59ABC (1-2) LABORATORY EXPERIENCE IN MATHEMATICS (NON-TRANSFER LEVEL)**

.5 - 1 unit: 1.5 - 3 hours lab.

Prerequisite: MATH-80. One-way corequisite: MATH-A, MATH-B, MATH-C, or MATH-D.

This course provides individualized instruction and technology-based instruction to augment courses in beginning or intermediate algebra. Technological applications may include a combination of work on computer algebra systems, interactive CD-ROM, and computer tutorials and/or videotapes on mathematics subjects. Topics will be tailored to the supported course and will enhance critical thinking, visualization of mathematical concepts and/or computational skills. Each letter (i.e., ABC) may be taken only once. (3/04)

## **MATHEMATICS, DEVELOPMENTAL** *(Developmental and Educational Studies)*

### **MATH-80 PREALGEBRA**

3 units: 3 hours lecture.

Prerequisite: MATH-91. Advisories: ENGL-81, ENGL-81L.

The course begins with a brief review of the number system and operations on numbers, including whole numbers, decimals, and fractions. The course covers percents, ratios, proportions, measurements, exponents, square roots, simple geometry, the metric system, and an introduction to algebra. Written problems and applications will be stressed throughout the course. Scientific calculator skills are stressed in all areas. (10/06)

### **MATH-83 MATH FOR OCCUPATIONS AND TRADES**

3 units: 3 hours lecture.

Prerequisite: MATH-91. Advisories: ENGL-81, ENGL-81L.

This course begins with a brief review of the number system and operations on numbers, including whole numbers, decimals, and fractions. The course covers percents, ratios, proportions measurements, exponents, square roots, simple geometry, the metric system, and an introduction to algebra. Written problems and specific applications to occupations and trades will be stressed throughout the course. Scientific calculator skills are stressed in all areas. (5/01)

### **MATH-89ABCD MATH LABORATORY**

.5 - 2 units: 1.5 - 6 hours lab.

Advisory: MATH-90. (Note: The letter designation indicates unit value, "A" being for 0.5 unit, "B" for 1 unit, etc., in 0.5 unit increments.)

This course is a laboratory experience primarily to help students who have taken a math class but who still need additional work before they progress to the next math class. It is designed to provide individualized assistance to improve a student's deficient areas. The number of hours and the number of assignments vary based on the units enrolled in. Each letter (i.e., A, B, C, or D) may be taken only once. (4/04)

### **MATH-90 FUNDAMENTALS OF ARITHMETIC**

3 units: 3 hours lecture.

Advisory: ENGL-90.

This course is an intensive review of the whole number system, including counting, notation, word names, and the number line. Particular emphasis is placed on the basic computational skills: addition, subtraction, multiplication, and division. Written problems and life skills will be emphasized throughout the course. (10/06)

### **MATH-91 FUNDAMENTALS OF DECIMALS AND FRACTIONS**

3 units: 3 hours lecture.

Prerequisite: MATH-90. Advisories: ENGL-80, ENGL-80L.

This course begins with a short review of the whole number system using basic computational skills. The course covers the meaning of decimals and fractions, and the four basic operations using them: addition, subtraction, multiplication, and division. Special emphasis will be placed on thought problems, including life skills. The course will conclude with an introduction to prime factoring, exponents, basic geometry, and order of operation. (10/06)

## **MECHANIZED AGRICULTURE & DIESEL EQUIPMENT MECHANICS**

*(Agriculture Division)*

**(Please refer to the Agriculture Division website for course offering details)**

[www.mccd.edu/academics/divisions/ag](http://www.mccd.edu/academics/divisions/ag)

### **MECH-06 FUNDAMENTALS OF OXY-FUEL WELDING AND SHIELDED METAL ARC WELDING (Also: WELD-06)**

3 units: 2 hours lecture, 3 hours lab.

Advisories: ENGL-81, ENGL-84; MATH-80 or MATH-83.

This course emphasizes development of minimum skill standards in welding. The Shielded Metal Arc Welding (SMAW), Oxy-Fuel Welding (OFW) and Oxy-Fuel Cutting (OFC) processes are covered as prescribed in the (AWS) American Welding Training Qualification (QC 10) entry-level standards. (2/06)

### **MECH-07 FUNDAMENTALS OF T.I.G. AND M.I.G. WELDING (Also: WELD-07)**

3 units: 2 hours lecture, 3 hours lab.

Advisories: ENGL-81, ENGL-84; MATH-80 or MATH-83.

This course emphasizes the development of minimum skill standards in welding. The Gas Metal Arc Welding (GMAW)/(MIG), Gas Tungsten Arc W (GTAW)/(TIG) and Plasma Arc Cutting (PAC) processes are studied as prescribed in the American Welding Society (AWS) Training Qualification (QC 10) entry-level standards. (2/06)

### **MECH-10 AGRICULTURAL SKILLS (Also: INDT-10) (CAN AG 4)**

3 units: 2 hours lecture, 3 hours lab.

Advisories: ENGL-81, ENGL-84; MATH-80 or MATH-83.

This course provides an introduction to basic technical skills required throughout the industrial areas. The course includes identification and use of tools and materials, tool sharpening and care, hot and cold metal work, pipefitting, electrical wiring fundamentals, basic woodwork, concrete materials and mixes, and sketching and estimating. (3/06)

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**MECH-12 AGRICULTURE EQUIPMENT**

3 units: 2 hours lecture, 3 hours lab.

Advisories: ENGL-A; MATH-83.

This course is a study of the use, maintenance, adjustment, calibration, and repair of the equipment commonly used in California agriculture, with emphasis on primary and secondary tillage, planting, chemical application, and harvesting equipment. The selection and operation of both machinery and tractors will be practiced. Safety will be stressed throughout. (10/04)

**MECH-13 AGRICULTURE EQUIPMENT**

3 units: 2 hours lecture, 3 hours lab.

Advisories: ENGL-A; MATH-83.

This course is a study of the use, maintenance, adjustment, calibration, and repair of the equipment commonly used in California agriculture during the spring tillage season, with emphasis on primary and secondary tillage, planting, chemical application, and harvesting equipment. The selection and operation of both machinery and tractors will be practiced. Safety will be stressed throughout. (3/06)

**MECH-15 SMALL GAS ENGINES (Also: INDT-15)**

3 units: 2 hours lecture, 3 hours lab.

Advisories: ENGL-A; MATH-83.

This course is a complete introduction to the operation, construction, maintenance, repair, and adjustment of two-cycle and four-cycle engines. It is designed for persons without prior experience in small engines. Theory and practical work including safety and the care and use of specialized tools used in small engine repair and maintenance will be covered. Examples of types of engines to be used will include lawn mower, power saw, pump, conveyor, self-propelled small carts, and any other small engines. (10/04)

**MECH-19A WELDING DESIGN AND CONSTRUCTION**

(Also: WELD-40A)

3 units: 2 hours lecture, 3 hours lab.

Prerequisite: WELD-07 or MECH-07. Advisories: ENGL-81, ENGL-84; MATH-80 or MATH-83.

This course covers basic metal fabrication skills as well as the design and construction of special industrial and agricultural equipment. (2/06)

**MECH-19B WELDING DESIGN AND CONSTRUCTION**

(Also: WELD-40B)

3 units: 2 hours lecture, 3 hours lab.

Prerequisite: WELD-40A/MECH-19A. Advisories: ENGL-81, ENGL-84; MATH-80 or MATH-83.

This course is a continuation of WELD-40A/MECH-19A. It covers basic and advanced metal fabrication skills as well as the design and construction of special agricultural and industrial equipment. (2/06)

**MECH-21 HYDRAULICS**

3 units: 2 hours lecture, 3 hours lab.

Advisories: ENGL-A; MATH-83.

This is an introduction to the principles of hydraulics applied to farm and light industrial equipment. The course includes a study of the technical language of fluid power, including graphical symbols, industrial standards, components, and maintenance of hydraulic units. (10/04)

**MECH-22A DIESEL ENGINES**

4 units: 2 hours lecture, 6 hours lab.

Advisories: ENGL-A; MATH-83.

This course explores the operation and repair of modern diesel engines. Principles and theories are studied by running, testing, diagnosing, disassembling and reassembling components, systems, and engines. (10/04)

**MECH-22B DIESEL ENGINES**

4 units: 2 hours lecture, 6 hours lab.

Prerequisite: MECH-22A.

This course includes principles of design and construction of heavy duty engines used throughout the power equipment and trucking industry. Emphasis is placed on engine chamber design and injection systems. Principles and theories are studied by running, testing, diagnosing,

disassembling, and reassembling components, systems, and engines. Safety is emphasized throughout. (11/06)

**MECH-23 DIESEL FUEL SYSTEM DIAGNOSTICS**

2 units: 1 hour lecture, 3 hours lab.

Advisories: ENGL-A; MATH-83.

This course includes the study of common types of diesel fuel injection systems. Design and theory of operation of distributor type, multi-plunger inline type, and common rail diesel fuel injection systems will be covered. Testing and diagnostic procedures for various fuel systems is an important part of the course. Service and adjustments of injectors, nozzles, and governors will also be covered. (10/04)

**MECH-24 POWER TRAINS**

4 units: 2 hours lecture, 6 hours lab.

Advisories: ENGL-A; MATH-83.

This course is a study of the function and repair of a power train from the clutch through the final drive. Topics will include the theory of operation, maintenance, diagnosis, and repair of clutches and torque converters, mechanical and hydraulic transmissions, differential, and final drives. Safety will be stressed throughout. (3/06)

**MECH-25 AGRICULTURE ELECTRIFICATION**

3 units: 2 hours lecture, 3 hours lab.

Advisories: ENGL-81, ENGL-84; MATH-83.

This course covers basic wiring single phase 120-140 volt together with three-phase motor and motor-control wiring. Identification, troubleshooting, maintenance, and testing of electrical systems will be covered along with motors and motor controls. Also included in the course will be the operation, construction, and mechanical design features of single-phase, polyphase induction, synchronous and D.C. motors and the various controls for starting, braking, stopping, reversing, protection, and speed control. Maintenance and safety will be stressed throughout the course. (3/00)

**MECH-26 POWER EQUIPMENT ELECTRICAL SYSTEMS**

3 units: 2 hours lecture, 3 hours lab.

Advisories: ENGL-A; MATH-83.

This course is a study of the fundamentals of electricity with applications to current power equipment electrical systems. Theory and service procedures will include the following systems: starting, charging, lighting, and accessories. (10/04)

**MECH-30 EQUIPMENT MECHANICS SKILLS**

2 units: 1 hour lecture, 3 hours lab.

Advisories: ENGL-A; MATH-83.

This course is an introduction to skills and safety required within the Diesel Mechanics and Mechanized Agriculture areas. The course will include identification and use of hand tools and power equipment used within the equipment mechanic area. Emphasis will be placed on precision measuring and use of the following equipment: hydraulic press, pullers, cleaners, hoists, jacks, securing, dynamometers, valve grinders, boring machines, sharpening tools, reamers, hones, glass bead machine, boil out tank, forklifts, and other specialty tools. An in-depth study will also occur on fasteners and plumbing used within the equipment mechanic area. (10/04)

**MECH-31 EQUIPMENT SAFETY**

1 unit: 1 hour lecture.

Advisories: ENGL-81, ENGL-84.

This course is a study of safety on and about farm equipment and machines. The safe operation and daily maintenance of machines commonly used in the daily operation of farms will be covered along with hitching, driving, and operational skills of selected machines. Safety rules and laws that apply to agriculture equipment will be stressed. (11/06)

**MECH-32 APPLIED ELECTRICAL AND HYDRAULIC SERVICE**

3 units: 2 hours lecture, 3 hours lab.

Advisories: ENGL-A; MATH-83; MECH-21, MECH-26.

This course is designed to give the student knowledge and competencies in modern cab and chassis electrical, electronic, electron hydraulic, and

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hydraulic systems. Testing, diagnosis, repair, and replacement of computer-controlled systems, monitors, sensors, lighting systems, wiring harness, electro-hydraulic systems, and hydraulic systems will be emphasized throughout the course. (3/06)

### **MECH-33 POWER EQUIPMENT AIR CONDITIONING**

2 units: 1 hours lecture, 3 hours lab.

Advisories: ENGL-A; MATH-83.

This is a study of power equipment air conditioning fundamentals designed to give the student knowledge and competencies in modern power equipment HVAC systems. Current EPA regulations that govern retrofit as well as the use of refrigerant installation, diagnostic, and recycling equipment are also covered. Environmental impacts by various protection procedures are emphasized. (3/06)

### **MECH-34 SERVICE FUNDAMENTALS**

3 units: 3 hours lecture.

Advisories: ENGL-A; MATH-83.

This course introduces service department policies and procedures, including computer and microfiche applications common to the industry. Also emphasized in the course are parts orders, warranties, time management, and use of technical reference materials. (11/06)

### **MECH-35 COMPACT POWER EQUIPMENT**

3 units: 2 hours lecture, 3 hours lab.

Advisories: ENGL-A; MATH-83; MECH-15.

This is a study in basic principles of modern small equipment and engines and explores design, operation, and proper maintenance of equipment and current compact engines approved by the California Air Resources Board. Topics include application of compact engine systems to various machines, power transmission systems, attachments, related engine systems to various machines, power transmission systems, attachments, related engine systems, equipment operation, problem solving, and component failures. (9/06)

### **MECH-40 EQUIPMENT REPAIR**

2 units: 1 hour lecture, 3 hours lab.

Advisories: ENGL-81, ENGL-84; MATH-83.

This class is an introduction to skills of maintenance and repair of equipment. Renovation of equipment including tractor, machinery, and truck painting, retooling, and structural repairs will be covered. Replacement of worn cutting tools, hardfacing, sandblasting, metal preparation, and painting will be performed on a variety of equipment. Safety will be stressed throughout. (11/06)

### **MECH-45 ADVANCED ARC WELDING PROCEDURES**

(Also: WELD-45)

3 units: 2 hours lecture, 3 hours lab.

Advisories: ENGL-B; MATH-80 or MATH-83; WELD-06/MECH-06 and WELD-07/MECH-07.

This course is designed to emphasize advanced skills and techniques of Shielded Metal Arc Welding, Gas Metal Arc Welding, Gas Tungsten Arc Welding, Air Carbon Arc Cutting, and Oxyacetylene Flame Cutting as related to pipe and structural members. Included will be welding assembly print interpretation, weld symbol interpretation, and weld joint preparation. Students will be prepared to take an AWS Welder Certification Test during this course. (2/06)

### **MECH-48 MECHANIZED AGRICULTURE: PROBLEMS**

(Formerly Mech-49)

2 units: 6 hours lab.

Prerequisites: MECH-22A, MECH-24, MECH-30.

This course is designed to provide supervised study and practices involving special problems in Mechanized Agriculture in addition to courses already completed by the student and includes special project work for additional knowledge and enrichment. Emphasis will be placed upon the needs and interest of the student. (11/06)

### **MECH-51 TRUCK BRAKE AND CHASSIS**

4 units: 2 hours lecture, 6 hours lab.

Advisories: ENGL-81, ENGL-84; MATH-83.

This course is a study of truck and bus mechanics. It includes a study of the running gear, tires, wheels, brakes, electrical systems wiring, services, maintenance, and safety inspection. Troubleshooting and servicing are major portions of this course. (11/06)

### **MECH-52 TRUCK/TRACTOR POWER FRAME**

4 units: 2 hours lecture, 6 hours lab.

Advisories: ENGL-81, ENGL-84; MATH-83.

This is a course of truck/tractor and bus power frame applications. It includes a study of, and practice in, removing, repairing, and replacing engines, engine components, clutches, transmissions, drive lines, and differentials. Also included in the course are electrical systems troubleshooting and service, in-frame overhaul of engines, cooling systems and other components or systems housed within the engine compartment. (11/06)

### **MECH-70AA-ZZ SPECIAL TOPICS IN MECHANIZED AGRICULTURE**

.5 - 4 units: 0 - 4 hours lecture, 0 - 12 hours lab.

Advisories: ENGL-81, ENGL-84; MATH-83.

This course is the study of basic principles, processes, and theories of the special topic being presented during the semester. (11/06)

### **MECH-85 BASIC AGRICULTURAL SKILLS (Also: INDT-85)**

3 units: 2 hours lecture, 3 hours lab.

Advisories: ENGL-81, ENGL-84; MATH-80 or MATH-83.

This course provides a basic introduction to technical skills required throughout the industrial areas. The course includes identification and use of tools and materials, tool sharpening and care, hot and cold metal work, pipefitting, electric wiring fundamentals, basic woodwork, concrete materials and mixes, and sketching and estimating. (3/06)

## **MERCHANDISING MANAGEMENT**

(Business Division)

### **MDSE-31 RETAIL MANAGEMENT (Also: MKTG-31)**

3 units: 3 hours lecture.

Advisories: ENGL-A, ENGL-41.

This course is a study of principles and practices of retail merchandising. It is designed to help develop skills in organizing, operating, and managing in the retail merchandising industry. It will also provide students with knowledge necessary to enter the field of merchandising and to provide a basis for advancement for those currently employed in the field. (4/04)

### **MDSE-32 SALESMANSHIP (Also: MKTG-32)**

3 units: 3 hours lecture.

Advisories: ENGL-A, ENGL-41.

This course is designed to provide the student with a theoretical and practical background in salesmanship. Included in this course are the study of the psychology of selling, selling principles and techniques, advertising and sales promotion, and development of the individual for entry into the field of salesmanship. (3/00)

### **MDSE-33 ADVERTISING (Also: MKTG-33)**

3 units: 3 hours lecture.

Advisories: ENGL-A, ENGL-41.

This is an introductory course in advertising principles and techniques. Areas of study will include advertising agencies; preparation of advertisements, including copyrighting, illustration, and layouts; media selection; budgeting for advertising; psychology and persuasion of advertisements; and the use of advertising as a tool in sales promotion. (11/03)

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## MUSIC

(Arts Division)

Note: Many four-year colleges have a maximum number of acceptable performance course units.

### **MUS-01 FUNDAMENTALS OF MUSIC**

(CSU breadth area C1)

3 units: 3 hours lecture.

Advisory: ENGL-84.

This course is a study of music fundamentals, including principles and procedures of rhythm and pitch notation, scales (major, minor, church, and other) and key signatures, intervals, chord structures and symbols. Harmonic analysis of chords and of simple four-part writing is included. The course is applicable to those who have learned to play and sing without training in fundamentals, and to beginners in music. (2/01)

### **MUS-02 MUSICAL STAGE PRODUCTION**

3 units: 2 hours lecture, 3 hours lab.

Advisories: ENGL-41, ENGL-84.

This course is an intensive study of musical stage productions, including musical theater, musical revues, opera, and operettas. It is open to students interested in singing and acting. A major musical stage production is prepared and performed by students at the end of the semester. Detailed study of mise-en-scene, makeup, stage vocal techniques, and scene staging are included. All students are expected to participate in every aspect of the musical stage production. This course may be repeated three times. (2/01)

### **MUS-04A MUSIC THEORY I**

3 units: 3 hours lecture.

Advisory: MUS-01.

This is the first of four sequential music theory courses. This sequence provides a comprehensive study of lower division music theory. Concurrent studies in melodic and rhythmic analysis and composition, in harmonic analysis, and an analysis of form are included. Principles of counterpoint (modal and tonal), harmony (diatonic and chromatic), and 20<sup>th</sup> century technique are included in the sequence. The student will also acquire the basis for an intelligent appraisal and study of individual styles of music (17<sup>th</sup> through 20<sup>th</sup> centuries), with attention directed toward 19<sup>th</sup> and 20<sup>th</sup> century styles. This course provides a thorough study of diatonic harmony found in music literature of the common practice period. This includes harmonic and voice leading principles, use of figured bass, triads and 7<sup>th</sup> chords, non-harmonic tones, and harmonic progression. (12/04)

### **MUS-04B MUSIC THEORY II**

3 units: 3 hours lecture.

Prerequisite: MUS-04A.

This is the second of four sequential music theory courses. This sequence provides a comprehensive study of lower division music theory. Concurrent studies in melodic and rhythmic analysis and composition, in harmonic analysis, and an analysis of form are included. Principles of Counterpoint (modal and tonal), Harmony (diatonic and chromatic), and 20<sup>th</sup> century technique are included in the sequence. This course provides a thorough study of chromatic harmony found in music literature of the common practice period from the 20<sup>th</sup> century. This includes secondary dominants, modulation to closely related keys, modulation to distant keys, modal exchange and mixture chords, the (Neapolitan, German, French, Italian) 6<sup>th</sup> chord, added-note chords and larger vertical structures (9<sup>th</sup>, 11<sup>th</sup>, 13<sup>th</sup>), dominant prolongation, analysis of simple and complex forms, and chromatic voice leading. (12/04)

### **MUS-04C MUSIC THEORY III**

3 units: 3 hours lecture.

Prerequisite: MUS-04B.

This is the third of four sequential music theory courses. This sequence provides a comprehensive study of lower division music theory. Concurrent studies in melodic and rhythmic analysis and composition, harmonic analysis and an analysis of form are included. Principles of counterpoint (modal and tonal), harmony (diatonic and chromatic), and 20<sup>th</sup> century technique are included in the sequence. This course provides a thorough study of ear-training and sight-singing as it relates to the music found in

the common practice period through the 20<sup>th</sup> century. Ear-training studies will include dictation (melodic, harmonic, and rhythmic), aural identification of scales, diatonic and chromatic intervals, triads, 7<sup>th</sup> chords, their functions, inversions, and qualities. An introduction to conducting patterns, fundamentals of acoustics, analysis of musical form as an aid to functional hearing, cadence identification, and error detection will be included. Sight-singing studies will include diatonic and chromatic melodies, and part-singing. The course will use theory taught in MUS-04A and MUS-04B to augment awareness of the ear training and sight-singing student. (12/04)

### **MUS-04D MUSIC THEORY IV**

3 units: 3 hours lecture.

Prerequisite: MUS-04C.

This is the fourth of four sequential music theory courses. This sequence provides a comprehensive study of lower division music theory. Concurrent studies in melodic and rhythmic analysis and composition, harmonic analysis, and an analysis of form are included. Principles of counterpoint (modal and tonal), harmony (diatonic and chromatic), and 20<sup>th</sup> century technique are included in the sequence. This course provides a thorough study of non-tonal harmony (e.g. quartal, pan-diatonic), introduction to set theory and basic twelve-tone technique, jazz harmony, and principles of improvisation. A survey of representative compositions of the 20<sup>th</sup> century with respect to style and structure is included. (12/04)

### **MUS-11 HISTORY OF CLASSICAL MUSIC (EARLY MUSIC THROUGH BAROQUE ERA)**

(CSU breadth area C1)

3 units: 3 hours lecture.

Advisory: ENGL-A.

This course is a study of the important composers and their works in classical music from early music (e.g., Gregorian chant) to Bach (600 to 1750). Students will develop an understanding and appreciation of various types of classical music from different eras as a medium of cultural development and as a background toward further musical study. (12/06)

### **MUS-12 HISTORY OF CLASSICAL MUSIC (CLASSICAL ERA TO THE PRESENT DAY)**

(CSU breadth area C1)

3 units: 3 hours lecture.

Advisory: ENGL-A.

This course is a study of the important composers and their works in classical music from the classical era to the present day. Emphasis is on classical, romantic, impressionistic, nationalistic, and contemporary periods in classical music history. Students will develop an understanding and appreciation of various types of classical music from different eras as a medium of cultural development and as a background toward further musical study. (12/06)

### **MUS-13 HISTORY AND APPRECIATION OF JAZZ**

(CSU breadth area C1)

3 units: 3 hours lecture.

Advisory: ENGL-A.

This course presents jazz literature of the important performance areas, 1890 to present, including analysis of representative works. International influences, including Africa and other non-western regions, will be discussed. The course is a listener's guide to appreciation of jazz and stresses principles of structure and expression, formal design, and stylistic tendencies of the chief historical eras. (11/02)

### **MUS-14 HISTORY OF AMERICAN POPULAR MUSIC**

(CSU breadth area C1)

3 units: 3 hours lecture.

Advisory: ENGL-A, ENGL-41.

This course presents an introduction to the history and literature of the popular music movement in the United States; it is a study of the relationships of popular music to the social history of America. Emphasis is on styles and personalities of folk, blues, jazz, musical theater, country & western, and rock "n" roll. This course is designed for the non-music major. (12/06)

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**MUS-24ABCD APPLIED MUSIC**

1 unit: 3 hours lab.

Prerequisite/Advisory for MUS-24A: None. Prerequisite for MUS-24BCD: A is prerequisite for B, etc.

This course provides for individual instruction in voice, piano, or traditional band or orchestra instruments. It requires one lesson per week with a private instructor approved by the Music Department staff. A minimum of 15 lessons must be verified. A jury examination by the Music Department staff is required at the conclusion of the course. (2/01)

**MUS-27A PIANO I**

2 units: 2 hours lecture.

Advisory: ENGL-A.

This course is a sequential program of instruction for the beginning piano student. It is designed to develop sight reading skill and keyboard technique incorporated into solo and ensemble music. (12/06)

**MUS-27B PIANO II**

2 units: 2 hours lecture.

Prerequisite: MUS-27A. Advisory: ENGL-A.

This course is a continuation of MUS-27A, and introduces two octave scales, arpeggios, triads, damper pedal technique, and musical textures and rhythms that are more complex. (12/06)

**MUS-27C PIANO III**

2 units: 2 hours lecture.

Prerequisite: MUS-27B. Advisory: ENGL-A.

This course is designed for the second year of piano instruction at a college level. Studies in diatonic and chromatic chord structures and their voicing (as found in piano literature), and the study of two-, three, and four-part textures are included. This course will explore various piano styles found in the common practice period through the 21<sup>st</sup> century and will introduce piano technique. (12/06)

**MUS-27D PIANO IV**

2 units: 2 hours lecture.

Prerequisite: MUS-27C. Advisory: ENGL-A.

This course is a continuation of MUS-27C. It offers a more advanced study of diatonic and chromatic chord structures and their voicing as found in piano literature. The course will continue to examine various piano styles found in the common practice period through the 21<sup>st</sup> century and introduce related piano techniques. (12/06)

**MUS-28 JAZZ IMPROVISATION**

2 units: 2 hours lecture.

This course is an introduction to theory and performance of basic jazz improvisation. The study of scales, chords, major and minor keys, modes, and various jazz styles is included. (10/06)

**MUS-36A BEGINNING GUITAR**

2 units: 2 hours lecture.

Advisory: ENGL-A.

This course provides for group instruction on the guitar. The course presents opportunity to learn basic techniques of guitar performance. Instruction will be predominantly in the area of folk and classical techniques. (2/01)

**MUS-36B INTERMEDIATE GUITAR**

2 units: 2 hours lecture.

Prerequisite: MUS-36A. Advisory: ENGL-A.

This course is a continuation of skills and techniques learned in MUS-36A. Additional emphasis will be placed upon classical techniques. (2/01)

**MUS-36C ADVANCED GUITAR**

2 units: 2 hours lecture.

Prerequisite: MUS-36B. Advisory: ENGL-A.

This course is a study of advanced guitar techniques, including classical methods, scale forms, picking variations, extended chord forms, and development of individual style. (2/01)

**MUS-39A-ZZ SPECIAL PROBLEMS IN MUSIC**

1-3 units: 1-3 hours lecture.

This course is designed to provide students with the opportunity to do advanced, specialized work, under the supervision of an instructor in areas not offered in regular classes. Students must develop an advanced problem in the area of music that they wish to explore. Before enrolling, students must complete a contract detailing proposed area of study. (4/07)

**MUS-40 ORCHESTRA**

2 units: 1 hour lecture, 3 hours lab.

Limitation on enrollment: Audition by instructor: Student must be able to sight read.

This course offers experience in performing orchestra literature, as is standard in lower division college performance ensemble classes. Public performance and exchange concerts are scheduled in addition to class rehearsals. This course may be repeated three times. (1/07)

**MUS-41A CONCERT BAND I**

2 units: 1 hour lecture, 3 hours lab.

Limitation on enrollment: Audition by instructor.

This course provides experience in performing concert and symphonic band literature. Public performance and exchange concerts are scheduled in addition to class rehearsals. (2/01)

**MUS-41B CONCERT BAND II**

2 units: 1 hour lecture, 3 hours lab.

Limitation on enrollment: Audition by instructor. Prerequisite: MUS-41A.

This course provides experience in performing concert and symphonic band literature. Public performance and exchange concerts are scheduled in addition to class rehearsals. (2/01)

**MUS-41C CONCERT BAND III**

2 units: 1 hour lecture, 3 hours lab.

Limitation on enrollment: Audition by instructor. Prerequisite: MUS-41B.

This course provides experience in performing concert and symphonic band literature. Public performance and exchange concerts are scheduled in addition to class rehearsals. (2/01)

**MUS-41D CONCERT BAND IV**

2 units: 1 hour lecture, 3 hours lab.

Limitation on enrollment: Audition by instructor. Prerequisite: MUS-41C.

This course provides experience in performing concert and symphonic band literature. Public performance and exchange concerts are scheduled in addition to class rehearsals. (2/01)

**MUS-42A JAZZ ENSEMBLE I**

2 units: 1 hour lecture, 3 hours lab.

Limitation on enrollment: Audition by instructor; student must be able to sight read and have some ensemble experience.

This course is a study of jazz music in the big band tradition. The course emphasizes individual, sectional, and ensemble instrumental performance. Tone, intonation, balance, precision, breath control, articulation, style, and improvisation are included. The jazz ensemble makes several public performances each year. (2/01)

**MUS-42B JAZZ ENSEMBLE II**

2 units: 1 hour lecture, 3 hours lab.

Limitation on enrollment: Audition by instructor; student must be able to sight read and have some ensemble experience. Prerequisite: MUS-42A.

This course is a study of jazz music in the big band tradition. The course emphasizes individual, sectional, and ensemble instrumental performance. Tone, intonation, balance, precision, breath control, articulation, style, and improvisation are included. The jazz ensemble makes several public performances each year. (2/01)

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**MUS-42C JAZZ ENSEMBLE III**

2 units: 1 hour lecture, 3 hours lab.

Limitation on enrollment: Audition by instructor; student must be able to sight read and have some ensemble experience. Prerequisite: MUS-42B.

This course is a study of jazz music in the big band tradition. The course emphasizes individual, sectional, and ensemble instrumental performance. Tone, intonation, balance, precision, breath control, articulation, style, and improvisation are included. The jazz ensemble makes several public performances each year. (2/01)

**MUS-42D JAZZ ENSEMBLE IV**

2 units: 1 hour lecture, 3 hours lab.

Limitation on enrollment: Audition by instructor; student must be able to sight read and have some ensemble experience. Prerequisite: MUS-42C.

This course is a study of jazz music in the big band tradition. The course emphasizes individual, sectional, and ensemble instrumental performance. Tone, intonation, balance, precision, breath control, articulation, style, and improvisation are included. The jazz ensemble makes several public performances each year. (2/01)

**MUS-43A ELEMENTARY VOICE**

3 units: 3 hours lecture.

Limitation on enrollment: Must demonstrate the ability to match pitch; see instructor. Advisories: ENGL-A, ENGL-41.

This is a course in elementary voice training. It emphasizes posture, diaphragmatic-intercostals breathing, breath support, breath control, tonal placement, articulation, stage presence, and overcoming performance anxiety. Critical evaluation, demonstration, and written reviews will be required. A basic understanding of music fundamentals, although not required, would be highly desirable. (12/06)

**MUS-43B ADVANCED VOICE**

3 units: 3 hours lecture.

Prerequisite: MUS-43A. Advisories: ENGL-41, ENGL-84.

This is a course for those singers who desire more advanced vocal training. In-depth study, discussion, and personal application of vocal technique such as diaphragmatic-intercostal breathing, breath support and control, correct tonal placement and articulation is a regular part of class activities. Correct pronunciation of English, Latin, Italian and German will be studied and performed with selections from classical vocal repertoire. (2/01)

**MUS-44 CHORUS (Formerly MUS-44ABCD)**

2 units: 1 hour lecture, 3 hours lab.

Limitation on enrollment: Audition by instructor.

This course is a study of standard choral literature. It emphasizes part-singing, intonation, breath control, vocal development, style, eras, musical devices, etc. The chorus makes several public appearances each year. This course may be repeated three times. (1/05)

**MUS-45 CHAMBER SINGERS (Formerly MUS-45ABCD)**

2 units: 1 hour lecture, 3 hours lab.

Limitation on enrollment: Audition by instructor.

This course specializes in the study and performance of choral literature chosen from all major eras and genres of choral writing. Particular focus will be made on literature written or arranged for small vocal ensembles. Emphasis includes part-singing, intonation, breath control, vocal development, blend, tone coloring, and choral balance. The Chamber Singers perform several times throughout the year. This course may be repeated three times. (1/05)

**MUS-46 CHORAL AND INSTRUMENTAL CONDUCTING**

3 units: 3 hours lecture.

Advisories: ENGL-41, ENGL-84; MUS-01, MUS-27A.

This course covers the essential personal traits and baton techniques of conducting. Score reading, mastery of elementary patterns and techniques, repertoire for performing vocal and instrumental ensembles, and observance of successful conductors are included. (2/01)

**MUS-47 SONG INTERPRETATION: MUSIC THEATER**

3 units: 3 hour lecture.

Prerequisite: MUS-43A. Advisories: ENGL-41, ENGL-84.

This is a course for those singers who desire to develop their abilities in song interpretation. Particular emphasis is placed on music theater literature and presentation. Character development, motivation, blocking, facial and body gestures, and emotional discovery are all incorporated into the song interpretation. (2/01)

**MUS-61ABCD (1-4) FINE AND PERFORMING ARTS – SPECIAL TOPICS**

.5 - 2 units: 0.5 - 1 hour lecture, 1.5 - 6 hours lab.

(Note: The number following the letter designation indicates unit value, "1" being for 0.5 unit, "2" for 1 unit, etc., in 0.5 unit increments.)

The course covers a variety of topics of current interest to students of music. Different topics will be emphasized each time the course is offered. Sections of this course may vary in unit value depending on subject matter, meeting time, and format. Each letter (i.e., A, B, C or D) may be taken only once.

**NATURAL SCIENCE**

(Science, Math and Engineering Division)

**NTSC-40 A-F NATURAL SCIENCE**

1 unit each; 3 to 8 day excursions.

This is a field study on the natural history of a specific region. Educational institutions and areas of scientific interest will be visited. Lecture and examinations will be given en route. The academic areas of Anthropology, Botany, Biology, Geology, Astronomy, Physics, Chemistry, and Zoology will be investigated where applicable.

**NTSC-40G GRAND CANYON**

1 unit: 9 hours lecture, 50 hours total lab.

In this course, students traverse the Grand Canyon on foot from the North to South Rims and this involves a backpack trip of 24.5 miles in four days. There is usually space for 6-8 non-backpackers who stay with the bus to study the rims, the canyon at Page, Arizona, and the Painted Desert. The entire trip requires seven nights and eight days. Except for two nights on the ground for backpackers, lodging is in motels and hotels. There are two evening class meetings preceding and one following the trip.

**NTSC-45L ABC FIELD STUDY**

1-3 units: 1-3 hours lecture and/or 3-12 hours lab by arrangement.

(Note: The second letter designation indicates unit value, "A" being for 1 unit, "B" for 2 units, and "C" for 3 units.)

This course is offered as special opportunities arise for field study in the natural sciences, such as Biology, Ecology, Physical Anthropology, Geology, and Cultural Anthropology. Work will take place in the field, the laboratory, and/or the museum providing practical experiences in observation, collection, preservation, identification, preparation for exhibition or other work required of active scientists. This course is not repeatable.

**NURSING**

(Allied Health Division)

See Registered Nursing or Vocational Nursing

**NUTRITION**

(Business Division)

**NUTR-10 NUTRITION (Formerly FCSC-10)**

(CAN FCS 2) (CSU breadth area E)

3 units: 3 hours lecture.

Advisory: ENGL-A.

This course provides information on scientific concepts of nutrition relating to functioning of nutrients in basic life processes. It includes special needs during stages of the life-cycle as well as food sources of nutrients, assessment of diets, special diets for health problems, and current nutritional issues. (12/04)

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**NUTR-20 PRINCIPLES OF FOODS**

3 units: 2 hours lecture, 3 hours lab.

Advisories: ENGL-A, ENGL-41; MATH-91; NUTR-44.

This course will study the scientific principles of food preparation techniques. Emphasis is on nutrient values of foods, food preservation, food and equipment safety and sanitation, product evaluation, and quality control. (11/04)

**NUTR-26ABC INDEPENDENT STUDY IN FOODS AND NUTRITION**

1-3 units: 3-9 hours lab.

Prerequisite: NUTR-20.

This course is a supervised study in the area of foods and nutrition. A special program in the student's area of interest will be planned, arranged, and carried out with approval and supervision of the instructor. Each student will submit a report or project upon completion. (3/05)

**NUTR-36 NUTRITION AND FOOD SERVICE SUPERVISED FIELD EXPERIENCE**

3.5 units: 1 hour lecture, 7.5 hours lab.

Limitation on enrollment: Students must provide evidence of negative TB test prior to participation in lab activities. Prerequisite: NUTR-44. One-way corequisites: NUTR-10, NUTR-20. Advisories: ENGL-A; MATH-91

This course is designed to help students learn problem solving and communication skills. Clinical experience and learning activities specific to food service management will be emphasized. The student is engaged in on-the-job learning activities under the supervision of a worksite supervisor and a college nutrition instructor. Learning objectives are established based on dietary service supervisor functions. Students rotate through experiences in skilled nursing facilities, schools and hospitals. Students will be required to follow dress standards required by the facility in which they work. This course is recommended at or near the completion of the Dietary Service Supervisory Program. The student who has not successfully completed the prerequisite of NUTR-44 but has passed with a "C" or higher the ServSafe Food Safety Certification should consider submitting a prerequisite challenge. Students may be required to show proof of a current negative TB clearance or other immunizations required by the clinical facility to which they are assigned. (3/06)

**NUTR-39 NUTRITION FOR YOUNG CHILDREN (Also: CLDV-39)**

3 units: 3 hours lecture.

Advisories: ENGL-A, ENGL-41, ENGL-41L.

This course offers a study of nutrients and their function with an emphasis on the needs of children -- birth through adolescence. Cultural and socioeconomic influences on food practices, and methods of teaching good nutrition to children will be covered. Emphasis will be on improving the nutritional status of children. This course is designed for Early Childhood Education majors to fulfill state requirements for a Children's Learning Center permit. The course is also for parents who wish to become more knowledgeable about nutrition for their children and for food service workers in child care programs. (11/06)

**NUTR-40 MENU PLANNING (Formerly FCSC-40)**

3 units: 3 hours lecture.

Advisories: ENGL-81, ENGL-84; NUTR-10 or NUTR-39.

This course covers principles of menu planning for a variety of food services including child, school, and elder care, and restaurants. Emphasis is on development, types and uses, organization and significance of the menu, and cost and pricing of menu items. (12/04)

**NUTR-41 INFANT AND TODDLER FEEDING**

1 unit: 1 hour lecture.

Advisories: ENGL-A, ENGL-41.

This course focuses on feeding typical and atypical developing infants beginning at birth with breast milk, formulas, and first foods, and progresses to textures and foods appropriate for the toddler. The course focuses on how to feed a baby, prevent baby bottle tooth decay, and choking prevention. Students will learn about appropriate snacks, food safety aspects, and

food preparation for children with varying needs. Finally, students will have the opportunity to design a menu meeting the Child Care Food Program Guidelines. This course is recommended for ECE and Early Intervention students. (11/05)

**NUTR-42 QUANTITY FOOD PREPARATION (Formerly FCSC-42)**

3 units: 2.5 hours lecture, 1.5 hours lab.

Advisories: ENGL-A; MATH-91; NUTR-20 or some experience in food preparation, NUTR-44.

This quantity food service course is designed for child care, school food service, catering, and elderly care programs. This class includes food production, use of small and large equipment, sanitation and safety, record keeping, work improvement, the supervisor's role, communication, and nutrition for quantity food preparation. (12/04)

**NUTR-43 CHILDREN AND WEIGHT CONCERNS**

1 unit: 1 hour lecture.

Advisories: ENGL-A, ENGL-41.

This course is designed to provide an overview of the problem of childhood obesity. Students will explore reasons for the recent epidemic in our country and review the trends. Factors including pressure by the media and the connection to eating disorders will be studied. Finally, students will look at the role of the family, school, and community in addressing childhood obesity. This course is recommended for ECE students. (11/04)

**NUTR-44 FOOD SAFETY AND SANITATION**

2 units: 2 hours lecture.

Advisories: ENGL-A, ENGL-41.

This course offers basic principles of personal and institutional sanitation and application of these principles to food preparation, sanitation, food allergies, HACCP, and sanitary facilities including accident prevention, regulations, and pest management. An emphasis is placed on the supervisor's role in maintaining high standards for these principles. This course meets the California Health and Safety Code and training for certification requirements for food handlers. (11/04)

**NUTR-45 INTRODUCTION TO MEDICAL NUTRITION THERAPY**

2 units: 2 hours lecture.

Prerequisite: NUTR-10; Advisories: ENGL-A.

This course is designed to introduce medical nutrition therapies as used in health care facilities. Topics include nutrition care planning for disease states as well as normal nutrition needs. Cultural considerations and the management of long term care residents will be emphasized. This course is recommended for the student planning a career in nursing and food service in health care institutions. (11/06)

**NUTR-70A-ZZ SPECIAL TOPICS IN FOODS AND NUTRITION**

(Formerly FCSC-70A-ZZ)

1-3 units: 1-3 hours lecture, 0-9 hours lab. Prerequisite/advisory: None.

This is a course designed to address special topics in Foods and Nutrition to meet current needs of students. Specific classes will be offered to help them cope with the rapidly-changing environment and its effect on everyday living. (12/04)

**OFFICE TECHNOLOGY**  
(See Administrative Office Management)

**PARALEGAL STUDIES**

(Business Division)

**PLGL-50 INTRODUCTION TO PARALEGAL STUDIES**

3 units: 3 hours lecture.

Advisories: AOM-52A or AOM-52B; CPSC-24 or CPSC-30; ENGL-A, ENGL-41.

This course provides an overview of substantive and procedural law, legal theory, the legal system, legal research and writing, and paralegal employment. (11/06)

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**PLGL-51 LEGAL RESEARCH AND WRITING**

4 units: 4 hours lecture.

One-way corequisite: PLGL-50. Advisories: AOM-52A or AOM-52B; CPSC-24 or CPSC-30; ENGL-A, ENGL-41.

This course is designed to develop the student's library and computer research skills in finding and validating relevant legal authority. The student will develop legal analysis methods for identifying key facts and issues in factual situations, and learn to apply relevant law to those facts and issues. Writing skills will be developed utilizing correct grammar, format, terminology, and citations for letters and legal memoranda and briefs. Field trip(s) to local law libraries may be required. (11/05)

**PLGL-52 CIVIL LITIGATION (Formerly PLGL-52A)**

4 units: 4 hours lecture.

One-way corequisite: PLGL-50. Advisories: AOM-52A or AOM-52B; CPSC-24 or CPSC-30; ENGL-A, ENGL-41.

This course is designed to prepare the student for his/her role as a paralegal in the litigation process. The course covers the court system and jurisdictional issues; types and forms of pleadings; and initiation and defense of a civil litigation action, including initial client contact, calendaring, discovery, law and motion, summary proceedings, alternate dispute resolution, and trial preparation and proceedings. (12/06)

**PLGL-53 LAW OFFICE PRACTICES**

3 units: 2 hours lecture, 3 hours lab.

Advisories: AOM-52A or AOM-52B; ENGL-A, ENGL-41, CPSC-24 or CPSC-30; PLGL-50.

This course is designed to train the student in the operation of a law office. Content of the course includes law office organization, timekeeping and time management, accounting systems, the application of computer software specifically designed for the law office, scheduling, calendaring, management of personnel, and retrieval systems for law. (11/06)

**PLGL-54 TORTS**

3 units: 3 hours lecture.

Prerequisite: PLGL-50. Advisories: ENGL-A, ENGL-41, ENGL-41L.

This course provides an overview of tort law doctrine. Areas of study include tort concepts and terminology; negligence; strict liability; intentional torts; family torts; property torts; business torts; workers' compensation; defenses; and immunities. (1/02)

**PLGL-57 ESTATE PLANNING AND PROBATE PROCEDURES**

3 units: 3 hours lecture.

One-way corequisite: PLGL-50. Advisories: ENGL-A, ENGL-41, ENGL-41L.

This course introduces the student to the basic legal concepts involving wills, trusts, and probate procedures. Areas of study include the fundamental principles of estates; trusts; wills; probate procedures; real and personal property; sales; taxes; and the administration of fiduciary accounting. (1/02)

**PLGL-59 EVIDENCE/TRIAL PREPARATION**

3 units: 3 hours lecture.

Prerequisite: PLGL-50. Advisories: ENGL-A, ENGL-41, ENGL-41L.

This course is designed to give the student an in-depth understanding of evidence, trial preparation, and presentation in a civil case. The student will have "hands-on" experience applying the knowledge and skills learned, such as discovery procedures, utilizing discovery at trial, motions, and how rules of evidence relate to discovery and trial. Trial objectives will also be covered in this course. (11/01)

**PLGL-60 FAMILY LAW**

3 units: 3 hours lecture.

One-way corequisite: PLGL-50. Advisories: ENGL-A, ENGL-41; PLGL-51A.

This course introduces the student to the area of family law. Areas of study include marriage; divorce; non-marital cohabitation; invalid marriages; separation; annulment; client interviewing; commencing the proceedings; orders pending trial; support; child custody and visitation; marital property; and adoption and parentage. (3/06)

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**PHILOSOPHY**

(Humanities Division)

**PHIL-01 INTRODUCTION TO PHILOSOPHY**

(CAN PHIL 2) (CSU breadth area C2)

3 units: 3 hours lecture.

Prerequisites: ENGL-A, ENGL-AL.. Advisories: ENGL-41, ENGL-41L.

This course presents an introduction to perennial problems in philosophy, such as personal identity, the existence of God, the essence of reality, the nature of justice, and the possibility of knowledge. These issues will be discussed in light of philosophical positions stemming from classical to modern Western and non-Western philosophical sources. (3/02)

**PHIL-01H HONORS INTRODUCTION TO PHILOSOPHY**

(CSU breadth area C2)

3 units: 3 hours lecture.

Advisories: ENGL-01A. Limitation on enrollment: Enrollment in the Honors program. See the college catalog for a description of enrollment requirements.

This course introduces perennial questions in philosophy, such as: Who am I? What is the nature of reality? How do we know what we know? What is the nature of religious belief? These questions will be discussed in light of philosophical readings taken from classical and modern Western sources, as well as from non-Western sources. There will be an emphasis on collaborative learning, research, and writing. Students enrolled in this class must be enrolled in the Honors Program. (4/06)

**PHIL-03 ANCIENT PHILOSOPHY**

(CAN PHIL 8) (CSU breadth area C2)

3 units: 3 hours lecture.

Prerequisites: ENGL-A, ENGL-AL. Advisories: ENGL-41, ENGL-41L.

This course presents an introduction to the history of philosophy from the Pre-Socratics to the Renaissance, with emphasis on the Pre-Socratics through Aristotle. (9/01)

**PHIL-04 MODERN PHILOSOPHY**

(CAN PHIL 10) (CSU breadth area C2)

3 units: 3 hours lecture.

Prerequisites: ENGL-A, ENGL-AL. Advisories: ENGL-41, ENGL-41L.

This course presents an introduction to the history of philosophy from the Renaissance to the present, with emphasis on Descartes through Kant. (9/01)

**PHIL-05 CONTEMPORARY MORAL AND SOCIAL ISSUES**

(CAN PHIL 4) (CSU breadth area C2)

3 units: 3 hours lecture.

Prerequisites: ENGL-A, ENGL-AL. Advisories: ENGL-41, ENGL-41L.

This course is concerned with the philosophical examination of moral and social issues, such as capital punishment, abortion, war, animal rights, and economic justice. These issues will be discussed in light of ethical theories and moral reasoning stemming from Western and non-Western philosophical sources. (3/02)

**PHIL-10 CRITICAL THINKING**

(CSU breadth area A3) [CILC area G]

3 units: 3 hours lecture.

Prerequisites: ENGL-A, ENGL-AL. Advisories: ENGL-41, ENGL-41L.

This is a practical course in sound and logical reasoning. The focus of this course is to develop the abilities to analyze, to criticize, and to reach reasoned conclusions. This includes the ability to recognize and avoid common fallacies in reasoning, and to construct cogent arguments and essays. (3/02)

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**PHIL-12 LOGIC**

(CAN PHIL 6) (CSU breadth area A3)

3 units: 3 hours lecture.

Prerequisites: ENGL-A, ENGL-AL. Advisories: ENGL-41, ENGL-41L.

This course presents a study of correct reasoning, concentrating on developing the skills for distinguishing logically correct from logically incorrect arguments. The emphasis is on informal fallacies and modern symbolic logic, although the classical syllogism and scientific method are also covered. (9/01)

**PHIL-13 CRITICAL REASONING AND WRITING (Also: ENGL-13)**

(CSU breadth area A3) [CILC area G]

3 units: 3 hours lecture.

Prerequisite: ENGL-01A.

ENGL-13/PHIL-13 meets the IGETC critical thinking/composition requirement. The course emphasizes the development of critical thinking skills through instruction in reading and writing arguments. Readings feature mostly non-fictional essays and books that reflect diverse cultural and gender perspectives on a variety of contemporary political and social issues, especially those involving race, ethnicity, and gender. (1/05)

**PHIL-13H HONORS CRITICAL REASONING AND WRITING**

(Also: ENGL-13H)

(CSU breadth area A3) [CILC area G]

3 units: 3 hours lecture.

Limitation on enrollment: Enrollment in the Honors Program.

Prerequisite: ENGL-01A.

This course emphasizes the development of critical thinking skills through instruction in reading and writing arguments. Readings feature mostly non-fictional essays and books that reflect diverse cultural and gender perspectives on a variety of contemporary political and social issues, especially those involving race, ethnicity, and gender. (5/06)

**PHIL-15 COMPARATIVE RELIGIONS**

(CSU breadth area C2)

3 units: 3 hours lecture.

Advisory: ENGL-01A.

This course surveys the historical background and fundamental philosophical concepts of the major religions of the world, including Hinduism, Buddhism, Shinto, Confucianism, Judaism, Christianity, Islam, and some typical basic religions. (4/06)

**PHIL-39H SPECIAL TOPICS IN PHILOSOPHY**

1 unit: 1 hour lecture.

Limitation on enrollment: Admission to the Honors Program.

This course is designed to allow students to do specialized reading and research in areas of philosophy not offered in regular classes or to do advanced reading and research on topics that were introduced in survey classes. Areas of study may include environmental ethics, Native American philosophy, aesthetics, or a particular philosopher or school of philosophy. (11/04)

## PHOTOGRAPHY

(Arts Division)

**PHOT-10A BASIC PHOTOGRAPHY**

(CAN ART 18)

3 units: 2 hours lecture, 3 hours lab.

Advisory: ENGL-A.

This is an elementary course covering camera and darkroom techniques of black and white photography. Topics include exposure control, film development, contact printing, enlarging, composition, lighting, filters, print finishing, and mounting. (11/04)

**PHOT-10B INTERMEDIATE PHOTOGRAPHY**

3 units: 2 hours lecture, 3 hours lab.

Prerequisites: PHOT-10A or PHOT-11A.

This is a course dealing with the practical application of the basic principles of photography, emphasizing technical and artistic control and

the perfection of processing, and composition. The course also provides a broad introduction to studio lighting. (11/04)

**PHOT-11A DIGITAL CAMERA BASICS**

3 units: 2 hours lecture, 3 hours lab.

Advisory: ENGL-A.

This course introduces students to digital cameras through lectures, hands-on experience, and computer use. Instruction includes digital camera functions, technical and creative control, computer processing of images, and digital output options. (11/04)

**PHOT-30 INTRODUCTION TO COLOR PHOTOGRAPHY**

3 units: 2 hours lecture, 3 hours lab.

Prerequisite: PHOT-10B.

This course covers the introduction to theory and practice of color photography. Students will learn color processing and printing as well as lighting and exposure for color. (11/04)

**PHOT-31 BASIC VIEW CAMERA**

2 units: 1 hour lecture, 3 hours lab.

Prerequisite: PHOT-10B.

Basic view camera is a class in the fundamentals of operating a 4x5 view camera in the studio and the field. Processing and printing of large format film is included as a regular part of class assignments. (11/04)

**PHOT-32 STUDIO PHOTOGRAPHY**

2 units: 1 hour lecture, 3 hours lab.

Prerequisite: PHOT-10B.

This course includes advanced black and white and some color assignments. Students will become acquainted with commercial equipment and processing. Assignments will include portraiture, lighting, and small and large products. Design and layout may be incorporated into assignments. (11/04)

**PHOT-34 PHOTO EXPRESSION**

2 units: 1 hour lecture, 3 hours lab.

Prerequisite: PHOT-10B.

Photo expression is a course which explores the possibilities of the use of visual language in relation to the thought process. Advanced techniques of camera use, film handling, and printing will be included, but emphasis will be placed on the personal expression of ideas. (11/04)

**PHOT-49 INDEPENDENT STUDY IN PHOTOGRAPHY**

1 unit: 3 hours lab.

Prerequisite: PHOT-10A or PHOT-11A.

This course covers a variety of topics and/or activities of current interest in the field of photography. This course may be repeated three times. (11/04)

## PHYSICAL EDUCATION

(Life Fitness and Health Division)

**GENERAL INFORMATION:** All physical education classes are co-ed unless otherwise stated in the course description and/or Schedule of Classes.

The dress for Merced College Physical Education activities classes is dependent upon the nature of activity; students will be advised of proper dress at time of orientation.

Staff members of the Life Fitness and Health Division will screen all students participating in physical activity classes who show a medical problem which may adversely affect their participation. Students so identified will be required to obtain a physician's clearance. When appropriate, screening may be achieved through the Disabled Student Services Office. Students who lead a sedentary lifestyle or who have a history of heart disease or other medical conditions should check with their physician before starting any exercise program.

Students are advised to use caution when participating in physical activity classes. Strains, pulls, and similar injuries may be caused by improper use of equipment, or failure to follow directions of instructors.

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## PHED-01 INTERCOLLEGIATE ATHLETICS

2 units: 10 hours lab.

Limitation on enrollment: This is a varsity team sport requiring coach's or academic athletic advisor's approval.

This is a course teaching theory, practice, and game performance of the designated competitive sport. This course may be repeated two times. (2/00)

1A	Baseball (Men)	Advisory: PHED-12A
1BF	Fall Basketball (Men/Women)	Advisory: PHED-12B
1BS	Spring Basketball (Men/Women)	Advisory: PHED-12B
1C	Cross Country (Men/Women)	Advisory: None.
1D	Football (Men)	Advisory: PHED-12C
1E	Golf (Coed)	Advisory: PHED-11D
1F	Soccer (Men/Women)	Advisory: PHED-12D
1G	Swimming (Men/Women)	Advisory: PHED-13H
1H	Tennis (Men/Women)	Advisory: PHED11C
1I	Track and Field (Men/Women)	Advisory: None.
1J	Water Polo (Men/Women)	Advisory: PHED-13F
1K	Softball (Women)	Advisory: PHED-12H
1L	Volleyball (Women)	Advisory: PHED-12E

## PHED-02 PEP SQUAD

1-2 units: 3-6 hours lab.

Limitation on enrollment: Enrollment limited to try-outs and instructor's or academic athletic advisor's approval.

Advisories: Good general health; absence of medical conditions that would prevent planned physical activity.

This is a course designed to teach the cheerleaders/pep squad members the drill routines and activities for athletic events. This course may be repeated three times. (12/06)

## PHED-03 VARSITY CONDITIONING

1-2 units: 3-6 hours lab.

Advisories: Good general health; absence of medical conditions that would prevent planned physical activity.

This is an open laboratory experience designed for those people who desire an individualized strength and conditioning program using a combination of exercise machines, free weights, and aerobic training methods. This class is geared to athletes and individuals who are interested in preparing for varsity competition. Multiple workouts are required per week. This course may be repeated three times. (1/06)

### LIFE FITNESS ACTIVITY

#### PHED-10A AEROBICS

0.5 - 1 unit: 1.5 - 3 hours lab.

Advisories: Good general health; absence of medical conditions that would prevent planned physical activity.

This is a choreographed exercise program set to music which improves cardiovascular fitness while conditioning and toning the whole body. Strenuous physical activity is required. Good general health is advised. This course may be repeated three times. (1/06)

#### PHED-10B AEROBIC CIRCUIT TRAINING

1 unit: 3 hours lab.

Advisory: Good general health; absence of medical conditions that would prevent physical activity.

This class uses a variety of aerobic activities to improve cardiorespiratory endurance. Circuit machines used include steppers, treadmills, cycling, rowing, recumbent bikes, and cross trainers. Emphasis will be placed on monitoring psychological response to exercise and teaching proper stretching, warm-up, training at target rate, and warm down methods. A pre-test and post test will be administered to evaluate fitness level and monitor improvement. The course may be repeated three times. (4/04)

#### PHED-10C CIRCUIT WEIGHT TRAINING

0.5 - 1 unit: 1.5 - 3 hours lab.

Advisory: Good general health; absence of medical conditions that would prevent physical activity.

This is a fitness class requiring three workouts per week. The equipment

(single station exercise machines) and routine utilized in the fitness lab are designed to exercise all major muscle groups for a well-rounded fitness program with the non-athletic in mind. In addition to regular students, circuit training has proven especially beneficial for women, older men, and others not interested in weight training but who desire increased muscle tone and cardiovascular fitness. This course may be repeated three times. (1/06)

#### PHED-10D WEIGHT TRAINING

0.5 - 1 unit: 1.5 - 3 hours lab.

Advisory: Good general health; absence of medical conditions that would prevent planned physical activity.

This is an open-laboratory experience for those people who desire an individualized strength program using a combination of exercise machines and free weights. This class is designed specifically to improve strength. The class is suited for athletes and men and women of all age groups who are interested in muscle toning and muscle building. This course may be repeated three times. (1/06)

#### PHED-10E FITNESS THROUGH ACTIVITY

0.5 - 1 unit: 1.5 - 3 hours lab.

Advisory: Good general health; absence of medical conditions that would prevent planned physical activity.

Students will attain optimal levels of fitness by applying techniques used in a variety of team and/or individual activities. Drills and activities closely emulate actual conditions of competition performance. This course may be repeated three times. (1/06)

#### PHED-10F FLEXIBILITY AND CARDIOVASCULAR FITNESS

2 units: 6 hours lab.

Prerequisite/Advisory: None.

Practical applications of all aspects of flexibility and cardiovascular conditioning are presented and performed. A system of class presentation is used to insure a gradual, safe, and total physiological adaptation of the student to exercise. A gradual, progressive, safe, and eventually total body fitness experience is pursued. Geriatric fitness adaptations are emphasized. The course may be repeated three times. (3/00)

#### PHED-10G FITNESS EVALUATION AND EXERCISE PRESCRIPTION

2 units: 1 hour lecture, 3 hours lab.

Prerequisite/Advisory: None.

Students in this physiologically-based program will receive individualized exercise programs based on results obtained from tests administered in the fitness laboratory. Tests given include V02, strength, flexibility, body fat, cholesterol level, and nutritional analysis. In addition to fitness evaluation and exercise prescription, the course will include lectures, consultations, and demonstrations on a variety of physiologically-based exercise and nutrition material. Lab fees will be charged for some optional tests.

#### PHED-10H WALKING FOR CARDIOVASCULAR CONDITIONING AND FLEXIBILITY

1 unit: 3 hours lab.

Prerequisite/Advisory: None.

This course is designed to improve cardiovascular efficiency, flexibility and strength through use of walking and related activities. Students will use the latest research techniques to improve knowledge of walking activities. This course may be repeated three times. (12/99)

### INDIVIDUAL OR DUAL ACTIVITY

#### PHED-11A BADMINTON

1 unit: 0.5 hour lecture, 1.5 hours lab.

Prerequisite/Advisory: None.

This is a course teaching basic skills of badminton. The following shots, backhand and forehand smash, overhead clear, drop shot and serve, will be covered along with rules and strategy of the game. Class play will consist of singles, doubles, mixed doubles, and tournaments. This course may be repeated three times. (9/99)

#### PHED-11B RACQUETBALL

1 unit: 0.5 hour lecture, 1.5 hours lab.

Prerequisite/Advisory: None.

This is an introductory course in racquetball that teaches the basic

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strokes, scoring, and strategy. Class play will consist of singles, doubles and tournaments. This course may be repeated three times. (9/99)

#### **PHED-11C TENNIS**

1 unit: 0.5 hour lecture, 1.5 hours lab.

Prerequisite/Advisory: None.

This course will teach beginning, intermediate and advanced skills of tennis including gripping the racket, body positioning, footwork, swing, and follow through. Also introduced will be the forehand drive, backhand drive, and the serve. The volley and half volley will be added, as well as the drop shot and underhand serve. Drills and actual game participation are emphasized. History, rules, scoring, and tennis etiquette are also taught. This course is repeatable three times. (9/99)

#### **PHED-11D GOLF**

1 unit: 0.5 hour lecture, 1.5 hours lab.

Prerequisite/Advisory: None.

Through lecture, demonstration, video tapes, and drills, the basic, intermediate, and advanced principles of the golf swing will be studied and analyzed, as well as the principles of golf. The design of the golf course will be studied in addition to the types of equipment. Golf course and player etiquette will be stressed in addition to the rules of golf. This class also includes student participation, practicing golf shots, playing golf holes, and learning about tournament competition. This course is repeatable three times. (9/99)

#### **PHED-11E BOWLING**

1 unit: 0.5 hour lecture, 1.5 hours lab.

Prerequisite/Advisory: None.

This is an introductory course in bowling that teaches delivery, scoring, and rules. The class is conducted as an instructional league. This course may be repeated three times. (9/99)

### **TEAM ACTIVITY**

#### **PHED-12A BASEBALL**

1 unit: 3 hours lab.

Prerequisite/Advisory: None.

This is a course designed to teach fundamentals of baseball. Batting, throwing, catching, base running, team play, rules, and strategy will be covered in the class. Team competition is also included. This course may be repeated three times. (9/99)

#### **PHED-12B BASKETBALL**

1 unit: 3 hours lab.

Prerequisite/Advisory: None.

This course offers the student opportunity to develop and improve fundamental skills involved in basketball, such as ball handling, shooting, defensive and offensive tactics, and physical endurance. Rules, strategy and sportsmanship are also stressed. This course may be repeated three times. (9/99)

#### **PHED-12C FOOTBALL**

1 unit: 3 hours lab.

Prerequisite/Advisory: None.

This course offers the student opportunity to develop and improve the fundamental skills involved in football, such as passing, receiving, kicking, blocking (with the aid of blocking dummies), team play, and strategy. Rules and class competition will also be included. This course may be repeated three times. (9/99)

#### **PHED-12D SOCCER**

1 unit: 3 hours lab.

Prerequisite/Advisory: None.

This is a course designed to present basic fundamentals, tactics, and techniques of soccer with emphasis on learning through playing. Rules, strategy, and class competition will be included. This course may be repeated three times. (9/99)

#### **PHED-12E VOLLEYBALL**

1 unit: 3 hours lab.

Prerequisite/Advisory: None.

The course begins with basic skills and court positions necessary to enjoy the sport. Intermediate and advanced skills and court positions are introduced as the level of ability of the class will allow, with classes progressing to playing multiple offenses. Each class session begins with warm-up exercises and "dry-land" drills. The skill period ends with class participation in a volleyball match. This course may be repeated three times. (9/99)

#### **PHED-12F RECREATION VOLLEYBALL**

1 unit: 3 hours lab.

Prerequisite/Advisory: None.

Recreation volleyball is designed to develop, through participation in team play, the basic skills and strategy of the sport. History, rules, officiating, and etiquette will be included. This course may be repeated three times. (9/99)

#### **PHED-12G INTRAMURAL ACTIVITIES**

0.5 unit: 1.5 hours lab.

Prerequisite/Advisory: None.

This course is designed to allow all students opportunity to engage in a variety of competitive sports and activities in an intramural environment. This course may be repeated three times. (9/99)

#### **PHED-12H SOFTBALL**

1 unit: 3 hours lab.

Prerequisite/Advisory: None.

This is a course designed to teach fundamentals of softball. Batting, throwing, catching, base running, team play, rules, and strategy will be covered. Team competition is also included. This course may be repeated three times. (9/99)

### **AQUATICS**

#### **PHED-13A BEGINNING SWIMMING**

1 unit: 0.5 hour lecture, 1.5 hours lab.

Prerequisite/Advisory: None.

This is an introductory course for non-swimmers or those with limited skills in swimming. Basic swimming strokes taught will be the crawl, back crawl, elementary backstroke, breaststroke, basic front dive, underwater swimming, and other related aquatic skills. May be repeated three times. (4/01)

#### **PHED-13B LIFEGUARD TRAINING**

2 units: 1.5 hours lecture, 1.5 hours lab.

Limitation on Enrollment: Students must pass the American Red Cross Swimming requirement. Advisory: PHED-13H.

This course teaches theory and analysis of advanced swimming skills, instruction and certification in lifesaving, Title 22 (First Aid), and cardiovascular resuscitation. A course recommended for anyone who wishes to become a lifeguard, it may be repeated one time. (4/05)

#### **PHED-13C WATER CALISTHENICS**

1 unit: 0.5 hour lecture, 1.5 hours lab.

Prerequisite/Advisory: None.

This course will include isometric calisthenics and aerobic types of exercise performed in water to increase one's strength, flexibility, and cardiovascular fitness. No swimming skills are required, as exercises are done in waist- to chest-deep water. Water games, relays, and music will add further interest to the exercising. Both swimmer and non-swimmer will benefit from this class. This course may be repeated three times. (10/99)

#### **PHED-13D FITNESS THROUGH AQUATICS**

1 unit: 3 hours lab.

Advisory: PHED-13A.

The course is a personal fitness program designed to use swimming as a method to reach a desired level of cardiovascular fitness. May be repeated three times. (4/01)

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**PHED-13E WATER SAFETY INSTRUCTION**

2 units: 1.5 hours lecture, 1.5 hours lab.  
Prerequisites: PHED-13B or PHED-13H.

This course is designed to certify students who complete all required work as certified Red Cross swimming instructor. It includes instruction in teaching techniques, stroke analysis, skilled swimming, class organization, and pool safety. There will be practice teaching assignments with peers and a practical and written final. This course is offered during spring semester only. (12/06)

**PHED-13F WATER POLO**

.5-1 unit: 1.5-3 hours lab.  
Advisory: PHED-13A.

This course is designed to develop the basic skills, rules, and strategy of water polo. Opportunity will be given for class participation through which students will increase their swimming skills and conditioning. This course may be repeated three times. (12/06)

**PHED-13G DIVING**

.5-1 unit: 1.5-3 hours lab.  
Advisory: PHED-13A.

Basic techniques of diving are presented in this course, which includes approach, position, and form of water entry for front, reverse, inward and twisting dives. This course may be repeated three times. (12/06)

**PHED-13H SWIMMING SKILLS**

1 unit: 0.5 hour lecture: 1.5 hours lab.  
Advisory: PHED-13A.

The course will include review of fundamental swimming strokes and skills. Additional strokes taught will include the butterfly, inverted breaststroke, overarm sidestroke, and trudgen strokes. Also included in the course will be shallow dives, flip turns, treading water, and underwater skills. This course may be repeated three times. (4/05)

**DANCE****PHED-14A DANCE CHOREOGRAPHY (Also: DNCE-14A)**

1 unit: 0.5 hour lecture, 1.5 hours lab.  
Prerequisite/Advisory: None.

This is a course teaching the student of dance how to use "language of the body" to communicate an idea, theme, or story. Utilizing time, space, and energy, the student learns to conceive, develop, and put movements together. May be repeated three times.

**PHED-14B MODERN DANCE (Also: DNCE-14B)**

1 unit: 0.5 hour lecture, 1.5 hours lab.  
Prerequisite/Advisory: None.

This is a course designed for the students to express themselves creatively through various modern dance forms, and to increase skills of body posture, flexibility, coordination, and strength. Students will study technical components which include time, effort and kinetic awareness. May be repeated three times.

**PHED-14C BALLET (Also: DNCE-14C)**

1 unit: 0.5 hour lecture, 1.5 hours lab.  
Prerequisite/Advisory: None.

This is a course designed to teach the basic steps and skills of ballet. Students will have the opportunity to learn and perform routines. History and terminology will also be covered. May be repeated three times.

**PHED-14D1 BEGINNING JAZZ DANCE (Also: DNCE-14D1)**

1 unit: 0.5 hour lecture, 1.5 hours lab.  
Advisories: Good general health; absence of medical conditions that would prevent planned physical activity.

This is a course designed to introduce the basic techniques, rhythms, and combinations of jazz movement. The class will include stretching exercises, coordination exercises, and general body conditioning exercises. This course may not be repeated. (3/06)

**PHED-14D2 INTERMEDIATE JAZZ DANCE (Also: DNCE-14D2)**

1 unit: 0.5 hour lecture, 1.5 hours lab.  
Prerequisite: PHED-14D1. Advisories: Good general health; absence of medical conditions that would prevent planned physical activity.

Students will be introduced to intermediate dance techniques. Basic skills will be reviewed along with an emphasis on conditioning and flexibility. Additional technical study includes double pirouettes, chaîné and piqué turns. Students will be required to develop and perform short routines in class. This course may not be repeated. (3/06)

**PHED-14D3 ADVANCED JAZZ DANCE (Also: DNCE-14D3)**

1 unit: 0.5 hour lecture, 1.5 hours lab.  
Prerequisite: PHED-14D2. Advisories: Good general health; absence of medical conditions that would prevent planned physical activity.

This course emphasizes advanced conditioning, control, stage presence and dance quality performances. Students must be available for rehearsal and performances of productions to which they may be assigned. This course may not be repeated. (3/06)

**ADAPTIVES****PHED-15 ADAPTED PHYSICAL EDUCATION**

1 unit: 3 hours lab.  
Prerequisite/Advisory: None.

Adapted Physical Education provides individual instruction for the physically disabled student or other students requiring individual approaches to health-related fitness activities. Students will engage in health-building activities designed to create self confidence, enhanced self image, and physical independence. May be repeated three times.

**THEORY AND PRACTICUM****PHED-20 INTRODUCTION TO PHYSICAL EDUCATION AND EXERCISE SCIENCE**

3 units: 3 hours lecture.  
Advisory: ENGL-A.

This is a survey class designed to introduce the professional foundations of physical education and exercise science. The course includes historical and philosophic development of physical education. This course will also acquaint the student with current issues, qualifications, and opportunities in the field. (01/05)

**PHED-31 TECHNIQUES OF SPORTS OFFICIATING**

2 units: 1 hour lecture, 3 hours lab.  
Advisory: ENGL-A, ENGL-41.

This is a course designed to provide the individual with knowledge, rules, skills, methods, and techniques of officiating football, volleyball, and basketball. Emphasis will be attaining practical experience in a classroom situation while laboratory hours by arrangement will include officiating competitive events such as physical education games, intramural, junior high school games and recreational games. (12/06)

**PHED-32 TECHNIQUES OF SPORTS OFFICIATING**

2 units: 1 hour lecture, 3 hours lab.  
Advisory: ENGL-A, ENGL-41.

This is a course designed to provide the individual with knowledge, rules, skills, methods, and techniques of officiating track and field, baseball and softball. Emphasis will be on attaining practical experience in a classroom situation while laboratory hours by arrangement will include officiating competitive events such as physical education games, intramural, junior high school games and recreational games. (12/06)

**PHED-36A THEORY AND ANALYSIS OF FOOTBALL**

1 unit: 1 hour lecture.  
Advisory: ENGL-A, ENGL-41.

This course presents the fundamental knowledge of football through lecture and discussions. This course is recommended for physical education, recreation, and recreation-aide majors and varsity football players. This course may be repeated once. (12/06)

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**PHED-36B THEORY AND ANALYSIS OF BASKETBALL**

1 unit: 1 hour lecture.  
Advisory: ENGL-A, ENGL-41.

This course presents the fundamental knowledge of basketball through techniques of lecture, discussions, and video analysis. This course is recommended for physical education, recreation, and recreation-aide majors and varsity basketball players. (12/06)

**PHED-36C THEORY AND ANALYSIS OF BASEBALL**

1 unit: 1 hour lecture.  
Advisory: ENGL-A, ENGL-41.

This course presents the fundamental knowledge of baseball through techniques of lecture, discussions, and video analysis. This course is recommended for physical education, recreation, and recreation-aide majors and varsity baseball players. (12/06)

**PHED-36D THEORY AND ANALYSIS OF TRACK AND FIELD**

1 unit: 1 hour lecture.  
Advisory: ENGL-A, ENGL-41.

This course presents the fundamental knowledge of track and field through techniques of lecture, discussions, and video/DVD analysis. (12/06)

**PHED-70L5 SPECIAL TOPICS IN WATER EXERCISE**

1 unit: 3 hours lab.  
Prerequisite/Advisory: None.

This course uses water exercises as a means to improve strength, flexibility, and cardiovascular fitness. Swimmers and non-swimmers may take the course. This course may be repeated three times. (3/00)

**PHED-70L6 SPECIAL TOPICS IN PHYSICAL EDUCATION LAB**

1 unit: 3 hours lab.  
Prerequisite/Advisory: None.

This is a course teaching a variety of special topics in physical education which have current interest to students. This course may be repeated three times. (3/00)

**PHED-90 ADAPTIVE PE**

1 unit: 3 hours lab.  
Prerequisite/Advisory: None.

This course is a continuing program of individualized instruction for the physically disabled student, allowing that student long-range participation in an adapted exercise physiology environment designed to create more physical independence for the student. May be repeated three times. (5/97)

## PHYSICAL SCIENCE

(Science, Math and Engineering Division)

**PHSC-01 INTRODUCTION TO PHYSICAL AND EARTH SCIENCE**

(CSU breadth area B1)  
3 units: 3 hours lecture.

Advisories: ENGL-A, ENGL-41; MATH-A or MATH-B.

**This is an introductory course presenting the nature of physical, earth, and space sciences and their relationship to other areas of scientific knowledge. The course will develop the major concepts and give an understanding of the general principles of physical, earth, and space science. As an introductory class, the course of study will focus on major principles and applications to modern observations and phenomena. This course is designed to meet the content requirement for physical science and for earth and space science for the Liberal Studies - Elementary Teaching preparation pathway. (12/04)**

**PHSC-01L INTRODUCTION TO PHYSICAL AND EARTH SCIENCE LABORATORY**

(CSU breadth areas B1/B3)  
1 unit: 3 hours lab.

One-way corequisite: PHSC-01. Advisories: ENGL-A, ENGL-41; MATH-A or MATH-B.

This introductory laboratory is designed to provide hands-on exploration in parallel with topics covered in the lecture course, PHSC-01. Emphasis will be placed on 1) classical science experimentation, 2) laboratory activities

in the real world, and 3) support of the laboratory activities through use of modern technologies. Students planning on becoming K-12 teachers will find materials applicable to their future profession. (03/05)

## PHYSICS

(Science, Math and Engineering Division)

**PHYS-02A GENERAL PHYSICS**

(CAN PHYS 2) (CSU breadth area B1/B3)  
4 units: 3 hours lecture, 3 hours lab.  
Prerequisite: MATH-02, or MATH-25 and MATH-26.  
Advisories: ENGL-A, ENGL-41.

This course is intended for students other than physics and engineering majors. PHYS-02A is the first semester of a one-year physics course designed to develop major concepts and give an understanding of general principles of physics. This course will also try to relate physics to other areas of knowledge and discuss science in general, and physics specifically, as part of the concept of culture and time. The development of ideas will begin with those of Aristotle and terminate with present-day concepts of the atom and nucleus. PHYS-02A will emphasize the universe, motion, forces in nature, energy, fields, conservation laws, waves, sound, light, and thermal phenomena. (1/07)

**PHYS-02B GENERAL PHYSICS**

(CAN PHYS 4)  
4 units: 3 hours lecture, 3 hours lab.  
Prerequisite: PHYS-02A. Advisories: ENGL-A, ENGL-41.

PHYS-02B is a continuation of PHYS-02A with emphasis on electricity, magnetism, radiation, relativity, atomic and nuclear processes, astrophysics, cosmology, and a look toward the future. (1/07)

**PHYS-04A PHYSICS**

(CAN PHYS 8) (CSU breadth area B1/B3)  
4 units: 3 hours lecture, 3 hours lab.  
Prerequisite: MATH-04A. One-way corequisite: MATH-04B.  
Advisories: ENGL-A, ENGL-41.

This course is a calculus-based physics course intended for physics and engineering majors as well as some chemistry and math majors. PHYS-04A is the first semester of a three-semester sequence intended to give a technical introduction to physics with emphasis on concepts and principles of physics and problem-solving. PHYS-04A includes the areas of mechanics, wave motion, fluids, and thermal phenomena. (1/07)

**PHYS-04B PHYSICS**

(CAN PHYS 12)  
4 units: 3 hours lecture, 3 hours lab.  
Prerequisites: MATH-04B; PHYS-04A. One-way corequisite: MATH-04C. Advisories: ENGL-A, ENGL-41.

PHYS-04B is a continuation of PHYS-04A with emphasis on the areas of electricity, magnetism, and light. (1/07)

**PHYS-04C PHYSICS**

(CAN PHYS 14)  
4 units: 3 hours lecture, 3 hours lab.  
Prerequisite: PHYS-04B. Advisories: ENGL-A, ENGL-41.

PHYS-04C is a continuation of PHYS-04B. It emphasizes the laws of thermodynamics, relativity, and topics of modern physics. (1/07)

**PHYS-10 CONCEPTS IN PHYSICS**

(CSU breadth area B1)  
3 units: 3 hours lecture.  
Advisories: ENGL-A, ENGL-41; MATH-A or MATH-B.

This course is a survey of major concepts covered in physics. The concepts, as well as the understanding of general principles, will be developed through lecture, demonstrations, and discussion of everyday phenomena. Both classical and modern topics will be covered, to include mechanics, properties of matter, heat, sound, electricity, magnetism, light, atomic and nuclear physics, relativity, and astrophysics. This course provides an opportunity to work with the concepts of physics in a qualitative manner. (1/07)

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## PHYSIOLOGY

(See Biology)

## PLANT SCIENCE

(Agriculture Division)

(Please refer to the Agriculture Division website for course offering details)  
[www.mccd.edu/academics/divisions/ag](http://www.mccd.edu/academics/divisions/ag)

### PLSC-10 ELEMENTS OF PLANT SCIENCE

(CAN AG 8) (CSU breadth area B2/B3)

3 units: 2 hours lecture, 3 hours lab.

Advisories: ENGL-A; MATH-80 or MATH-83.

This course is designed to provide the students with a working knowledge of fundamental structures and processes of plants. Principles to be applied cover plant structures, physiology, heredity, environmental relationship to growth, adaptation, and management of crops. Techniques of research, exploration of plant growth, and identification of economical crops will be included. (12/06)

### PLSC-12 WEEDS

3 units: 3 hours lecture.

Advisory: ENGL-A; MATH-80 or MATH-83.

This is a study of classification, identification, and life cycle of common and poisonous weeds in California which are detrimental to cultivated crops, grasslands, animals, and man. Management practices include: prevention, mechanical, biological, and chemical methods. Weed establishment and chemical resistance are also covered. (12/06)

### PLSC-13 ECONOMIC ENTOMOLOGY

3 units: 3 hours lecture.

Advisories: ENGL-A; MATH-80 or MATH-83.

This course will cover insects and mites of economic importance to agriculture. Morphology, taxonomy, identification, life cycles, hosts, habitat relationships, and control methods will be discussed. Collection and labeling of specimens will be required. (12/06)

### PLSC-16 PLANT PROPAGATION

3 units: 2 hours lecture, 3 hours lab.

Prerequisite/Advisory: None.

This course teaches principles of sexual and asexual propagation, seeding, cuttings, grafting, layering, specialized plant structures for propagation, propagation media, and rooting aids.

### PLSC-48 PLANT SCIENCE: PROBLEMS (Formerly PLSC-49)

2 units: 6 hours lab.

Advisories: ENGL-A; MATH-80 or MATH-83.

This course will offer students opportunity for investigating a deeper interest in the field of Plant Science. The interest areas will include but not be limited to: crop breeding, propagation, crop production, student projects, greenhouse management, soil management, and soil testing. (12/06)

### PLSC-70 A-Z SPECIAL TOPICS IN PLANT SCIENCE

.5 - 4 units: 0.5 - 4 hours lecture, 1.5 - 12 hours lab.

Prerequisite/Advisory: None.

This course is the study of basic principles, processes, and theories of the special topic being presented during this semester.

### PLSC-71 A-Z TOPICS IN AGRICULTURAL PEST CONTROL UPDATING

1 unit: 18 total hours lecture.

Prerequisite/Advisory: None.

This mini-course is designed to meet continuing education requirements for Agricultural Pest Control Advisors (P.C.A.), Qualified Agricultural Applicator Licensee (Q.L.), and the Qualified Applicator certificate as set forth by the California Department of Food and Agriculture (C.D.F.A.). Topics to be covered, but not restricted to plant science, are laws and regulations; pesticide management; insects, mites and other invertebrates; defoliation and plant growth regulators; nematodes; plant diseases; vertebrate pest control; and equipment and applicator safety. All topics of the course shall relate to the realm of Integrated Pest Management. This course is continually updated with the changes in laws and practices, and

is presented each fall and spring semester. Each course offering must be approved by the regional continuing education accreditation committee and assigned an accreditation number as established by the C.D.F.A. (This course is offered on a credit/no credit basis.)

## POLITICAL SCIENCE

(Social Science Division)

### POSC-01 ESSENTIALS OF THE AMERICAN POLITICAL SYSTEM

(CAN GOVT 2) (CSU breadth area D8)

3 units: 3 hours lecture.

Advisories: ENGL-A, ENGL-41.

This course will introduce students to institutions of American national government, the American political system, and California state and local government. The course includes a study of the United States Constitution and its application to federal, state, and local government. Emphasis is placed upon various roles of national and state government, constitutional rights and obligations of citizens, and the evolution and development of California state political institutions. This course meets the United States Constitution requirement and the federal, California state, and local government requirement. (5/03)

### POSC-02 AN INTRODUCTION TO WORLD POLITICAL SYSTEMS

(CSU breadth area D8)

3 units: 3 hours lecture.

Advisories: ENGL-A, ENGL-41.

This course is a comparative study of the theory, history, structure, and application of the governmental systems of major European nations, as well as non-European countries. Emphasis will be placed on the governments of England, France, Germany, Russia, and Japan. (2/06)

## PSYCHOLOGY

(Social Science Division)

### PSYC-01A INTRODUCTION TO PSYCHOLOGY

(CAN PSY 2) (CSU breadth area D9) [CILC area E]

3 units: 3 hours lecture.

Advisories: ENGL-A, ENGL-41.

PSYC-01A is a survey course designed to provide introduction to facts and theories underlying human behavior. Special emphasis is given to the following topics: schools of psychology, physiological factors, sensation, perception, motivation, learning, thinking, emotion, abnormal behavior, personality, heredity, environment, and social factors. (12/02)

### PSYC-01AH HONORS INTRODUCTION TO PSYCHOLOGY

(CSU breadth area D9) [CILC area E]

3 units: 3 hours lecture.

Limitation on enrollment: Enrollment in the Honors Program. See the current college catalog for a description of enrollment requirements.

Advisories: ENGL-01A, ENGL-41.

PSYC-01AH is an in-depth survey course designed to provide an introduction to facts and theories underlying human behavior. Special emphasis is given to the following topics: schools of psychology, physiological factors, sensation, perception, motivation, learning, thinking, emotion, abnormal behavior, personality, heredity, environment, and social factors. There will also be an emphasis on research, writing, and critical thinking. (2/06)

### PSYC-01B INTRODUCTION TO PSYCHOLOGICAL METHODS

[CILC area E]

3 units: 3 hours lecture.

Prerequisite: PSYC-01A or PSYC-01AH.

This course is a continuation of PSYC-01A with emphasis on psychological theory and a detailed treatment of the scientific method as applied to the study of human behavior. Experimental design, basic assumptions, and limitations and advantages of the experimental method are considered along with an introduction to descriptive and inferential statistics. (1/05)

### PSYC-05 INTRODUCTION TO STATISTICS IN PSYCHOLOGY

3 units: 3 hours lecture.

Prerequisite: MATH-C; Advisories: ENGL-01A, ENGL-41.

The theory of parametric and nonparametric statistical methods and their application to psychological data. Topics include: descriptive statistics,

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probability and sampling distributions; statistical inference and power, linear correlation and regression, chi-square; t-tests; and one-way analysis of variance (ANOVA). Application of both hand-computation and statistical software printouts to data in a psychology context, including the interpretation of the relevance of the statistical findings. (1/07)

**PSYC-09 HUMAN DEVELOPMENT (Also: CLDV-09)**

(CSU breadth area E)  
3 units: 3 hours lecture.  
Advisories: ENGL-A, ENGL-41.

This course is an introduction to the scientific study of human development from conception through death. It examines the interplay of biological, psychological, social, and cultural forces on the developing human being. (3/05)

**PSYC-15 BIOLOGICAL PSYCHOLOGY**

3 Units: 3 hours lecture.  
Advisories: ENGL-A, ENGL-41.

An introduction to the scientific study of the biological bases for human thought and behavior. Topics include basic neuroanatomy and neurophysiology, research methods in biological psychology, the autonomic and peripheral nervous system; and the physiological mechanisms underlying sensation, perception, consciousness, motivation, emotion, learning, memory, and psychological disorders. (1/07)

**PSYC-20 SOCIAL PSYCHOLOGY**

3 Units: 3 hours lecture.  
Advisories: ENGL-A, ENGL-41.

This course analyzes human behavior in relation to the social environment. Topics include aggression, prejudice, attraction, altruism, attitude change, conformity, gender roles, cultural norms, person perception, obedience, and social cognition. Emphasis will be placed on the application of the scientific method and research strategies in social psychology. (1/07)

**PSYC-22 HUMAN SEXUALITY**

(CSU breadth area E)  
3 units: 3 hours lecture.  
Advisories: ENGL-A, ENGL-41.

This course explores the psychology of human sexuality. Biological, psycho-social, and socio-cultural research is presented concerning all aspects of human sexuality in contemporary society. Specific topics include human development and sexuality, sexual orientation and behavior, contraception and sexually transmitted infections, sexual dysfunction, and prostitution. (1/05)

**PSYC-23 PERSONAL AND SOCIAL ADJUSTMENT**

(CSU breadth area E)  
3 units: 3 hours lecture.  
Advisories: ENGL-A, ENGL-41.

PSYC-23 is a course which examines personality factors as they relate to problems of growth and adjustment. Concepts covered in the course are personality development, psychological bases of behavior, mental health, and interpersonal relations. Stress is placed on the importance of applying therapeutic principles and techniques in everyday life. (3/03)

**PSYC-25 ABNORMAL PSYCHOLOGY**

3 units: 3 hours lecture.  
Advisories: ENGL-A, ENGL-41.

This course is designed to provide the student with an understanding of abnormal behavior as delineated in the "Diagnostic and Statistical Manual of Mental Disorders." Topics include classifications, clinical pictures, causal factors, treatment, and outcomes of maladaptive behavior. Special emphasis will be placed on assessment, therapy, and prevention of maladaptive behavior. (1/07)

**PSYC-33 WORKING EFFECTIVELY WITH FAMILIES**

(Also: CLDV-33 and SOC-33)  
1 unit: 1 hour lecture.  
Advisory: ENGL-A.

This is a course designed to teach students how to work with parents in school settings. Students will examine current ways of parent involvement,

parent rights and responsibilities, and ways of keeping parents informed. (11/05)

**PSYC-35 DEVELOPMENTAL PSYCHOLOGY: CHILDHOOD**

3 units: 3 hours lecture.  
Advisories: ENGL-A, ENGL-41.

This course is a study of human development from conception to adolescence. The focus is on major theories and psychological research relating to the physical, cognitive, and psychosocial aspects of development during childhood, with an emphasis on the influence of culture. (1/07)

**PSYC-36 DEVELOPMENTAL PSYCHOLOGY: ADOLESCENCE**

3 Units: 3 hours lecture.  
Advisories: ENGL-A, ENGL-41.

This course is a study of human development during adolescence. The focus is on major theories and psychological research relating to the physical, cognitive, and psychosocial aspects of development during adolescence, with an emphasis on the influence of culture. (1/07)

**PSYC-49AA-ZZ SPECIAL TOPICS IN PSYCHOLOGY**

3 units: 3 hours lecture.  
Advisories: ENGL-A, ENGL-41.

This course is designed to address special topics in psychology to meet the needs of students. Special topics will include Theories of Personality, Cognitive Psychology, Learning and Memory, Motivation, Behavior Modification, Death and Dying, and Cross-Cultural Psychology. (1/07)

**PSYC-51 APPLIED PSYCHOLOGY**

3 units: 3 hours lecture.  
Advisories: ENGL-A, ENGL-41.

This course is designed to provide an introduction to the principles of human behavior and personality development, and their application to daily problems. Special emphasis will be given to the following topics: self-esteem, personality, learning and self-management, motives and values, emotions, attitudes, life-span development, interpersonal relationships, and psychological wellness. (11/04)

**REAL ESTATE**  
(Business Division)

**REAL-42 REAL ESTATE PRINCIPLES**

3 units: 3 hours lecture.  
Advisories: ENGL-81, ENGL-84.

This course is an analysis of principles of real estate in California, history of California real estate, property, contracts, agencies, listings, real estate financing, deeds, liens and encumbrances, escrows and title insurance, land descriptions, real estate mathematics, and real estate licensing and state regulations. (12/03)

**REAL-43 REAL ESTATE PRACTICES**

3 units: 3 hours lecture.  
Prerequisite: REAL-42; Advisories: ENGL-81, ENGL-84.

This course is an analysis of problems related to establishing and conducting a real estate business, the real estate office valuations of listings, prospecting, advertising, the selling process, closing the sale, financing real estate, exchanges and specializing brokerage, income properties, management and leasing, taxes and real estate deals, land utilization, and professional and public relations. (10/06)

**REAL-45 REAL ESTATE FINANCE**

3 units: 3 hours lecture.  
Prerequisite: REAL-42; Advisories: ENGL-81, ENGL-84.

This course is a practical applied study and analysis of money markets, interest rates, and real estate financing. Actual case illustrations will demonstrate lending policies, and problems and rules involved in financing real property, including residential, multi-family, commercial, and special purpose properties. (11/06)

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**REAL-46 REAL ESTATE APPRAISAL**

3 units: 3 hours lecture.

Prerequisite: REAL-42; Advisories: ENGL-81, ENGL-84.

This course explains methods and techniques for analyzing data used in the valuation of real property. Case study methods are employed; field work and demonstration and/or form appraisal reports are required. Principles and theories of real estate valuations, as well as the approaches to value (cost, market, income) are studied with an emphasis on residential properties. (11/06)

**REAL-48 REAL PROPERTY MANAGEMENT**

3 units: 3 hours lecture.

Prerequisite REAL-42; Advisories: ENGL-81, ENGL-84.

This course provides a practical approach to management of developed real estate. Emphasis is given to economics of real estate; neighborhood analysis and rent schedules; management procedures; selection of personnel; contracts and purchasing; interior and exterior maintenance repair; leasing, advertising, and publicity; managing family residences, apartment buildings, store buildings, office buildings, and other commercial properties; management accounting; modernization and rehabilitation; and adequate insurance plans. (11/06)

**REAL-49 ESCROW PROCEDURE** (Formerly REAL-49A)

3 units: 3 hours lecture.

Prerequisite: REAL-42. Advisories: ENGL-81, ENGL-84.

This course covers the principles and procedures involved in the process of opening and closing real estate escrow transactions. The course will define legal documents and terminology used in escrow procedure as well as explain the processing of documents and transfer of title combined with sale and closing procedures for several different types of escrows. (1/04)

## RECREATION

(Life Fitness and Health Division)

**RECR-30 INTRODUCTION TO COMMUNITY RECREATION**

(CAN REC 2)

3 units: 3 hours lecture.

Advisory: ENGL-A, ENGL-41.

This course teaches a general orientation to the field of recreation and parks. It will include a history of the recreation and leisure services, a description of recreational forms, and the nature, scope, and significance of leisure, and recreation as a social force in contemporary society. Emphasis is placed on the role of the professional leader in a variety of settings. (12/06)

## REGISTERED NURSING

(Allied Health Division)

**REGN-01 TRANSITION LVN TO RN** (Formerly REGN-19)

2 units: 1 hour lecture, 3 hours lab.

Limitation on enrollment: California VN license. Prerequisites: BIOL 16; BIOL-20; CHEM-02A; ENGL-01A; BIOL-18. One-way corequisite: CLDV-09/PSYC-09

The series of lectures and discussions will provide concepts and principles necessary to facilitate transition of the LVN to the changing role of the registered nurse. Emphasis will be placed upon the registered nurse as a decision-making member of the health team, and of responsibilities to be assumed by such a practitioner. (10/06)

**REGN-02 CLINICAL SKILLS TRANSITION - LVN TO RN**

(Formerly REGN-19)

1 unit: 3 hours lab.

Limitation on enrollment: California VN license, enrolled in REGN Program 3<sup>rd</sup> semester. Prerequisites: REGN-01. One-way corequisite: REGN-35.

This course consists of practice in the clinical setting with skills and principles necessary to facilitate transition of the LVN to the changing role of the registered nurse. Clinical hours must be initiated in the first week of the semester enrolled. Emphasis is placed on nursing skills related to first year RN nursing concepts in clinical practice. (10/06)

**REGN-15 NURSING IN HEALTH AND ILLNESS I** (Formerly REGN-10)

9 units: 4 hours lecture, 15 hours lab.

Limitations on enrollment: 1) Enrollment in the REGN program, 2) CPR card Module AC, 3) physical within past 6 months, 4) negative TB screening test within past 6 months or negative chest x-ray within past year, 5) proof of current immunizations, 6) criminal background clearance, 8) proof of current malpractice insurance, and 9) drug screening. One way co requisite: REGN-16, Two-way corequisite: REGN-17 Advisory: REGN-50.

This course presents basic concepts that provide the foundation upon which homeostasis is maintained in adults and/or children. Common threads integrated throughout the program are initiated: nursing process, nutrition, pharmacology, developmental levels, cultural diversity, communication, and professional role. (10/06)

**REGN-16 PHARMACOLOGY I** (Formerly REGN-13A)

2 units: 2 hours lecture.

Limitation on enrollment: Enrollment in the REGN Program. One-way corequisite: REGN-15.

This course presents introductory concepts of pharmacology and drug administration with focus on laxatives/antidiarrheal, hypoglycemics, and analgesics and basic math. (10/06)

**REGN-17 NURSING SKILLS SIMULATION I** (Formerly REGN-13A)

1 unit: 3 hours lab.

Limitation on enrollment: Enrollment in the REGN program.

Two-way corequisite: REGN-15.

This course includes instruction/demonstration and return demonstration of nursing skills related to the first year nursing concepts. This course emphasizes skills and knowledge applications. (10/06)

**REGN-25 NURSING IN HEALTH AND ILLNESS II** (Formerly REGN-11)

9 units: 4 hours lecture, 15 hours lab.

Limitations on enrollment: Enrollment in the REGN program 2<sup>nd</sup> semester. Prerequisites: REGN-15, REGN-16. One-way corequisite: CLDV-09/PSYC-09, REGN-26; Two-way corequisite: REGN-27.

This course enlarges upon the concepts presented in REGN-15, introducing principles of care to maintain and restore normal homeostatic mechanisms in patients of all ages; study of the family unit throughout the life cycle is included, with emphasis on preventive care. (10/06)

**REGN-26 PHARMACOLOGY II** (Formerly REGN-13B)

2 units: 2 hours lecture.

Limitation on enrollment: Enrollment in the REGN program 2<sup>nd</sup> semester. Prerequisites: REGN-16. One-way corequisite: REGN-25 Advisory: VOCN-46A

This course presents introductory concepts of pharmacology and medication for infectious diseases, hypertension, anemias, family/OB, and GI/GU alterations. (10/06)

**REGN-27 NURSING SKILLS SIMULATION II** (Formerly REGN-13B)

1 unit: 3 hours lab.

Limitation on enrollment: Enrollment in the REGN program 2<sup>nd</sup> semester. Prerequisites: REGN-17. Two-way corequisite: REGN-25.

This course includes instruction/demonstration and return demonstration of nursing skills related to the first year nursing concepts. This course emphasizes skills and knowledge applications. (10/06)

**REGN-35 NURSING IN HEALTH AND ILLNESS III**

(Formerly REGN-20)

9 units: 4 hours lecture, 15 hours lab.

Limitations on enrollment: 1) Enrollment in the REGN program 3<sup>rd</sup> semester, 2) CPR card Module AC, 3) physical within past 6 months, 4) negative TB screening test within past 6 months or negative chest x-ray within past year, 5) proof of current immunizations, 6) criminal background clearance, 7) drug screening, and 8) proof of current malpractice insurance. Prerequisites: CLDV-09/PSYC-09; REGN-25 OR REGN-01. One-way corequisite: REGN-36. Two-way corequisite: REGN-37, REGN-38.

This course enlarges upon the concepts presented in REGN-15 and REGN-25 by introducing principles of care to maintain and/or restore homeostatic

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mechanisms in acute health problems. Prototype disease processes associated with each concept are studied in relation to preventive and restorative nursing care. Concurrent practice in the college laboratory and clinical experience in community facilities is required. (10/06)

**REGN-36 PHARMACOLOGY III** (Formerly REGN-24A)

1 unit: 1 hour lecture.

Limitation on enrollment: Enrollment in the REGN program 3<sup>RD</sup> semester. Prerequisite: REGN-26. One-way corequisite: REGN-35.

This course presents ongoing concepts of pharmacology compatible with respiratory, cardiac/vascular, GI, cancer, sexual reproductive disorders, and immunosuppressant therapies for adults and children. (10/06)

**REGN-37 NURSING SKILLS SIMULATION III** (Formerly REGN-24A)

1 unit: 3 hours lab.

Limitation on enrollment: Enrollment in the REGN program 3<sup>RD</sup> semester. Prerequisite: REGN-27. Two-way corequisite: REGN-35.

This course presents demonstration of higher-level nursing concepts related to second-year nursing courses. The third-semester student will assume the facilitator role with other nursing students in skill check-offs. (10/06)

**REGN-38 PROFESSIONAL RELATIONSHIPS AND RESPONSIBILITIES I** (Formerly REGN-21)

1 unit: 1 hour lecture.

Limitation on enrollment: Enrollment in the REGN program 3<sup>rd</sup> semester. Two-way corequisites: REGN-35.

The course introduces the student to the professional role of the registered nurse: its status, its responsibilities, and inherent problems as influenced by historical and social change. The focus is on the individual nurse and on the profession as a whole. (10/06)

**REGN-45 NURSING IN HEALTH AND ILLNESS IV**

(Formerly REGN-22)

9 units: 4 hours lecture, 15 hours lab.

Limitation on enrollment: Enrollment in the REGN program 4<sup>th</sup> semester. Prerequisites: REGN-35. One-way corequisite: REGN-46, REGN-48. Two-way corequisite: REGN-47.

This course presents advanced concepts and skills in caring for the client with critical or multiple health problems. It emphasizes rehabilitation and adaptation to a compromised and/or declining health status. Concurrent practice in the college laboratory and clinical experience in community health facility is required. (10/06)

**REGN-46 PHARMACOLOGY IV** (Formerly REGN-24B)

1 unit: 1 hour lecture.

Limitation on enrollment: Enrollment in the REGN program 4<sup>th</sup> semester. Prerequisites: REGN-36. One-way corequisite: REGN-45.

This course presents ongoing concepts of pharmacology for psychiatric (adult/teenagers), shock, cardiac arrhythmias, neurological and neuromuscular, and endocrine conditions. (10/06)

**REGN-47 NURSING SKILLS SIMULATION IV** (Formerly REGN-24B)

1 unit: 3 hours lab.

Limitation on enrollment: Enrollment in the REGN program 4<sup>th</sup> semester. Prerequisite: REGN-37. Two-way corequisite: REGN-45.

This course presents instruction and demonstration of higher level nursing concepts related to second-year nursing courses. The second-year student will assume a facilitator role with other nursing students in nursing care planning. (10/06)

**REGN-48 PROFESSIONAL RELATIONSHIPS AND RESPONSIBILITIES II** (Formerly REGN-23)

1 unit: 1 hour lecture.

Limitation on enrollment: Enrollment in the REGN program 4<sup>th</sup> semester. Prerequisite: REGN-38. One-way corequisite: REGN-45.

This course is an introduction to leadership and management principles applied to the health care field. Discussions will include leadership and management theories, organizational structure, problem-solving, decision-

making, conflict management, effective communication, change process, planning process, motivational theories, and performance appraisal. (10/06)

**REGN-50 NURSING CAREER SEMINAR**

.25 unit: 4.5 total hours lecture.

Prerequisite/Advisory: None.

This course introduces students to the various roles and responsibilities of nursing practitioners, including knowledge of educational levels as well as behaviors and skills. Merced College nursing programs are described, including admission requirements and procedures. Students are graded on credit/no credit basis. May be repeated once. (10/06)

## SCIENCE

(Science, Math and Engineering Division)

**SCI-30ABCD (1-3) SCIENCE LABORATORY EXPERIENCE**

1 - 3 units: 3 - 9 hours lab.

(Note: The number designation following the letter indicates unit value, "1" being for 1 unit, "2" for 2 units, and "3" for 3 units.)

This course consists of special projects for students desiring hands-on experience in lab operation and/or techniques. Each letter (i.e., A, B, C, or D) may be taken only once.

**SCI-39ABC SPECIAL TOPICS IN SCIENCE**

1 - 3 units: 3 - 9 hours lab.

Limitation on enrollment: Nine students per semester. (Note: SCI-39A is for 1 unit, SCI-39B for 2 units, and SCI-39C is for 3 units.)

This course consists of special projects for advanced students in science. (3/00)

## SOCIAL SCIENCE

(Social Science Division)

**SCSC-01 INTRODUCTION TO SOCIAL SCIENCE**

(CSU breadth area D7)

3 units: 3 hours lecture.

Advisories: ENGL-A, ENGL-41.

Introduction to Social Science offers an interdisciplinary view of society and of the individual. The course studies effects of technology, ideology, and historical experience on institutional and personal behavior. In addition, the course surveys important knowledge and research in the fields of anthropology, economics, education, history, political science, psychology, and sociology. (3/06)

## SOCIOLOGY

(Social Science Division)

**SOC-01 INTRODUCTION TO SOCIOLOGY**

(CAN SOC 2) (CSU breadth area D0)

3 units: 3 hours lecture.

Advisories: ENGL-01A, ENGL-41.

This course provides an introduction into what it means to be "sociologically mindful" and to think "sociologically" while understanding the difference from other ways of seeing the social world. The course begins with the understanding of the differences between personal troubles and public issues, and how sociologists apply various theoretical perspectives to a wide range of issues, such as: culture; socialization; social structure of society; deviance; issues of feminization; family; gender; race; inequality; economics; politics and population; and the relationship between the individual and society. The course accents international comparisons to show how similar institutions are structures and function differently in different societies around the world. (2/06)

**SOC-02 CONTEMPORARY SOCIAL PROBLEMS**

(CAN SOC 4)

3 units: 3 hours lecture.

Advisories: ENGL-01A, ENGL-41.

SOC-02 introduces fundamental theories and methodologies employed in the study of contemporary social problems. An emphasis is placed on analysis of causes and possible solutions to such problems as poverty, discrimination, crime, delinquency, alcoholism, drug abuse, suicide, family,

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and politics. A global perspective focuses on the international influences and contributions to various contemporary social problems. (2/06)

### **SOC-28 MARRIAGE AND THE FAMILY**

3 units: 3 hours lecture.

Advisories: ENGL-A, ENGL-41.

This course provides an overview of sociological theories and concepts utilized to investigate marriage and family relationships. An empirical as well as experiential analysis of marriage and family functions, structures, and roles is emphasized. Special focus is paid to contemporary issues, concerns, and debates regarding marriage and family dynamics. (2/06)

### **SOC-33 WORKING EFFECTIVELY WITH FAMILIES**

(Also: CLDV-33 and PSYC-33)

1 unit: 1 hour lecture.

Advisory: ENGL-A.

This is a course designed to teach students how to work with parents in school settings. Students will examine current ways of parent involvement, parent rights and responsibilities, and ways of keeping parents informed. (11/05)

## **SOIL SCIENCE**

(Agriculture Division)

(Please refer to the Agriculture Division website for course offering details)

[www.mccd.edu/academics/divisions/ag](http://www.mccd.edu/academics/divisions/ag)

### **SOIL-10 SOIL SCIENCE**

(CAN AG 14) (CSU breadth area B1/B3)

3 units: 2 hours lecture, 3 hours lab.

Advisories: ENGL-A; MATH-80.

This course provides a basic knowledge of the physical, chemical, and biological properties of soils and their characteristics. The course includes factors of fundamental soil properties, soil and plant relationships, principles of soil formation, fertilizers and soil management, salinity, pH, erosion management, and nonagricultural uses. (12/04)

### **SOIL-11 FERTILIZERS AND SOIL AMENDMENTS**

3 units: 3 hours lecture.

This course will cover the composition, value, selection and use of fertilizer materials and soil amendments. Soil, plant, and fertilizer relationships will be covered. Application practices common to area crops and soils will be discussed. (2/90)

## **SONOGRAPHY, DIAGNOSTIC MEDICAL**

(Allied Health Division)

### **SONO-36B BEGINNING CLINICAL EXPERIENCE I**

9 units: 486 total hours lab.

Limitation on enrollment: Enrollment in the Diagnostic Medical Sonography Program (Cardiac Track). Prerequisite: SONO-46A.

Two-way corequisite: SONO-36C.

This course provides clinical experience for application of theoretical principles and concepts covered in previous and current didactic coursework. Clinical experience in patient care and handling, scanning techniques, instrumentation, work efficiency and image evaluation for cardiac imaging is provided. This course is part of the Diagnostic Medical Sonography Program (Cardiac Track) and is only offered during the fall semester. (3/05)

### **SONO-36C ADVANCED ECHOCARDIOGRAPHY**

4 units: 3 hours lecture, 3 hours lab.

Limitation on enrollment: Enrollment in the Diagnostic Medical Sonography Program (Cardiac Track). Prerequisite: SONO-46A.

Two-way corequisite: SONO-36B.

This course covers advanced echocardiographic sonographic positioning and scanning protocol including transthoracic, transesophageal, pediatric, and fetal echocardiography; related anatomy and physiology to include cardiac pathology and clinical symptomology and how they relate to the sonographic appearance of these structures. Interpretation and critique of normal and abnormal anatomy with correction of clinical, didactic and image information will be presented. The laboratory component of this course will include demonstration and scanning exercises to provide a "live lab"

experience in conducting echocardiographic sonographic procedures. This course is part of the Diagnostic Medical Sonography Program (Cardiac Track). (3/05)

### **SONO-37A CARDIAC PHYSIOLOGY AND PRINCIPLES**

2 units: 1.5 hours lecture, 1.5 hours lab.

Limitation on enrollment: Enrollment in the Diagnostic Medical Sonography Program (Cardiac Track). Prerequisites: SONO-40, SONO-46A. Two-way corequisite: SONO-37B.

This course covers cardiac physiology and cardiac physics as it relates to echocardiography. The emphasis will describe the effects of pressure, loading, and volume as they relate to the following disease states: heart failure, shock, valvular stenosis and regurgitation, intracardiac shunts, pulmonary disease, pericardial disease, and cardiomyopathies. Hemodynamics, spectral Doppler, and color flow technologies will be described. The laboratory component of this course will include demonstration and scanning exercises to provide a "live lab" experience in conducting echocardiographic procedures. This course is a continuation of the Diagnostic Medical Sonography Program (Cardiac Track). (3/05)

### **SONO-37B BEGINNING CLINICAL EXPERIENCE II**

9 units: 486 total hours lab.

Limitation on enrollment: Enrollment in the Diagnostic Medical Sonography Program (Cardiac Track). Prerequisite: SONO-36B.

Two-way corequisite: SONO-37A

This course provides clinical experience for application of theoretical principles and concepts covered in previous and current didactic coursework. Clinical experience in patient care and handling, scanning techniques, instrumentation, work efficiency and image evaluation for echocardiographic imaging is provided. (3/05)

### **SONO-38B ADVANCED CLINICAL EXPERIENCE I**

4.5 units: 243 total hours lab.

Limitation on enrollment: Enrollment in the Diagnostic Medical Sonography Program (Cardiac Track). Prerequisite: SONO-37B.

This course provides continued clinical experience for application of theoretical principles and concepts covered in previous and current didactic coursework. Clinical experience inpatient care and handling, scanning techniques, instrumentation, work efficiency and image evaluation for cardiac imaging is provided. This course is part of the Diagnostic Medical Sonography Program (Cardiac Track). (4/05)

### **SONO-39B ADVANCED CLINICAL EXPERIENCE II**

9 units: 486 total hours lab.

Limitation on enrollment: Enrollment in the Diagnostic Medical Sonography Program (Cardiac Track). Prerequisite: SONO-38B.

This course provides clinical experience for advanced application of theoretical principles and concepts covered in previous and current didactic coursework. Clinical experience in patient care and handling, scanning techniques, instrumentation, work efficiency and image evaluation for cardiac imaging is provided. This course is part of the Diagnostic Medical Sonography Program (Cardiac Track). (4/05)

### **SONO-40 BASIC ULTRASOUND PHYSICS**

[CILC area B]

1.5 units: 18 total hours lecture, 27 total hours lab.

Limitation on enrollment: Enrollment in the Diagnostic Medical Sonography program. Prerequisites: MATH-A or MATH-B; PHYS-10 or RADT-40.

This course covers basic principles and terminology of diagnostic ultrasound physics to include a review of mathematical skills, transducers, beam dynamics, and instrumentation. Hands-on instruction will be provided to introduce the student to necessary elementary skills in scanning as it pertains to the physical nature of ultrasound. This course is part of the first summer session in the 18-month program in Diagnostic Medical Sonography which runs nine weeks in duration. (1/01)

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**SONO-41 INTRODUCTION TO SONOGRAPHY**

[CILC area B]

1.5 units: 18 total hour lecture, 27 total hours lab.

Limitations on enrollment: Completion of a two-year Allied Health program that is patient-care related, such as radiologic technology, registered nursing, respiratory therapist, physical therapy, associate degree-licensed vocational nurse, or a baccalaureate degree in biological sciences with patient care experience; minimum cumulative GPA of 2.35 in prerequisite course work; enrollment in the Sonography program. Prerequisite: ALLH-67.

This course is an overview of diagnostic medical sonography and its role in health care delivery. Students will be oriented to the academic and administrative structure of the program, clinical affiliates, and to the profession as a whole. An introduction to principles, instruments, and routine sonographic procedures will be emphasized. The laboratory portion of this course will include a hands-on orientation to the equipment and instrumentation. This course is part of the first summer session of the 18-month program in Diagnostic Medical Sonography which runs nine weeks in duration. (1/01)

**SONO-42A ABDOMINAL SONOGRAPHY**

[CILC area B]

4 units: 3 hours lecture, 3 hours lab.

Limitation on enrollment: Satisfactory progression in the Diagnostic Medical Sonography program. Prerequisites: BIOL-16; BIOL-18.

This course covers abdominal sonographic positioning and scanning protocol; related anatomy and physiology to include the retroperitoneum; pathology and clinical symptomology and how they relate to the sonographic appearance of these structures. Interpretation and critique of normal and abnormal anatomy with correlation of clinical, didactic, and image information will be presented. The laboratory component of this course will include demonstration and scanning exercises to provide a "live lab" experience in conducting abdominal sonographic procedures. This course is part of the first semester of the 18-month Diagnostic Medical Sonography program. (1/01)

**SONO-42B BEGINNING CLINICAL EXPERIENCE I**

[CILC area B]

9 units: 27 hours lab.

Limitation on enrollment: Satisfactory progression in the Diagnostic Medical Sonography program. Two-way corequisite: SONO-42A.

This course provides clinical experience for application of theoretical principles and concepts covered in previous and current didactic course work. Clinical experience in patient care and handling, scanning techniques, instrumentation, work efficiency, and image evaluation for abdominal imaging is provided. This course is part of the first semester of the 18-month Diagnostic Medical Sonography program and is only offered during fall semester. (1/01)

**SONO-43A OB/GYN SONOGRAPHY**

[CILC area B]

4 units: 3 hours lecture, 3 hours lab.

Limitation on enrollment: Satisfactory progression in the Diagnostic Medical Sonography program.

This course presents a review of anatomy and physiology of the gravid and nongravid pelvis. Techniques of transabdominal and transvaginal preparation are introduced. Symptomology of the female patient with correlation to the sonographic appearance of pathology are covered. First, second, and third trimester obstetrical assessment are covered in depth. This course is part of the second semester of the 18-month Diagnostic Medical Sonography program. (1/01)

**SONO-43B BEGINNING CLINICAL EXPERIENCE II**

[CILC area B]

9 units: 27 hours lab.

Limitation on enrollment: Satisfactory progression in the Diagnostic Medical Sonography program. Two-way corequisite: SONO-43A.

This course provides clinical experience for application of theoretical principles and concepts covered in previous and current didactic course work. Clinical experience in patient care and handling, scanning techniques, instrumentation, work efficiency, and image evaluation for obstetric and

gynecological imaging, in addition to abdominal imaging, is provided. This course is part of the second semester of the 18-month Diagnostic Medical Sonography program and is only offered during the spring semester. (1/01)

**SONO-44A ADVANCED ULTRASOUND PHYSICS**

[CILC area B]

1.5 units: 1.5 hours lecture.

Limitation on enrollment: Satisfactory progression in the Diagnostic Medical Sonography program.

This course is a continuation of basic physics and instrumentation including continuous and pulsed wave doppler. Basic principles of color flow imaging, advanced principles in medical ultrasound instrumentation, hemodynamics, bioeffects, artifacts, and sonographic quality control procedures are also covered. This course is part of the second summer session of the 18-month Diagnostic Medical Sonography program which runs nine weeks in duration. (1/01)

**SONO-44B ADVANCED CLINICAL EXPERIENCE I**

[CILC area B]

4.5 units: 243 total hours lab.

Limitation on enrollment: Satisfactory progression in the Diagnostic Medical Sonography program. Two-way corequisite: SONO-44C.

This course provides clinical experience for application of theoretical principles and concepts covered in previous and current didactic course work. Clinical experience in patient care and handling, scanning techniques, instrumentation, work efficiency, and image evaluation for superficial structure is provided. This course is part of the second summer session of the 18-month Diagnostic Medical Sonography program and is only offered during the summer. (1/01)

**SONO-44C SUPERFICIAL STRUCTURES**

[CILC area B]

1 unit: 9 total hours lecture, 27 total hours lab.

Limitation on enrollment: Satisfactory progression in the Diagnostic Medical Sonography program.

This course covers basic positioning and scanning protocol of the superficial structures; related anatomy and physiology to include the neck, breast, and testes; and pathology and clinical symptomology and how they relate to the sonographic appearance of these structures. Interpretation and critique of normal and abnormal anatomy with correlation of clinical didactic and image information will be presented. The laboratory component of this course will include demonstration and scanning exercises to provide a "live lab" experience in conducting superficial structure procedures. This course is part of the second summer session of the 18-month Diagnostic Medical Sonography program which runs nine weeks in duration. (1/01)

**SONO-45A INTEGRATIVE STUDY IN SONOGRAPHY**

[CILC area B]

2 units: 2 hours lecture.

Limitation on enrollment: Satisfactory progression in the Diagnostic Medical Sonography program.

This course covers a comprehensive analysis and assessment of all previous diagnostic medical sonography instructional course work in preparation for writing the national registry examination. Job market readiness skills will also be presented. This course is part of the third and final semester of the 18-month Diagnostic Medical Sonography program and runs 18 weeks in duration. (1/01)

**SONO-45B ADVANCED CLINICAL EXPERIENCE II**

[CILC area B]

9 units: 27 hours lab.

Limitation on enrollment: Satisfactory progression in the Diagnostic Medical Sonography program. Two-way corequisite: SONO-45C.

This course provides clinical experience for application of theoretical principles and concepts covered in previous and current didactic course work. Clinical experience in patient care and handling, scanning techniques, instrumentation, work efficiency, and image evaluation of basic vascular sonography is provided. Clinical experience in abdominal, obstetric,

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gynecological, and superficial structures imaging is also provided. This course is part of the third and final semester of the 18-month Diagnostic Medical Sonography program and is only offered during the fall semester. (1/01)

#### **SONO-45C BASICS OF VASCULAR SONOGRAPHY**

[CILC area B]

2 units: 1.5 hours lecture, 1.5 hours lab.

Limitation on enrollment: Satisfactory progression in the Diagnostic Medical Sonography program.

This course covers basic positioning and scanning protocol of the vascular system. Vascular terminology specific to the hemodynamics of the arterial venous and cerebrovascular application will be presented. Normal, abnormal, and pathological states of the human vascular system with emphasis on the external carotid system and the venous systems of the lower extremities will be included. The laboratory component of this course will include demonstration and scanning exercises to provide a "live lab" experience in conducting basic vascular procedures. This course is part of the third and final semester of the 18-month Diagnostic Medical Sonography program which runs 18 weeks in duration. (1/01)

#### **SONO-46A ECHOCARDIOGRAPHY**

1.5 units: 1 hour lecture, 1.5 hours lab.

Limitation on enrollment: Enrollment in the Diagnostic Medical Sonography Program.

This course covers an introduction to acoustical physics and instrumentation, echocardiographic positioning and scanning protocol including 2D, M-mode, Color Flow, and Doppler Imaging; related anatomy, hemodynamics, and physiology to include ventricular function, intracardiac anatomy, valvular anatomy and function; pathology and clinical symptomology and how they relate to the sonographic appearance of these structures. Interpretation and critique of normal and abnormal anatomy with correlation of clinical, didactic, and image information will be presented. The laboratory component of this course will include demonstration and scanning exercises to provide a "live lab" experience in conducting echocardiographic procedures. (3/05)

#### **SONO-49A-ZZ SPECIAL TOPICS IN DIAGNOSTIC MEDICAL SONOGRAPHY**

0.5 - 3 units: 0.5 - 3 hours lecture, 0 - 9 hours lab.

Limitation on enrollment: Current student or graduate of a diagnostic medical imaging program or six months of experience in a diagnostic medical sonography career track.

This course is designed to address special topics in diagnostic medical sonography to meet the current needs of students. It will provide students access to instruction that will assist them in acquiring the most up-to-date information possible in order to cope with the rapidly changing health care environment. (4/05)

## **SPANISH**

(Humanities Division)

#### **SPAN-01 ELEMENTARY SPANISH**

(CAN SPAN 2) (CSU breadth area C2)

5 units: 5 hours lecture.

Advisory: ENGL-84.

This course will focus on the development of listening, speaking, reading, and writing in a cultural context, with primary emphasis on communicative competency. Students will learn how to express in Spanish the most basic functions of everyday life. This course is not recommended for native speakers – native speakers should enroll in SPAN-10. (10/03)

#### **SPAN-02 ELEMENTARY SPANISH**

(CSU breadth area C2)

5 units: 5 hours lecture.

Prerequisite: SPAN-01 or two years of high school Spanish.

SPAN-02 is the continuation of SPAN-01. This course will focus on the further development of listening, speaking, reading, and writing in a cultural context with primary emphasis on communicative competency. Students will learn how to express in Spanish the most basic functions of everyday life. This course is recommended for students who have completed two

years of high school Spanish; it is not recommended for native speakers. Native speakers should enroll in SPAN-11. (11/03)

#### **SPAN-03 INTERMEDIATE SPANISH**

(CSU breadth area C2)

5 units: 5 hours lecture.

Prerequisite: SPAN-02 or SPAN-11. Advisory: LRNR-30.

Intermediate Spanish is a continuation of SPAN-02 and SPAN-11. This course reviews and further develops grammatical concepts introduced in SPAN-02 and SPAN-11, as well as introduces the student to the remaining major linguistic concepts of the language. Through varied readings, composition, and discussion, the student will increase his or her vocabulary and cultural knowledge. (11/03)

#### **SPAN-04 INTERMEDIATE SPANISH**

(CSU breadth area C2)

5 units: 5 hours lecture.

Prerequisite: SPAN-03. Advisory: LRNR-30.

This course is a thorough review of the fundamentals of reading, writing, speaking, and understanding Spanish designed to aid the student in preparing for advanced studies in Spanish composition, grammar, and conversation, as well as literature in Spanish, history, and culture. (11/03)

#### **SPAN-10 SPANISH FOR SPANISH SPEAKERS**

(CSU breadth area C2)

5 units: 5 hours lecture.

Advisory: ENGL-84 or high school "Spanish 2 for Spanish Speakers."

This course is designed for students who are fluent in Spanish and who are ready to develop literacy skills. The course will focus on extensive reading of all types of texts and their reworking in written form with the intention of expanding the vocabulary, creating an incipient awareness of linguistic registers, discussing items beyond the familial routine, improving written expression, and developing an appreciation for Hispanic culture as manifested in Spanish speaking countries and the U.S. (2/02)

#### **SPAN-11 SPANISH FOR SPANISH SPEAKERS**

(CSU Breadth C2)

5 units: 5 hours lecture.

Prerequisite: SPAN-10 or two years of "Spanish for Spanish Speakers." Advisory: LRNR-30.

This course represents the continuation of SPAN-10. It is designed for students who are fluent in Spanish and who are ready to develop literacy skills. This course continues to focus on extensive reading of all types of texts and their reworking in written form with the intention of expanding the vocabulary, increasing the awareness of linguistic registers, discussing items beyond the familial routine, improving written expression -- particularly accentuation and spelling -- and developing an appreciation for Latino culture as manifested in any of the Spanish-speaking countries, including the USA. (9/04)

#### **SPAN-35 SPANISH ACCENTUATION**

1 unit: 1 hour lecture.

Limitations on enrollment: Being a heritage speaker of Spanish (A heritage speaker uses Spanish with family and friends.) **OR** SPAN-02. Prerequisite: SPAN-02.

This course teaches the student how to correctly place written accents on Spanish words. It includes the division of syllables and the accentuation of groups of words that do and do not require an accent either because of stress patterns or semantic criteria. This course is recommended for students who know how to correctly pronounce the vocabulary taught in Span-02, Elementary Spanish, or those who speak Spanish with family and friends. (11/06)

#### **SPAN-39 ADVANCED SPANISH**

1 unit: 1 hour lecture.

Prerequisite: SPAN-04. Advisory: LRNR-30

This course is designed to acquaint the advanced student with specific items of Spanish language, literature, and culture, including history, political thought and sociological change. Papers will be written which will

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enforce knowledge of these areas and critical analysis of current Spanish intellectual and social thinking. This course may be repeated three times. (10/06)

## SPORTS MEDICINE

(Allied Health Division)

### SPMD-41 SPORTS MEDICINE PROFESSIONS

1 unit: 1 hour lecture.

Advisory: ENGL-A.

This course presents the scope of practice of the various sports medicine professional career opportunities. (5/03)

### SPMD-42 INTRODUCTION TO ATHLETIC TRAINING

3 units: 2 hours lecture, 3 hours lab.

Advisory: ENGL-A.

This is an introductory course in recognition, assessment, management, care, and prevention of injuries occurring in physical activities. (1/04)

### SPMD-43 REHABILITATION IN SPORTS MEDICINE

3 units: 2.5 hours lecture, 1.5 hours lab.

Prerequisite: SPMD-42. Advisory: ENGL-A.

This course, through lecture and lab, will include applications and methods in athletic injury treatment and rehabilitation. It will teach a practical approach to rehabilitation programs through design, implementation, and supervision. (05/03)

## STUDENT GOVERNMENT

(Social Science Division)

### STGV-33ABCD STUDENT GOVERNMENT

2 units: 1 hour lecture, 3 hours lab.

(Note: Students may enroll without holding an office.)

This course surveys theory and practice of parliamentary law, committee techniques, and democratic organization. Students will study some of the factors of successful leadership and effective group membership. Participation in student organization events, such as lectures, leadership workshops, and conferences, is required.

## TUTORIAL

(Developmental and Educational Studies)

### TUTR-35 TUTORIAL SEMINAR

1 unit: 3 hours lab.

Advisories/prerequisites: none

This is a course designed to provide tutors in the Merced College Tutorial Program with opportunity to explore more fully their experiences in the program. Tutors will receive instruction in areas of tutorial technique, group organizations, relationships with faculty and peers, evaluation techniques, and content tutoring. (11/06)

## VOCATIONAL NURSING

(Allied Health Division)

### VOCN-40 FOUNDATIONS OF NURSING

11 units: 5 hours lecture, 18 hours lab.

Limitations on enrollment: Enrollment in the Vocational Nursing program; CPR card; physical; a negative TB skin test or chest x-ray within past 6 months; immunizations; proof of completion of an educational course of study through 12<sup>th</sup> grade or evidence of completion of the equivalent thereof (C2530-VN Practice Act). Prerequisites: ALLH-67; BIOL-50; NUTR-10; VOCN-46A. Corerequisites: VOCN-46B, VOCN-47A.

This course covers theory, principles, and practice of fundamental nursing skills needed to care for adult patients. Health and its preservation is stressed. Interpersonal relationships, community resources, and prevention and treatment of disease are studied. Clinical experience is integrated with classroom theory, and is provided at affiliating hospitals, under direct supervision of Merced College nursing instructors. This is the first semester of nursing theory of a three-semester sequence. Clinical experience is integrated. (1/07)

### VOCN-42 PRINCIPLES AND PRACTICES OF NURSING CARE I

14 units: 8 hours lecture, 18 hours lab.

Limitation on enrollment: Enrollment in the Vocational Nursing program. Prerequisite: VOCN-40. Two-way corequisite: VOCN-47B.

This course emphasizes theoretical principles and clinical experience in meeting Maslow's basic human needs of nutrition, oxygenation, elimination, and affiliation. It involves clinical experiences in meeting the basic human needs of individuals of all ages with commonly occurring health problems. This course is part of the second semester of a three-semester program. Clinical experience is integrated. (4/07)

### VOCN-44 PRINCIPLES AND PRACTICES OF NURSING CARE II

14 units: 8 hours lecture, 18 hours lab.

Limitation on enrollment: Enrollment in the Vocational Nursing program. Prerequisite: VOCN-42. Two-way corequisite: VOCN-47C.

This course emphasizes theoretical principles of Maslow's basic human needs of safety, hygiene, rest, activity, comfort, and self-actualization as it relates to common and complex health problems occurring in individuals of all age groups. Pathophysiologic and psychosocial assessment and management of medical-surgical disorders are stressed. General pharmacological and nutritional considerations are included. This course is part of the third semester of a three-semester program. Clinical experience is integrated. (4/07)

### VOCN-46A APPLIED MATHEMATICS FOR PHARMACOLOGY

1 unit: 1 hour lecture.

Prerequisites: ENGL-A, MATH-80. Advisory: ALLH-67.

This is an introductory pharmacology course which includes an introduction to the professional context of drug administration, and study of the metric, apothecary, and household systems of measurement. Nursing responsibility and patient safety is included. Completion of this course requires accurate interpretation of doctors' orders, reading medication bottles, calculating drug dosages, and the reason for their application. (11/02)

### VOCN-46B PHARMACOLOGY FOR NURSES

2 units: 2 hours lecture.

Limitations on enrollment: Enrollment in the Vocational Nursing program; CPR card; physical; negative TB skin test or chest x-ray within past 6 months; immunizations; proof of completion of an educational course of study through 12<sup>th</sup> grade or evidence of completion of the equivalent thereof (C2530-VN Practice Act). Two-way corequisites: VOCN-40, VOCN-47A.

This is an introductory pharmacology course which includes uses, effects and safe administration of medications. Common local and systemic drugs are studied. Nursing responsibilities and client safety are emphasized. (1/07)

### VOCN-47A NURSING GUIDANCE I

1 unit: 1 hour lecture.

Limitation on enrollment: Enrollment in the Vocational Nursing program. Two-way corequisites: VOCN-40, VOCN-46B.

This course examines socialization and interpersonal communications related to vocational nursing. Course topics include verbal and non-verbal communication; communication problems in the nurse-patient relationship; the hospital as a working and learning environment; self-actualization relating to the elderly; and death and dying. (1/07)

### VOCN-47B NURSING GUIDANCE II

1 unit: 1 hour lecture.

Limitation on enrollment: Enrollment in the Vocational Nursing program. Prerequisite: VOCN-40. Two-way corequisite: VOCN-42.

This course examines the nature of stress and its influences on coping and adapting. Related topics examined include crisis and crisis intervention, and psychophysiological and somatopsychic responses to stress and anxiety. (1/07)

### VOCN-47C NURSING GUIDANCE III

1 unit: 1 hour lecture.

Limitation on enrollment: Enrollment in the Vocational Nursing program. Prerequisite: VOCN-42. Two-way corequisite: VOCN-44.

This course examines current and evolving patterns of mental health

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care and the shifts from inpatient custodial care to community-based treatment for the mentally ill. This course also examines the health-illness continuum, psychopathology, neuroses and psychoses, clinical disorders and maladaptations of behavior, and psychopharmacological approaches to treatment. (1/07)

#### **VOCN-48 INTRAVENOUS THERAPY/BLOOD WITHDRAWAL**

2 units: 2 hours lecture.

Limitation on enrollment: Licensed as a Vocational Nurse or Registered Nurse (required by section 2860.5 of the Board of Vocational Nurses and Psychiatric Technicians).

This short-term course is designed to prepare nurses to start and superimpose intravenous fluid and perform blood withdrawal as ordered by the physician. The course will cover psychological preparation of the patient, selection of equipment, aseptic technique, relevant anatomy and physiology, pharmacology of intravenous solutions, and administering blood components. Students will perform simulated and actual intravenous catheterizations and blood withdrawals. (5/01)

### **WATER/WASTEWATER TECHNOLOGY**

*(Science, Math and Engineering Division)*

#### **WWT-60 WATER TREATMENT PLANT OPERATIONS**

3 units: 3 hours lecture.

Advisories: ENGL-81, ENGL-84; MATH-80.

This course is an introduction to water treatment plant operations and processes. It will include the study of sources of water supply, water quality, treatment of water for domestic use, operations of water treatment systems, and introduction to water treatment operations arithmetic. This course prepares the student to test for state certification for water treatment plant operator grade 1 and 2. (11/03)

#### **WWT-61 INTRODUCTION TO WASTEWATER TREATMENT**

3 units: 3 hours lecture.

Advisories: ENGL-81, ENGL-84; MATH-80.

This course is an introduction to wastewater treatment plant operations and processes. It will include the study of wastewater terminology; current methods of wastewater treatment – primary, secondary, and advanced; wastewater quality; and basic wastewater mathematics. This course prepares the student to test for state certification for wastewater treatment plant operation grade 1 and 2 (entry-level). (11/03)

#### **WWT-62 WATER AND WASTEWATER CALCULATIONS**

3 units: 3 hours lecture.

Advisories: ENGL-81, ENGL-84; MATH-80.

This course provides for mastery of mathematical calculations specifically involving water and wastewater treatment plant operations and processes. It incorporates use of a handheld calculator, scientific notation, and use of dimensional analysis as tools of problem solving. This course prepares the student to test for state certification for wastewater treatment plant operator grade 1 and 2 (entry-level). (11/03)

#### **WWT-63 ADVANCED WATER TREATMENT PLANT OPERATIONS**

3 units: 3 hours lecture.

Prerequisite: WWT-60. Advisory: ENGL-81.

This course is a continuation of study of water treatment plant operations and processes with emphasis on knowledge and skills needed by operators of conventional surface and ground treatment. Topics include control of metallic ions, trihalomethanes, disposal of wastes in the operation of water plants, instrumentation and advanced laboratory procedures, and safety and drinking water regulations. The course provides classroom background to prepare students to take state certification exams. (11/03)

#### **WWT-64 ADVANCED WASTEWATER TREATMENT**

3 units: 3 hours lecture.

Prerequisite: WWT-61. Advisory: ENGL-81.

This course is a continuation of study of wastewater treatment plant operations and processes. It will emphasize details of the processes that occur in a wastewater treatment plant including aeration, maintenance of microbe populations, sludge digestion, and chemical removal. This course is designed for students who are in grades III and IV of state certification

and satisfies eight educational points towards certification as a wastewater treatment operator. (11/03)

### **WELDING TECHNOLOGY**

*(Industrial Technology Division)*

#### **WELD-06 FUNDAMENTALS OF OXY-FUEL WELDING AND SHIELDED METAL ARC WELDING (Also: MECH-06)**

3 units: 2 hour lecture, 3 hours lab.

Advisories: ENGL-81, ENGL-84; MATH-80 or MATH-83.

This course emphasizes development of minimum skill standards in welding. The Shielded Metal Arc Welding (SMAW), Oxy-Fuel Welding (OFW) and Oxy-Fuel Cutting (OFC) processes are covered as prescribed in the (AWS) American Welding Training Qualification (QC 10) entry-level standards. (2/06)

#### **WELD-07 FUNDAMENTALS OF T.I.G. AND M.I.G. WELDING**

(Also: MECH-07)

3 units: 2 hours lecture, 3 hours lab.

Advisories: ENGL-81, ENGL-84; MATH-80 or MATH-83.

This course emphasizes the development of minimum skill standards in welding. The Gas Metal Arc Welding (GMAW)/(MIG), Gas Tungsten Arc Welding (GTAW)/(TIG) and Plasma Arc Cutting (PAC) processes are studied as prescribed in the American Welding Society (AWS) Training Qualification (QC 10) entry-level standards. (2/06)

#### **WELD-40A WELDING DESIGN AND CONSTRUCTION**

(Also: MECH-19A)

3 units: 2 hours lecture, 3 hours lab.

Prerequisite: WELD-07 or MECH-07.

Advisories: ENGL-81, ENGL-84; MATH-80 or MATH-83.

This course covers basic metal fabrication skills as well as the design and construction of special industrial and agricultural equipment. (2/06)

#### **WELD-40B WELDING DESIGN AND CONSTRUCTION**

(Also: MECH-19B)

3 units: 2 hours lecture, 3 hours lab.

Prerequisite: WELD-40A/MECH-19B. Advisories: ENGL-81, ENGL-84; MATH-80 or MATH-83.

This course is a continuation of WELD-40A/MECH-19A. It covers basic and advanced metal fabrication skills as well as the design and construction of special agricultural and industrial equipment. (2/06)

#### **WELD-45 ADVANCED ARC WELDING PROCEDURES**

(Also: MECH-45)

3 units: 2 hours lecture, 3 hours lab.

Advisories: ENGL-B; MATH-80 or MATH-83; WELD-06/MECH-06 and WELD-07/MECH-07.

This course is designed to emphasize advanced skills and techniques of Shielded Metal Arc Welding, Gas Metal Arc Welding, Gas Tungsten Arc Welding, Air Carbon Arc Cutting, and Oxyacetylene Flame Cutting as related to pipe and structural members. Included will be welding assembly print interpretation, weld symbol interpretation, and weld joint preparation. Students will be prepared to take an AWS Welder Certification Test during this course. (2/06)

#### **WELD-48 SPECIAL PROBLEMS IN WELDING TECHNOLOGY**

2 units: 6 hours lab.

Prerequisites: WELD-06/MECH-06, WELD-07/MECH-07. Advisories: ENGL-81, ENGL-84; MATH-80 or MATH-83.

This course prepares the student for employment in the welding trades with entry-level skills. Trade techniques and information needed for employment in trade occupations will receive special attention. (2/06)

### **ZOOLOGY**

*(See Biology)*

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# Continuing Education (Noncredit) Courses

The noncredit program's office is located at the Merced Tri-College Center on the college campus (entrance off of G Street). This program offers a wide variety of classes to the community with no registration fee. Classes are offered to assist students seeking employment, to help them relearn skills and meet current job requirements, and to provide personal enrichment. Call 381-6540 for further information.

## BASIC SKILLS

### EDU-110 READING AND COMPUTERS

Course duration: 324 hours; open entry format.

This course is best-suited for adult learners below a third grade reading ability who need individual attention and a lot of encouragement and reinforcement while learning basic phonics, reading, spelling, and vocabulary skills. The student can learn at his/her own rate of speed with computer-assisted instruction. (12/05)

### EDU-111 READING AND COMPUTERS II

Course duration: 324 hours, open entry format.

Advisory: EDU-110.

This course is best suited for adult learners at third grade level reading and vocabulary level up to approximately sixth grade level who require individual attention and reinforcement while reviewing basic phonics to improve reading, spelling, and vocabulary skills. (12/05)

### EDU-112A SKILLS ACQUISITION FOR STUDENT SUCCESS – GENERAL

Course duration: 90 hours; open entry format.

This course provides a supervised learning experience for students who can benefit from individualized instruction in study skills and study habits in a laboratory setting. The study skills and study habits learned depend on the needs of the individual students and include educational computer applications, knowledge of college resources, and application of composition skills across the curriculum. (5/06)

### EDU-112B SKILLS ACQUISITION FOR STUDENT SUCCESS – MATH

Course duration: 90 hours; open entry format.

This course provides a supervised learning experience for students who can benefit from individualized instruction in study skills and study habits in a laboratory setting. The study skills and study habits learned depend on the needs of the individual students and include educational computer applications, knowledge of college resources, and application of computation skills across the curriculum. (5/06)

### EDU-112C SKILLS ACQUISITION FOR STUDENT SUCCESS – ALLIED HEALTH

Course duration: 25 hours; open entry format.

This course is designed to provide students the opportunity to improve and enhance their nursing skills through any number of training exercises that assist in the clinical development of, and reinforcement of, the practical nursing skills. The course is a lab setting enriched with a resource library, manikins (for skills practice), and computer stations. (5/06)

### GED-101 BASIC SKILLS AND GED PREPARATION

Course duration: 324 hours; open entry format.

This course is designed to build the basic skills of adults in the areas of writing, reading comprehension, and mathematics. Special emphasis is placed on analytical reading skills, problem solving, and test preparation. Subject matters included are the areas covered by the GED exam such as science, social studies, literature, mathematics, and writing. This course utilizes a computer software program to assist students to learn at their own pace. (12/05)

### GUI-101 INTRODUCTION TO COLLEGE

Course duration: 1.5 hours; open entry format.

This course will acquaint students with the College, academic regulations, the availability of campus resources, and the importance of educational planning. (1/06)

### GUI-102 PROBATION SOLUTIONS – LEVEL 1

Course duration: 1.5 hours; open entry format.

This course is required for Level 1 probation students. Successful completion of this course is required for students to enroll. The student will learn strategies to get off probation status and become successful in reaching their educational goals. (1/06)

### TUT-106 SUPERVISED TUTORING

Course duration: 102 hours; open entry format.

This course is designed to assist students who are experiencing difficulty in their college courses. The course provides tutoring from qualified tutors in either a one -to -one or small group setting. (4/06)

## DISABLED STUDENTS

### ARTS-209 ARTS AND CRAFTS FOR DISABLED ADULTS

Course duration: 54 hours; open entry format.

This course is designed to help disabled persons acquire skills, knowledge, and an appreciation of a variety of art forms. Students will have an opportunity to participate in and learn about a variety of art subjects such as sculpture, design, basic use of color, drawing, painting, decorative arts, and needlework. (1/06)

### HLT-215 COMMUNITY LIVING SKILLS: HEALTH EDUCATION

This course is designed to develop skills in individuals who need guidance in pre-vocational skills and work-readiness skills. (5/05)

### LDIP-224 LEARNING DISABILITY IDENTIFICATION AND PLANNING

Course duration: 9 hours; open entry format.

Limitation on enrollment: Students must be enrolled in Merced College credit courses.

This course is designed to provide enrolled Merced College students with the assessment necessary to identify themselves as learning disabled using the California Community College Learning Disability Model (CCCLDM), and how to identify and understand the support services necessary for academic success. (5/06)

### PHYC-206 BALANCE AND MOTOR SKILLS FOR THE PHYSICALLY LIMITED

Course duration: 54 hours; open entry format.

This course is a specialized exercise program for those in assisted living environments. Exercise routines provide physical, mental, and sensory stimulation, improve posture, and increase overall mobility and knowledge of proper body mechanics. (4/06)

### SKLS-210 DAILY LIVING SKILLS

Course duration: 324 hours; open entry format.

This course is designed primarily for mentally and/or physically disabled students who are functioning at very low levels. The course teaches the basic living skills necessary for successful social interaction and self-care to help enhance self-esteem. (4/06)

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## **SLAN-201 BEGINNING SIGN LANGUAGE**

Course duration: 36 hours; open entry format.  
This course is designed to teach beginning students how to communicate with the hearing impaired. Communication skills are acquired through signed words, gestures, finger spelling, and facial expression. Course instruction includes American Sign Language vocabulary taught concurrently with an overview of all sign systems. There is also minor emphasis on Signing Exact English (SEE). The course will include an overview of deaf culture and the history of deaf education. (5/06)

## **HEALTH AND SAFETY**

### **PHYC-305 PHYSICAL CONDITIONING**

Course duration: 54 hours; open entry format.  
This course is designed to help students of varying fitness levels attain optimal fitness levels through physical conditioning and exercise. Course topics may include cardiovascular routines, floor exercise, and stretching. (4/06)

### **PHYC-308 AQUATIC FITNESS**

Course duration: 18-90 hours; open entry format.  
This course provides personalized aquatics programs designed to develop and maintain cardiovascular and muscular fitness. The course promotes exercise, through such means as water aerobics, swimming, and water sports, as a way to maintain good health. (3/06)

### **PHYC-310 FLEXIBILITY AND CARDIOVASCULAR FITNESS**

Course duration: 90 hours; open entry format.  
This exercise course is designed to improve flexibility and cardiovascular fitness of all major muscle groups. The class provides a well-rounded fitness program that will strengthen, condition, and improve sports performance. Specialized classes are available for badminton, baseball, basketball, football, soccer, softball, tennis, and volleyball. (4/06)

### **TRNG-324 CIVILIAN HANDGUN SAFETY TRAINING**

Course duration: 12 hours; open entry format.  
This course is designed to familiarize the student with state laws and local ordinances pertaining to the use of handguns as a means of self-defense. The course provides awareness of laws regarding handgun ownership. The course also provides discussion of the moral aspects of the use of deadly force, even when there is a genuine threat of death or great bodily harm to one's self or others. (4/06)

## **HOME ECONOMICS**

### **SEW-402 BEGINNING QUILTING**

Course duration: 54 hours; open entry format.  
This course will teach students the fundamentals of quilting. Students will learn ideas and techniques for creating quilted and patchwork bed covers, wall art, clothing, and other quilted projects. Topics include piecing, appliqué, and other quilting skills. (1/06)

### **SEW-407 NEEDLECRAFTS AND SEWING**

Course duration: 54 hours; open entry format.  
This is a course with instruction in knitting, crocheting, stitchery, and sewing. Each student will choose an area of needlework and learn to master the skills for that area. (12/05)

### **SEW-408 SEWING SPECIALTY FABRICS**

Course duration: 54 hours; open entry format.  
This course is designed to provide the technical knowledge for specialty fabric construction. Emphasis will be placed on fabric identification and selection, sewing techniques, and an overview of sewing and pressing equipment. (4/06)

## **OLDER ADULTS**

### **ARTS-501 PAINTING TECHNIQUES FOR OLDER ADULTS**

Course duration: 54 hours; open entry format.  
This course provides beginning and intermediate instruction in painting and drawing techniques using a variety of mediums. Classes and topics include drawing, watercolor, charcoal, acrylic, pen, pencil, oil, gourd painting, and fabric painting. (1/06)

### **ARTS-502 ARTS AND CRAFTS FOR OLDER ADULTS**

Course duration: 54 hours; open entry format.  
This course provides the fundamentals for designing and creating self-expression through art mediums. Instruction may include fundamentals for woodworking, bonsai, quilting, working with paper and fiber materials, macramé, needlework, stained glass, and beading. (4/06)

### **ARTS-503A POURED CERAMICS FOR OLDER ADULTS**

Course duration: 54 hours; open entry format.  
This course is designed to teach students to work with ceramic pieces (greenware) and provide training in different greenware techniques. Students will create ceramic pieces from molds. The class provides the opportunity for creation of individual ceramic projects through the use of a variety of finishing techniques including hand painting, relief work, clay lifting, halo gold, lusters, washes, scrip, and firing. (4/06)

### **ARTS-503B WHEEL THROWN/HAND BUILT CERAMICS FOR OLDER ADULTS**

Course duration: 72 hours; open entry format.  
This course is designed to teach students to work with clay, creating ceramic pieces utilizing hand building and wheel throwing techniques. Students work with a variety of relief carving and finishing applications, including slip trailing, hand building, use of the potter's wheel, hand painting, pit firing, raku firing, and high and low fire glazing. (4/06)

### **ARTS-505 CREATIVE EXPRESSION FOR OLDER ADULTS**

Course duration: 54 hours; open entry format.  
This course is designed to assist adults in developing and writing their personal memories or life stories in a manner that will be of interest to families, heirs, and friends. Completed works will be treasured, preserved, and possibly published by the student. (4/06)

### **ARTS-507A MUSIC THERAPY FOR OLDER ADULTS (BEGINNING)**

Course duration: 54 hours; open entry format.  
This beginning course provides group instruction in band instruments. The course is designed to teach beginning students to sight read music, develop correct timing, and increase knowledge of a variety of music styles and compositions. Students may be invited to participate in recitals and public performances, depending on their ability. (4/06)

### **ARTS-507B MUSIC THERAPY FOR OLDER ADULTS (INTERMEDIATE)**

Course duration: 54 hours; open entry format.  
Limitation on enrollment: Students must demonstrate ability to sight-read music for their instrument.  
This course provides experience in performing concert and symphonic band literature. Public performance and exchange concerts are scheduled in addition to class instruction and rehearsals. (4/06)

### **ARTS-512 SENIOR CHORAL DYNAMICS**

Course duration: 54 hours; open entry format.  
Limitation on enrollment: Ability to accurately match pitch and correctly follow verbal instructions.  
This course is a study of standard choral literature. It emphasizes part-singing, intonation, breath control, vocal development, style, eras, musical devices, etc. The ensemble makes several public concert appearances each year. (4/06)

### **EDU-508 MATURE DRIVER IMPROVEMENT**

Course duration: 8 hours; open entry format.  
This course is designed primarily for drivers age 55 and older and includes classroom instruction on safety, road courtesy, improving driving performance, safe driving techniques for emergencies, and general vehicle maintenance. (12/05)

### **EDU-510 GROWING YOUNGER**

Course duration: 54 hours; open entry format.  
This course is designed to help older adults maintain and improve the cognitive functions of the brain that tend to diminish as part of the normal

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aging process. Students will engage in a course of mental "calisthenics" to enhance memory, cognitive skills, creative thinking, and problem solving. Topics include exploration of basic mathematical concepts, ancient and cultural board games, word games, puzzles, anagrams, and probability. (5/06)

#### **PHYC-506 MIND AND BODY FITNESS FOR OLDER ADULTS**

Course duration: 36- 54 hours; open entry format.

This course is designed to provide a full range of motion with flexibility and stretching that includes activities such as full range of motion in joints, gentle aerobic exercise for heart and lungs, hand weights for strengthening muscles and bones, and floor exercises to tone the muscles of the back, buttocks, and legs. (1/06)

#### **SEW-509 SEWING FOR SENIORS**

Course duration: 36- 54 hours; open entry format.

This course provides instruction in clothing construction with an emphasis on learning techniques specific to fabrics, pattern analysis, figure analysis, and construction skills. (1/06)

### **PARENTING**

#### **PTG-612 PARENTING SERIES**

Parenting is designed to provide quality education and support opportunities to caregivers of children and youth in out-of-home care. The courses will help providers meet the educational, emotional, behavioral, and developmental needs of children in their care. Topics include accessing education and health services; permanency planning and reunification; child development; cultural diversity and sensitivity; parenting skills and positive discipline; and self-esteem. Additional topics are designed to provide caregivers with the skills needed to care for children with medical, learning, and behavioral difficulties.

### **VOCATIONAL**

#### **BUSN-749 MICROCOMPUTERS AND BUSINESS**

Course duration: 720 hours; open entry format.

Advisory: Basic keyboarding skills.

This program is a project-based course designed to develop student entry-level skill proficiency in using state-of-the-art technology to solve problems. Various simulations reflective of real life experiences will be a major part of the instructional units. (5/07)

#### **BUSN-752 INTRODUCTION TO MICROCOMPUTERS**

Course duration: 24 hours; open entry format.

This course will introduce students to microcomputers and the Windows software environment. Students will learn to identify the components of desktop screens and learn to execute basic computer commands. The class may also cover Internet browsing, email, website navigation, and downloading files. (4/06)

#### **LANG-716 SPANISH IN THE WORKPLACE**

Course duration: 54 hours; open entry format.

This introductory course is designed for non-Spanish speakers who wish to develop specific conversational skills that are related to their work or community environment. Special words and phrases are taught with an emphasis on basic vocabulary and word recognition skills that will result in improved communication with Spanish speaking customers, patients, and clients. (4/06)

#### **LAW-765 COURT INTERPRETER AND ADMINISTRATIVE HEARINGS**

Course duration: 54 hours; open entry format.

This course is designed to help prepare students to take the state and/or federal exams for Spanish language interpreters. It provides an introduction to the court system and an overview of the administrative hearing process. Topics also include public speaking, memory development, note taking, and simultaneous interpretation. (5/06)

#### **MED-717 MEDICAL ASSISTING**

Course duration: 960 hours; open entry format.

Advisory: none.

This entry-level course is designed for adult students who desire vocational training in the field of medical assisting. Course instruction includes an overview of the career of medical assisting, knowledge of medical law and ethics, oral and written communication skills, medical terminology, anatomy and physiology, and administrative and clinical office procedures. (5/07)

#### **SOCL-760 CAREER AND LIFE PLANNING**

Course duration: 495 hours; open entry format.

This course is designed for adults who function at limited level of cognitive development. It is designed to help each student acquire positive work habits, attitude, and motivation so that he/she can achieve their fullest vocational potential. Course content will include training in basic work habits that include promptness, social skills, accepting work supervision, appropriate dress, and grooming. Students will learn about the value of work, career options, and effective strategies for obtaining employment. (5/06)

#### **SOCL-761 VOCATIONAL LIFE PLANNING**

Course duration: 8 hours; open entry format.

This course is designed primarily for students who are part of the Merced College Independent Living Program (ILP). The course addresses issues and barriers that students will typically encounter while seeking and maintaining employment and success in becoming an independent adult. Course content includes instruction in the areas of education, employment, housing, money management, and daily living skills. (5/06)

#### **SKLS-745 SKILLS FOR SUCCESS (NURSING SUCCESS CAMPS)**

Course duration: 72 hours; open entry format.

This support course is designed to provide students the opportunity to enhance the skills needed for success and retention in the nursing program. Intensive review and practical application of content areas related to the nursing program is emphasized. (4/06)

#### **TRNG-768 BUS DRIVER TRAINING/RECERTIFICATION**

Course duration: 30 hours; open entry format.

This course is designed to improve the bus driver's public relations ability and to provide a basic and refresher course information on vehicle checkout procedures, first aid, and emergency procedures. This course also includes good driving fundamentals, assessing and adjusting to road conditions, and techniques for safe downhill driving. Defensive driving skills and passenger discipline are addressed. A discussion of new state laws and requirements and an analysis of bus accidents is provided. (12/05)

### **ENGLISH AS A SECOND LANGUAGE (ESL)**

#### **ENG-801 ESL (ENGLISH AS A SECOND LANGUAGE) LEVEL 1**

Course duration: 324 hours; open entry format.

This course is for preliterate and non-literate ESL students who have no, or very few English language skills. Emphasis of the course is on aural/oral skills and visual reinforcement. (3/06)

#### **ENG-802 ESL (ENGLISH AS A SECOND LANGUAGE) LEVEL 2**

Course duration: 324 hours; open entry format. Advisory:

ENG-801.

This course is designed for preliterate and non-literate ESL students who have minimal English language skills. Emphasis in this course is on aural/oral skills with visual reinforcement. The student will be introduced to reading, writing, and math skills. (3/06)

#### **ENG-803 ESL (ENGLISH AS A SECOND LANGUAGE) LEVEL 3**

Course duration: 324 hours; open entry format.

Advisory: ENG-802.

This course is for beginning level students who are familiar with the printed and written alphabet but have minimal ability to use English. This course includes practice in listening, speaking, reading, and writing English on a beginning level. (3/06)

#### **ENG-804 ESL (ENGLISH AS A SECOND LANGUAGE) LEVEL 4**

Course duration: 324 hours; open entry format.

Advisory: ENG-803.

This course is designed for high-beginning level students who need more practice with English skills. This course includes practice in listening,

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speaking, reading, and writing on an advanced beginning level. (3/06)

### **ENG-805 ESL (ENGLISH AS A SECOND LANGUAGE) LEVEL 5**

Course duration: 324 hours; open entry format.

Advisory: ENG-804.

This course is for low-intermediate students who need practice and expansion of their communication skills. This course includes practice in listening, speaking, reading, and writing on a low to intermediate level. (3/06)

### **ENG-806 ESL (ENGLISH AS A SECOND LANGUAGE) LEVEL 6**

Course duration: 324 hours; open entry format.

Advisory: ENG-805.

This course is for high-intermediate ESL students who have learned basic survival skills, but who need instruction that will lead to a relatively sophisticated level of discourse of issues and ideas that reach beyond basic survival. This course will prepare students to take credit courses at Merced College. This course includes practice in listening, speaking, reading, and writing. (3/06)

## **CITIZENSHIP FOR IMMIGRANTS**

### **HST-908 UNITED STATES CITIZENSHIP**

Course duration: 25 hours; open entry format.

This course is designed to prepare students to meet the United States history, government, and English requirements necessary to become a United States citizen. The course covers the symbols and beliefs of the United States; federal, state, and local government; the Constitution; the Bill of rights; U.S. history, and a review of the interview and testing process required by the immigration services. (1/06)

# **BUSINESS AND COMMUNITY PROGRAMS**

## **COMMUNITY SERVICES**

The Community Services program at Merced College has been an integral part of the College's commitment to provide a wide choice of educational and cultural experiences in which the citizens of the district can participate. The Community Services Program offers the community an alternative that does not exist in the regular instructional program. To receive more information, call 384-6224.

Travel/Lecture Series -- This series offers a variety of travel and adventure films narrated by the film producer.

Performing Arts -- Community Services contracts with artists for theater performances including special assemblies for local schools. Additionally, they sponsor a cooperative of dance instructors to provide public performances to benefit local scholarship programs.

Workshops and Seminars -- These programs deal with community problems and topics of current interest. They are conducted in cooperation with special interest groups and other community organizations.

Classes -- Community Service fee-based classes are offered by Merced College to district residents interested in studying specific interests and enrichment areas. On-line (Internet) classes are offered throughout the year.

Special Programs for Children and Young Adults -- The Community Services Office maintains a variety of programs during the traditional summer session and throughout the year including College for Kids classes, sports camps and workshops, swimming programs, and summer theater.

Trips & Tours -- Bus tours to museums, historic sites, and to dramatic and musical performances in other areas of California are planned throughout the year. Nominal fees are charged to offset the cost of the performances and transportation. Escorted tours to locations throughout the world are also offered each year.

Traffic Safety School -- Merced College is licensed by the Department of Motor Vehicles to provide this course for adults and juveniles. With permission from the court of jurisdiction, taking this course will prevent your citation from appearing on your record. Traffic School Online, in English and in Spanish, is also available.

## **EMPLOYER-FOCUSED TRAINING CENTER (ETC)**

ETC is dedicated to meeting the needs of employees. The Center is part of the College's extended campus, and engages in a wide range of activities in support of local businesses such as on-site training, modular curriculum, and literacy or skill-enhancement training. Other programs include: Computers in Business, Medical Technology, Legal Technology, and Medical Assisting. Call 722-5092 for more information.

## **CENTER FOR INTERNATIONAL TRADE DEVELOPMENT (CITD)**

The Center for International Trade Development is one of 14 centers located in the state to provide small to medium sized businesses with one-on-one counseling, technical assistance, training, and market research. Although the CITD works with businesses, it also serves as a resource for faculty and assists with the internationalization of curriculum. The CITD serves a region of ten counties and maintains outreach centers providing local training, counseling, and access to an extensive international library.

## **WORKPLACE LEARNING RESOURCE CENTER**

Since its inception in 1994, the WpLRC has increased Merced Community College's capacity to deliver training and non-training services to regional businesses and industries through research, in-service training, and the development and implementation of innovative training methodologies. The WpLRC supports essential elements of the California Community College Mission and Goals, which is to *advance California's economic growth and global competitiveness through education, training, and services that contribute to continuous work force improvement*. The Center conducts needs assessments and develops on-site programs to retrain employees or upgrade employees' skills in a wide variety of subjects. Call 383-0360 for information or log on to our web site at [www.mccd.edu/wplrc](http://www.mccd.edu/wplrc).