Courses Offered at Modesto Junior College
### How to Read Course Descriptions

<table>
<thead>
<tr>
<th>Course Prefix and Number</th>
<th>Course Title</th>
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<tbody>
<tr>
<td>PHYSO — PLSC</td>
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</tbody>
</table>

#### Subheadings will contain one or more of the following:

- **Prerequisite**: Course work required before you may enroll
- **Corequisite** or **Corequisite enrollment..** (Course to be taken concurrently if not prior to the listed course)
- **Formerly listed as** (Previous course prefix and/or number, or title)
- **Also offered as** (Course offered in another division)
- **Recommended for Success**: Course, ability, or skill level strongly advised for success
- **Non degree course**: Units do not apply toward degree

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<table>
<thead>
<tr>
<th>Course Title</th>
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<tbody>
<tr>
<td>PHYS 165 — INTRODUCTORY PHYSICS</td>
<td>5 Units</td>
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<tr>
<td>PHYS 101 — INTRODUCTORY HUMAN PHYSIOLOGY</td>
<td>5 Units</td>
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<tr>
<td>PHYS 103 — INTRODUCTION TO NEUROSCIENCE</td>
<td>3 Unit(s)</td>
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<tr>
<td>PLSC 1 — INTRODUCTION TO PLANT SCIENCE</td>
<td>3 Units</td>
</tr>
<tr>
<td>PLSC 201 — INTEGRATED PEST MANAGEMENT</td>
<td>1 Unit</td>
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<tr>
<td>PLSC 255 — PLANT PROPAGATION/PRODUCTION</td>
<td>3 Units</td>
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<tr>
<td>PLSC 256 — FRUIT SCIENCE</td>
<td>3 Units</td>
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<tr>
<td>PLSC 257 — PLANT NUTRITION AND FERTILIZER</td>
<td>3 Units</td>
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<td>PLSC 258 — PLANT PEST CONTROL</td>
<td>3 Units</td>
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<td>PLSC 260 — PLANT PEST CONTROL</td>
<td>3 Units</td>
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<tr>
<td>PLSC 261 — PLANT DISEASE CONTROL</td>
<td>3 Units</td>
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<tbody>
<tr>
<td>PLSC 200 — INTRODUCTION TO PLANT SCIENCE</td>
<td>3 Units</td>
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<tr>
<td>PLSC 250 — FIELD CROPS</td>
<td>3 Units</td>
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<tr>
<td>PLSC 251 — VEGETABLE CROPS</td>
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<tr>
<td>PLSC 252 — PLANT PROPAGATION/PRODUCTION</td>
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<td>PLSC 253 — PLANT NUTRITION AND FERTILIZER</td>
<td>3 Units</td>
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<tr>
<td>PLSC 254 — PRUNING</td>
<td>1 Unit</td>
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<tr>
<td>PLSC 255 — INTEGRATED PEST MANAGEMENT</td>
<td>1 Unit</td>
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<tr>
<td>PLSC 256 — FRUIT SCIENCE</td>
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<table>
<thead>
<tr>
<th>Unit Value</th>
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<tbody>
<tr>
<td>Lecture and/or Laboratory.</td>
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<tr>
<td>Hours arranged</td>
<td>(Laboratory time arranged on individual basis)</td>
</tr>
<tr>
<td>(A-F Only)</td>
<td>Letter grade only for course completion.</td>
</tr>
<tr>
<td>(P/NP Only)</td>
<td>Credits/No Credit only, no letter grade given</td>
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<tr>
<td>(A-F or P/NP)</td>
<td>Option to complete course for letter grade or on a Pass/No Pass basis</td>
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| Parentheses will contain one or more of the following: |
| Transfer: indicates the transferrability of a course to Columbia College, California State University (CSU) or University of California (UC), and/or whether or not the course has TCSU (LDTP) Articulation, or equivalencies with Columbia College. |
| General Education: Identifies whether or not a course fulfills a General Education requirement area specified in one of the three General Education patterns. |
ADJU
(Administration of Justice)

For degrees and certificates earned in Administration of Justice, see the Behavioral and Social Sciences Division on page 116.

ADJU 145—COMMUNITY AGENCY SERVICE 1 Unit
Prerequisite: Satisfactory completion of ADJU 201
Concurrent enrollment: ADJU 145A, ADJU 145B, ADJU 145C, or ADJU 145D.
Analysis of field experiences of students concurrently enrolled in ADJU 145A, 145B, 145C, or 145D. Class time is devoted to sharing and evaluating problems that develop, and ways of resolving them will be sought by class members. Lecture. Three maximum completions. Transfer: CSU (TCSU CJ 110)

ADJU 145 A,B,C,D—COMMUNITY AGENCY SERVICE FIELDWORK 1-4 UNITS
Prerequisite: Satisfactory completion of ADJU 201
Concurrent enrollment: ADJU 145
Supervised field experience in a variety of community social agencies. Weekly lab. 75 hours of work experience or 60 hours of volunteerism in a community service/social agency are required for every unit earned each semester. May be repeated up to 16 units in any combination. Transfer: CSU

ADJU 201—INTRODUCTION TO ADMINISTRATION OF JUSTICE 3 Units
History and philosophy of the administration of justice in America. Overview of its sub-systems, including their role expectations and interrelationships. Overview of theories to account for crime, punishment and rehabilitation. Introduction to professional education, training and ethics in the administration of justice/field. Field trips may be required. Lecture. (A-F Only) Transfer: CSU, UC (TCSU CJ 201) General Education: (MUC-GE: B) (CSU-GE: 00)

ADJU 202—PRINCIPLES AND PROCEDURES OF THE JUSTICE SYSTEM 3 Units
Recommended for Success: Satisfactory completion of ADJU 201
Role and responsibilities of each Administration of Justice system segment; law enforcement, judicial, corrections. Past, present and future exposure to each sub-system procedure from initial entry to final disposition; relationship each segment maintains with its system members. Field trips may be required. Lecture. (A-F Only) Transfer: CSU

ADJU 203—CONCEPTS OF CRIMINAL LAW 3 Units
Recommended for Success: Satisfactory completion of ADJU 201 and 202.
Historical development, philosophy of law and constitutional provisions; definitions, classification of crime and their application to Administration of Justice system, legal research, case law, methodology and concepts of law as a social force. Field trips may be required. Lecture. (A-F Only) Transfer: CSU, UC

ADJU 204—LEGAL ASPECTS OF EVIDENCE 3 Units
Recommended for Success: Satisfactory completion of ADJU 202 and 203.
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. Field trips may be required. Lecture. (A-F Only) Transfer: CSU

ADJU 205—COMMUNITY RELATIONS 3 Units
Roles of Administration of Justice practitioners and agencies. Interrelationships and role expectations among the various agencies and the public. Principal emphasis on the professional image of Administration of Justice system and development of positive relationships between system members and the public. Lecture. (A-F Only) Transfer: CSU, UC

ADJU 206—MULTICULTURAL ISSUES WITHIN PUBLIC SAFETY 3 Units
Overview of multicultural concepts and issues; application of those concepts and issues to the four public safety disciplines: corrections, fire safety, hazardous materials, law enforcement. Identification of problems related to an increasingly diverse population. Examination of strategies to overcome these problems, particularly in relation to the maintenance of social order. Field trips required. Lecture. (A-F Only) Transfer: CSU

ADJU 210—COMMUNICATIONS IN CRIMINAL JUSTICE 3 Units

ADJU 212—CRIMINAL INVESTIGATION 3 Units
Fundamentals of investigation; crime scene search and recording; collection and preservation of physical evidence; scientific aids; modus operandi; sources of information; interviews and interrogation; follow-up and case preparation. Lecture. Field trips may be required. (A-F Only) Transfer: CSU

ADJU 213—PATROL PROCEDURES 3 Units
Responsibilities, techniques and methods of police patrol. Field trips required. Lecture. (A-F Only) Transfer: CSU

ADJU 215—INTRODUCTION TO FIREARMS 1½ Unit
Limitation on Enrollment: This course is restricted under California Penal Code Section 12021, course requires handling and possessing firearms. Convicted felons, persons addicted to any narcotic or convicted of any offense involving the violent use of a firearm are not allowed to enroll in the course based on Penal Code Section 12021. Prior to the use of a firearm in the course, each student must sign a declaration to the effect that he or she is not prohibited from such use by Penal Code Section 12021. Historical evaluation, ownership evaluation, moral aspects, legal provisions, safety precautions, and restrictions covering the use of firearms; field demonstration and basic instruction in use of sidelines. Students must provide own ammunition. The instructor reserves the right to remove a student from the firing range due to a safety violation. Lecture/Laboratory. Students may repeat any combination of ADJU 215/216 or 219 for a maximum of 4 completions. Materials fee required. Field trips may be required. (A-F Only) Transfer: CSU

ADJU 216—ADVANCED FIREARMS AND RANGE APPLICATION 1½ Units
Limitation on Enrollment: This course is restricted under California Penal Code Section 12021. Course requires handling and possessing firearms. Convicted felons, persons addicted to any narcotic or convicted of any offense involving the violent use of a firearm are not allowed to enroll in the course based on Penal Code Section 12021. Prior to the use of a firearm in the course, each student must sign a declaration to the effect that he or she is not prohibited from such use by Penal Code Section 12021. A continuation of ADJU 215. In-depth review of legal aspects of firearms. Range firing of various weapons; usage of non-lethal weapons. Students must provide own ammunition, hearing protectors, and safety glasses. The instructor reserves the right to remove a student from the firing range due to a safety violation. Lecture/Laboratory. Three maximum completions. Field trips may be required. Materials fee required. (P/NP only) Transfer: CSU

ADJU 217—SUBSTANCE ABUSE 3 Units
Recommended for Success: Satisfactory completion of ADJU 201 and 202
Basic understanding of controlled substances, including identification, physiological effects, testing, and use detection, methods of control and investigation, applicable laws controlling use, treatment processes, and patient rights to confidentiality. Lecture. One completion allowed. (A-F Only) Transfer: CSU

ADJU 219—CORRECTIONS FIREARMS TRAINING 1½ Units
Prerequisite: Satisfactory completion of ADJU 215.
Limitation on Enrollment: This course is restricted under California Penal Code Section 12021. Convicted felons, persons addicted to any narcotic or convicted felons, persons addicted to any narcotic or convicted of any offense involving the violent use of a firearm are not allowed to enroll in the course.
Laws, policies, and ethical considerations with specialized training in weaponry used by correctional agencies. Range firing of rifles, shotguns, and handguns. Students must provide safety glasses and hearing protectors, and ammunition. Course is restricted under state and federal laws. Instructor reserves the right to remove a student from the firing range due to a safety violation. Students may repeat any combination of ADJU 215/216 or 219 for a maximum of 4 completions. Lecture/Laboratory. Field trips may be required. Materials fee required. (A-F Only) Transfer: CSU

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ADJU 222—PROFILING TERRORISM 3 Units
Recommended for Success: Satisfactory completion of ADJU 201.
Discusses the most significant theories by the best terrorist analysts in the world, while still focusing on the domestic and international threat of terrorism and the basic security issues surrounding terrorism today. Social-historical origins of terrorism, criminal, legal, and social response to terrorism, at-risk populations, prevention, and intervention strategies. Lecture. Two maximum completions. (A-F Only) Transfer: CSU

ADJU 232—JUVENILE JUSTICE PROCEDURES 3 Units

ADJU 234—CRIME CAUSATION 3 Units
Principal theories commonly utilized in accounting for many known facts of criminality. Emphasis on implications and logic of certain theoretical positions common to much thinking and writing in the field. Lecture. (A-F Only) Transfer: CSU

ADJU 235—INTRODUCTION TO CORRECTIONS 3 Units
Introduction to the correctional field. Covers historical development of correctional processes, current trends, and future directions of the correctional field. Examines local, state, and federal systems. Field trips may be required. Lecture. Applicable to the Associate Degree. (A-F Only) Transfer: CSU, UC General Education: (M-J-GE B)

ADJU 236—CORRECTIONAL LAW 3 Units
Overview of the Constitutional provisions and definitions of laws relating to the corrections component of the Criminal Justice System. Emphasis on the legal aspects concerning adult offenders and correctional personnel with the Dept. of Corrections, juvenile offenders and correctional personnel with the Youth Authority and diversion agencies. The laws will entail Federal, State, and Local jurisdictions. Field trips required. Lecture. (A-F Only) Transfer: CSU

ADJU 240—DRUG AWARENESS ½ Unit
Basic understanding of current drugs of abuse including psychological and physical symptomology, appearance, and social implications. Lecture. (A-F Only) Transfer: CSU

ADJU 242—DOMESTIC VIOLENCE PREVENTION ½ Unit

ADJU 243—DOMESTIC VIOLENCE CRISIS INTERVENTION 3 Units
Recommended for Success: Satisfactory completion of ADJU 201 or 242.
Domestic violence as a pervasive and significant social issue requiring both prevention and intervention. Social-historical roots of family violence, criminal, legal, and social response to violence, at-risk populations, prevention, and intervention strategies. Lecture. (A-F Only) Transfer: CSU

ADJU 349 — A,B,C,D WORK EXPERIENCE 1,2,3,4 Units
Designed for students who wish to combine classroom experience with an expansion of skills or knowledge acquired at a site of employment on a paid or volunteer basis. Work must directly relate to the student’s area of study. Maximum 4 units may be earned per semester. May be repeated to a maximum of 16 units. Work Experience credit. Cooperative General Work Experience is included in the maximum.

ADJU 351—ELEMENTS OF SUPERVISION IN PUBLIC SAFETY 3 Units
The nature and function of the supervisor’s role in business, industry, and government. The skills and techniques of effective management will be examined and applied in terms of attaining maximum results through the cooperative efforts of others. Lecture.
AG 349 A,B,C,D — WORK EXPERIENCE  1, 2, 3 and 4 Units
AG 376 — BASIC SCIENCE AND LABORATORY TECHNIQUES  3 Units
AG 390 A,B,C,D — AGRICULTURAL SKILLS TRAINING  ½, 1, 2, 3, 4 Units

AGEC (Agricultural Economics)

AGEC 50 — SURVEY OF AGRICULTURAL ECONOMICS  3 Units
A preparatory course designed to further agricultural business knowledge and prepare for entry-level employment and further agricultural business course pursuits. Field trips required. Lecture/Laboratory/Other.

AGEC 55 — PREPARATORY AGRICULTURE COMPUTER APPLICATIONS  3 Units
Preparation for computer use in the workplace, emphasizing agribusiness situations, use of computer applications software, including word processors, spreadsheets, and databases. Includes information accessing, telecommunications, and other software appropriate to agribusiness. Lecture/Laboratory.

AGEC 200 — AGRICULTURAL ACCOUNTING AND ANALYSIS  3 Units
Study of agricultural accounting and types of records, their use and how to compute and use measures of earnings and cost of production to improve efficiency in agricultural operations. Agricultural income tax problems. Lecture/Laboratory/Other. (A-F Only) Transfer: CSU

AGEC 208 — INTRODUCTION TO INTERNATIONAL BUSINESS  3 Units
Recommended for Success: Satisfactory completion of BUSAD 248
Also offered as BUSAD 208.
A comprehensive overview of international business. Offers a global perspective of international trade, international marketing, international accounting, the operation of multinational companies, economic theories and forces, international organizations and the political and cultural impact of world trade. Lecture. Field trips required. Transfer: CSU

AGEC 209 — IMPORT/EXPORT FUNDAMENTALS  3 Units
Recommended for Success: Satisfactory completion of AGEC 208
Also offered as BUSAD 209.
Overview of processes and procedures involved in importing and exporting products and services. Special emphasis on finance and financial documentation. Lecture. Field trips required. Transfer: CSU

AGEC 210 — ELEMENTS OF AGRICULTURAL ECONOMICS  3 Units
The place of agriculture and farming in the economic system, basic economic concepts and problems of agriculture; pricing and marketing problems, factors of production, state and federal farm programs affecting the farmer's economic position. Field trips required. Lecture/Laboratory/Other. (A-F Only) Transfer: CSU, UC General Education: (MJC-GE B) (CSU-GE D2)

AGEC 215 — AGRICULTURAL MARKETING  3 Units
Structure and framework of agricultural marketing, history and present trends; marketing principles, policies, channels, institutions, regulatory agencies, cooperative marketing orders, cyclical and seasonal price variations, integration, and foreign and domestic trade; consideration of specific marketing problems affecting area commodities. Field trips required. Lecture/Laboratory. (A-F Only) (Spring) Transfer: CSU

AGEC 220 — AGRICULTURAL BUSINESS MANAGEMENT  3 Units
Recommended for Success: Before enrolling in this course, students are strongly advised to satisfactorily complete (AGEC 200) and (AG 285 or equivalent) and (MATH 70 or equivalent), and one AG production class.
Principles of agricultural management and measures of earnings in determining production efficiency; property reports, government regulations, agricultural finance, development of a management plan for a given agriculture with application of the above principles; term report and field laboratories required. Lecture/Laboratory. (A-F Only) Transfer: CSU

AGEC 225 — AGRICULTURE COMPUTER APPLICATIONS  3 Units
Computer use in the agribusiness work place, with emphasis on using software to solve agribusiness accounting problems, recordkeeping, creating. Computer applications including word processing, spreadsheets, databases, and presentation managers. Researching through the Internet and World Wide Web, telecommunications, and other agribusiness software. Lecture. (A-F Only) Transfer: CSU, UC General Education: (MJC-GE D2)

AGEC 280 — AGRICULTURAL SALES AND SERVICE  3 Units
Recommended for Success: Before enrolling in this course, students are strongly advised to satisfactorily complete three agriculture courses (preferably two or more agriculture production courses and one or more agribusiness courses).
Introduction to the sales and service professions with emphasis on, but not limited to, the agribusiness sector. Provides both theoretical background and experiential exercises on a variety of sales and service facets including: the sales industry, identifying and understanding personalities, motivating people, sales presentations, prospecting, sales management, and advertising and promotion. Designed to prepare for employment or augment a current sales job. Field trips required. Lecture/Laboratory. (A-F Only) Transfer: CSU

AGGE (Agriculture, General)

AGGE 145 — PARLIAMENTARY PROCEDURE  1 Unit
Also offered as SCPCOM 145.
Introduction to Parliamentary Procedure. Preparing for and participating in meetings as a member, officer, and chairperson. Rank and use of motions. Two completions allowed. Lecture. (A-F or P/NP) Transfer: CSU

AGGE 146 — AGRICULTURE, ENVIRONMENT AND SOCIETY  3 Units
The sociology of agriculture presented through an examination of relationships between societies and their environments, economics, and agriculture. Emphasis on the analysis of agriculture's use of technology and the corresponding impact on the environment, economy and society. Field trips may be required. Lecture. Materials fee may be required. (A-F or P/NP) Transfer: CSU, UC General Education: (MJC-GE B) (CSU-GE D7)
AGM 191X,A,B—AGRICULTURE FIELD STUDIES ½-2 Units
Examination of agriculture principles and methods through extended field studies at selected sites in the United States and abroad. Gain knowledge of and appreciation for the value of agriculture and agriculture education in other states and countries as a means of developing extended agriculture relationships. Course is repeatable, four completions allowed. Field trips are required. Lecture (A-F or P/NP). Transfer: CSU.

AGGE 320—EVALUATION OF AGRICULTURAL PRODUCTS 1 Unit
Evaluation skills in selecting animal, plant, mechanical, and business products. Four maximum completions. Field trips required. Lecture. Materials fee required. (A-F Only)

AGM (Agricultural Mechanics)

Courses with an asterisk are those in which safety glasses* are required per state law.

AGM 50—PREPARATION FOR MECHANICAL TECHNOLOGY* 3 Units
Preparation in woodworking, cold metal, forging, plumbing and welding as related to farm maintenance and repair. Designed for agricultural students who need development in basic mechanical skills. Field trips may be required. Lecture/Laboratory. Materials fee required.

AGM 200—INTRODUCTION TO MECHANICAL TECHNOLOGY* 3 Units
Also offered as INTEC 200.
Basics in woodworking, cold metal, forging, plumbing and welding as related to farm maintenance and repair. Designed for agricultural students who need development in basic mechanical skills. Field trips may be required. Lecture/Laboratory. Materials fee required. (A-F Only) Transfer: CSU

AGM 210—AGRICULTURAL WELDING* 3 Units
Introduction and basic instruction in various welding and cutting methods to include: SMAW, GMAW, OAW, GTAW. Coursework to include machine selection and setup. Lecture/Laboratory. Materials fee required. (A-F Only) Transfer: CSU

AGM 211—ADVANCED AGRICULTURAL WELDING* 3 Units
Prerequisite: Satisfactory completion of AGM 210
Advanced welding and other metallurgical techniques such as pipe fitting, hard facing, MIG (GMAW) and TIG (GTAW) welding on aluminum and stainless steel. Field trips may be required. Lecture/Laboratory. Materials fee required. (A-F Only) Transfer: CSU

AGM 212—MECHANICAL SYSTEMS DESIGN & EVALUATION 1 3 Units
Introduction to elements of agriculture mechanical system design and evaluation. Mechanical systems include fluid power and mechanical drive systems, structural design as well as development of evaluation procedures to ensure optimum performance. Introduction to computer evaluation and 3D modeling software will also be included. May be completed up to 2 times. Lecture/Laboratory. (A-F Only). Applicable to the Associate Degree. Transfer: CSU

AGM 213—MECHANICAL SYSTEMS DESIGN & EVALUATION 2 3 Units
Advanced elements of agriculture mechanical system design and evaluation. Emphasis will be placed on mechanical and electronic data acquisition and evaluation of performance. The use of data logging equipment and computer analysis will be included. May be completed up to 2 times. Lecture/Laboratory. (A-F Only) Transfer: CSU

AGM 214—EQUIPMENT SERVICE AND SAFETY 1 Unit
Safe tractor, forklift, and machinery operation, service and key safety practices found in shops. Safe handling of chemicals used in farming and fire safety. A job skills course for students involved in farming practices on college property. Supervised field operation and field trips required. Lecture/Laboratory. (A-F Only) Transfer: CSU

AGM 215—MACHINERY MANAGEMENT 3 Units
Designed for future and current equipment managers/owners to understand the selection, maintenance, and replacement of tractors and machinery used in the agriculture, on-highway truck, and heavy equipment industries. Assessing needs and developing sound management practices for modern equipment operators. A focus on practical knowledge and "hands-on" skills is a priority. Materials fee required. Field trips required. (A-F or P/NP) Lecture/Lab. Transfer: CSU

AGM 220—INDUSTRIAL/AGRICULTURAL MACHINERY* 3 Units
Recommended for Success: Satisfactory completion of AG 280 or other math equivalent.
Operation, selection and care of industrial and agricultural machinery common to this area. The calibration, repair, adjustment and hitching of machinery. Principles of power and its transmission related to machinery. Semester notebook required. Field trips required. Lecture/Lab. (A-F Only) Transfer: CSU

AGM 221—EQUIPMENT DIAGNOSIS AND REPAIR 3 Units
Emphasis will be placed on modern diagnostic techniques and equipment repair used in the agriculture, on-highway truck, and heavy equipment industries. Designed for the diesel equipment technician who wants to become more proficient in advanced diesel engine diagnosis and repair. May be completed up to two times. Materials fee required. Lecture/Lab. (A-F or P/NP) Transfer: CSU

AGM 222—COMPACT POWER EQUIPMENT REPAIR 1 Unit
Emphasis placed on advancement of skills learned in Small Engine Repair course. Students will gain practical and "hands-on" experience in compact equipment repair. May be completed up to two times. Lab. (A-F Only) Transfer: CSU

AGM 225—PRINCIPLES OF ELECTRICAL WIRING 3 Units
Also offered as INTEC 225.
Fundamental principles, and applications of electrical energy used on residential, industrial and agricultural situations including designing, planning and implementation of electrical circuits. Field trips required. Materials fee required. (A-F Only) Transfer: CSU

AGM 230—FIELD SURVEYING 2 Units
Recommended for Success: Satisfactory completion of MATH 70 or AG 280.
Also offered as ENGR 230.
Selection, care and checking of tapes, levels, GPS and laser systems. Introduction to total station care and use. Field observations, note taking and office computations; use of surveying instruments and equipment for land measurement and mapping; practice in differential, profile, and contour leveling; horizontal angles, traverses, and construction problems used in public lands surveying, legal descriptions, and county records. Lecture/Laboratory. Field trips required. (A-F Only) Transfer: CSU

AGM 235—IRRIGATION AND DRAINAGE 3 Units
Irrigation and drainage problems relating to pumps, motors, sprinkler systems, structures, pipelines, ditches and wells; computation of costs and measurement of water; water law, basic principles of plant-soil-moisture relations and water movement in soil. Field laboratories required. Lecture/Laboratory. Field trips required. (A-F Only) Transfer: CSU

AGM 240—TRUCK AND TRACTOR POWER TRAINS 3 Units
Operation and repair of truck and tractor transmissions and power transfer systems. Topics to include diagnostics and repair of transmissions, clutches and differentials. Field trips required. Lecture/Laboratory. (A-F Only) Transfer: CSU

AGM 241—DIESEL ENGINE PRINCIPLES 3 Units
Recommended for Success: Before enrolling in this course, students are strongly advised to complete AGM/AUTEC 289.
Also offered as AUTEC 241.
The operation and repair of modern diesel engines. Principles and theories are studied by running, testing, diagnosing, disassembling and reassembling components, systems, and engines. Field trips required. Materials fee required. Lecture/Lab. (A-F or P/NP) Transfer: CSU

AGM 242—DIESEL ENGINE OVERHAUL 3 Units
Principles of design and construction of heavy duty engines used in the agriculture, construction, and trucking industries. Principles and theories are studied by running, testing, diagnosing, disassembling, and reassembling components, systems, and engines. Lecture/Laboratory. (A-F or P/NP) Transfer: CSU
AGM 243 — HEAVY MACHINERY ELECTRICAL SYSTEMS 3 Units
Recommended for Success: Satisfactory completion of AGM 241 or AUTEC 241
Designed for the entry level heavy duty mechanic interested in heavy machinery and/or on-highway truck. A strong understanding of basic and advanced electrical systems of heavy machinery will be generated. Electrical system troubleshooting, diagnosis and repair with the aid of technical information and electrical test equipment will be the focus. The class will also provide necessary electrical theory and background review for more advanced electrical courses. Applicable to the Associate Degree. Materials fee required. (A-F Only) Transfer: CSU

AGM 245 — DIESEL ENGINE FUEL SYSTEMS AND DIAGNOSIS 3 Units
The study of common types of diesel fuel injection systems. Design and theory of operation of distributor type, in-line type, as well as electronically controlled systems. Testing and diagnostic procedures for various fuel systems is a major component of the course. Service and adjustments of injectors, nozzles, and governors will also be covered. Field trips required. (A-F Only) Transfer: CSU

AGM 251 — FARM CONSTRUCTION AND MATERIALS 4 Units
Recommended for Success: Before enrolling in this course, students are strongly advised to satisfactorily complete AGM 200 and AGM 210.
Types, costs and characteristics of construction materials, their use in farm equipment and buildings. Structural requirements, cost factors, safe loads, animal and equipment requirements, operation and labor efficiency, adaptability to the community. Designing and building projects in the shop and group field work. Field trips required. (A-F Only) Transfer: CSU

AGM 252 — FARM CONSTRUCTION ADVANCED LAB 2 Units
Prerequisite: Satisfactory completion of AGM 251
Analysis of types, costs and characteristics of construction materials, their use in farm equipment and buildings. Structural requirements, cost factors, safe loads, operation and labor efficiency and adaptability to the environment. Designing and building projects in the shop and group field trips. Field trips required. (A-F Only) Transfer: CSU

AGM 262 — HYDRAULICS/PNEUMATICS 3 Units
Also offered as INTEC 262.
Principles and practices of hydraulics/pneumatics as used in the industry. Study of the different applications and management of hydraulics for the most efficient use. Basic pneumatic principles and application systems. Field trips may be required. Two maximum completions. Transfer: CSU

AGM 280 — MOBILE MACHINERY HYDRAULIC SYSTEMS 3 Units
Prerequisite: Satisfactory completion of AG 280 and (AGM 215 or 220)
Fundamental principles and practices of hydraulic circuits applied to mobile hydraulic systems in the Agriculture, Heavy Machinery, and Off-Highway truck industries. Emphasis in system and component design and operation as applied to diagnosis and repair of hydraulic systems. Field trips may be required. Lec/Lab. Materials fee Required. (A-F or P/NP) Transfer: CSU

AGM 289 — PRINCIPLES OF POWER MECHANICS/SMALL ENGINES 3 Units
Formerly listed as: AGM/AU TECH 389
Also offered as AUTEC 289
Introduction to the operation, construction, maintenance, repair and adjustments of two and four-stroke engines. Designed for persons prior experience in engine repair. Experienced technicians will also benefit. Materials fee required. (A-F Only) Transfer: CSU

AGM 310 — AGRICULTURAL WELDING 2 Units
Basic welding techniques and theory instruction in oxyacetylene welding and cutting, shield metal arc welding, and flue and vertical fusion welding. Introduction to Mig welding, brazing, and heating will also be covered as well as welding safety. Field trips required. (P/NP Only)

ANAT (Anatomy)

ANAT 125 — HUMAN ANATOMY 5 Units
Prerequisite: Satisfactory completion of AP 50 or BIO 101 or BIO 111
Study of human body structures including organ, tissue, and cellular interrelationships. Involves extensive use of models, specimen, histological material, and dissection. Cadaver materials and demonstrations used. Intended for students entering the health professions. (A-F or P/NP) Transfer: CSU, UC (CC, BIOL 110) General Education: (CSU-GE: B2, B3) (IGETC: SB) (MJC-GE:A)

ANAT 180 A,B — INTRODUCTION TO TUTORING ANATOMY 1,2 Units
Prerequisite: Satisfactory completion of ANAT 125
Fundamental skills of tutoring in the anatomy lab. Strategies for tutoring students enrolled in Anatomy 125 will be learned. Specific focus will be on techniques for identifying microscopic and macroscopic structures in the anatomy lab. Intended for students selected as tutors in the Anatomy 125 lab. May be completed up to 4 times. Lab. (A-F or P/NP) Transfer: CSU

ANSC (Animal Science)

ANSC 50 — PREPARATORY ANIMAL SCIENCES 3 Units
A preparatory survey of the livestock industry, supply of animal products and their uses. A special emphasis on the origin, characteristics, adaptation and contributions of farm animals to the agriculture industry. Analyze the economic trends and career opportunities in animal agriculture. Field trips required. Lecture.

ANSC 200 — INTRODUCTION TO ANIMAL SCIENCE 3 Units
A scientific approach to the livestock industry encompassing aspects of animal anatomy, physiology, nutrition, genetics, and care applications. Emphasis on the origin, characteristics, adaptations and contributions of livestock to the modern agricultural industry. Field trips may be required. Lecture. Transfer: CSU, UC General Education: (CSU-GE: A)(CSU-GE: B2)(IGETC: SB)

ANSC 201 — BEEF CATTLE SCIENCE 3 Units
A study of the principles and practices of purebred and commercial beef cattle production throughout California, the U.S. and the world. Emphasis to be placed on the importance of breeds, cattle selection, nutrition, environmental management, health and record keeping to ensure scientifically-based management decisions and consumer product acceptance as applied to beef cattle. Field trips required. Lecture/Laboratory. (A-F Only) Transfer: CSU, UC

ANSC 202 — SWINE SCIENCE 3 Units
A study of the principles and practices of purebred and commercial pork production throughout California, the U.S., and the world. Emphasis to be placed on the importance of breeds, cattle selection, nutrition, environmental management, health, marketing and record keeping to ensure scientifically-based management decisions and consumer product acceptance. Field trips required. Lecture/Laboratory. (A-F Only) Transfer: CSU, UC

ANSC 203 — SHEEP SCIENCE 3 Units
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 marketing of lambs and wool. Field trips required. Lecture/Laboratory. (A-F Only) Transfer: CSU, UC

ANSC 207 — EQUINE SCIENCE 3 Units
A survey of the equine industry; selection, feeding, breeding, facilities, handling and health management will be emphasized to ensure scientifically-based management decisions. Field trips required. Lecture/Laboratory. (A-F Only) Transfer: CSU, UC

Transfer:
CSU
CSU-GE: B2, B3
IGETC: SB
MJC-GE:A
ANSC 208 — CARE AND HANDLING OF HORSES AND TACK 3 Units
Basic care of the horse and equipment. Types of equipment. Horse handling skills including training and riding. Student is expected to provide own horse. Field trips required. (A-F Only) Transfer: CSU

ANSC 209 — EQUINE BREEDING AND REPRODUCTION 3 Units
Recommended for Success: Before enrolling in this course, students are strongly advised to satisfactorily complete ANSC 207.
An advanced level course designed for students interested in learning more about equine reproduction and management. Field trips may be required. (A-F Only) Transfer: CSU

ANSC 210 — LIVESTOCK SELECTION AND EVALUATION 3 Units
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 required. Specific reference will be made to the formulation of livestock rations. Lecturer/Laboratory. (A-F Only) Transfer: CSU, UC

ANSC 211 — INTRODUCTION TO MEAT SCIENCE 3 Units
An introductory course to the meat industry with a special emphasis on meat products and value-added meat processing techniques. Concepts on food safety and sanitation, grading and inspection along with preservation and marketing strategies to meet current consumer demands. Field trips required. (A-F Only) Transfer: CSU, UC

ANSC 212 — LIVESTOCK SELECTION & EVALUATION 3 Units
Recommended for Success: Before enrolling in this course, students are strongly advised to satisfactorily complete ANSC 210.
Advanced study of animal conformation as related to its various functions. Evaluation of beef, sheep and swine species using performance and carcass data as well as live animal observation. Oral interpretation of these evaluative criteria. Formal reasoning presentations required. Field trips required. Two maximum completions. Lecture/Laboratory/Other. (A-F Only) Transfer: CSU, UC

ANSC 214 — LIVESTOCK FEEDING AND NUTRITION 3 Units
The fundamentals of digestion and absorption in both ruminants and nonruminants are discussed. The nutritive value of feeds as they relate to the formulation of livestock rations will be emphasized, including by-product feeding. Field trips required. Lecture/Laboratory. (A-F Only) Transfer: CSU, UC

ANSC 215 — ANIMAL HEALTH AND SANITATION 3 Units
Common livestock diseases and fundamentals of immunity. Includes coverage of the livestock worker’s role in promoting animal health and the foundation of disease control programs. Field trips required. Lecture/Laboratory. (A-F Only) Transfer: CSU, UC

ANSC 216 — LIVESTOCK BREEDING AND SELECTION 3 Units
Anatomy and physiology of male and female reproductive systems, endocrine system, and problems affecting reproductive efficiency, fertilization, gestation, and parturition. Principles of herd management as applied to livestock breeding and improvement, systems breeding, environmental factors affecting reproduction and performance. Lecturer/Laboratory. (A-F Only) Transfer: CSU, UC

ANSC 217 — ADVANCED BREEDING AND ARTIFICIAL INSEMINATION 4 Units
Recommended for Success: Satisfactory completion of ANSC 201 and 220 and (ANSC 216 or 226)
Advanced study and practical application of breeding principles and artificial insemination of farm animals; the collection, evaluation, and handling of semen; and semen testing, storage, and quality control. Students will also discuss artificial insemination as it pertains to market quality. Field trips required. Lecture/Laboratory. Materials fee required. (A-F Only) Transfer: CSU, UC

ANSC 220 — DAIRY INDUSTRY/DAIRY SCIENCE 3 Units
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; employment opportunities and requirements. Field trips required. Lecture Laboratory. (A-F Only) Transfer: CSU, UC

ANSC 221 — DAIRY CATTLE SELECTION AND EVALUATION 3 Units
Selection of dairy cattle on type conformation and the correlation between type and production. Pedigree evaluation, animal analysis, linear classification and body condition scoring. Written and oral evaluation on selection. Field trips required. Two maximum completions. Lecture/Laboratory/Others. (A-F Only) Transfer: CSU, UC

ANSC 222 — MILK PRODUCTION AND TECHNOLOGY 3 Units
Milk and milk product consumption and the economics of milk production. Discusses the mammary system anatomy, the physiology of milk secretion, the composition and the properties of milk, including factors of production. Evaluation of milking parlors and equipment, systems, analysis and operation is also included. Milk testing, sanitation, quality control, udder health and treatment as well as dairy mathematics. Field trips required. Lecture/Laboratory. (A-F Only) Transfer: CSU, UC

ANSC 224 — DAIRY FEEDS AND FEEDING 3 Units
Fundamentals of digestion and absorption in ruminants. The nutritive value of feeds as they relate to the formulation of dairy rations will be emphasized, including by-product feeding. Term project and field laboratories required. Lecture/Laboratory. (A-F Only) Transfer: CSU

ANSC 226 — DAIRY CATTLE MANAGEMENT 3 Units
Prerequisite: Satisfactory completion of ANSC 221
Advanced study of dairy conformation as related to the function of milk production. Evaluation of dairy cattle using production data, pedigrees and live animal evaluation. Particular emphasis will be placed on linear classification and selective mating. Oral interpretation of these evaluative criteria and formal reasoning presentations will be required. Evaluation of milk and milk products will be required as well. Field trips required. Two maximum completions. Lecture/Laboratory/Others. (A-F Only) Transfer: CSU

ANSC 227 — ADVANCED DAIRY CATTLE SELECTION AND EVALUATION 3 Units
Prerequisite: Satisfactory completion of ANSC 221
Advanced study of dairy conformation as related to the function of milk production. Evaluation of dairy cattle using production data, pedigrees and live animal evaluation. Particular emphasis will be placed on linear classification and selective mating. Oral interpretation of these evaluative criteria and formal reasoning presentations will be required. Evaluation of milk and milk products will be required as well. Field trips required. Two maximum completions. Lecture/Laboratory/Others. (A-F Only) Transfer: CSU

ANSC 228 — DAIRY MANAGEMENT 3 Units
Recommended for Success: Before enrolling in this course, students are strongly advised to satisfactorily complete ANSC 220 and 224 and AGEC 200.
Economics of dairying; milk production and marketing and their relationship to income; computing production costs; analyzing dairy enterprises; business planning, farm selection, management problems relating to feeding, labor, replacements, breeding, work simplification and record keeping. Term project and field laboratories required. Lecture/Laboratory. (A-F Only) Transfer: CSU

ANSC 230 — POULTRY SCIENCE 3 Units
A study of the principles and practices of commercial poultry production. Emphasis is placed on poultry nutrition, reproduction, environmental management, health, marketing and record keeping to ensure scientifically-based management decisions and consumer product acceptance. Field trips required. Lecture/Laboratory. (A-F Only) Transfer: CSU

ANSC 232 — AVIAN PRACTICES 3 Units
Practices in avian management including breeders, fryers, and layers; incubating, brooding and rearing of chicks. Processing and marketing of various avian products. Specific work with game birds, and non-commercial species of fowl. Field laboratories required. Lecture/Laboratory. (A-F Only) Transfer: CSU

ANSC 234 — POULTRY FEEDING 3 Units
Economics of poultry feeding. Composition of feeds, nutritional requirements, feed formulation for poultry; computer-assisted feed formulation, and proper feeding techniques. Field laboratories required. Lecture/Laboratory. (A-F Only) Transfer: CSU
ANSC 235 — POULTRY DISEASES AND HOUSING 3 Units
Anatomy and physiology of poultry; diagnosis, treatment, prevention and control of disease; sanitation; types of housing and equipment; planning housing, and equipment needs; vaccination schedules. Field laboratories required. Lecture/Laboratory. (A-F Only) Transfer: CSU

ANSC 236 — POULTRY BREEDING AND SELECTION 3 Units
Principles of poultry breeding, record analysis, calling and selection of poultry, incubation, hatching and grading of eggs. Lecture/Laboratory. (A-F Only) Transfer: CSU

ANSC 240 — BEEF FITTING AND SHOWING 2 Units
Principles of selection, feeding, and presentation of beef animals for show. Field trips required. Three maximum completions. Lecture/Laboratory/Other. (A-F Only) Transfer: CSU

ANSC 241 — SHEEP FITTING AND SHOWING 2 Units
Principles of selection, feeding, and presentation of sheep for show. Three maximum completions. Field trips required. Lecture/Laboratory. (A-F Only) Transfer: CSU

ANSC 242 — SWINE FITTING AND SHOWING 2 Units
Principles of selection, feeding, and presentation of swine for show. Field trips required. Three maximum completions. Lecture/Laboratory. (A-F Only) Transfer: CSU

ANSC 243 — EQUINE FITTING AND SHOWING 2 Units
Formerly titled "Horse Fitting and Showing"
Principles of selection, feeding, and presentation of horses for show. Field trips required. Three maximum completions. Lecture/Lab. (A-F Only) Transfer: CSU

ANSC 244 — DAIRY FITTING & SHOWING 2 Units
Principles of selection, feeding, and presentation of dairy animals for show. Field trips may be required. Three maximum completions. Lecture/Lab. (A-F Only) Transfer: CSU

ANSC 245 — MEAT GOAT FITTING AND SHOWING 2 Units
Principles of selection, feeding, and presentation of meat goats for show. Field trips may be required. Three maximum completions. Lecture/Lab. (A-F Only) Transfer: CSU

ANSC 250 — VETERINARY PHYSIOLOGY, ANATOMY & TERMINOLOGY 3 Units
Recommended for Success: Satisfactory completion of ENGL 101
Commonly used terminology and biological concepts used in veterinary medicine. Includes study of basic normal anatomy and physiology (in both large and small animals) in a body systems format, along with related vocabulary and spelling. Commonly used veterinary acronyms and abbreviations are woven throughout the course where relevant. Transfer: CSU

ANSC 251 — VETERINARY PHARMACY PROCEDURES 2 Units
Recommended for Success: Satisfactory completion of ENGL 50
Includes discussion of veterinary pharmacology and common items dispensed with emphasis on proper labeling and dispensing instructions. Lecture/Laboratory. Field trips required. Transfer: CSU

ANSC 252 — VETERINARY EQUIPMENT: OPERATION, INSTRUMENTATION, AND SAFETY 3 Units
Recommended for Success: Satisfactory completion of ENGL 50
Customer service, medical communication skills, office organization, scheduling, emergency recognition and management, stress management, preventative health programs, and medical recordkeeping. Field trips required. Lecture/Laboratory. Transfer: CSU

ANSC 253 — VETERINARY LABORATORY PROCEDURES 1 Unit
Introduction to manual and automated veterinary lab techniques and procedures, including work with blood, urine, fecal and skin samples. (A-F or P/NP). One completion allowed. Lecture. Transfer: CSU

ANSC 254 — VETERINARY MEDICAL OFFICE PROCEDURES 2 Units
Introduction to customer service, medical communication skills, office organization, scheduling, emergency recognition and management, stress management, preventative health programs, and medical recordkeeping. (A-F Only) Transfer: CSU

ANSC 255 — PREPARATION FOR SURGICAL AND DENTAL ASSISTANCE 3 Units
Recommended for Success: Satisfactory completion of ENGL 50
Preparation for surgery, surgery assistance, surgical and dental instruments and packs, anesthesia induction, monitor and anesthetic machine maintenance, anatomy of the mouth and dental arcade, dental prophylaxis and extractions. Field trips required. Lecture/Laboratory. Transfer: CSU

ANSC 256 — VETERINARY ASSISTANCE AND NURSING: EMERGENCY PROCEDURES 1 Unit
Emphasis on emergency procedures, monitoring vital signs, taking steps to stabilize patients. Basic nutritional requirements for pets, species requirements, nutritional disorders, feeding methods. Basic animal behavior, detecting signs of stress, and identifying causes of behavioral problems. Field trips required. Lecture/Laboratory. Transfer: CSU

ANSC 257 — VETERINARY ASSISTANCE AND NURSING: ANIMAL HANDLING 2 Units
Basic veterinary nursing procedures including animal restraint, administration of medication, catheterization, vacination techniques, bathing, bandaging, and performing minor medical procedures. (A-F Only) Transfer: CSU

ANSC 265 — INTRODUCTION TO COLT TRAINING 3 Units
Basic principles involved in handling and training the young horse. Course includes groundwork, trailering, starting a colt, advancing the green horse, and problem-solving. (A-F Only) Transfer: CSU

ANTH 101 — PHYSICAL ANTHROPOLOGY 3 Units
Introduction to human evolution. The evidence for human biological and behavioral adaptations is examined. Issues and topics will include the principles of genetics and evolution, human variation, comparative primate anatomy/behavior and an assessment of the human fossil record. Field trips may be required. Lecture. Transfer: CSU, UC. (CC ANTHR 1) (TCSU ANTH 110) (IGETC 3B)
ANTHR 102—CULTURAL ANTHROPOLOGY
3 Units
Introduction to the methods, theories and insights of cultural anthropology and the application of these to life in a multicultural society. Topics include, but are not limited to: the nature of culture, cross-cultural comparative patterns in the areas of subsistence patterns, economics, religion, kinship, gender, language, political organization. Recommended for people who travel internationally. Field trips may be required. Lecture. Transfer: CSU, UC (CC ANTHR 2) (TCSU ANTH 120) General Education: (MUC-GE B) (CSU-GE D1) (IGETC: 4)

ANTHR 104—LANGUAGE, CULTURE AND COMMUNICATION
3 Units
An introduction to the anthropological study of language. Topics include a survey of linguistics, including phonetics, phonology, morphology, syntax and semantics; the ethnography of communication; classification and cultural meaning; the evolution of language, and historical linguistics. (A-F or P/NP). Applicable to the Associate Degree. Transfer: CSU, UC. (TCSU ANTH 130) General Education: (MUC-GE B,C) (CSU-GE C2,D1) (IGETC:3B, 4A)

ANTHR 105—PHYSICAL ANTHROPOLOGY LABORATORY
1 Unit
Corequisite: Satisfactory completion of or concurrent enrollment in ANTHR 101.
Laboratory investigation of methods and techniques of human evolution and variation, including use of the scientific method, anthropometry, and an analysis of the development and functional morphology of primates. Lines of evidence examined will include the study of population genetics, comparative anatomy and behavior of primates, forensic anthropology, human fossils and their reconstruction. Lecture/Laboratory. (A-F Only) Transfer: CSU, UC (TCSU ANTH 110) (MUC-GE A) (CSU-GE B3) (IGETC: SB)

ANTHR 107—FORENSIC ANTHROPOLOGY INTRODUCTION
3 Units
Introduction to forensic anthropology as an applied field of physical anthropology; the methods of solving crimes with anthropological data and applying techniques designed for the analysis of human skeletal remains (personal identification, the determination of population, cause of death, DNA analysis, and issues of collection of physical evidence). Interaction between anthropologists and law enforcement agencies and human rights issues. (A-F or P/NP). Transfer: CSU

ANTHR 130—ARCHAEOLOGICAL AND CULTURAL PREHISTORY
3 Units
An introduction to anthropological archaeology including concepts, theories, and methods employed by archaeologists in reconstructing past life ways of humans. Topics include history and interdisciplinary nature of archaeological research; data acquisition, analysis and interpretation with a discussion of applicable data and models; cultural resource management; selected cultural sequences. Field trips may be required. Lecture. Transfer: CSU, UC (CC ANTHR 10)(TCSU ANTH 150) General Education: (CSU-GE D1) (IGETC: 4)

ANTHR 140—MAGIC, WITCHCRAFT & RELIGION
3 Units
A cross-cultural study of the forms and functions of supernatural beliefs and associated rituals around the world. Emphasis on analyzing beliefs and rituals within their cultural contexts, and on broad comparison, to derive insight into the place of belief and ritual in human life. Lecture. Transfer: CSU, UC General Education: (MUC-GE B) (CSU-GE D1) (IGETC: 4A)

ANTHR 150—NATIVE PEOPLE OF NORTH AMERICA
3 Units
Introductory survey of the origins and varied adaptations made by the aboriginal cultures north of Mexico. Protohistoric and historic periods are emphasized. Special consideration of the aboriginal cultures of California. Emphasis on the techniques of data collection, analysis and interpretation. Field trips may be required. Lecture. Not offered every semester. Transfer: CSU, UC (CC ANTHR 15) General Education: (CSU-GE D1) (IGETC:4)

ANTHR 160—FAMILIES IN SOUTHEAST ASIAN CULTURES
1 Unit
Also offered as FAMLF 160.
A survey of basic value concepts of Southeast Asian cultures; their origin, and resulting impact on family structure, child rearing, marriage practices, religion, folk medicine and education. Overview of the interplay between Southeast Asian social and cultural values and their counterparts in American society. Continuity and change in the Southeast Asian family. Lecture. (Spring) Transfer: CSU

ANTHR 161—FAMILIES IN LATIN AMERICAN CULTURES
1 Unit
Also offered as FAMLF 161.
A survey of basic value concepts of Latin American cultures; their origin, and resulting impact on family structure, child rearing, marriage practices, religion, folk medicine and education. Overview of the interplay between Latin American social and cultural values and their counterparts in American society. Continuity and change in the Latin American family. Lecture. (Fall) Transfer: CSU

ANTHR 174—ANTHROPOLOGY SUMMER FIELD STUDIES
3 Units
Recommended for Success: Satisfactory completion of ANTHR 102, ANTHR 130, or ANTHR 150
Application of principles of anthropology and archaeology through extended field studies at selected sites in the western United States. Skills developed in cultural field studies, ethnographic data collection, archaeological artifact and site identification. Requires ability to work and study under rigorous conditions. Field trips required. Maximum two completions. Materials fee required. (Summer). Lecture. (A-F or P/NP) Transfer: CSU.

AP (Anatomy & Physiology)

AP 50—ELEMENTARY HUMAN ANATOMY-PHYSIOLOGY
3 Units
Introduction to the structure and function of the human body; basic terminology, cell biology, and the organ systems. Designed as a preliminary course for Allied Health students, but open to all students. Lecture. (A-F or P/NP) Transfer: (CC BIOL 150) General Education: (MUC-GE A)

AP 150—INTEGRATIVE ANATOMY AND PHYSIOLOGY
5 Units
Prerequisites: Satisfactory completion of AP 50 or BIO 101 or BIO 111
An intense one-semester study of the general structure and function of the human body with an emphasis on integrative functions of the organ systems. Includes organ, tissue and cellular inter-relationships; cellular communication; blood movement and hemostasis; fluid balance, respiration and digestion, and reproduction. Intended for students entering health professions that accept a one-semester course. One completion allowed. Lecture/Laboratory. (A-F or P/NP) Transfer: CSU, UC. General Education: (MUC-GE A) (CSU-GE B2, B3)(IGETC:SB)

ARCH (Architecture)

ARCH 100—INTRODUCTION TO ENGINEERING AND ARCHITECTURE
1 Unit
Also offered as ENGR 100.
Introduction to the vocational and academic opportunities at MJC with special emphasis on engineering, architecture and related technologies. Topics include models of student success, characteristics of the professions, development of educational plans, Associate Degree Requirements, importance of teamwork, and self-assessment. Activities include field trips, practice labs, and presentations by MJC counselors and practicing engineers and architects. Lecture. Materials fee may be required. (Fall) Transfer: CU, UC General Education: (MUC-GE: B) (CSU-GE: D1) (IGETC: 3A)

ARCH 106—MATERIALS OF CONSTRUCTION
2 Units
Use and application of construction processes and materials pertaining to architecture. Field trips may be required. Lecture. Materials fee may be required. (Fall) Transfer: CSU

ARCH 107—MATERIALS OF CONSTRUCTION LABORATORY
1 Unit
Recommended for Success: Concurrent enrollment in ARCH 106
Observation and testing of mechanical properties of steel, concrete, and wood; laboratory and field trips. Materials, importance of teamwork, and self assessment. Activities include field trips, practice labs, and presentations by MJC counselors and practicing engineers and architects. Lecture. Materials fee may be required. (Fall) Transfer: CSU

ARCH 117—HISTORY OF ARCHITECTURE
3 Units
The development of architecture, its philosophies and conditions from Prehistoric through Egyptian, Greek, Roman, Early Christian, Medieval, Romanesque Gothic and Pre-Columbian. Lecture. Materials fee may be required. (Fall) Transfer: CSU, UC. General Education: (MUC-GE C) (CSU-GE C1) (IGETC: 3A)
ARCH 118—HISTORY OF ARCHITECTURE 2  
3 Units
The development of architecture, its philosophies and conditions from the Renaissance through the Industrial Revolution, the Modern Movement and including the Twentieth Century. ARCH 117 is not a prerequisite. Lecture. Materials fee may be required. (Spring) Transfer: CSU, UC. General Education: (MJC-GE: C) (CSU-GE: C1) (IGETC: 3A)

ARCH 121—BEGINNING GRAPHICS AND DESIGN 1  
4 Units
Introduction to the graphic and computer production of architectural drawings pertaining to freehand, orthographic, axonometric and perspective drawings. Basic principles and concepts of two- and three-dimensional design. Field trips may be required. Lecture/Laboratory. Materials fee may be required. (Fall). Transfer: CSU, UC.

ARCH 122—BEGINNING GRAPHICS AND DESIGN 2  
4 Units
Prerequisite: Satisfactory completion of ARCH 121
Continuation of ARCH 121. Extended development of the content in ARCH 121 plus the introduction of the graphic methods and skills to communicate and represent conceptual ideas, analysis, and design concepts. Field trips may be required. Lecture/Laboratory. Materials fee may be required. (Spring) Transfer: CSU, UC.

ARCH 131—ARCHITECTURAL DRAFTING 1  
4 Units
Recommended for Success: Previous drafting experience.
Techniques and skills of drafting, introduction to building codes and construction methods, and the construction documents used to communicate the light-wood frame building process. Introduction to computer-assisted drafting in architectural applications. Field trips may be required. Lecture/Laboratory. Materials fee may be required. Transfer: CSU.

ARCH 132—ARCHITECTURAL DRAFTING 2  
3 Units
Prerequisite: Satisfactory completion of ARCH 131
Continuation of ARCH 131. Further development of office and drafting practices, contract document preparation, and construction processes with emphasis on heavy timber construction. Introduction to computer-assisted drafting in more complex architectural applications. Field trips may be required. Lecture/Laboratory. (Spring) Transfer: CSU.

ARCH 152—ARCHITECTURAL DESIGN 1  
5 Units
Prerequisites: Satisfactory completion of ARCH 122
Fundamentals of design concepts focusing on architectural form, function, space, and structure. Application of problem solving methods as applied to the relationship of man, building, and environmental concerns. Field trips required. Lecture/Laboratory. Materials fee may be required. (Fall) Transfer: CSU.

ARCH 153—ARCHITECTURAL DESIGN 2  
5 Units
Prerequisite: Satisfactory completion of ARCH 152
Continuation of ARCH 152. Explorations in architectural design within an environmental context. Consideration of projects dealing with buildings, site, climate, and structural issues and their interaction with aesthetic and functional concerns. Field trips required. Lecture/Laboratory. Materials fee may be required. (Spring) Transfer: CSU.

ARCH 331—BASIC ARCHITECTURAL DRAFTING 1  
2 Units
Introduction to architectural drafting and construction techniques for the nonprofessional with major emphasis on residential drawing and design. Topics include: a basic understanding of drafting skills, architectural nomenclature, design presentations, building materials, and a simple understanding of structure. Lecture/Laboratory.

ART 102—INTRODUCTION TO COMPUTER GRAPHICS  
3 Units
Also offered as CMPGR 202.
Introduction to computer graphics using various applications and tools. Topics explored include but are not limited to: original image creation, photographic editing, scanning, printing, two-dimensional animation, sound, digitizing pens, mouse, and digital camera. Field trips required. Materials fee required. Lecture/Laboratory. (MJC Activities) Transfer: CSU, UC. General Education: (CSU-GE: C1)

ART 103—APPLIED COMPUTER GRAPHICS  
3 Units
Recommended for Success: Satisfactory completion of ART 102/CMPGR 202
Also offered as CMPGR 213.
Formerly listed as Microcomputer Graphics.
Concepts and techniques in computer graphics as related to fine and applied art applications. Field trips required. Materials fee required. Lecture/Laboratory. (MJC Activities) Transfer: CSU

ART 108—CERAMICS 1  
3 Units
Techniques of elementary clay construction and ornamentation, introduction to throwing techniques. Trustee receipt required to purchase course materials as needed. Field trips may be required. Materials fee required. One completion allowed. Lecture/Laboratory. (A-F or P/NP) (MJC Activities) Transfer: CSU, UC (CC ART 31)

ART 109—CERAMICS 2  
3 Units
Prerequisite: Satisfactory completion of ART 108
Pottery construction, emphasis on throwing and design. Field trips required. Trustee receipt required to purchase course materials as needed. Field trips may be required. Materials fee required. One completion allowed. Lecture/Laboratory. (A-F or P/NP) (MJC Activities) Transfer: CSU, UC

ART 110—CERAMICS 3  
3 Units
Prerequisite: Satisfactory completion of ART 109
Throwing techniques and surface decoration; experiments in clay bodies, glazes, and stacking of kiln. Field trips required. Trustee receipt required to purchase course materials as needed. Field trips may be required. Materials fee required. One completion allowed. Lecture/Laboratory. (A-F or P/NP) (MJC Activities) Transfer: CSU, UC
ART 119 — COMPUTER GRAPHICS PORTFOLIO REVIEW 1 Unit
Prerequisite: This course follows the completed courses of the Computer Graphics majors/certificate core requirements.
Also offered as CMGPR 219.
Prepares the student majoring or receiving a certificate in Computer Graphics with the necessary visual and business skills to develop a portfolio. Emphasizes the creative and applied business needs for individuals entering the professional field of Computer Graphics. Field trips required. Lecture/Laboratory. (A-F Only) Transfer: CSU

ART 120 — BASIC DRAWING 1 3 Units
An introductory course in techniques used in representing form, light and shadow, texture, perspective, composition, and expression using various drawing media. Field trips may be required. Trustee receipt required to purchase course materials as needed. Lecture/Laboratory. (A-F or P/NP) (MJC Activities) Transfer: CSU, UC (CC ART 210) (CC ART 1) General Education: (CSU-GE: C1)

ART 121 — BASIC DRAWING 2 3 Units
Prerequisite: Satisfactory completion of ART 120
Further exploration of various drawing materials and techniques. Emphasis on composition, development of personal approach to drawing. Field trips may be required. One completion allowed. Lecture/Laboratory. (A-F or P/NP) (MJC Activities) Transfer: CSU, UC

ART 123 — FIGURE DRAWING 3 Units
Prerequisite: Satisfactory completion of ART 120
Fundamentals of art anatomy and representation of the human figure. Drawing of both the nude and draped figure in various media. Two maximum completions. Lecture/Laboratory. Field trips required. (MJC Activities) Transfer: CSU, UC (CC ART 9A)

ART 124 — COLOR AND DESIGN 1 3 Units
Recommended for Success: Satisfactory completion of ART 120 or previous drawing experience
Design principles and color theory. Problems in two-dimensional form using various media. Field trips may be required. One completion allowed. Lecture/Laboratory. (A-F or P/NP) Transfer: CSU, UC (CC ART 230) (CC ART 24)

ART 125 — COLOR AND DESIGN 2 3 Units
Prerequisite: Satisfactory completion of ART 124
Expressions in design. Utilization of the elements and principles of design in two and three-dimensional form using various materials and techniques. Field trips may be required. Lecture/Laboratory/Other. (Spring) (MJC Activities) Transfer: CSU, UC

ART 127 — ALTERNATIVE DRAWING METHODS 3 Units
Prerequisite: Satisfactory completion of ART 120
Theory and practice of nontraditional drawing material and techniques. Emphasis on contemporary approaches to drawing including mixed media, collage, nontraditional surfaces, and working in series. Further exploration of the compositional issues addressed in the Basic Drawing series. Transfer: CSU, UC (MJC-GE: Activities)

ART 140 — SCULPTURE 1 3 Units
Study of form, structure and three-dimensional design as related to sculpture using various materials such as stone, plaster, clay, plastics and metals. Field trips may be required. Trustee receipt required to purchase course materials as needed. One completion allowed. Lecture/Laboratory. (A-F or P/NP) (MJC Activities) Transfer: CSU, UC (MJC-GE: Activities)

ART 141 — SCULPTURE 2 3 Units
Prerequisite: Satisfactory completion of ART 140
Continuation of ART 140; in-depth realization of sculpture in both concept and craftsmanship. Field trips may be required. Trustee receipt required to purchase course materials as needed. One completion allowed. Lecture/Laboratory. (A-F or P/NP) (MJC Activities) Transfer: CSU, UC (MJC-GE: Activities)

ART 142 — SCULPTURE 3 3 Units
Prerequisite: Satisfactory completion of ART 141
Continuation of ART 141 with an emphasis on experimentation and development of personal expression applied to sculptural problems. Field trips may be required. One maximum completions. Trustee receipt required to purchase course materials as needed. Lecture/Laboratory. (A-F or P/NP) (MJC Activities) Transfer: CSU, UC

ART 143 — SCULPTURE 4 3 Units
Prerequisite: Satisfactory completion of ART 142
Continuation of ART 142 with an emphasis on work with clay and experimentation. Field trips may be required. Field trips may be required. Trustee receipt required to purchase course materials as needed. Lecture/Laboratory. (A-F or P/NP) (MJC Activities) Transfer: CSU, UC (MJC-GE: Activities)

ART 144 — WATERCOLOR PAINTING 1 3 Units
Prerequisite: Satisfactory completion of ART 120 or ART 124
Theory and practice of transparent watercolor painting using still life and landscape subject matter. Traditional and experimental techniques will be used. Field trips may be required. One completion allowed. Lecture/Laboratory. (A-F or P/NP) (MJC Activities) Transfer: CSU, UC (CC ART 23A)

ART 145 — WATERCOLOR PAINTING 2 3 Units
Prerequisite: Satisfactory completion of ART 144
A continuation of the concepts and skills developed in ART 144. Emphasis is placed upon experimentation and on the development of a personal painting style. Field trips may be required. One completion allowed. Lecture/Laboratory. (A-F or P/NP) (MJC Activities) Transfer: CSU, UC (CC ART 23B)

ART 146 — MIXED MEDIA PAINTING 3 Units
Prerequisite: Satisfactory completion of ART 120 or ART 124
Theory and practice of acrylic or oil painting with an emphasis on experimental techniques and different mixed mediums. Lecture/Laboratory. Field trips may be required. Two completions allowed. (A-F or P/NP) (MJC Activities) Transfer: CSU, UC

ART 147 — PAINTING 1 (IN ACRYLIC) 3 Units
Prerequisite: Satisfactory completion of ART 120 or ART 124
Introduction to acrylic painting, basic techniques and stylistic approaches. Emphasis on developing form through color. One completion allowed. Field trips may be required. Lecture/Laboratory. (A-F or P/NP) (MJC Activities) Transfer: CSU, UC

ART 148 — PAINTING 1 (IN OIL) 3 Units
Formerly listed as “ART 148 - Oil Painting 1” Prerequisite: Satisfactory completion of ART 120 or ART 124
Introduction to oil painting, basic techniques and stylistic approaches. Emphasis on developing form through color. Field trips may be required. Lecture/Laboratory. Maximum one completion. (MJC Activities) Transfer: CSU, UC (CC ART 21A)

ART 149 — PAINTING 2 3 Units
Formerly listed as “ART 149 - Oil Painting 2” Prerequisite: Satisfactory completion of ART 147 or ART 148
Continued work in oil and acrylic painting, basic techniques and stylistic approaches. Emphasis on developing form through color. Field trips may be required. Maximum three completions. Lecture/Laboratory. (A-F or P/NP) (MJC Activities) Transfer: CSU, UC (CC ART 21B)

ART 150 — GALLERY OPERATION AND MANAGEMENT 3 Units
Recommended for Success: Concurrent enrollment in ART 160, 164, or 165
Introduction to the various aspects of operation and management of an art gallery: exhibition organization, hanging, publicity and jurying. Field trips required. Two maximum completions. Lecture/Laboratory. (MJC Activities) Transfer: CSU

ART 160 — APPRECIATION OF ART 3 Units
Introductory art appreciation for the general student. Illustrated lectures in painting, sculpture, architecture and design. Field trips required. Lecture Transfer: CSU, UC General Education: (MJC-GE: C) (CSU-GE: C1) (IGETC: 3A)

ART 161 — AMERICAN ART 3 Units
Introduction to the arts through the study of painting, sculpture, architecture, and history of North America from pre-historic times to the present. Emphasis will be on the arts of the United States. Field trips required. Lecture Transfer: CSU, UC General Education: (MJC-GE: C) (CSU-GE: C1) (IGETC: 3A)

ART 162 — HISTORY OF RENAISSANCE ART 3 Units
Analysis of the European 14th-16th century drawing, painting, sculpture, and architecture, with an emphasis on the Italian High Renaissance masters. Field trips required. Lecture Transfer: CSU, UC General Education: (MJC-GE: C) (CSU-GE: C1) (IGETC: 3A)

ART 163 — HISTORY OF MODERN ART 3 Units
Analysis of the arts through the study of painting, sculpture, architecture, and the history of Europe and the Americas from circa 1870 to the present. Field trips required. Lecture Transfer: CSU, UC General Education: (MJC-GE: C) (CSU-GE: C1) (IGETC: 3A)
ART 164—HISTORY OF ART 1 3 Units
Analysis of great art periods through study of paintings, sculpture, architecture, and history from prehistoric times to the Middle Ages. Field trips may be required. One completion allowed. Lecture. (A-F or P/NP) Transfer: CSU, UC (TCSU ART 110) (CC ART 11) General Education: (MJC-GE: C) (CSU-GE: C1) (IGETC: 3A)

ART 165—HISTORY OF ART 2 3 Units
Continuation of study of painting, sculpture, and architecture from Renaissance to the present. Field trips may be required. One completion allowed. Lecture. (A-F or P/NP) Transfer: CSU, UC (CC ART 12) General Education: (MJC-GE: C) (CSU-GE: C1) (IGETC: 3A)

ART 168—SURVEY OF PHOTOGRAPHY 3 Units
Recommended for Success: Satisfactory completion of ART 170 or 181. A survey course dealing with past and present photographic technique and imagery. Field trips required. Lecture. (Spring) Transfer: CSU, UC General Education: (MJC-GE: C) (CSU-GE: C1)

ART 169—HISTORY OF NON-WESTERN ART 3 Units
Analysis of the art forms of Africa, Oceania, Asia and the Americas in their relation to their cultural history from prehistoric times to the present. Field trips required. Lecture. Not offered every semester. Transfer: CSU, UC (CC ART 13) General Education: (MJC-GE: C) (CSU-GE: C1)

ART 170—BASIC PHOTOGRAPHY 3 Units
Introduction to the art and craft of photography: cameras, films, papers, basic black and white darkroom operations, composition, print quality, and photographic seeing. Field trips required. Project card use available. Lecture/Laboratory. Not offered every semester. Materials fee required. (MJC Activities) Transfer: CSU, UC General Education: (MJC-GE: C) (CSU-GE: C1)

ART 172—INTERMEDIATE PHOTOGRAPHY 3 Units
Prerequisite: Satisfactory completion of ART 170 or 182.
Refinement of basic craft, vision, and aesthetics as they apply to black and white photography. Continued emphasis on visual literacy and personalized seeing. Field trips required. Project card use available. Lecture/Laboratory. Materials fee required. Transfer: CSU, UC General Education: (CSU-GE: C1)

ART 173—DIGITAL IMAGING FOR PHOTOGRAPHERS 3 Units
Recommended for Success: Satisfactory completion of ART 170.
Introductory course in digital imaging and electronic desktop photography. Application related to the use of fine art photography and publication will be emphasized. The class includes lectures, discussions, critiques, computer laboratory work. Field trips required. Three maximum completions. Materials fee required. Lecture/Laboratory. (MJC Activities) Transfer: CSU, UC General Education: (MJC-GE: C) (CSU-GE: C1)

ART 174—COLOR PHOTOGRAPHY 3 Units
Prerequisite: Satisfactory completion of ART 172 or 186.
Introduction to color photography. Transparency and negative materials; printing processes; print presentation and aesthetics. Field trips required. Lecture/Laboratory. (A-F Only) (Fall) (MJC Activities) Transfer: CSU, UC General Education: (MJC-GE: C) (CSU-GE: C1)

ART 178B,C,D—ADVANCED PHOTOGRAPHY 2,3,4 Units
Recommended for Success: Satisfactory completion of ART 172 or 186
Advanced exploration in the visual and technical areas of either black and white, color, or non-silver photography. Students will design a project and produce a portfolio of finished work. Field trips may be required. Materials fee required. Completions to 8 units maximum. Other - combination seminar, and hours arranged. Transfer: CSU, UC General Education: (MJC-GE: C) (CSU-GE: C1)

ART 179—PHOTOJOURNALISM 3 Units
Prerequisite: Satisfactory completion of ART 170
Also offered as JRNAL 179
Study of photography as a tool in reporting news, sports and feature stories in print and online media. Examines work and approaches of professional photojournalists, develops fundamental skills in visual storytelling, camera, lighting and compositional techniques, editorial criteria, page layout, copyright and ethics. Photographs will be made with film and/or digital cameras and processed on computer. May be completed up to 2 times. (A-F or P/NP) Applicable to the Associate Degree. Transfer: CSU General Education: (MJC-GE: A) General Education: (MJC-GE: A) (CSU-GE: B1) (IGETC: 5A)

ART 181—BASIC PHOTOGRAPHY 1 1½ Units
Introduction to the art and craft of photography - cameras, films, papers, basic black and white darkroom operations, composition, print quality, and photographic seeing. Field trips required. ART 181 and ART 182 are the two-semester equivalent of ART 170 but: do not fulfill the CSU-GE requirement. Trustee receipt required to purchase course materials as needed. Lecture/Laboratory. (MJC Activities) Transfer: CSU, UC General Education: (CSU-GE: B1) (IGETC: 5A)

ART 182—BASIC PHOTOGRAPHY 2 1½ Units
Prerequisite: Satisfactory completion of ART 181
Introduction to the art and craft of photography: cameras, films, papers, basic black and white darkroom operations, composition, print quality, and photographic seeing. ART 181 and ART 182 are the two-semester equivalent of ART 170 but: do not fulfill the CSU-GE requirement. Field trips required. Trustee receipt required to purchase course materials as needed. Lecture/Laboratory. (MJC Activities) Transfer: CSU, UC General Education: (CSU-GE: B1) (IGETC: 5A)

ART 183—INTERMEDIATE PHOTOGRAPHY 1 1½ Units
Prerequisite: Satisfactory completion of ART 170 or 182.
Refinement of basic craft, vision and aesthetics as they apply to black and white photography. Continued emphasis on visual literacy and personalized seeing. ART 183 and ART 186 are the two semester equivalent of ART 172. Field trips required. Trustee receipt required to purchase course materials as needed. Lecture/Laboratory. Transfer: CSU, UC General Education: (CSU-GE: B1) (IGETC: 5A)

ART 184—INTERMEDIATE PHOTOGRAPHY 2 1½ Units
Prerequisite: Satisfactory completion of ART 185
Refinement of basic craft, vision and aesthetics as they apply to black and white photography. Continued emphasis on visual literacy and personalized seeing. ART 183 and ART 186 are the two semester equivalent of ART 172. Field trips required. Trustee receipt required to purchase course materials as needed. Lecture/Laboratory. Transfer: CSU, UC General Education: (CSU-GE: B1) (IGETC: 5A)

ART 185A—PHOTO LABORATORY TECHNOLOGY 1 1 Unit
Recommended for Success: Satisfactory completion of ART 170
Maintenance and operation of a photographic lab facility: equipment, chemistry, scheduling and other related activities. Field trips required. Four maximum completions. Laboratory. (MJC Activities) Transfer: CSU, UC General Education: (CSU-GE: B1) (IGETC: 5A)

ART 191—PHOTOGRAPHY LAB TECHNOLOGY 2 1 Unit
Recommended for Success: Before enrolling in this class, students are strongly advised to satisfactorily complete ART 170
Maintenance and operation of a photographic lab facility; equipment, chemistry, scheduling and other related activities. Field trips may be required. Four maximum completions. Laboratory. (MJC Activities) (A-F or P/NP) Transfer: CSU, UC General Education: (CSU-GE: B1) (IGETC: 5A)

ASTRO (Astronomy)

ASTRO 141—INTRODUCTION TO ASTROPHYSICS 3 Units
Prerequisite: Satisfactory completion of PHYS 142 or PHYS 101
Recommended for Success: Satisfactory completion of MATH 122 or qualification by MJC assessment process.
Designed for students with a mathematical and/or scientific background. Study of planetary astronomy, stars and stellar evolution, gravity and cosmology, with emphasis on physical principles. Field trips required. Lecture. (A-F or P/NP) One completion allowed. Transfer: CSU, UC General Education: (MJC-GE: A) (CSU-GE: B1) (IGETC: 5A)
ASTRO 151 — INTRODUCTION TO ASTRONOMY LABORATORY 1 Unit
Corequisite: Satisfactory completion of or concurrent enrollment in ASTRO 141 or ASTRO 160. Techniques in experimental astronomy. Determination of the properties of the Sun, and solar system objects, stars and galaxies. Use of the college telescopes and instruments may be incorporated into experiments. Laboratory. (A-F or P/NP) Transfer: CSU, UC General Education: (CSU-GE: B1, B3) (IGETC: SA)

ASTRO 160 — INTRODUCTION TO MODERN ASTRONOMY 3 Units
Introductory survey course in astronomy. Emphasis on current studies of solar system, the birth and death of stars and cosmology. Field trips may be required. Lecture. Materials fee may be required. Transfer: CSU, UC General Education: (MJC-GE: A) (CSU-GE: B1, B3) (IGETC: SA)

AUBDY (Autobody)

AUBDY 115 — INTRODUCTION TO TECHNICAL INDUSTRIES 1 Unit
Also offered as AUTEC 115 and INTEC 115. Introduction to educational and technical employment opportunities. Includes an understanding of curriculum requirements that pertain to educational goals as they relate to technical majors. Assist students in setting goals and developing skills necessary for life-long success in obtaining, maintaining, and advancing in technical careers. Current events that impact technical industries and society will be discussed. History and employment opportunities in technical industries. Techniques and applications of sound shop/agency practices and hazardous waste management. Development of an educational plan and presentations by MJC counselors. Field trips may be required. Materials fee required. Lecture/Other. (A-F Only) (MJC Guidance) Transfer: CSU

AUBDY 301 — AUTOMOTIVE COLLISION REPAIR 1 5 Units
Study of body sheet metal and structural strength, body design and sheet metal working characteristics. Training in welding, brazing, metal bumping, metal finishing and plastic filling, heat shrinking, shop safety. Field trips may be required. Lecture/Laboratory. Materials fee required. (A-F Only)

AUBDY 302 — AUTOMOTIVE COLLISION REPAIR 2 5 Units
Prerequisite: Satisfactory completion of AUBDY 301
Body repair techniques. Progressive training in the use of hydraulic portopower equipment, plastic repairs, and corrosion protection. Installation of fenders, hoods, doors and alignment procedures. Field trips may be required. Lecture/Laboratory. Materials fee required. (A-F Only)

AUBDY 303 — AUTOMOTIVE COLLISION REPAIR 3 4 Units
Prerequisite: Satisfactory completion of AUBDY 302
Training in automobile body measurement and alignment; replacement of welded body parts; methods of sectioning; types of glass and glass operating mechanisms; upholstery, trim and moldings. Techniques and procedures in MIG welding and Mild HSS Steel. Field trips may be required. Lecture/Laboratory. Materials fee required. (A-F Only)

AUBDY 304 — AUTOMOTIVE COLLISION REPAIR 4 4 Units
Prerequisite: Satisfactory completion of AUBDY 303
Specialized training in major body repairs, rebuilding, unibonded body alignment and fundamentals of frame repair, damage estimating and shop management. Field trips may be required. Lecture/Laboratory. Materials fee required. (A-F Only)

AUBDY 321 — AUTOMOTIVE SPRAY REFINISHING 1 2 Units
Introduction to automobile spray painting. Study of materials, supplies and equipment. Experience in feather-edging and application of base coats; spray techniques in spot blending and panel refinishing with a base coat and clear coat. Field trips may be required. Lecture/Laboratory/Other. Materials fee required. (A-F Only)

AUBDY 322 — AUTOMOTIVE SPRAY REFINISHING 2 3 Units
Prerequisite: Satisfactory completion of AUBDY 321 and (AUBDY 301 or 351)
Continuation of AUBDY 321 with further instruction in complete refinishing with single stage enamels, base coat/clear coat enamels, and estimate writing. Field trips may be required. Lecture/Laboratory. Materials fee required. (A-F Only)

AUBDY 351 — AUTO BODY COLLISION REPAIR 1 2 Units
For beginning students in auto body collision work. Theory and study of the body sheet metal and structure. Theory and manipulative skills in oxy-ace welding, sheet metal strengthening, plastic filling and shrinking. Lecture/Laboratory. Materials fee required. (A-F Only)

AUBDY 352 — AUTO BODY COLLISION REPAIR 2 2 Units
Prerequisite: Satisfactory completion of AUBDY 351
Continued development of skills competence in metal strengthening through individual project work. Student must supply own project, and it must meet instructor's approval. Study of theory, equipment and manipulative techniques in MIG welding and spray refinishing, up to and including surface preparation and priming. (No complete or spot color repairs are allowed in evening classes without instructor's approval.) Lecture/Laboratory. Materials fee required. (A-F Only)

AUTEC (Automotive Technology)

AUTEC 115 — INTRODUCTION TO TECHNICAL INDUSTRIES 1 Unit
Also offered as AUBDY 115 and INTEC 115.
Introduction to educational and technical employment opportunities. Includes an understanding of curriculum requirements that pertain to educational goals as they relate to technical majors. Assist students in setting goals and developing skills necessary for life-long success in obtaining, maintaining, and advancing in technical careers. Current events that impact technical industries and society will be discussed. History and employment opportunities in technical industries. Techniques and applications of sound shop/agency practices and hazardous waste management. Development of an educational plan and presentations by MJC counselors. Field trips may be required. Materials fee required. Lecture/Other. (A-F Only) (MJC Guidance) Transfer: CSU

AUTEC 241 — DIESEL ENGINE PRINCIPLES 3 Units
Recommended for Success: Before enrolling in this course, students are strongly advised to complete AGM/AUTEC 289.
Also offered as AGM 241.
The operation and repair of modern diesel engines. Principles and theories are studied by running, testing, diagnosing, disassembling and reassembling components, systems, and engines. Field trips required. Materials fee required. Lecture/Other. (A-F Only). (MJC Guidance) Transfer: CSU

AUTEC 289 — PRINCIPLES OF POWER MECHANICS/ SMALL ENGINES 3 Units
Formerly listed as: AGM/AUTEC 389
Also offered as AGM 289.
Introduction to the operation, construction, maintenance, repair and adjustments of two and four-stroke engines. Designed for persons with prior experience in engine repair. Experienced technicians will also benefit. Lecture/Laboratory. Materials fee required. (A-F Only) Transfer: CSU

AUTEC 311 — BASIC AUTOMOTIVE SYSTEMS 3 Units
Basic repair practices of automotive systems to include cooling, lubrication, fuel, exhaust, and electrical. Proper selection and use of automotive shop manuals, charts, service publications, tools, measuring devices, etc. Field trips may be required. Lecture/Laboratory. Materials fee required. (A-F Only)

AUTEC 315 — A1: ENGINE REPAIR 3½ Units
Formerly listed as “Engine Rebuilding”
Prerequisite: Satisfactory completion of AUTEC 311
Use of automotive machine shop equipment. Engine disassembly, cleaning, inspection, measuring, and reassembly procedures. Lecture/Laboratory. Materials fee required. Lecture/Laboratory. (A-F Only)

AUTEC 317 — A7: AUTO HEATING AND AIR CONDITIONING 3 Units
Corequisite: Satisfactory completion of AUTEC 311
Principles of automotive air conditioning and the components used in air conditioning. Factory-installed air conditioning units and add-on type units. Charging, leak detection, component replacement and repair procedures. Lecture/Laboratory. Materials fee required. (A-F Only)
AUTEC 319 — A8: ENGINE PERFORMANCE 3½ Units
Prerequisite: Satisfactory completion of AUTEC 368
Corequisite: Satisfactory completion of, or concurrent enrollment in AUTEC 369.
Prepares students for Automotive Service Excellence A8 Examination. Comprehensive study of
diagnosis and repair applications including general engines, ignition systems, fuel, air induction
and exhaust systems, emission control systems, computerized engine controls, and engine electrical
systems. Lecture/Laboratory. Materials fee required. (A-F Only).

AUTEC 320 — L1: ADVANCE ENGINE PERFORMANCE 4 Units
Prerequisites: Satisfactory completion of AUTEC 319
Prepares students for the Automotive Service Excellence L1 Examination. Advance engine perform-
ance topics including test equipment and diagnosis techniques of powertrain and computerized
powertrain controls, fuel system and air induction systems, automotive emission controls and I/M
failures. Lecture/Laboratory. Materials fee required. (A-F Only)

AUTEC 321 — A5: BRAKES SYSTEMS 3½ Units
Prerequisite: Satisfactory completion of AUTEC 311.
Prepares students for the Automotive Service Excellence A5 Examination. Principles of design and
operation, techniques for repair, diagnosis and replacement of four-wheel braking systems. Empha-
sis will be placed on the theory of operation, diagnosis and repair of modern braking systems and
their related components. Preparation for the State Brake Test and ASE Certification Test is included.
Lecture/Laboratory. Materials fee required. (A-F Only)

AUTEC 322 — A4: STEERING, SUSPENSION AND ALIGNMENT 3½ Units
Prerequisite: Satisfactory completion of AUTEC 311.
Prepares student for the Automotive Service Excellence A4 Examination. Principles of design and
operation, techniques for diagnosis and repair of steering and suspension systems. Includes com-
ponent replacement and alignment theory and procedures using two and four-wheel alignment
equipment. Lecture/Laboratory. Materials fee required. (A-F Only)

AUTEC 323 — A2: AUTOMATIC TRANSMISSION AND TRANSAXLES 3½ Units
Prerequisite: Satisfactory completion of AUTEC 311.
Prepares students for the Automotive Service Excellence A2 Examination. A detailed study of the
clutch, standard and automatic transmissions, drive lines and differentials; theory of operation
including friction materials, hydraulics, torque converters, gear trains, planetary gears, and controls
as well as gear ratios, torque multiplication, speeds, drive line angles and tooth patterns. (A-F Only)
Materials fee required.

AUTEC 324 — A3: MANUAL TRANSMISSION AND DRIVE AXLES 3 Units
Prerequisite: Satisfactory completion of AUTEC 311.
Prepares students for the Automotive Service Excellence A3 Examination. Construction, operation
and diagnosis of manual transmissions and axles, to include service and overhaul. Theory as well as
"hands-on" training with clutch systems and drive axle operation and service. (A-F Only) Materials Fee
required.

AUTEC 368 — A6: AUTOMOTIVE ELECTRICITY/ ELECTRONIC SYSTEMS 1 3½ Units
Prerequisite: Satisfactory completion of AUTEC 311.
Introduction to automotive electrical systems. Covers basic fundamentals: Ohm’s law, starting and
charging systems, batteries, alternators and starters. Course also covers principles of operation,
testing, adjusting, and rebuilding procedures. (A-F Only) Materials fee required. Lec/Lab

AUTEC 369 — A6: AUTOMOTIVE ELECTRICITY 2 4 Units
Prerequisite: Satisfactory completion of Automotive Service Excellence A6 examination. Fundamentals of automotive
electronics and electrical components including ignition, computer, light and horn circuits, indicat-
ing devices, electrical accessories and computer-controlled devices. Lab emphasis on testing and
servicing electrical equipment. (A-F Only) Materials fee required. Lecture/Laboratory.

AUTEC 373 — 97 B.A.R. CLEAN AIR COURSE 5 Units
Prerequisites: Satisfactory completion of AUTEC 311 OR as outlined by C.A.R.B. specifications.
Provides the experienced automotive mechanic with comprehensive, up-to-date background in
auto emission control. Modern test equipment and techniques will assure that engine operation and
emission levels are within manufacturers’ and California Air Resources Board (C.A.R.B.) specifi-
cations. Prepares the student to take the California Bureau of Automotive Repair (B.A.R.) Smog Check
Mechanic Qualification Examination. B.A.R. requires a minimum of 90% attendance and 70% (C)
grade for completion. Two maximum completions, Lecture/Laboratory. Materials fee required. Not
offered every semester.

BIO (Biology)

All courses are offered for letter grade only unless otherwise stated. Biology majors must take major courses on a letter grade basis. All majors must complete a program of courses approved by the division. Suggested curricula for specific biological sciences majors and related fields may be obtained from the advisors. Classes may sometimes convene at off-campus sites within the YCCD.

BIO 50 — BASIC BIOLOGY 3 Units
Introduction to the study of living organisms. Intended as a practical foundation for students
interested in a basic knowledge of biological principles, terminology, and the scientific process. May
serve as a bridge to transfer-level biology courses and is not open to students who have completed
BIO 101 or 111. Lecture/Discussion/Demonstration. Field trips may be required. Materials fee may be
required. General Education: (MJC-GE: A)

BIO 101 — BIOLOGICAL PRINCIPLES 5 Units
Prerequisite: Satisfactory completion of (CHEM 142, 143, or 101) and eligibility for MATH
101 or higher.
Study of general principles of biology in relationship to the process of all living organisms. Topics
include an introduction to the nature of science, reproduction, development, evolution, energetics,
molecular biology, genetics, cellular structure, homeostatic mechanisms, ecology, and taxonomy. Core
course intended for biology and biology-related majors. Lecture/Laboratory. Field trips may be
required. Transfer: CSU, UC (CC BIOL 17) General Education: (MJC-GE: A)

BIO 111 — GENERAL BIOLOGY 4 Units
Prerequisite: Satisfactory completion of (CHEM 142, 143, or 101) and eligibility for MATH
101 or higher.
Introduction to principles of life, including reproduction, heirdity, development, evolution, historical
development of biology, molecular biology and ecology. Not open to students who have completed
BIO 101. Not a substitute for BIO 101. Field trips may be required. Lecture/Laboratory. Transfer:
CSU, UC (CC BIOL 17) General Education: (MJC-GE: A) (CSU-GE: B2, B3) (IGETC: SB)

BIO 115 — GENETICS, EVOLUTION, AND SOCIETY 3 Units
Exploration of basic principles of genetics and evolution as unifying themes in the biological
sciences. Emphasis on analysis of gene action, mutation, inheritance, natural selection, evolution of
life and of species, biotechnologies and their implications for society. Lecture. Transfer: CSU, UC
General Education: (MJC-GE: A) (CSU-GE: B2, B3) (IGETC: SB)

BIO 130 — INTRODUCTION TO MARINE VERTEBRATES 3 Units
Recommended for Success: Satisfactory completion of a college-level biology course.
Groups of vertebrates adapted to marine environment; structural, physiological, and behavioral
modifications making adaptation possible; species within those groups common to Pacific coastline.
Field trips may be required. Lecture. Transfer: CSU, UC General Education: (MJC-GE: A)

BIO 130L — INTRODUCTION TO MARINE VERTEBRATES LABORATORY 1 Unit
Prerequisite: Satisfactory completion of BIO 130 or concurrent enrollment.
In depth study of selected topics from BIO 130 through the use of specimens, slides, laboratory
exercises and field trips. Laboratory. Field trips required. Transfer: CSU, UC General Education:
(MJC-GE: A) (CSU-GE:B3)
BIO 140—INTRODUCTION TO MARINE BIOLOGY 4 Units
Introduction to the natural history of plants and animals of the temperate and tropical marine environment including rocky shores, mud flat, sandy beach, salt marsh, coral reef, mangal forest, open ocean, deep ocean, bay/estuary and Sacramento-San Joaquin Delta communities. Arctic and Antarctic marine ecosystems will also be introduced. Field trips may be required. Lecture/Laboratory. Transfer: CSU, UC General Education: (MJC-GE: A) (CSU-GE: B2, B3) (IGETC: SB)

BIO 145—INTRODUCTION TO FRESHWATER BIOLOGY 4 Units
Introduction to the natural history of common organisms of the freshwater environment along with basic ecological principles, which includes: energy flow, nutrient cycling, population dynamics, and community structure. (A-F or P/NP) Field trips required. Lecture/Laboratory. Materials fee required. Transfer: CSU, UC General Education: (MJC-GE: A) (CSU-GE: B2, B3) (IGETC: SB)

BIO 151X, A, B, C—BIOLOGY FIELD STUDIES ½, 1, 2, 3 Units
Recommended for Success: Before enrolling in this course, students are strongly advised to satisfactorily complete (BIO 111, BIO 101, ZOOL 101, BOT 101 or other college-level biology course.)
Field trips to representative and unique ecosystems. Emphasis on life histories, adaptations and biological interactions of organisms within the ecosystem studied. Field experiences will include sampling methods, preparation of field notes and field identification of species characteristic of the ecosystem. Field trips are required. Lecture/Laboratory. Four maximum completions in any combination not to exceed 6 units. Materials fee required. Not offered every semester. Transfer: CSU

BIO 180X, A, B—SPECIAL PROJECTS IN BIOLOGY ½, 1, 2 Units
Prerequisite: Concurrent enrollment in a college-level biology course.
Individual study, research, or project in the field of biology. Field trips may be required. Four maximum completions not to exceed 2 units in any combination of this course format. Lecture/Laboratory arranged. Materials fee may be required. (A-F or P/NP) Transfer: CSU

BOT—BIOLOGY

BOT 101—GENERAL BOTANY 4 Units
Prerequisite: Satisfactory completion of BIO 101
Principles of plant life, plant morphology, anatomy, physiology, reproduction, genetics, evolution, and ecology of bacteria, fungi, algae, archea, slime molds, bryophytes, and vascular plants. Lecture/Laboratory. Field trips may be required. Transfers: CSU, UC, (CC BIOL 6) (TCSU BIOL SEQ A) General Education: (CSU-GE: B2, B3) (IGETC: SB)

BOT 110—PLANT BIOLOGY 3 Units
Introduction to plants, including structure and function, heredity, development, reproduction, ecology, and evolution as they pertain to plants. Not open to students who have completed Biology 101. Not a substitute for Botany 101. Lecture/Laboratory. Field trips may be required. Transfer: CSU, UC General Education: (MJC-GE: A) (CSU-GE: B2, B3) (IGETC: SB)

BUSAD—BUSINESS ADMINISTRATION

BUSAD 100—STUDIES IN BUSINESS SUCCESS 1½ Units
Recommended for Success: Satisfactory completion of GUIDE 110
Discussion of academic and other requisites for success in various business fields. Students will create a personal development plan for meeting academic requirements, acquisition of necessary skills, and entry into the job market of their elected field. Lecture. Transfer: CSU

BUSAD 200—SPREADSHEET SKILLS FOR FINANCIAL ACCOUNTING 2 Units
Prerequisite: Concurrent or previous enrollment in BUSAD 201 or 320.
Introduction to spreadsheet software. Spreadsheet analysis, design, testing and documentation as they relate to the field of accounting will be covered. Hands-on experience using a microcomputer. Microsoft Excel or a similar spreadsheet application will be used. Lecture/Laboratory. Transfer: CSU

BUSAD 201—FINANCIAL ACCOUNTING 4 Units
Recommended for Success: Satisfactory completion of BUSAD 310 and ENGL 101 placement eligibility.
Explores what financial accounting is, why it is important, and how it is used by investors and creditors to make decisions; focusing on a preparer approach. Covers the accounting information system and the recording and reporting of business transactions with a focus on the accounting cycle, the application of generally accepted accounting principles, the classified financial statements, and statement analysis. Includes issues relating to asset, liability, and equity valuation, revenue and expense recognition, cash flow, internal controls and ethics. Lecture. Transfer: CSU, UC (TCSU BUS 110) (CC BUSAD 1A)

BUSAD 202—MANAGERIAL ACCOUNTING 4 Units
Prerequisite: Satisfactory completion of BUSAD 201
Examination of how managers use accounting information in decision-making, planning, directing operations, and controlling. Focus on cost terms and concepts, cost behavior, cost structure, and cost-volume-profit-analysis. Examination of profit planning, standard costs, operations and capital budgeting, cost control, and accounting for costs in manufacturing organizations. (A-F or P/NP) Course is not repeatable. Field trips are not required. Course is applicable to the associate degree. Lecture. Transfer: CSU, UC (TCSU BUS 120) (CC BUSAD 1B)

BUSAD 203—COMPUTER ACCOUNTING 3 Units
Prerequisite: Satisfactory completion of BUSAD 201 or 310.
Recommended for Success: Satisfactory completion of BUSAD 320 if BUSAD 310 is used to satisfy the prerequisite.
Introduction to the use of the computer in accounting/bookkeeping. Practical applications of accounting through hands-on experiences on the personal computer using a variety of current computer accounting software packages. Lecture/Laboratory. Transfer: CSU

BUSAD 204—COST ACCOUNTING 3 Units
Prerequisite: Satisfactory completion of BUSAD 201 and 202.
Introduction to cost accounting theory and practice. Control of material, labor and burden costs; methods of applying expenses; job order and process cost system; cost statements. Lecture. Transfer: CSU

BUSAD 208—INTRODUCTION TO INTERNATIONAL BUSINESS 3 Units
Recommended for Success: Satisfactory completion of BUSAD 248 Also offered as AGEC 208.
A comprehensive overview of international business. Offers a global perspective of international trade, international organizations and the political and cultural impact of world trade. Lecture. Field trips may be required. Transfer: CSU

BUSAD 209—IMPORT/EXPORT FUNDAMENTALS 3 Units
Recommended for Success: Satisfactory completion of BUSAD 208 Also offered as AGEC 209.
Overview of processes and procedures involved in importing and exporting products and services. Special emphasis on finance and financial documentation. Lecture. Field trips may be required. Transfer: CSU

BUSAD 210—BUSINESS COMMUNICATION 3 Units
Recommended for Success: Before enrolling in this course, students are strongly advised to satisfactorily complete ENGL 101
Principles and applications of written and oral business communications, including routine memo and letter writing, persuasive writing, oral communication, and informative report writing. (A-F or P/NP) Lecture. Transfer: CSU General Education: (MJC-GE: D)
BUSAD 218—BUSINESS LAW  4 Units
Recommended for Success: Third semester Business major.
Laws and regulations affecting managerial decisions; legal concepts and case analyses in the areas of ethics, employment, consumer transactions, competition, the environment, business torts and crimes, contracts, agency, business organizations, and international business. Lecture. Transfer: CSU, UC (CC BUSAD 18)

BUSAD 230—PERSONAL FINANCE  3 Units
Principles and practices of business from the consumer’s point of view; factors involved in intelligent management of income and expenditure and ethical maximization of personal financial gain. Income and wealth distribution; occupational earnings; wise buying; consumer rights and legislation and protective agencies; credit and borrowing; financial services; automobiles; property, liability, health, life, and disability insurance; retirement; social security; pensions, annuities; housing; savings and investment; taxes; estate planning. Lecture. Transfer: CSU

BUSAD 233—INVESTMENTS  3 Units
Recommended for Success: Satisfactory completion of BUSAD 230, and at least one semester of accounting.
Thorough study of corporate stocks and bonds, with time deposits, government securities, mutual funds, real estate, commodity futures, options and less common investment media receiving brief consideration. Emphasis on careful, critical investigation of risk and reward—rigorous mathematical analysis expected. Field trips may be required. Lecture. Transfer: CSU

BUSAD 240—PRINCIPLES OF MANAGEMENT  3 Units
(Not open to those who have completed management telecourse.)
An introductory study of the basic business management functions: planning, organizing, leading, and controlling. Lecture. Transfer: CSU (CC BUSAD 480 General Education: MNC-GE B)

BUSAD 245—PRINCIPLES OF MARKETING  3 Units
Understanding customer needs and behavior, developing a product and/or service mix to satisfy customer needs profitably, determining promotional strategy, selecting channels and methods of distribution, establishing appropriate prices. Legal, political, cultural, social, economic, competitive and ethical aspects of marketing. Field trips may be required. Lecture. Transfer: CSU (CC BUSAD 30)

BUSAD 246—STORE MANAGEMENT  3 Units
An examination of the resources, abilities and knowledge necessary to establish and operate a retail business successfully. Subjects studied include site selection, merchandising policies and management, buying policies and activities, pricing, retail promotion, customer service and credit, personal selling and marketing research for retailers. Lecture. Transfer: CSU

BUSAD 247—WEB MARKETING  3 Units
Designed to provide an understanding of the World Wide Web and its potential as a marketing tool. Includes: application basics, design, and utilization in primary or supportive e-commerce roles. Lecture. Transfer: CSU

BUSAD 248—INTRODUCTION TO BUSINESS  3 Units
Survey of business principles, problems and operations; legal, ethical, moral, and social issues; ownership, human resources; management; production, marketing, finance; managerial controls; government regulation, risk management. Lecture. Transfer: CSU, UC (CC BUSAD 20)

BUSAD 249—BUSINESS INTERNSHIP  4 Units
An internship program with selected business firms dealing with either accounting, computer science, marketing, business law, office administration, bookkeeping, or retail management practices in public or private agencies. Student interns will be under joint supervision of the employers and a faculty member. Intended to provide practical applications for students who have developed theoretical knowledge and effective interpersonal skills by completing their discipline’s introductory level course(s). See appropriate instructor for required enrollment forms. Transfer: CSU

BUSAD 259—SMALL BUSINESS MANAGEMENT  3 Units
Provides those intending and those involved in small business with the tools to help insure success. Covers establishing marketing, managing, and financing the new firm. Field trips may be required. Lecture. Transfer: CSU

BUSAD 274—HUMAN RESOURCES MANAGEMENT  3 Units
Principles and methods related to effective utilization of human resources in organizations. Understanding human relations involved in recruitment, selection, and placement of employees with regard to training, experience, and abilities. Discussion, illustrations, and case studies to develop techniques effective in dealing with personnel problems. Lecture. Transfer: CSU

BUSAD 299A,B—MARKETING PROJECTS  1,2 Units
Formerly listed as: BUSAD 285A,B—Special Projects
Independent analysis or design of computer accounting software or work in specialized BUSAD topics. Projects must have the approval of instructor. Conference with the instructor: minimum of 1 per month. Completions up to 4 maximum units. Laboratory. Transfer: CSU

BUSAD 300—MACHINE CALCULATION  3 Units
Recommended for Success: Satisfactory completion of MATH 20
Instruction in the operation of the electronic calculator including addition, subtraction, multiplication, and division using constant factors and automatic accumulation as applied to business applications. Major emphasis on 10-key touch operation. Lecture/Laboratory.

BUSAD 303 — INTRODUCTION TO THE CALIFORNIA GAMING INDUSTRY  3 Units
Recommended for Success: Basic English and basic arithmetic skills.
Introduction to the history, current issues, laws, regulations, and career opportunities in the California Gaming Industry. Discusses the roles and responsibilities of gaming industry employees and provides hands-on training experiences in the terminology, skills and operations of legal games available throughout California. Students successfully completing this course will be prepared to seek employment within the gaming industry. Field trips required. Lecture/Laboratory. Students are required to replace lost or damaged course materials.

BUSAD 310—BOOKKEEPING 1  3 Units
Recommended for Success: Satisfactory completion of BUSAD 300 or MATH 50.

BUSAD 319—PAYROLL ACCOUNTING  3 Units
Prerequisites: Satisfactory completion of BUSAD 310 or 201.
Recommended for Success: Satisfactory completion of BUSAD 320 if BUSAD 310 is used as a prerequisite.
Completing the payroll register. Reporting payroll tax information to the federal and state governments, with emphasis on completing both quarterly and annual reports. Making the necessary journal entries to record payroll transactions. Computing payroll on the microcomputer. Lecture/Laboratory.

BUSAD 320—BOOKKEEPING 2  3 Units
Prerequisite: Satisfactory completion of BUSAD 310
Entries requiring analysis and interpretation; entries for promissory notes; adjustments for prepaid; unlearning and accrued items; depreciation of assets, property sales, closing of books, partnership and corporate accounting, cash flows and financial analysis. Lecture.

BUSAD 331—BEGINNING COMPUTER ACCOUNTING SOFTWARE  1 Unit
Prerequisites: Satisfactory completion of BUSAD 310 or 201.
Recommended for Success: BUSAD 320 if BUSAD 310 is used to satisfy prerequisite.
A beginning course using features of computerized accounting software package(s). Course is designed to enable students to learn and apply the features of computerized accounting software to record, process and communicate financial accounting data for a Service Company in the small business setting. Lecture. Two maximum completions.
BUSAD 332—INTERMEDIATE COMPUTER ACCOUNTING SOFTWARE
1 Unit
Prerequisites: Satisfactory completion of BUSAD 331
A continuation of the beginning course using features of computerized accounting software package(s). Course is designed to enable students to learn and apply the features of computerized accounting software to record, process and communicate financial accounting data for a Merchandising Company in the small business setting. Lecture. Two maximum completions.

BUSAD 333—COMPUTER ACCOUNTING SOFTWARE
2 Units
Prerequisites: Satisfactory completion of BUSAD 310 or 201.
Recommended for Success: Satisfactory completion of BUSAD 320 if BUSAD 310 is used to fill prerequisite.
A combination of BUSAD 331 and BUSAD 332. A beginning course using features of computerized accounting software package(s). Course is designed to enable students to learn and apply the features of computerized accounting software to record, process and communicate financial accounting data for a Service Company and for a Merchandising Corporation in the small business setting. Lecture. Two maximum completions.

BUSAD 336—TAX ACCOUNTING
3 Units
Recommended for Success: Satisfactory completion of BUSAD 201 or 310
US Federal Income Tax to include preparation of Federal Tax Returns, supplemental Federal schedules for individuals and business forms, and computation of social security and other self-employment taxes. One completion allowed. (A-F or P/NP) Field trips may be required. Lecture. (Fall)

BUSAD 358—SALES AND ADVERTISING PROMOTION
3 Units
Fundamentals of personal selling and advertising. The sales process is defined and analyzed. The use of a variety of advertising techniques, methods, and media are explored. Stresses practical application. Lecture.

BUSAD 364—TOTAL QUALITY MANAGEMENT
3 Units
Recommended for Success: Satisfactory completion of SUPR 351, BUSAD 240 or equivalent.
Also offered as SUPR 364. (Not open to those who have completed management telecourse.)
This course provides an introduction to W. Edward Deming's philosophy of Total Quality Management and its implications for improving the competitiveness of American business in the international economy. A variety of related management topics is also presented. Lecture.

BUSAD 377—HUMAN RELATIONS IN BUSINESS
3 Units
People and their roles in the business and non-profit community. The nature of work, the work environment, personal skills and performance, work groups, and solving human relations problems. Lecture.

BUSAD 379—CUSTOMER RELATIONS
1 Unit
Provide the student with skills and attitudes necessary to be successful in the workplace. Focusing upon internal and external business interactions, customer satisfaction, departmental dynamics, appropriate procedure and protocol. Field trips may be required. Lecture.

BUSAD 380—CUSTOMER SERVICE
1 Unit
Provide the student with the skills necessary to establish effective customer service. Including public administration skills, sales techniques, and conflict management. Course is focused upon serving the public. Field trips may be required. Lecture.

BUSAD 391—LOGISTICS MANAGEMENT
3 Units
Basic aspects of Logistics Management: to include customer service, transportation, distribution, warehousing, inventory procurement, and materials handling management. Lecture. Field trips required.

CGR 201—GRAPHIC ARTS FUNDAMENTALS
3 Units
History of major printing process, application of layout and design, hot and cold type composition, proofreading, paste-up, process photography, offset production procedures, paper, printing inks, bindery and photographic legal restrictions. Field trips may be required. Lecture. Material fee required. (Fall) Transfer: CSU (MJC Activities)

CGR 211—TYPOGRAPHY 1
3 Units
Basic fundamentals of typesetting and composition. Includes instruction in the printer's point system, type face identification and mark-up procedures. Operation of display and typesetting equipment. Note: PageMaker software. Field trips may be required. Lecture/Laboratory. (Fall) Transfer: CSU (MJC Activities)

CGR 212—ELECTRONIC PREPRESS
3 Units
Recommended for Success: Concurrent enrollment in CGR 211.
Terminology, materials, equipment, facilities and methods used in electronic prepress. Electronic job planning and layout basics, such as: file formats, fonts, imposition, trapping, screen angle, preflight, postscript output, image setters, proofing and output to plates. Techniques of preparing electronic files for output to: postscript printers, image setters, and direct to plate. Procedures for preparing line art, black and white photos, color photos, clip art and software created illustration. Scaling graphics to layout specs and working with single multicolored layouts. Note: Illustrator software. Field trips may be required. Lecture/Laboratory. (Fall) Transfer: CSU (MJC Activities)

CGR 214—PRINTING PRESSES AND BINDERY 1
3 Units
Formerly listed as GRC 214.
Introduction to bindery work: planning, paper cutting, folding, assembling, finish work and packaging. Introduction to single color small offset presses. Operations and maintenance of feeders and printing units. Fundamentals of press chemistry. Use press adjustments to control ink and water systems. Fundamental use of offset plates. Field trips may be required. Lecture/Laboratory. (Fall) Transfer: CSU (MJC Activities)

CGR 221—IMAGE CAPTURE AND MANIPULATION
3 Units
Optical and digital methods of image capture and manipulation. Photographic materials and equipment for the graphic arts. Densitometry, light sources, pin register, film assembly, exposure and development control. Contact frame, camera, and scanner theory and practice. Students will use a variety of flat bed scanners, transparency scanners, and digital cameras. Photoshop will be used to manipulate the images. Materials fee may be required. Lecture/Laboratory. (Spring) Transfer: CSU (MJC Activities)

CGR 222—IMAGE ASSEMBLY AND PLATEMAKING
2 Units
Recommended for Success: Satisfaction completion of OFADM 351 and CGR 214.
Planning for litho plating; handling and repair of litho negatives; special negative operations—scribing, opaquing, retouching, flat layout and imposition, step and repeat stripping; single and multiple negative masking. Lecture/Laboratory. Materials fee required. (Spring) Transfer: CSU

CGR 223—PRINTING PRESSES AND BINDERY 2
3 Units
Recommended for Success: Satisfaction completion of CGR 214
Formerly listed as GRC 223.
Intermediate skills in bindery work, including those listed in CGR 214 and specialty printing production to include foil stamping and embossing. Intermediate skills on printing presses to include two or more colors with tight registration. Troubleshooting, maintenance, and planning for printing of multi color jobs. Field trips may be required. Lecture/Laboratory. (Fall) Transfer: CSU

CGR 224—ELECTRONIC PUBLISHING SYSTEMS
3 Units
Recommended for Success: Satisfaction completion of OFADM 351
Formerly listed as GRC 224.
Introduction to electronic publishing systems, to include text generation, computer-designed graphics: Typographical applications and typesetting devices, to include image setters and direct to plate devices. Current options for hardware and software used in the graphic communication industry and the advantages and disadvantages. Postscript and its role in electronic publishing. Field trips may be required. Two maximum completions. Lecture/Laboratory. Not offered every semester. Transfer: CSU (MJC Activities)
CGR 225 - PRODUCTION SCREEN PRINTING 2 Units
Fundamentals of production screen printing on multi-media or substrates. Screen printing with single and multi-color with halftone registration. Field trips may be required. Materials fee required. Lecture/Laboratory. (Spring) Transfer: CSU.

CGR 230 - GRAPHIC DESIGN 3 Units
Recommended for success: Satisfactory completion of ART 120, ART 124, CGR 211, CGR 212, and CGR 224.
Provides a knowledge of graphic design principles and application in business today. Note: Illustrator software. Lecture/Laboratory. Field trips required. Transfer: CSU (MJC Activities)

CGR 232 - GRAPHIC DESIGN PORTFOLIO DEVELOPMENT 1 Unit
Recommended for Success: Before enrolling in this course, students are strongly advised to complete a minimum of 15 units in the CGR major.
Students develop their knowledge and skill for organizing a comprehensive professional portfolio that prepares their work to pursue career opportunities in the graphic design and printing industry. Portfolios include a collection of individual and group projects, resume, a professional cover letter, and samples of completed job applications. Students prepare and present their portfolio as a final project. (A-F or P/NP) Lecture. (A-F Only) Transfer: CSU

CGR 331 - TYPOGRAPHY 2 3 Units
Recommended for Success: Satisfactory completion of CGR 211 and 212.
Instruction in advanced typesetting techniques relating to commercial printing. Operation of display, text, and computer assisted typesetting equipment. Advanced methods of form composition. Note: QuarkXPress software. Lecture/Laboratory. (A-F Only) (Spring)

CGR 332 - PRODUCTION PRESSES AND BINDERY 3 Units
Recommended for Success: Satisfactory completion of CGR 214, 223 or equivalent training. Formerly listed as GRC 332.
Fundamentals in care, maintenance and setting of rollers in large press systems. Includes instruction in operational procedures for large presses, including handling of press plates. Special attention given to complex color printing and production printing of all types. Production bindery in all areas to include: folding, stitching, coil binding, fastback binding, and specialty presses for bindery. The emphasis will be on production and quality control. Field trips may be required. Lecture/Laboratory. (A-F Only) (Fall)

CGR 333 - PHOTO TECHNIQUES 3 Units
Recommended for Success: Satisfactory completion of CGR 211 and 221.
Photo manipulation procedures: Photoshop training, image capture using scanners and digital cameras, output devices (proofing and image setters), special films, proofing methods and materials, and utilizing industry equipment and software. Note: Primary software (Photoshop). Lecture/Laboratory. (A-F Only) (Fall) (MJC Activities)

CGR 342 - DESIGNING FOR CLIENTS 2 Units
Prerequisite: Satisfactory completion of CGR 212
Recommended for success: Satisfactory completion of 211, 224, 231, 221, and 331.
Techniques required to design and prepare copy for several types of printing media. Emphasis on digital skills and procedures required for the production of artwork. Design and preparation of printing for a client. Field trips may be required. Lecture/Laboratory. (A-F Only) (Spring)

CGR 350 - GRAPHIC COMMUNICATION INTERNSHIP 2 Units
Prerequisite: Minimum of 15 units completed in Communication Graphics major.
Supervised field experience in graphic communications. Study and research related to job training. Current developments in graphic communications. Initial orientation, two student/instructor conferences and one local work-site visit. 150 hours paid or 120 hours non-paid work per semester equals 2 units. Three maximum completions.

CGR 352 - PRODUCTION MANAGEMENT 1 Unit
Prerequisite: Minimum of 15 units completed in Communication Graphics major.
Fundamentals of Graphics Production Management to include: job flow, production work, maintenance schedules, estimating, purchasing, production scheduling, and development of portfolios. Field trips may be required. Laboratory. (Spring)

CHEM 101 - GENERAL CHEMISTRY 1 5 Units
Prerequisite: Satisfactory completion of MATH 90 or equivalent placement by MJC assessment process.
Recommended for Success: Before enrolling in this course, students are strongly advised to complete CHEM 142 with a grade of C or better or complete High School Chemistry with a grade of B or better.
Principles of chemistry emphasizing measurements and significant figures, chemical reactions, stoichiometry, gas laws and theory, thermodynamics, atomic structure and quantum mechanics, periodic properties, chemical bonding, molecular structure, intermolecular attractions and properties of liquids and solids, and properties of solutions. Field trips are not required. (A-F or P/NP) Lecture/Lab/Discussion. Transfer: CSU, UC (CC CHEM 1A) General Education: (MJC-GA) (CSU-GA: B1, B3) (IGETC: SA)

CHEM 102 - GENERAL CHEMISTRY 2 5 Units
Prerequisite: Satisfactory completion of CHEM 101.
Continuation of CHEM 101 emphasizing kinetics, solutions, equilibrium, acids and bases, electrochemistry, thermodynamics, nuclear chemistry, coordination chemistry and descriptive chemistry. Field trips are not required. Lecture/Lab/Discussion (A-F or P/NP) Transfer: CSU, UC (CC CHEM 1B) General Education: (MJC-GA) (CSU-GA: B1, B3) (IGETC: SA)

CHEM 112 - ORGANIC CHEMISTRY 1 5 Units
Prerequisite: Satisfactory completion of CHEM 102 or CHEM 103.
Nomenclature, structure, reactions and spectroscopy of carbon containing compounds. Laboratory emphasizes basic techniques of synthesis, purification, and identification of organic compounds. (A-F or P/NP). Materials fee required. Lecture/Laboratory. Transfer: CSU, UC General Education: (CSU-GA: B1, B3) (IGETC: SA)

CHEM 113 - ORGANIC CHEMISTRY 2 5 Units
Prerequisite: CHEM 112
A continuation of CHEM 112 with emphasis on alcohols, amines, carboxyls, carboxyls, and biologically important compounds. Involves special topics in organic reactions and syntheses. Lecture/Laboratory. Materials fee required. (Spring) Transfer: CSU, UC General Education: (CSU-GA: B1, B3) (IGETC: SA)

CHEM 142 - PRE-GENERAL CHEMISTRY 3 Units
Corequisite: Concurrent enrollment in or satisfactory prior completion of CHEM 90.
Intended to prepare students for General Chemistry with an emphasis on problem-solving using unit analysis. Included are topics on classification of matter, atomic and molecular structure, measurements and the metric system, chemical reactions and stoichiometry, aqueous solutions and fundamentals of acids and bases. (A-F or P/NP) Lecture. Transfer: CSU, UC General Education: (MJC-GA) (CSU-GA: B1) (IGETC: SA)

CHEM 143 - INTRODUCTORY COLLEGE CHEMISTRY 5 Units
Prerequisite: Eligibility for MATH 90.
Designed to meet the requirements for certain nursing, dental hygiene, physical therapy, home economics, agriculture and forestry programs (inorganic chemistry). Principles of chemistry including an introduction to organic chemistry. Uses the factor-label method of problem solving. Credit not granted to students who have completed CHEM 142. Lecture/Laboratory/Discussion. Materials fee required. Transfer: CSU, UC (CC CHEM 10) General Education: (MJC-GA) (CSU-GA: B1, B3) (IGETC: SA)

CHEM 144 - FUNDAMENTALS OF ORGANIC AND BIOCHEMISTRY 4 Units
Prerequisite: Satisfactory completion of CHEM 142 or CHEM 143.
Basic principles of organic and biochemistry. Uses inductive and deductive problem solving methods. Lecture/Laboratory. Materials fee may be required. (Spring) Transfer: CSU, UC (CC CHEM 11) General Education: (MJC-GA)(CSU-GA: B1, B3) (IGETC: SA)
CHEM 150—EXPLORING OUR CHEMICAL ENVIRONMENT  3 Units
The interaction of mankind and the environment from a chemical perspective. Basic chemical principles are developed in order to understand such items as conventional, nuclear, and alternative energy sources, air and water pollution, fertilizers, pesticides, food preservatives, genetic engineering, and medicines and drugs. Field trips may be required. Lecture. Transfer: CSU, UC (CC CHEM 20) General Education: (MUC-GE-A)(CSU-GE-B1)

CHEM 164—INTRODUCTORY CHEMISTRY LABORATORY  2 Units
Corequisite: Concurrent enrollment in or prior satisfactory completion of CHEM 142 or CHEM 150.
Introductory concepts and techniques used in a chemistry laboratory. Recommended for liberal studies and other non-science majors. Topics include: scientific method, measurements, physical and chemical changes, data analysis, molecular compounds, chemical reactions and energy. No credit will be given for students who have completed CHEM 143 or CHEM 101. (A-F or P/NP) Materials fee required. Lec/Lab. Transfer: CSU, UC General Education: (MUC-GE-A)(CSU-GE-B3)

CLDDV (Child Development)

CLDDV 48A,B —FUNDAMENTAL COMMUNICATION 1-2 Units
SKILLS FOR CHILD DEVELOPMENT MAJORS
Formerly listed as CLDDV 50A, B
Recommended for success: Enrollment in at least one of the Child Development courses
Emphasis on developing fundamental communication skills including reading comprehension, preparation of written assignments, and spoken communication specific to the terminology utilized in the field of child development. Credit in this course may not be used to satisfy Child Development requirements for graduation from Modesto Junior College. Class can be completed a maximum of four times, for a maximum of 8.0 units, combined between 48A and 48B. Lecture. Transfer: CSU (CC CHILD 3)

CLDDV 101—INTRODUCTION TO EARLY CHILDHOOD EDUCATION
Foundations of educational programs and preparation for entering the field of education. Study of philosophy and history of education, appropriate curriculum and environments for educational programs; principles for teachers in educational programs. Examine domains of human development, including physical, cognitive, social-emotional, and creative, with emphasis on but not limited to ages 0-8. Basic skill development in observation of children in educational settings. Introduction to state and federal requirements for educational programs. (A-F or P/NP) Lecture. Transfer: CSU, UC (CC CHILD 1) General Education: (MUC-GE-B,E)(CSU-GE-E)

CLDDV 103—CHILD GROWTH AND DEVELOPMENT  3 Units
Basic principles of human development as they apply to infancy, childhood, and adolescence, including prenatal and birthing, physical, cognitive, social, emotional, and atypical development. Discussion of current developmental research and application. (A-F or P/NP) Lecture. Transfer: CSU, UC (CC CHILD 1) General Education: (MUC-GE-B,E)(CSU-GE-E)

CLDDV 104—CHILD GROWTH & DEVELOPMENT - CONCEPTION THROUGH EARLY CHILDHOOD  2 Units
First half of CLDDV 103 - Basic principles of human development as they apply to infancy and childhood, including prenatal and birthing: physical, cognitive, social, emotional, and atypical development. Discussion of current developmental research and application. (A-F or P/NP) Lecture. Transfer: CSU, UC General Education: (MUC-GE-B,E)(CSU-GE-E)

CLDDV 105—CHILD GROWTH & DEVELOPMENT- LATE CHILDHOOD THROUGH LATE ADOLESCENCE  2 Units
Recommended for success: Satisfactory completion of ENGL 50
Second half of CLDDV 103 - Basic principles of human development as they apply to late childhood through adolescence: physical, cognitive, social, emotional, and atypical development. Discussion of current developmental research and application. (A-F or P/NP) Lecture. Transfer: CSU, UC General Education: (MUC-GE-E)(CSU-GE-E)

CLDDV 107—INTRODUCTION TO CHILD DEVELOPMENT CURRICULUM (Formerly listed as CLDDV 278)
Recommended for success: Satisfactory completion of ENGL 50
Study of appropriate play, aesthetic and learning experiences including program content, use of materials and equipment and guidance of children’s experiences in developmentally appropriate fashion; techniques of meeting physical needs of children. Principles of learning, models of curricular philosophies and programs and integration of domains of development will be integrated. Discussion of cultural contexts, variations in development and inclusion of children with special needs. Lecture. Transfer: CSU

CLDDV 109—CHILD - FAMILY - COMMUNITY  3 Units
(Formerly listed as CLDDV 249)
Framework for understanding the development of and influences on young children within the context of the family, early care and education, school, peer group, community and media, including culture, religion, economics, politics, and change. Issues, challenges and concerns are explored as well as community resources and the importance of partnerships and advocacy. (A-F or P/NP) Lecture. Transfer: CSU (CC CHILD 22)

CLART (Culinary Arts)

CLART 211—FOOD SAFETY AND SANITATION  2 Units
Formerly listed as: CLART 311
Law and practices related to sanitation and safety in the food preparation industry. Four maximum completions. Materials fee required. (A-F or P/NP) Transfer: CSU (CC HPMGT 120)

CLART 301—CULINARY ACADEMY  14 Units
An introductory course designed to familiarize the student with basic culinary skills development. The daily production will emphasize techniques of masting, grilling and braising utilizing menus that reflect American regional cuisine. Introduction to stocks, soups, mother sauces, sauce derivatives, thickening agents, and flavoring agents. Identification and function, purchasing and receiving, and proper storage procedures of ingredients and products will be discussed. The baking module provides students with the opportunity to prepare breads, rolls, biscuits, muffins, pies, tarts and cookies. Field trips may be required. (A-F or P/NP) Fee for food supplies. Not offered every semester. (Fall)

CLART 302—CULINARY ACADEMY  14 Units
Prerequisite: Satisfactory completion of CLART 301
Daily production will emphasize techniques of specialty desserts, pastries, garde manger, and advanced cooking techniques that reflect modern American and international cuisine. Areas of specialized studies include management and supervision, cost control, computers, menu planning and facility planning. Field trips may be required. (A-F or P/NP) Fee for food supplies. Not offered every semester. (Spring)
CLDDV 121 — GUIDANCE OF YOUNG CHILDREN  3 Units
(Formerly listed as CLDDV 246)
Recommended for success: CLDDV 101, or CLDDV 103, or CLDDV 104 and CLDDV 105
Developing effective relationships with young children through positive guidance practices. Identify-
ing and application of appropriate guidance techniques. Lecture. Transfer: CSU

CLDDV 122—LEARNING ENVIRONMENTS FOR INFANTS AND TODDLERS  3 Units
Recommended for success: Before enrolling in this course students are strongly advised to satisfactorily complete CLDDV 101 or CLDDV 103 or (CLDDV 104 and CLDDV 105.)
Development and evaluation of the physical and social learning environments for infants and toddlers including goals, curriculum, materials, state regulations, equipment, and interaction of children, staff, and families. (A-F or P/NP) Transfer: CSU

CLDDV 123—LEARNING ENVIRONMENTS FOR YOUNG CHILDREN  3 Units
(Formerly listed as CLDDV 247)
Recommended for success: Satisfactory completion of CLDDV 101, or CLDDV 103, or CLDDV 104 and CLDDV 105
Development and evaluation of the learning environment for young children including physical environment, curriculum, goals, materials, and equipment and including children with disabilities in a multicultural context. Exploration of the interaction of children, teachers, and families, and how those interactions affect programs and children’s development. Lecture. (A-F and CR/NC) Transfer: CSU

CLDDV 125—INFANT AND TODDLER DEVELOPMENT AND CARE  3 Units
Prerequisite: Satisfactory completion of CLDDV 103 or CLDDV 104 and CLDDV 105
Infant and toddler developmental milestones and practices for stimulation and learning. Exploration and assessment of the infant and toddler curriculum and environment, family involvement, educational theory, and recent brain research concerning the first three years of life. Health, safety, nutrition, aspects of group care, and the review of Department of Social Services Regulation compliance in infant and toddler programs. (A-F or P/NP). Lecture. Transfer: CSU (CC CHILD 25)

CLDDV 126 C,D,E—INCLUSION SPECIAL NEEDS PRACTICUM  3-5 Units
Prerequisite: Satisfactory completion of CLDDV 103.
Concurrent enrollment in or satisfactory prior completion of CLDDV 121.
Recommended for Success: Before enrolling in this course, students are strongly advised to satisfactorily complete ENGL 50.
Enrollment limited to those who can present evidence of TB clearance.
Child-centered, play-oriented approaches to student teaching experience under guided supervision with toddlers and preschool-age children with an identified disability. Build a comprehensive understanding of children and families through individualized, relationship-based (DIR Floortime) caregiving practice including the development of relationships with families. Build connections between theory and practice, develop professional behaviors, practice positive and nurturing guidance techniques, and utilize facilitation-based teaching through authentic observation, documentation, screening, and assessment while designing, facilitating and evaluating curriculum that support an inclusive and culturally diverse environment. Will support IFSP/IEP goals and may include participation in an educational meeting. CLDDV 130 - Supervised Field Experience - may NOT be used as a substitute for lab practicum. CLDDV 130 - Supervised Field Experience - may NOT be used as a substitute for lab practicum. Class can be repeatable – three completions allowed. Field trips may be required. Applicable to the associate degree (A-F or P/NP) Lecture/Laboratory. Transfer: CSU (CC CHILD 25)

CLDDV 127 C,D,E—INCLUSION SPECIAL NEEDS PRACTICUM  2-5 Units
Concurrent enrollment in or satisfactory prior completion of CLDDV 125.
Recommended for Success: Before enrolling in this course, students are strongly advised to satisfactorily complete ENGL 50.
Enrollment limited to those who can present evidence of TB clearance.
Child-centered, play-oriented approaches to student teaching experience under guided supervision with infants and toddlers who may have a disability. Build a comprehensive understanding of children and families through individualized, relationship-based caregiving including the development of relationships with families. Build connections between theory and practice, develop professional behaviors, practice positive and nurturing guidance techniques, and utilize facilitation-based teaching through authentic observation, documentation, screening, and assessment while designing, facilitating and evaluating curriculum that support an inclusive and culturally diverse environment. Will support IFSP goals and may include participation in an educational meeting. CLDDV 130 - Supervised Field Experience - may NOT be used as a substitute for lab practicum. Course is repeatable up to a maximum of 5 units earned. Field trips may be required. Applicable to the associate degree (A-F or P/NP) Lecture/Laboratory. Transfer: CSU (CC CHILD 16)

CLDDV 128B,C,D,E—PRESCHOOL PRACTICUM  2-5 Units
(Formerly listed as CLDDV 248)
Prerequisite: Satisfactory completion of CLDDV 101, or CLDDV 103, or CLDDV 104 and CLDDV 105;
Recommended for Success: Before enrolling in this course, students are strongly advised to satisfactorily complete ENGL 50 and CLDDV 121.
Enrollment limited to those who can present evidence of TB clearance.
Child-centered, play-oriented approaches to student teaching experience under guided supervision with preschool-aged children who may have a disability. Build a comprehensive understanding of children and families through individualized, relationship-based caregiving including the development of relationships with families. Build connections between theory and practice, develop professional behaviors, practice positive and nurturing guidance techniques, and utilize facilitation-based teaching through authentic observation, documentation, screening, and assessment while designing, facilitating and evaluating curriculum that support an inclusive and culturally diverse environment. Will support IFSP goals and may include participation in an educational meeting. CLDDV 130 - Supervised Field Experience - may NOT be used as a substitute for lab practicum. CLDDV 130 - Supervised Field Experience - may NOT be used as a substitute for lab practicum. Course is repeatable – three completions allowed. Field trips may be required. Applicable to the associate degree (A-F or P/NP) Lecture/Laboratory. Transfer: CSU (CC CHILD 16)

CLDDV 130B,C,D—SUPERVISED FIELD EXPERIENCE  2-4 Units
(Formerly listed as CLDDV 260)
Fingerprint and TB clearances are required.
Designed to combine experience in an infant, toddler, preschool, school-age care facility, or K-12 classroom with an expansion of skills or knowledge acquired at a site of employment on a paid or volunteer basis. Provides an orientation to the structure of work experience education and develops specific knowledge and skills related to employment situations through the accomplishment of goals. 75 paid hours or 60 volunteer hours of related work experience are required for the 2-unit class; 150 paid hours or 120 volunteer hours of related work experience are required for the 3-unit class; 225 paid hours or 180 volunteer hours of related work experience are required for the 4-unit class. This course may NOT be used as a substitute for lab practicums. Class can be completed a maximum of four times, for a maximum of 16.0 units, Lecture / Field Experience. Transfer: CSU

CLDDV 150—ADMINISTRATION OF CHILDREN’S PROGRAMS  3 Units
(Formerly listed as CLDDV 250)
Prerequisite: Satisfactory completion of CLDDV 101, or CLDDV 103 and CLDDV 105
Laws governing private and public programs serving young children in California. Aspects of record, reports, health and safety, finances, staff management, curriculum development, and equipment requirements and parent–community relationships from the administrator’s point of view. Course is not repeatable. Applicable to the associate degree. Lecture. Transfer: CSU (CC CHILD 30)

CLDDV 151—ADVANCED ADMINISTRATION OF CHILDREN’S PROGRAMS  3 Units
(Formerly listed as CLDDV 270)
Prerequisite: Satisfactory completion of CLDDV 101, or CLDDV 103 and CLDDV 105
Management and supervision in Early Care and Education programs. Includes strategic planning, group dynamics, supervision of staff and volunteers, development of motivation and morale, leadership and management skills, functions of personnel, interview skills, evaluations, human resource issues, resolving group conflicts and working with advisory boards. Designed to provide knowledge of methods and principles for working with adults in a supervisory capacity in Early Care and Education settings. Course is not repeatable. Field trips may be required. (A-F or P/NP) Lecture. Transfer: CSU (CC CHILD 31)

CLDDV 154—ADULT RELATIONSHIPS AND MENTORING IN SCHOOLS  2 Units
(Formerly listed as CLDDV 264)
Prerequisite: Satisfactory completion of CLDDV 101, CLDDV 103, or CLDDV 104 and CLDDV 105
Impact of staff interaction on children and adults in the classroom environment. Roles and functions of adults as professionals. Three completions allowed. Field trips may be required. Lecture. (A-F or P/NP) Transfer: CSU
CLDDV 160—ATYPICAL DEVELOPMENT 3 Units
(Formerly listed as CLDDV 277)
Recommended for success: ENGL 50; CLDDV 103, or CLDDV 104 and CLDDV 105
Examines the interaction of genetic, biological, and environmental influences in the prenatal, natal, and postnatal environment that contribute to the development of the atypical child. Identification of a variety of special needs in children from birth to 12 years of age. Factors influencing development will be explored including family, community, and culture as the child is included in all environments. Lecture. Transfer: CSU General Education: (MUC-GE-B)

CLDDV 163—WORKING WITH CHILDREN WITH SPECIAL NEEDS 3 Units
Introduction to inclusion of children with special needs, from infancy to adolescence in the school and community. Includes laws and policies. Emphasis on cognitive, social, emotional, and physical development for the child with disabilities in care and educational settings. Collaboration with parents as partners and methods for working with professionals. Lecture. Transfer: CSU

CLDDV 165—CHILDREN AT RISK 3 Units
Recommended for Success: Satisfactory completion of ENGL 50
Examines risks facing for prenatal, infants, and young children including prenatal drug exposure, very low birth weight, serious congenital infection, congenital anomaly, low Apgar scores at birth, and other potential neurologic problems. Introduces the characteristics and effects of major childhood stress, including parental divorce and remarriage, parental illness and death, childhood illness and disability, child abuse and family violence, and parental incarceration. Field trips may be required. Lecture. Transfer: CSU

CLDDV 166—ADHD: IDENTIFY, ASSESS, INTERVENTIONS 1 Unit
Basic description of Attention Deficit Hyperactivity Disorder: causes, identification, assessment, and treatments. (A-F or P/NP). Transfer: CSU

CLDDV 167—OBSERVATION AND ASSESSMENT 3 Units
Prerequisites: Satisfactory completion of CLDDV 103, or CLDDV 104 and CLDDV 105, or CLDDV 245
Recommended for Success: Satisfactory completion of ENGL 50
Observation as a means of assessing developmental levels of infants, young and school age children. Introduction of various informal, formal, normed, standardized, and valid assessment and screening tools. Integration of observation techniques to perform reliable screenings and assessments to create a portfolio to be presented to parents. Field trips may be required. Lecture. Transfer: CSU

CLDDV 168—AUTISM 1: DESCRIPTION & IDENTIFICATION 1 Unit
Basic description of Autism, the Autistic spectrum, causes and assessment. (A-F or P/NP). Transfer: CSU

CLDDV 169—AUTISM 2: INTERVENTIONS & TREATMENTS 1 Unit
Overview of major interventions and treatments for Autism Spectrum Disorders. (A-F or P/NP). Transfer: CSU

CLDDV 170—AUTISM 3: DIR FLOORTIME APPROACH 1 Unit
Overview of DIR (Developmental, Individualized, Relationship-Based) Floor Time approach to developmental challenges encouraging interpersonal and emotional growth, Greenspan's renowned approach is presented and studied with detailed explanation. May be completed up to 4 times. (A-F or P/NP). Transfer: CSU

CLDDV 173—AUTISM: OVERVIEW AND TREATMENT 3 Units
Basic concepts of autism. Topics include description, identification, interventions and treatments, and DIR Floor Time approach. May be completed up to 4 times. (A-F or P/NP). Transfer: CSU

CLDDV 175—STEP-PARENTING: HEALTHY, HAPPY PARENTING 1 Unit

CLDDV 201—HEALTH AND SAFETY PRACTICES 3 Units
IN PROGRAMS FOR CHILDREN
Universal health precautions and other health and safety practices for children's programs. Health and safety requirements mandated by county and state, including injury prevention, infant and child first aid and CPR (satisfactory completion will earn student the Red Cross certificates in First Aid and CPR), prevention of infectious disease, caring for ill children, and recognizing signs of child abuse. Materials fee required. Lecture. Transfer: CSU

CLDDV 231—OVERVIEW OF FAMILY CHILD CARE 3 Units
(Formerly listed as FAML 331)
Selected topics related to family child care including, but not limited to, securing a license from California Department of Social Services, interpersonal relationships, business management, program development, policy formulation, health, safety, nutrition, food practices, child guidance, and environmental maintenance, including utilization of a rating scale. Lecture. Transfer: CSU

CLDDV 232—HEALTHY CAREGIVER 3 Units
(Formerly listed as FAML 330)
Selected topics related to the professional growth of the family child care provider including interpersonal skills, communication styles, prevention of burn-out, and strategies for career success. Lecture. Transfer: CSU

CLDDV 262—DIVERSITY IN EDUCATIONAL SETTINGS 3 Units
Formerly listed as “Diversity in Early Childhood Education”
Recommended for success: Before enrolling in this course, students are strongly advised to complete ENGL 50.
Examines the increasing diversity of society, educational environment, and social interactions in the classroom. The theoretical framework of awareness, knowledge, and skill is used to investigate forms of discrimination that permeate educational practices and society, and how these processes impact the work with children and their families. Culturally relevant materials and anti-bias strategies needed to integrate multicultural goals into the learning environment and curriculum are explored. (A-F or P/NP). Lecture. Transfer: CSU General Education: (MUC-GE-B), (CSU-GE-D7)

CLDDV 266—MENTOR SEMINAR ½ Unit
Beginning Early Childhood Mentors attend seminars to explore issues related to their role as supervisors of early childhood student teachers. Seminar content will be individualized to meet the needs of each mentor. Class can be completed a maximum of four times, for a maximum of 2.0 units. Lecture. Transfer: CSU

CLDDV 267—DIRECTOR SEMINAR 1 Unit
Directors, site supervisors and other early childhood educators attend monthly seminars to explore issues related to professional duties. Seminars will include quality improvement efforts, advocacy, supervision and mentoring of colleagues. Seminar content will be individualized to meet the needs of participants. Class can be completed a maximum of four times, for a maximum of 4.0 units. Lecture. Transfer: CSU

CLDDV 274—EARLY LITERACY 3 Units

CLDDV 279 — HEADSUP! READING 1, 2, 3 3 Units
Research-based principles and practices for providing children birth through age 5 a strong foundation in early reading and writing within a developmentally appropriate approach. Lecture. Transfer: CSU

CLDDV 280 — SCHOOL-AGE DEVELOPMENT 3 Units
(Formerly listed as CLDDV 275)
A study of the developing child during the school-age years. Developmental characteristics of school-age children, influences on behavior and learning, and the fundamentals of planning and implementing curriculum in programs serving school-age children and their families. Lecture. Transfer: CSU General Education: (MUC-GE-B)(CC CHILD 27)

CLDDV 281 — SCHOOL-AGE PROGRAM AND CURRICULUM 3 Units
(Formerly listed as CLDDV 276)
The fundamentals of planning, implementing, and evaluating curriculum for programs serving school-age children and their families. Developing and providing age appropriate activities, environment, and relationships in the context of an integrated and active curriculum. Lecture. Transfer: CSU General Education: (MUC-GE-B)

CLDDV 290A,C—BRAIN DEVELOPMENT THROUGH 3 Units
MUSIC AND MOVEMENT ACTIVITIES
(Formerly listed as CLDDV 365)
Recommended for Success: Satisfactory completion of ENGL 50, CLDDV 103, or CLDDV 104 and CLDDV 105
The brain and its connection to motor skill development in young children. Non-competitive group games, movement programs, and educational fitness. Lecture. Transfer: CSU
CLDDV 291 — CREATIVE ACTIVITIES FOR YOUNG CHILDREN  3 Units
(Formerly listed as CLDDV 364)
Recommended for Success: Satisfactory completion of ENGL 50, CLDDV 103, or CLDDV 104 and CLDDV 105
Develop, implement, and analyze creative experiences in the young child’s learning process. Lecture. Transfer: CSU

CLDDV 292 — MATH AND SCIENCE CURRICULUM FOR YOUNG CHILDREN  3 Units
Recommended for Success: Satisfactory completion of ENGL 50, CLDDV 103, or CLDDV 104 and CLDDV 105
Study of math and science exploration by young children. Evaluation and development of appropriate math and science activities and materials. Discussion of variations in developmental levels, inclusion of children with special needs, and respect of cultural differences. Lecture. Transfer: CSU (CC CHILD 12, 13)

CLDDV 293 — MUSIC, BIRTH TO K: THEORY AND PRACTICE  3 Units
Also offered as MUST 103.
Recommended for Success: Before enrolling in this class students are strongly advised to possess the following basic music skills: ability to read music (note names, melody and rhythm) and define and apply basic music vocabulary, or have successfully completed one or more of the following courses; MUST 101, MUSA 121, MUSA 161, MUSA 151, MUSA 153.
Introduction to the methods of teaching music to children (birth to Kindergarten). Theories on the developing mind and the benefit of musical understanding to musicianship as well as overall development theory and developmentally appropriate practice. Study of classroom implementation process. First in a two course sequence. Field trips may be required. (A-F or P/NP) Lecture. Transfer: CSU.

CLDDV 294 — MUSIC, BIRTH TO K: APPLICATION  3 Units
Also offered as MUST 106.
Prerequisite: Satisfactory completion of CLDDV 293/MUST 103.
Application of the methods of teaching music to children (birth to Kindergarten) at an infant/toddler or preschool center with instructor supervision. Students will continue to draw connections between basic music skills, methods of teaching theories, child development, and developmentally appropriate practice. Second in a two sequence of courses. Field trips may be required. (A-F or P/NP) Lecture. Transfer: CSU.

CLDDV 357 — CURRENT ISSUES: CHILD CARE DIRECTORS  1 Unit
Study of current issues and planning decisions facing directors of child care programs; examination and analysis of new and proposed state regulations. Lecture.

CLDDV 366 — CURRENT ISSUES: INFANT/TODDLER TEACHERS  1 Unit
Study of current issues in creating infant/toddler environments, evaluating development, and parent interaction. Lecture.

CLDDV 367 — CURRENT ISSUES: PRESCHOOL TEACHERS  1 Unit
Study of current issues in creating preschool environments, evaluating development, and parent interaction. Lecture.

CLDDV 369 — CHILDREN AT RISK  1 Unit
Understanding the impact of prenatal exposure to drugs and violence on children and families. Strategies to assist teachers, family child care providers, foster parents and other professionals in meeting needs of children prenatally exposed to drugs. Lecture.

CLDDV 370 — ISSUES IN CHILDREN’S NUTRITIONAL HEALTH  2 Units
Also offered as FDTR 370
Overview of entry level skills in the child nutrition program including sanitation, record keeping, and food production. Role and responsibilities in providing menus for children and youth which comply with budgetary parameters and meet their nutritional, social and emotional needs with sensitivity to culturally diverse foods. Lecture.

CLDDV - CMPET

CMPET (Computer Electronics)

CMPET 206 — PERSONAL COMPUTER ASSEMBLY, UPGRADING AND REPAIRING
Prerequisite: Satisfactory completion of CMPSC 201 or equivalent.
An introductory course in assembling, upgrading, and repairing of personal computer systems. Emphasis on hands-on laboratory activities with personal computer hardware. Operating principles of computer subsystems and peripheral devices. Use of diagnostic software and hardware tools. Multi-user system setup and maintenance. Lecture/Laboratory. Materials fee required. Transfer: CSU.

CMPET 210 — INTERMEDIATE PERSONAL COMPUTER SERVICING WITH A+ CERTIFICATION TRAINING
Prerequisite: Satisfactory completion of CMPET 206 or CMPET/ELTEC 214.
Intermediate principles and practices of personal computer systems maintenance, upgrading and repair with an emphasis on preparation for A+ Computer Technician Certification administered by CompTIA. Contents include hardware and operating system setup, adding peripherals, communication and networking fundamentals, disaster recovery and supporting Windows NT. Lecture/Laboratory. Materials fee required. Transfer: CSU.

CMPET 212 — DIGITAL PRINCIPLES AND CIRCUITS
Prerequisite: Satisfactory completion of MATH 70 or concurrent enrollment. Also offered as ELTEC 212.
Introduction to digital circuits. Use and application of digital components in electronic devices and computers. Interfacing input and output devices to digital circuits. Introduction to programmable logic devices. Materials fee required. Lecture/Laboratory. Transfer: CSU.

CMPET 214 — MICROPROCESSOR PROGRAMMING AND INTERFACING
Prerequisite: Satisfactory completion of ELTEC 212/CMPET 212 Also offered as ELTEC 214.
Introduction to the structure and operation of microprocessors as controllers for today's electronic devices and systems. Basic microprocessor hardware including memories, registers, counters, input/output ports, decoders, and arithmetic logic using the popular PIC RISC microcontroller. Machine language simulation and development on personal computers. Emphasis on interfacing to electronic hardware. Materials fee required. Lecture/Laboratory. (A-F Only) Transfer: CSU.

CMPET 232 — INTRODUCTION TO PROGRAMMABLE LOGIC CONTROLLERS Also offered as ELTEC 232.
Introduction to the basic concepts of programmable logic controllers. Installation, programming, maintaining, and troubleshooting of microprocessor programmable logic controller systems. Lecture/Laboratory. (A-F Only) Transfer: CSU.

CMPET 234 — ADVANCED TOPICS IN PROGRAMMABLE LOGIC CONTROLLERS
Recommended for Success: Satisfactory completion of ELTEC 232/CMPET 232 or equivalent course. Also offered as ELTEC 234.
Advanced study of programmable logic controllers and complete controller systems. Emphasis on component selection, design and operation of industry-like controller systems. Lecture/Laboratory. (A-F Only) Transfer: CSU.

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<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Units</th>
<th>Description</th>
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<tr>
<td>CMPET 269 — NETWORK</td>
<td>+ CERTIFICATION TRAINING LAB 1 Unit</td>
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<td>Concurrent Enrollment: Satisfactory completion of CMPSC 263. Recommended for Success: Satisfactory completion of any introductory computer course. Also offered as CMPSC 269. Network + is quickly becoming the standard for introductory-level industry certification. Designed for those interested in a career in network support, this vendor-neutral certification takes the student through installing and configuring a network client. This laboratory course along with the CMPSC 263 course provides preparation for CompTIA's Network+ certification exam. Extensive network lab projects will be required. Field trips may be required. Laboratory. Materials fee required. Transfer: CSU.</td>
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<tr>
<td>CMPET 302 — INTRODUCTION TO INDUSTRIAL NETWORKING WITH DEVCIENET</td>
<td>1 Unit</td>
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<td>Instruction on DeviceNet which is an open architecture system of smart sensors, controllers, and I/O all linked together on a common network and controlled by a PC that may or may not be networked to other PC's. Exploration of device level hardware and software. Lecture.</td>
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<tr>
<td>CMPGR 201 — ANIMATION: A GLOBAL VIEW OF ART IN MOTION 3 Units</td>
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<td>History of animation and its relationship to societies and cultures. Explores the development of animation from its earliest attempts in prehistoric times through the present day integration of technology. Strategies for production are presented, including animation techniques, design, layout, editing, timing, composition, color, lighting, music, sound effects, voice, story, concept, content, theme, historical relationship, social context, ethical context, purpose, audience, and philosophy. Field trips may be required. Lecture. Transfer: CSU General Education: (MJC-GE: C)</td>
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<tr>
<td>CMPGR 202 — INTRODUCTION TO COMPUTER GRAPHICS 3 Units</td>
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<td>Also offered as ART 102. An introductory course in the field of computer graphics using various applications and tools. Topics explored include, but are not limited to, original image creation, photographic editing, scanning, printing, two-dimensional animation, sound digitizing pens, mouse, and digital camera. Field trips may be required. Materials fee required. Lecture/Laboratory. Transfer: CSU, UC General Education: (CSU-GE: C1)</td>
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<tr>
<td>CMPGR 213 — APPLIED COMPUTER GRAPHICS 3 Units</td>
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<td>Recommended for Success: Satisfactory completion of ART 102/CMPGR 202. Also offered as ART 103. Concepts and techniques in computer graphics as related to fine and applied art applications. Field trips may be required. Materials fee required. Lecture/Laboratory. Transfer: CSU.</td>
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<tr>
<td>CMPGR 214 — DIGITAL CAPTURE FOR COMPUTER GRAPHICS 3 Units</td>
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<td>Recommended for Success: Satisfactory completion of any previous computer graphics course. Explore digital capture and image editing techniques using such hardware devices as scanners, capture boards, digital cameras and video. Students must have access to a digital camera. Field trips may be required. Lecture/Laboratory. Materials fee required. Transfer: CSU.</td>
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<tr>
<td>CMPGR 215 — BUSINESS PRESENTATION GRAPHICS 3 Units</td>
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<td>Recommended for Success: Satisfactory completion of any introductory computer science class. The use of a computer as a vehicle for preparing, producing, and controlling the presentation of visuals within the business environment. Both qualitative and quantitative data and selection of appropriate visual display format and media will be covered. Hardware and peripheral equipment as well as commercially available software will be covered. Emphasis is placed on the use of existing commercially available software with &quot;hands on&quot; experience being provided in an open lab environment. Field trips may be required. Lecture/Laboratory. Materials fee required. Transfer: CSU (CC CMPSC 11)</td>
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<tr>
<td>CMPGR 217 — COMPUTER ILLUSTRATION SOFTWARE 3 Units</td>
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<td>Recommended for Success: Satisfactory completion of CMPGR 202 or ART 102. Introduction to illustration software as applied to visual and data presentation. Explores the techniques and tools used by artists, designers, and illustrators to produce artwork for print, publishing, multi-media graphics, web page design or illustration. Hands-on experience with microcomputer graphics systems required. Field trips may be required. Materials fee required. Lecture/Laboratory. Transfer: CSU.</td>
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<tr>
<td>CMPGR 219 — COMPUTER GRAPHICS PORTFOLIO REVIEW 1 Unit</td>
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<td>Recommended for Success: This course follows the completed courses of the Computer Graphics majors/ certificate requirements. Also offered as ART 119. Prepares the student majoring in or receiving a certificate in Computer Graphics with the necessary visual and business skills to develop a portfolio, emphasizes the creative and applied business needs for individuals entering the professional field of Computer Graphics. Field trips may be required. Lecture/Laboratory. Transfer: CSU.</td>
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<tr>
<td>CMPGR 225 — 3D GRAPHICS AND ANIMATION 3 Units</td>
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<td>Graphic animation techniques utilizing microcomputers and 3D software. 3D modeling, scene composition, materials editing, object and camera movement, character development and storyboarding will be explored. Students will have intensive hands-on experience with IBM or Mac graphic systems and related peripheral devices. Field trips may be required. Two maximum completions. Lecture/Laboratory. Materials fee required. Transfer: CSU.</td>
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<tr>
<td>CMPGR 226 — 3D GRAPHICS AND ANIMATION 2 3 Units</td>
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<td>Recommended for Success: before enrolling in this course, students are strongly advised to satisfactorily complete CMPGR 225. Continued development of 3D modeling and animation skills. Storyboarding, integration of 3D software with other industry standard applications. Finished animation production techniques. May be completed two times. (A-F or P/NP). Transfer: CSU.</td>
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<tr>
<td>CMPGR 235 — IMAGE MANIPULATION SOFTWARE 3 Units</td>
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<td>Recommended for Success: Satisfactory completion of a previous course in Computer Graphics. Introduction to the techniques and technology of digital image capture and imaging manipulation software. Field trips may be required. Lecture/Laboratory. Materials fee required. Two maximum completions. Transfer: CSU.</td>
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<tr>
<td>CMPGR 236 — ADVANCED PHOTOSHOP APPLICATIONS 3 Units</td>
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<td>Recommended for Success: Satisfactory completion of CMPGR 235 or equivalent skills. Advanced skills in Adobe Photoshop including layout and publication, image processing, web skills and illustration. Students will have extensive hands-on experience with IBM or MAC graphic systems and related peripheral devices. Field trips may be required. Two maximum completions. Lecture/Laboratory. Materials fee required. Transfer: CSU.</td>
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<tr>
<td>CMPGR 252 — DESKTOP PUBLISHING FOR COMPUTER GRAPHICS 3 Units</td>
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<td>Recommended for Success: Before enrolling in this course, students are strongly advised to satisfactorily complete CMPGR 202 or CMPSC 274 or CMPSC/OFADM 231. Desktop publishing concepts with hands-on training in the use of computers, printers, scanners, and various page-layout applications; text and graphics will be integrated into documents and publications typically used in a range of computer graphics disciplines. (A-F or P/NP). Transfer: CSU.</td>
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<tr>
<td>CMPGR 262 — EXPLORING THE WORLD WIDE WEB 1 Unit</td>
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<td>Introduction to the World Wide Web (Web). Use of a graphical browser for accessing, viewing, and saving Web documents. Use of E-mail, search engines and bookmarks. Current and emerging Web technologies, and the impact on education, business, organizations, and our professional and personal lives. Lecture/Laboratory. Materials fee required. (MJC Activities) Transfer: CSU (CC CMPSC 10)</td>
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CMPGR 263 – INTERNET LITERACY 3 Units
Recommended for Success: Satisfactory completion of any introductory computer class.
Provides the conceptual background and the online skills needed to become Internet literate. Covers internet services: e-mail, listserv, newsgroups, FTP, telnet, and the World Wide Web (WWW). Emphasis will be placed on the WWW, types of access (ISP), usage, software (browsers and other support software) and internet etiquette in a global environment. Introduction to publishing and multimedia. Usage of search engines to conduct research and copyright issues and bibliographic style. Reflects on the impact of emerging technologies on the future of commerce and communications as well as societal issues. Lecture/Laboratory. Materials fee required. Transfer: CSU.

CMPGR 264—PUBLISHING ON THE WORLD WIDE WEB 3 Units
Recommended for Success: Satisfactory completion of CMPGR 262, CMPSC 201

CMPGR 265—MULTIMEDIA ON THE WORLD WIDE WEB 3 Units
Prerequisite: Satisfactory completion of CMPGR 264 or 287

CMPGR 266—DREAMWEAVER IN WEB SITE DESIGN 3 Units
Recommended for Success: Satisfactory completion of CMPGR 202 or ART 102.
Macromedia’s Dreamweaver web design software, including templates, libraries, Cascading Style Sheets, and FTP Strategies for creating intuitive and accessible web sites such as audience considerations, site map, and navigational building, and testing. Lecture/Laboratory. Transfer: CSU

CMPGR 267—FLASH: WEB GRAPHICS AND ANIMATION 1 3 Units
Recommended for Success: Satisfactory completion of CMPGR 202 or ART 102.
Introduction to Macromedia’s Flash. Covers the tools and concepts of Flash and its many interactive possibilities and functions, including drawing, image, text, animation, sound, and action-scriptting integration. Explores the strategies for creating intuitive and accessible Flash productions from start-to-finish, such as audience considerations, site map and navigation building, and the effective use of content and animation, output, optimization and testing. Lecture/Laboratory. Materials fee required. Transfer: CSU

CMPGR 268—FLASH: WEB GRAPHICS AND ANIMATION 2 3 Units
Prerequisite: Satisfactory completion of CMPGR 266
In-depth look into how Flash is effectively used by real-world interactive designers and developers. Explore advanced Flash concepts and tools such as dynamic text, tell-targeting movie clips, drop-down menus, scrolling text, scriptable masks, embedded video, streaming and event sound, and the integration of Flash with HTML. Gain an understanding of how to use Action Scripting for more powerful interactivity and animation by exploring the use of variables, properties, expressions, functions, and operators. Bring together the Flash methods learned into the creation of a final, online portfolio presentation. Lecture/Laboratory. Materials fee required. Transfer: CSU

CMPGR 269—DESKTOP VIDEO ANIMATION 3 Units
Recommended for Success: Satisfactory completion of CMPGR 202 or ART 102
Concepts and techniques utilizing computers and related technologies, with the video media. Video image capture enhancement, recording and exportation for use in graphic image production/presentation, computer animation, web and CD will be explored. Students will have intensive "hands on" experience on the MAC or IBM graphic system and related video peripheral devices. Field trips may be required. Lecture/Laboratory. Materials fee required for special printer/plotter paper, inks, and film. Transfer: CSU (MJC Activities)

CMPGR 270—INTRODUCTION TO MULTIMEDIA 3 Units
Recommended for Success: Satisfactory completion of Basic Computer literacy course such as CMPGR 201
Introduction to multimedia software and hardware on microcomputers. Students will have intensive "hands on" experience working with a variety of media such as text, numbers, sound, music, graphics, animation and video. Techniques of media capture, generation and editing and subsequent interactive multimedia development will be explored. Field trips may be required. Lecture/Laboratory. Materials fee required. Transfer: CSU.

CMPGR 288—INTERMEDIATE MULTIMEDIA 3 Units
Prerequisite: Satisfactory completion of CMPGR 287
Continuation of Multimedia concepts and applications. Working with a variety of media forms such as text, numbers, sound, music, graphics, animation and video. Emphasis is placed on further development of scripting and interactive design. Discussion of needs assessment, design issues, implementation and presentation will be combined with "hands on" projects. Field trips may be required. Two maximum completions. Lecture/Laboratory. Materials fee required. Transfer: CSU.

CMPGR 298A,B—SPECIAL TOPICS IN COMPUTER GRAPHICS 1,2 Units
Prerequisite: Varies with topic
Participation in discussion, analysis, and evaluation of a special topic in computer graphics, microcomputer applications, and related technologies. Topic to be announced in class schedule. Field trips may be required. Four maximum completions for a maximum of 6 units in any combination. Lecture or Lecture/Lab. Transfer: CSU

CMPSC 103—SYMBOLIC LOGIC 3 Units
Also offered as PHIO 103.
An introduction to modern deductive logic, includes sentential and predicate logic with identity theory and definite descriptions. Lecture. Not offered every semester. Transfer: CSU, UC General Education: (MJC-GE: D2) (CSU-GE: A3)

CMPSC 201—GENERAL COMPUTER LITERACY 3 Units
Survey of the functions and uses of computers in business, education, industry, and science with emphasis on the personal computer; study of computers and peripheral equipment as integrated systems; exploration of the impact of computers on society; introduction to problem-solving and applications programming techniques; experience with popular internet and application packages on the laboratory microcomputers. (A-F or P/NP) Approved for hybrid, telecourse and on-line instruction. Transfer: CSU, UC (CC CMPSC 1) General Education: (MJC-GE: D2)

CMPSC 202—BUSINESS INFORMATION SYSTEMS 3 Units
Prerequisite: Satisfactory completion of BUSAD 201 or 310 and CMPSC 201.
Introduction to design, development, and use of information system models to improve managerial decision making. Study of information systems hardware and software, advanced computer codes; systems analysis and planning; systems security; application development using decision support systems; and expert systems. Lab work will focus on Internet research and advanced spreadsheet, database, and word processor functions for solutions to business problems. Field trips may be required. Lecture Laboratory arranged. Materials fee required. Transfer: CSU (TCSU IS 120)

CMPSC 203—TECHNICAL COMPUTER LITERACY 3 Units
Concepts and techniques for using microcomputer applications. Instruction and extensive practice in Windows, word processing, spreadsheets, database management, Internet basics, file transfer between applications, and related auxiliary applications. (A-F or P/NP). Materials fee required. Transfer: CSU General Education: (MJC-GE: D)
**CMPCS 204 — INTRODUCTION TO PROGRAMMING**  3 Units
*Recommended for Success: Satisfactory completion of MATH 90 or qualification by MJC assessment process.*
The first course in computer programming for students with little or no programming experience. General computer literacy issues describing computer hardware, software development, operating systems, and telecommunications will be covered. Beginning problem-solving analysis, documentation, algorithm design, control structures, program coding, using BASIC and C++, file input and output, and program testing and program maintenance will be stressed. Field trips may be required. Lecture/Laboratory. Materials fee required. (P/NP Only)  *Transfer:* CSU UC

**CMPCS 205 — PROBLEM SOLVING AND PROGRAMMING 1**  3 Units
*Prerequisite: Satisfactory completion of CMPCS 204*
Designed for computer science transfer majors but open to all students. Emphasizes algorithm development and problem analysis skills for computer science. Software engineering skills will be developed for both procedural programming and object-oriented programming. Solution algorithms will be implemented using either the C++ or Java programming languages. Extensive programming projects demonstrating problem solving and implementation skills will be assigned throughout the semester. Field trips may be required. Lecture/Laboratory. Materials fee required.  *Transfer:* CSU UC (TCSU CS110) (CC CMPCS 22)

**CMPCS 206 — INTRODUCTION TO UNIX/LINUX SYSTEMS AND PROGRAMMING**  3 Units
*Recommended for Success: Satisfactory completion of CMPCS 204*
Introduction to the UNIX operating system using Linux. Coverage will include using UNIX shells, commands, the role of the system administrator, the UNIX file system, editors, file processing, shell programming utilities, Perl and CGI programming, C and C++ programming, and recent developments in UNIX and the Windows graphical user interface. Extensive hands-on experience using UNIX operating system and programming within the UNIX environment. Field trips may be required. Lecture/Laboratory. Materials fee required.  *Transfer:* CSU UC (CC CMPCS 9)

**CMPCS 213 — PROGRAMMING WITH VISUAL BASIC**  3 Units
*Prerequisite: Satisfactory completion of CMPCS 204*
Concepts in programming a computer using the language called Visual BASIC. Emphasis on structured design, graphical user interfacing, and documentation. Includes user screen development, control constructs, array processing, elementary file processing, and database access. Extensive interaction with computers will be expected. Lecture/Laboratory. Materials fee required.  *Transfer:* CSU UC (CC CMPCS 28) General Education: (MJC GE: D2)

**CMPCS 214 — ADVANCED VISUAL BASIC**  3 Units
*Prerequisite: Satisfactory completion of CMPCS 213 or equivalent.*
Advanced concepts of computer programming using Microsoft Visual BASIC. Students will program user interfaces with Microsoft Word, Excel and Access. They will also create Internet and general business interfaces. Graphics and game structure applications will be covered. Lecture/Laboratory. (Spring)  *Transfer:* CSU UC

**CMPCS 216 - JAVASCRIPT PROGRAMMING FOR THE INTERNET**  3 Units
*Prerequisite: Satisfactory completion of CMPCS 264 and CMPCS 204*
Developing World Wide Web applications with HTML and JavaScript. An introduction to creating interactive HTML documents through manipulation of the WWW DOM (Document Object Model). Designing Web-based applications, validating and processing user input, creating dynamic documents utilizing DHTML. Extensive programming projects demonstrating problem solving and implementation skills will be assigned throughout the semester. Hands-on computer assignments required. Field trips may be required. Two maximum completions. Lecture/Laboratory. Materials fee required.  *Transfer:* CSU UC

**CMPCS 220 – SQL SERVER ADMINISTRATION**  3 Units
*Prerequisite: Satisfactory completion of CMPCS 275*
Provides students with the knowledge and skills required to install, configure, administer, and troubleshoot Microsoft SQL Server client/server database management system version 7.0 or higher. Two maximum completions. Lecture/Laboratory. Materials fee required. Not offered every semester.  *Transfer:* CSU

**CMPCS 225 – SQL DATABASE IMPLEMENTATION**  3 Units
*Prerequisite: CMPCS 275*
Provides students with the technical skills required to implement a database solution with SQL Server. Topics include: architecture, key features of SQL Server, reviewing SQL Server programming tools, Transact-SQL, creating databases, data integrity, planning and creating indexes, advanced query techniques, summarizing data, managing transactions and locks, implementing views, stored procedures and triggers, working with distributed data, and advanced text queries. Two maximum completions. Lecture. Laboratory arranged. Materials fee required. Not offered every semester.  *Transfer:* CSU

**CMPCS 231 — INTERMEDIATE WORD PROCESSING**  3 Units
*Recommended for Success: Satisfactory completion of OFADM 203 and (OFADM 330 or CMPCS 274.)*
Also offered as OFADM 231.
Intermediate word processing features such as mail merge, macros, styles, graphics, tabs, and sorts. Features will be applied in creating business documents. Two maximum completions. Lecture/Laboratory. Materials fee required.  *Transfer:* CSU UC (CC OFTEC 141)

**CMPCS 241 — ASSEMBLY LANGUAGE PROGRAMMING**  3 Units
*Prerequisite: Satisfactory completion of CMPCS 204*
Designed for Computer Science transfer majors, but open to all students. Introduction to microcomputer hardware architecture and assembly language programming. A microprocessor instruction set will be examined in detail. Memory addressing modes, logic and control, data representations and manipulation, table processing, and device I/O control processes will be examined. Macros, program modules, and interrupts will be studied. Extensive hands-on computer projects implementing course objectives will be assigned. Field trips may be required. Lecture/Laboratory. Materials fee required.  *Transfer:* CSU UC (CC CMPCS 40) General Education: (MIC GE: D2)

**CMPCS 261 — PROBLEM SOLVING AND PROGRAMMING 2**  3 Units
*Prerequisite: Satisfactory completion of CMPCS 205 or ACM CS-1 equivalent.*
Introduction to simple data structures and object-oriented programming. Includes more advanced features of high-level languages such as C++ or Java. Continued emphasis on good programming methodologies and problem solving techniques and analysis. Programming problems implementing lists, stacks, queues, and trees will be emphasized. Field trips may be required. Lecture/Laboratory. Materials fee required.  *Transfer:* CSU UC (TCSU CS110) (CC CMPCS 24) General Education: (MIC GE: D2)

**CMPCS 263 — NETWORKING ESSENTIALS**  3 Units
*Prerequisite: Satisfactory completion of an introductory computer class.*
Concepts of networking technologies. Includes design, media, hardware, standards, protocols, architectures, operations, administration, support, distributed networks, WANs, troubleshooting, and the Internet. Designed to help individuals prepare for Microsoft Certification Exam #70-058. Hands-on computer assignments required. Field trips may be required. Lecture/Laboratory. Materials fee required.  *Transfer:* CSU

**CMPCS 264 — WINDOWS SERVER OS**  3 Units
*Formerly listed as "Windows 2000 Server"*
*Prerequisite: Satisfactory completion of CMPCS 263 and 204*
Technical study of the Windows Server operating system. Includes server hardware, installation, configuration, clients, management, network protocols, active directory and security, remote access and virtual private networks, interoperability, Internet and intranets, monitoring, tuning, and troubleshooting. Hands-on computer assignments required. Field trips may be required. Two maximum completions. Lecture/Laboratory. Materials fee required. (A-F or P/NP)  *Transfer:* CSU General Education: (MIC GE: D)

**CMPCS 269 — NETWORK AND CERTIFICATION TRAINING LAB**  1 Unit
*Concurrent Enrollment: CMPCS 269*
Recommended for Success: Satisfactory completion of any introductory computer course
Also offered as CMPET 269.
Network + is quickly becoming the standard for introductory-level industry certification. Designed for those interested in a career in network support, this vendor-neutral certification takes the student through installing and configuring a network client. This laboratory course along with the CMPCS 263 course provides preparation for CompTIA Network+ certification exam. Extensive network lab projects will be required. Field trips may be required. Laboratory. Materials fee required.  *Transfer:* CSU
**CMPSC 270—UNDERSTANDING DATA COMMUNICATIONS**  3 Units
How data communications systems and their various hardware and software components work. Includes communication between personal computer systems, database services, electronic bulletin boards, and the Internet. Hands-on computer assignments required. Lecture/Laboratory. Materials fee required. Transfer: CSU

**CMPSC 275—DATABASE MANAGEMENT SYSTEMS/MICROCOMPUTERS**  3 Units
Introduction to database management systems (DBMS). Instruction on the design, setup and maintenance of a DBMS. Applications in inventory control, mailing lists, report construction and format, sorting and indexing operations, general file relationships and information retrieval. Hands-on experience using a microcomputer. Emphasis on Microsoft Access or similar DBMS software. Lecture/Laboratory. Materials fee required. Transfer: CSU (CC: CMPSC 35)

**CMPSC 276—INTRODUCTION TO DATA WAREHOUSING**  3 Units
Formerly listed as: CMPSC 276 Database Programming
Prerequisite: Satisfactory completion of CMPSC 275 or 225 or 220
Introduction to data warehousing. Emphasizes heterogeneous database design, optimization and reporting. Use of a multi-vendor environment such as Oracle, SQL Server, MySQL, or PostgreSQL. Maximum two completions. (A-F or P/NP) Materials fee required. Transfer: CSU

**CMPSC 278—SPREADSHEET SOFTWARE**  3 Units
Recommended for Success: Any introductory computer class.
Introduction to spreadsheet software. Spreadsheet analysis, design, testing, and documenting will be covered. Data entry, data management, graphing and keystroke macros will be emphasized. Applications in various areas will be explored with emphasis in business, professional and educational use. Hands-on experience using a microcomputer. Emphasis on Microsoft Excel or similar spreadsheet application. Lecture/Laboratory. Materials fee required. Transfer: CSU (CC: CMPSC 30)

**CMPSC 279—SPREADSHEET DESIGN AND PROGRAMMING**  3 Units
Prerequisite: Satisfactory completion of CMPSC 278
Uses current spreadsheet macros and command languages to build application programs for small businesses. Emphasizes design concepts, structured programming techniques, and documentation techniques. Graphics and database management capabilities will be explored along with ancillary and related enhancement programs. Lecture. Laboratory arranged. Materials fee required. Transfer: CSU

**CMPSC 281—ADVANCED NETWORKING & SECURITY**  3 Units
Formerly listed as: Windows 2000 Security
Prerequisite: Satisfactory completion of CMPSC 264 and 206.
Technical study of security for Windows Networks. Includes assessing security risks, planning administrative access and user accounts, securing communication channels, securing file and print resources, securing access to remote users and offices, securing network access to Internet users, extending the network to partner organizations, designing a public key infrastructure, and developing a security plan. Hands-on computer assignments required. Field trips may be required. Two maximum completions. Materials fee required. Lecture/Laboratory. (A-F or P/NP) Transfer: CSU

**CMPSC 289 — DIRECTORY SERVICES**  3 Units
Formerly listed as: “Windows 2000 Directory Services”
Prerequisite: Satisfactory completion of CMPSC 264 and 206.
Technical study of the Directory Services using tools such as LDAP and Active Directory. Includes the design and implementation of directory services, analyzing business requirements, information technology structures, software, hardware and network requirements, large and small scale directory services design, group policy design, design topology and locations, replication and disaster recovery. Hands-on computer assignments required. Field trips may be required. Two maximum completions. Lecture. Laboratory arranged. Materials fee required. (A-F or P/NP) Transfer: CSU

**CMPSC 291—WINDOWS PROGRAMMING WITH VISUAL C++**  3 Units
Prerequisite: Satisfactory completion of CMPSC 205, or CAN CSCI 22 course equivalent, or ACM CS-1 course equivalent.
Introduction to the Microsoft Visual C++ programming environment. Review of the C++ language and object-oriented programming concepts. Emphasis on using Visual C++ to build user applications, user interfaces, ActiveX applications, Internet programming, and advanced programming techniques. Hands-on computer programming projects will be required. Field trips may be required. Lecture/Laboratory. Materials fee required. Transfer: CSU, UC

**CMPSC 294—COMPUTER SCIENCE FINAL PROJECT**  3 Units
Recommended for Success: Completion of at least 18 units of required courses leading to the Associate Degree in Computer Science.
Culminating experience for students pursuing an AS degree in Computer Science. Objectives of degree courses will be integrated into a final managed project advised by one or more Computer Science faculty. Effective project and team management will be emphasized. Field trips may be required. (A-F only) One completion allowed. Transfer: CSU

**CMPSC 298A,B,C—SPECIAL TOPICS IN COMPUTER SCIENCE**  1,2,3 Units
Prerequisite: Varies with topic.
Participation in discussion, analysis, and evaluation of a special topic in computer science, microcomputer applications, and related technologies. Topic to be announced in class schedule. Twelve maximum units in any combination. Field trips may be required. Lecture. Materials fee required. Transfer: CSU

**CMPSC: NON-CREDIT COURSES**

**CMPSC 801—DATABASE MANAGEMENT SYSTEM WORKSHOP**
An introduction to a database management system with hands-on instruction using a microcomputer. Students will define, create, and use their own database. Unlimited repeats. Lecture/Laboratory. Materials fee required.

**CMPSC 803—SPREADSHEET WORKSHOP**
Introduction to the basic application of computers in the business environment. Specific instruction on use of the Electronic Spreadsheet. Unlimited repeats. Lecture/Laboratory. Materials fee required.

**CMPSC 805—WORD PROCESSING WORKSHOP**
Introduction to the basic application of computers in the business environment. Specific instruction on word processing as an office automation tool. Exploration of benefits of word processing and its ability to expand productivity. Unlimited repeats. Laboratory. Materials fee required.

**COLSK** *(College Skills)*

**COLSK 810—COLLEGE SKILLS DEVELOPMENT**
Provides supervised computer laboratory experience for students who must use a computer laboratory to achieve the goals and objectives of a course in which they are enrolled. Enrollment takes place when students log-on to computers located in Modesto Junior College laboratories. Unlimited repeats. Laboratory.

**COLSK 820—COLLEGE SKILLS ENHANCEMENT**
Supervised experience developing and implementing research methods and strategies to enhance classroom learning. Unlimited repeats. Laboratory.

**DAIND** *(Dairy Industry)*

**DAIND 301—GOOD MANUFACTURING PRACTICES AND SANITATION**  1 Unit
Introduction to dairy plant sanitation, good manufacturing practices, guidelines and implementation. Introduction to chemicals, pH and their roles in functional cleaning of the dairy plant and associated equipment. Field trips required. Two completions allowed. Lecture. (A-F Only)

**DAIND 302—FLUID STREAM**  1 Unit
Introduction to the basic elements of routing and use of fluid milk throughout the dairy plant. Demonstration of how fluids are utilized. Process flow from incoming raw milk throughout the plant to pasteurized finished products. Field trips required. Two maximum completions. Lecture. (A-F Only).
DAIND 303 — INDUSTRIAL SAFETY 1 Unit
Introduction to the elements of industrial safety as it relates to a dairy processing facility. Topics to be covered: illness and injury prevention, confined space entry, lock-out, tag-out programs, hazard communication programs, and industrial lift programs. Field trips required. Two maximum completions. Lecture. (A-F Only)

DAIND 304 — SENSORY EVALUATION 1 Unit
Develop skills for sight, taste, smell and touch, in the evaluation of various dairy products. Course content follows the California Agriculture Teaching Association Curricular Code used for Career Development Events — dairy product evaluation. Applicable to the associate degree. Field trips required. Two maximum completions. Lecture. (A-F Only)

DAIND 305 — HACCP AND FOOD SAFETY 1 Unit
Introduction to hazardous analysis critical control point programs including the importance of HACCP and the identification of critical control points. The class will demonstrate how to design and implement an HACCP program. Field trips required. Two maximum completions. Lecture. (A-F Only)

DAIND 306 — DAIRY INDUSTRY EMPLOYABILITY SKILLS 1 Unit
Resume preparation, interviewing skills, and job search techniques that are unique to the dairy processing industry. Field trips required. Two maximum completions. Lecture. (A-F Only)

DAIND 307 — PROCESS EQUIPMENT AND ENGINEERING 1 Unit
Introduction and identification of equipment used in the processing facility. Cleaning, sanitizing and maintenance of processing equipment. Performance of equipment breakdowns for inspection. Discussion of required regulatory licensing. Field trips required. Two maximum completions. Lecture. (A-F Only)

DAIND 308 — LABORATORY SKILLS 1 Unit
Demonstration and analysis of common laboratory tests. Identification of various equipment used in the dairy lab, proper safety, and chemical disposal. Designed for the plant technician, not a laboratory technician. Field trips required. Two maximum completions. Lecture. (A-F Only)

DAIND 309 — DAIRY PRODUCTS AND MARKETING 1 Unit
Introduction to the standards of identifying milk, dairy foods and elementary dairy products. Marketing and handling will be covered. Field trips required. Two maximum completions. Lecture. (A-F Only)

DAIND 310 — TRANSPORTATION OF DAIRY PRODUCTS 1 Unit
Introduction to aspects of raw milk pick-up, routing, transportation to the milk plant, loading and transporting of finished packaged dairy products. Field trips required. Two maximum completions. Lecture. (A-F Only)

DAIND 311 — CHEESE AND WHEY PROCESSING 1 Unit
Introduction to aspects in the art of cheese making. Elementary techniques of whey processing. Field trips required. Two maximum completions. Lecture. (A-F Only)

DAIND 312 — WAREHOUSING/DRY AND REFRIGERATED 1 Unit

DTAST (Dental Assisting)

DTAST 360 — INTRODUCTION TO DENTAL ASSISTING 3 Units
Prerequisite: High school graduation or equivalent; proof of completion of CPR for the Professional Rescuer from the American Red Cross or the Health Care Provider CPR course from the American Heart Association, which must be valid through the end of the program.
An introduction to the profession of dentistry including the educational requirements, legal and ethical responsibilities of each member of the dental team. Discussion of current issues facing the dental profession. Overview of the career opportunities available to the registered dental assistant. Introduction to data gathering on dental patients, including oral diagnosis and treatment planning. Instruction in evaluating the medically compromised dental patient and preparing for medical emergencies. Field trips may be required. Lecture. Materials fee required (A-F Only) (Fall)

DTAST 361 — PREVENTION OF DISEASE TRANSMISSION 2 Units
Prerequisite: High school graduation or equivalent; proof of completion of CPR for the Professional Rescuer from the American Red Cross or the Health Care Provider CPR course from the American Heart Association, which must be valid through the end of the program.
This course covers the knowledge and skills required for dental health care professionals to control, prevent the spread of disease, properly manage hazardous chemicals and maintain a safe dental office environment. Protocols established by the American Dental Association, Dental Board of California, California Dental Association, Center for Disease Control and Prevention, OSAP, and OSHA regulations with emphasis on Bloodborne Pathogens Standard and the Hazard Communication Standard. Field trips may be required. Lecture/Laboratory. Materials fee required (A-F Only) (Fall).

DTAST 362 — DENTAL SCIENCE 3 Units
Concurrent Enrollment: DTAST 360, 361, 362, 363 and 365
An overview of human anatomy and physiology with an emphasis on the head and neck. The knowledge of the structures of the head and oral cavity including identification of oral landmarks and to recognize whether any abnormalities or lesions exist. The study of tooth morphology and the relationship to form and function of the dentition. Recognize conditions that are variations of normal but not considered pathological. Field trips may be required. Lecture. Materials fee required (A-F Only) (Fall).

DTAST 363 — INTRODUCTION TO CLINICAL DENTISTRY 2 Units
Concurrent Enrollment: DTAST 360, 361, 362, 363 and 365
Introduction to dental assisting, role of the chairside assistant, basic skills for preparing the dental patient for treatment. Intraoral tasks delegated to qualified dental assistants which are related to operative dentistry. Field trips may be required. Lecture/Laboratory. Materials fee required (A-F Only) (Fall).

DTAST 364 — DENTAL MATERIALS 2 Units
Concurrent Enrollment: DTAST 360, 361, 362, 363 and 365
The dental assistant’s role in the manipulation of dental materials used in the oral environment. Instruction in the properties, characteristics, and manipulation of dental materials. Identification of government regulations and compliance with health and safety procedures when using dental materials. The study of drugs, their composition, uses, effects and contraindications as applied to the dental patient. Identification of laws regulating safe use of medication for the dental patient. Field trips may be required. Lecture/Laboratory. Materials fee required (A-F Only)

DTAST 365 — THEORY OF DENTAL RADIOLoGY 3 Units
Prerequisite: High school graduation or equivalent; proof of completion of CPR for the Professional Rescuer from the American Red Cross or the Health Care Provider CPR course from the American Heart Association, which must be valid through the end of the program.
Concurrent Enrollment: DTAST 360, 361, 362, 363 and 364.
Introduction to the principles of dental radiology, basic concepts of x-ray generation, occupational safety procedures, materials and equipment used in producing dental x-rays. Theory of dental radiological techniques. DTAST 365 (Fall) and DTAST 369 (Spring) have been designed to meet the standards set forth by the Dental Board of California for the California Radiation Safety Licensure. Both courses must be completed with a grade of C or better in order to qualify for licensure. Field trips may be required. Lecture. Materials fee required (A-F Only) (Fall)
DTAST 366 — ADMINISTRATIVE DENTAL ASSISTING 2 Units
Prerequisite: Satisfactory completion of DTAST 360, 361, 362, 363, 364 and 365
Concurrent Enrollment: DTAST 367, 368, 369 and 370
Basic dental office business concepts and procedures including communication skills, patient
relations, record management, risk management and application of current technology. Employ-
ment skills necessary to obtain a position as an administrative dental assistant. Field trips may be
required. Lecture. Materials fee required. (A-F Only) (Spring)

DTAST 367 — EXPANDED FUNCTIONS 2 Units
Prerequisite: Satisfactory completion of DTAST 360, 361, 362, 363, 364 and 365 with a C
or better.
Concurrent Enrollment: DTAST 366, 368, 369 and 370.
Achievement of a healthy and functional dentition through the prevention of new and recurring
diseases by the means of dental plaque control techniques. Procedures in which plaque and stains
on the surface of the teeth are removed from the coronal surfaces. Specific intraoral tasks that are
completed as a procedure delegated to the expanded function dental assistant. Field trips may be
required. Lecture/Laboratory. Materials fee required. (A-F Only) (Spring)

DTAST 368 — ADVANCED DENTAL ASSISTING 3 Units
Prerequisite: Satisfactory completion of DTAST 360, 361, 362, 363, 364 and 365 with a C
or better.
Concurrent Enrollment: DTAST 366, 367, 369 and 370.
Advanced training in the areas of dental specialties including prosthodontics, endodontics,
periodontics, pediatric dentistry, orthodontics and oral surgery. Field trips may be required. Lecture/Lab-
oratory. Materials fee required. (A-F Only) (Spring)

DTAST 369 — CLINICAL DENTAL RADIOLOGY 3 Units
Prerequisite: Satisfactory completion of DTAST 360, 361, 362, 363, 364 and 365 with a C
or better.
Concurrent Enrollment: DTAST 366, 367, 368 and 370.
Applied advanced dental radiography techniques. Identification and interpretation of anatomical
landmarks related to dental radiography, exposure, processing and evaluation techniques, and ap-
plied quality assurance techniques. Emphasis on infection control as applied to dental radiography,
evaluation of the exposed and processed dental radiograph used for diagnostic interpretation using
manual and automatic processing. DTAST 365 (Fall) and DTAST 369 (Spring) have been designed
to meet the standards set forth by the Dental Board of California for the California Radiation Safety
License. Both courses must be completed with a grade of C or better in order to qualify for li-
censure. Field trips may be required. Lecture/Laboratory. Materials fee required. (A-F Only) (Spring)

DTAST 370 — CLINICAL 1 6 Units
Prerequisite: Satisfactory completion of DTAST 360, 361, 362, 363, 364 and 365 with a C
or better.
Concurrent Enrollment: DTAST 366, 367, 368, and 369.
Role of the chairside dental assistant; basic skills for preparing the dental patient for treatment
including knowledge and skills essential to the functions of the registered dental assistant during
dental experience. Field trips may be required. Lecture/Laboratory. Materials fee required. (A-F
Only) (Spring)

DTAST 371 — CLINICAL 2 1 Unit
Prerequisite: Satisfactory completion of DTAST 366, 367, 368, 369 and 370 with a C
or better.
Role of the chairside dental assistant; advanced skills for preparing the dental patient for treatment
including knowledge and skills essential to the functions of the registered dental assistant. Field
trips may be required. Laboratory. Materials fee required. (A-F Only) (Summer).

EASC I (Earth Science)

EASC I 161 — EARTH SCIENCE 4 Units
Designed to bring together geology, oceanography, meteorology and astronomy areas with rocks
and minerals, mountain building, earthquakes and volcanoes, sea floor spreading, ocean and shore-
line features, planets and stars. Field trips may be required. Lecture/Laboratory. Materials fee may be
required. Transfer: CSU, UC. General Education: (MJC-GE-A)(CSU-GE-B1, B3)(IGETC:SA)

EASC I 162 — INTRODUCTION TO OCEANOGRAPHY 4 Units
Recommended for success: Before enrolling in this course, students are strongly advised to
satisfactorily complete (MATH 70 or PHYS 160) and (EASC I 161)
Introduction to the ocean’s role in the earth system, ocean basins and plate tectonics, properties of
ocean water, marine sediments, ocean-atmosphere interaction, ocean currents, ocean waves and
tides, coastal process, marine ecosystems, ocean life, ocean and climate, oceanic effects of climate
change, oceanographic techniques, ocean stewardship, and ocean problems. Lab activities empha-
size gathering and analysis of oceanographic data (both archived and real-time) to understand and
predict oceanographic phenomena. Field trips may be required. (A-F or P/NP) Lecture/Laboratory.
Transfer: CSU, UC. General Education: (MJC-GE-A)(CSU-GE-B1, B3)(IGETC:SA)

ECON (Economics)

ECON 101 — ECONOMIC PRINCIPLES: MACROECONOMICS 3 Units
Prerequisite: Satisfactory completion of MATH 90
Recommended for Success: Before enrolling in this course, students are strongly advised to
have college level composition skills.
Introduction to macroeconomic theory in the context of managed market economy. Covers basic
concepts in economics, particularly those relating to aggregate economic analysis, such as scarcity,
trade-offs, and opportunity costs. Topics include: market systems, aggregate measures of economic
activity, macroeconomic equilibrium, money and financial institutions, monetary and fiscal policy,
international economics, and economic growth. Lecture (A-F or P/NP) Transfer: CSU, UC (CC ECON

ECON 102 — ECONOMIC PRINCIPLES: MICROECONOMICS 3 Units
Recommended for Success: Satisfactory completion of High school algebra or MATH 70.
An introductory course focusing on individual economic decision-making. Topics include scarcity,
opportunity costs, comparative advantage, market structure and market failure, elasticity, cost
theory, price and output determination under various market structures and factor markets. Related
topics such as international trade, public choice, income distribution, externalities and government
regulation may be included. Lecture. Transfer: CSU, UC (CC ECON 11) General Education:

ECON 105 — ECONOMIC HISTORY OF THE UNITED STATES 3 Units
Recommended for Success: Satisfactory completion of ENGL 101
Also offered as HIST 115.
Analysis of origins and development of business, labor and agriculture from the colonial period
to the present. Emphasis on the federal government’s part in the development and regulation of
business, labor and agriculture, the government’s role in the national economic process. Lecture.
Transfer: CSU, UC. General Education: (MJC-GE-B)(CSU-GE-D2, D6)(IGETC:4)

EHS (Environmental Horticultural Science)

In this program the student will develop skills in plant recognition and use, nursery practices, and landscape design sufficient to enter the landscape or nursery business or to transfer to a university. Contact the division office in the Agriculture Building for advising assistance.

EHS 50 — BEGINNING ORNAMENTAL GARDENING 2 Units
Formerly listed as OH 50.
Preparation for the fundamentals of indoor and outdoor gardening, planting for patios and balco-
nies, gardening in containers and simple landscaping. Designed for anyone interested in gardening,
regardless of prior experience or size of garden. A series of 30 television programs supported by
coordinating textual material and by additional printed materials that are optional. Field trips may be
required.
EHS S1 — ENVIRONMENTAL HORTICULTURE PREPARATION 3 Units
Formerly listed as OH S1 - Ornamental Horticulture Preparation.
A preparatory course in environmental horticulture, emphasis on nursery operation including structures and layout, seeding, transplanting, planting, pruning, irrigation, pest control, and disease and pest management. Preparation and use of propagating and planting mediums. Use and maintenance of common tools and equipment. Saturday field laboratory may be required. Field trips required. Lecture/Laboratory.

EHS S56 — PREPARATORY PARK AND LANDSCAPE MAINTENANCE 3 Units
Preparation for training in installation of plant materials and materials of parks and other planted areas and in skills required for students to qualify as technicians. Special interest directed to provide specific skills in such areas as forestry, highway maintenance, city, state, and federal parks. (A-F or P/NP) Field trips required. Lecture/Laboratory. Materials fee required.

EHS S8 — PREPARATORY FLORAL DESIGN 3 Units
Formerly listed as OH S8.
A preparatory course in commercial floristry teaching basic theory, techniques, and skills currently practiced in the floral design industry. Construction of basic floral products for resale; cut flower processing and industry sales practices. Field trips required. Lecture/Laboratory.

EHS 61 — PREPARATORY ORNAMENTAL PLANT IDENTIFICATION 3 Units
Formerly listed as OH 61.
Preparation in the identification, growth habits, culture and ornamental use of house plants, vines, ground covers, annuals, perennials and small shrubs adapted to climates of California central valleys. One Saturday laboratory required. Field trips required. Lecture/Laboratory.

EHS 62 — PREPARATORY ORNAMENTAL SHRUB AND TREE IDENTIFICATION 3 Units
Formerly listed as OH 62.
Preparation in the identification, growth habits, culture and use of large shrubs and trees adapted to climates of California central valleys. Field laboratories, including some on Saturdays, are required. Field trips required. Lecture/Laboratory.

EHS 65 — INTRODUCTORY LANDSCAPE PLANNING AND DESIGN 3 Units
Formerly listed as OH 65.
Preparation in the planning and designing of landscaped areas. Emphasis on location of lawns, trees, shrubs, walks, driveways, patios, planters and other landscape structures for home and park. Field trips required. Lecture/Laboratory.

EHS 100 — ENVIRONMENTAL GARDENING 3 Units
Formerly listed as OH 100.
Plants used in the landscape, basic landscape design principles and plant propagation techniques. Emphasis on the practical application of horticultural principles. Field trips required. Lecture/Laboratory. (A-F Only) Transfer: CSU, UC

EHS 201 — PLANT IDENTIFICATION AND USAGE 1 3 Units
Recommended for Success: Satisfactory completion of EHS 210 and/or PLSC 200.
Formerly listed as EHS 201 - Plant Materials and Usage 1.
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 Nurserymen & Garden Centers (CANGC) and California Landscape Contractors Association (CLCA) Certification Tests Plant Lists. Covers those plants best observed and studied in the spring of the year. Field trips required. Will require Saturday labs. Lecture/Laboratory. (A-F Only) Transfer: CSU, UC

EHS 202 — PLANT IDENTIFICATION AND USAGE 2 3 Units
Recommended for Success: Satisfactory completion of EHS 210 and/or PLSC 200.
Formerly listed as EHS 202-Plant Materials and Usage 2.
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 Nurserymen & Garden Centers (CANGC) and California Landscape Contractors Association (CLCA) Certification Tests Plant Lists. Covers those plants best observed and studied in the fall of the year. Field trips required. Will require Saturday labs. Lecture/Laboratory. (A-F Only) Transfer: CSU, UC

EHS 210 — INTRODUCTION TO ENVIRONMENTAL HORTICULTURE 3 Units
Formerly listed as OH 210 - Introduction to Ornamental Horticulture.
A general course in environmental 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 house plants, floral design, plant identification, turfgrass installation and care, and survey of career opportunities. Field trips required. Saturday labs required. Lecture/Laboratory. (A-F Only) Transfer: CSU

EHS 212 — FLORICULTURE CROP PRODUCTION 3 Units
Recommended for Success: Satisfactory completion of EHS 201 and 202.
Formerly listed as OH 212.
Analysis, description and operation of greenhouses and other structures and facilities as they relate to floriculture. Included are: relationships of light, temperature, moisture, aeration, humidity, and fertility of floricultural crops; identification and investigation of major greenhouse grown crops including foliage plants, flowering potted plants, bedding plants, cut flowers, color and specialty crops; and planning and implementing several cropping plans for floriculture plants and products. Field trips required. Lecture/Laboratory. (A-F Only) Transfer: CSU

EHS 215 — LANDSCAPE DESIGN 3 Units
Recommended for Success: Satisfactory completion of EHS 201 and 202.
Formerly listed as OH 215 - Landscape Planning and Design.
The study and implementation of the art and science of landscape design, including principles of the design process, drafting, graphics, and presentation methods. Project emphasis is placed upon residential and small commercial sites. Field trips required. Lecture/Laboratory. (A-F Only) Transfer: CSU

EHS 220 — TURFGRASS MANAGEMENT 3 Units
Maintenance and management of turfgrasses that include sports athletic fields, golf courses, parks, cemeteries, commercial, and residential lawns. Discussion will focus on identification, installation, cultural requirements and maintenance practices. Field trips required. Lecture/Laboratory. (A-F Only) Transfer: CSU

EHS 235 — PLANT PROPAGATION/PRODUCTION 3 Units
Recommended for Success: Satisfactory completion of PLSC 200 and/or EHS 210.
Also offered as PLSC 235.
Plant propagation and production practices with emphasis on nursery operations including sexual and asexual reproduction, planting, transplanting, fertilizing, pest and disease control, structures and site layout. Preparation and use of propagating and planting mediums. Use and maintenance of common tools and equipment. Regulations pertaining to plant production. Field trips required. Lecture/Laboratory. (A-F Only) Transfer: CSU

EHS 250 — LANDSCAPE IRRIGATION 3 Units
Recommended for Success: Satisfactory completion of EHS 210.
Formerly listed as ON 250 - Urban Irrigation Practices.
Prepares students to design, install and maintain a water efficient landscape irrigation system. Topics include water supply, basic hydraulics, component identification and terminology, system layout, pipe sizing, types of heads, valves, controllers. Field trips may be required. Lecture/Laboratory. (A-F Only) Transfer: CSU

EHS 276 — LANDSCAPE MAINTENANCE 3 Units
Recommended for Success: Satisfactory completion of EHS 210.
Formerly listed as ON 276 - Park and Landscape Maintenance.
Enhancing 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. Field trips required. Lecture/Laboratory. (A-F Only) Transfer: CSU
EHS 278—LANDSCAPE CONSTRUCTION AND INSTALLATION  3 Units
Recommended for Success: Satisfactory completion of EHS 210.
Formerly listed as OH 278—Landscape Engineering.
Fundamentals of landscape construction, including soil preparation, paving and construction
materials, hand and power tool use, turf and plant installation, plan reading, estimating and bidding
preparation; also covers local codes and state requirements and prepares students to pass the
C-27 Landscaping Contractor’s License exam. Field trips required. Lecture/Laboratory. (A-F Only)
Transfer: CSU

EHS 280—BEGINNING FLORAL DESIGN  3 Units
Formerly listed as OH 280.
Introduction to the fundamentals of theory, techniques and skills currently practiced in the floral
industry. Includes applied art principles, cut flower care, handling practices, proper use of florist
tools and materials, pricing of floral products and use of current floral business technology. Includes
constructing corsages, floral arrangements, foliage plant items, which meet floral industry stan-
dards. Field trips required. Two maximum completions. Lecture/Laboratory. Materials fee required.
(A-F Only) Transfer: CSU

EHS 281—ADVANCED FLORAL DESIGN  3 Units
Prerequisite: Satisfactory completion of EHS 280
Formerly listed as OH 281 - Commercial Floristry Advanced Floral Design
Advanced floral design theory, techniques and skills in the floral industry, including wedding,
sympathy, party, holiday, high style and advanced floral designs. Techniques include working with
the customer, consultations, pricing and use of computers and other business machines. Construc-
tion and servicing of weddings, funerals, party and holiday floral displays. Field trips required. Two
maximum completions. Lecture/Laboratory. Materials fee required. (A-F Only) Transfer: CSU

EHS 282—FLORAL SHOP MANAGEMENT  4 Units
Prerequisites: Satisfactory completion of EHS 280 and EHS 281.
Formerly listed as OH 282.
Provides insight into the business and management skills needed to run a successful floral shop.
Flower shop involvement required. Field trips required. Two maximum completions. Lecture/Labora-
tory/Other. (A-F or P/NP) Lecture. Materials fee required. Transfer: CSU

EHS 283—COMMERCIAL FLORISTRY PRACTICUM  4 Units
Prerequisites: Satisfactory completion of EHS 280, 281, 282.
Formerly listed as OH 283.
Involvement in all areas of, and taught in, a retail flower shop. Includes principles of small business
management, including personnel, physical plant and financial management, floral design,
construction, and pricing, floral orders and wire services; floral delivery; purchasing, marketing and
inventory control. Two maximum completions. Laboratory/Other Conjunction with practicing flower
shop manager - MJC nursery or shop site. Field trips required. (A-F Only)

EHS 289—ENVIRONMENTAL HORTICULTURE  3 Units
SCIENCE TEACHING STRATEGIES
Application of environmental horticulture science teaching strategies. Construction of an action plan
incorporating environmental horticulture science curriculum in an applied setting, such as a school
garden. Exploration of science curriculum standards as they relate to teaching strategies applied
in the classroom. May be completed up to two times. Field trips required. (A-F or P/NP) Lecture
Transfer: CSU

EHS 291—ENVIRONMENTAL HORTICULTURE  3 Units
SCIENCE TEACHING STRATEGIES
Transfer:

EHS 292—LANDSCAPE CONSTRUCTION AND INSTALLATION  3 Units
Recommended for Success: Satisfactory completion of EHS 210.
Formerly listed as OH 278—Landscape Engineering.
Fundamentals of landscape construction, including soil preparation, paving and construction
materials, hand and power tool use, turf and plant installation, plan reading, estimating and bidding
preparation; also covers local codes and state requirements and prepares students to pass the
C-27 Landscaping Contractor’s License exam. Field trips required. Lecture/Laboratory. (A-F Only)
Transfer: CSU

EHS 293—COMMERCIAL FLORISTRY PRACTICUM  4 Units
Prerequisites: Satisfactory completion of EHS 280, 281, 282.
Formerly listed as OH 283.
Involvement in all areas of, and taught in, a retail flower shop. Includes principles of small business
management, including personnel, physical plant and financial management, floral design,
construction, and pricing, floral orders and wire services; floral delivery; purchasing, marketing and
inventory control. Two maximum completions. Laboratory/Other Conjunction with practicing flower
shop manager - MJC nursery or shop site. Field trips required. (A-F Only)

EHS 294—NURSERY INDUSTRY SKILLS  1 Unit
Formerly listed as OH 390.
A repeatable short course in Ornamental Horticulture that covers all skill aspects of the wholesale
and retail nursery business. Also included are excerpts from plant identification, turf, and landscape
design. Six maximum completions. Field trips may be required. Lecture. (A-F Only)

ELTEC (Electronics Technology)

ELTEC 205—ELECTRONICS FABRICATION AND ASSEMBLY TECHNIQUES  3 Units
Introduction to current fabrication and assembly techniques used in the electronics industry. Manual
and automated techniques used in component manufacturing, circuit assembly, and system integra-
tion. Materials fee required. Lecture/Laboratory. Transfer: CSU

ELTEC 208—THE WORLD OF ELECTRICITY AND ELECTRONICS  3 Units
Recommended for Success: Satisfactory completion of MATH 20
Also offered as INTEC 208.
An overview of electrical and electronic phenomena as applied to common consumer and industrial
devices. The course examines the physical nature of electricity and magnetism and the application
of the scientific method. The historical development and the socioeconomic aspects of the “elec-
tronic age” are examined. Lecture/Laboratory. Materials fee required. Transfer: CSU. General
Education: (MJC-GE: A)

ELTEC 212—DIGITAL PRINCIPLES AND CIRCUITS  3 Units
Prerequisite: Satisfactory completion of MATH 70 or concurrent enrollment.
Also offered as CMPET 212.
Introduction to digital circuits. Use and application of digital components in electronic devices and
computers. Interfacing input and output devices to digital circuits. Introduction to programmable
logic devices. Materials fee required. Lecture/Laboratory. Transfer: CSU. General Education:
(MJC-GE: A)

ELTEC 214—MICROPROCESSOR PROGRAMMING AND INTERFACING  4 Units
Prerequisite: Satisfactory completion of ELTEC 212 or CMPET 212
Also offered as CMPET 214.
Introduction to the structure and operation of microprocessors as controllers for today’s electronic
devices and systems. Basic microprocessor hardware including memories, registers, counters,
input/output ports, decoders, and arithmetic logic using the popular PIC RISC microcontroller.
Machine language simulation and development on personal computers. Emphasis on interfacing to
electronic hardware. Materials fee required. Lecture/Laboratory. (A-F Only) Transfer: CSU
ELTEC 221 — INSTRUMENTATION DEVICES AND SYSTEMS 3 Units
Prerequisite: Satisfactory completion of ELTEC 208.
Also offered as INTEC 221.
An introduction to industrial instrumentation devices and systems. The principles and operation of mechanical and electrical transducers. Analysis of industrial instrumentation systems. Lecture/Laboratory. Materials fee required. (A-F Only) Transfer: CSU

ELTEC 223 — INDUSTRIAL ELECTRICAL COMPONENTS AND CONTROL DEVICES 3 Units
Prerequisite: Satisfactory completion of ELTEC 223.
An introduction to common components and control devices found in the manufacturing and processing industry. Content includes basic terminology, component identification, manufacturer's specifications, and maintenance procedures for the components and devices. Lecture/Laboratory. Materials fee required. (A-F Only) Transfer: CSU

ELTEC 226 — MOTORS, CONTROLS AND CONTROLLERS 3 Units
Prerequisite: Satisfactory completion of ELTEC 226.
Introduction to AC and DC motors and control systems. Emphasis on system troubleshooting. Use and programming of AC and DC systems. Lecture/Laboratory. (A-F Only) One completion allowed. Transfer: CSU

ELTEC 229 — COMMERCIAL AND INDUSTRIAL WIRING 3 Units
Also offered as INTEC 229.
Advisories: Before enrolling in this course, students are strongly advised to satisfactorily complete (INTEC 225 OR AGM 225) AND (INTEC 208 OR ELTEC 208).
Essential insights and practices in Commercial and Industrial Wiring that develop skills for the electrical trade. Topics include the application of basic concepts in the design of electrical systems, implementation of accepted trade practices used in installations, and common troubleshooting techniques. Field trips may be required. Materials fee required. (A-F Only) Transfer: CSU

ELTEC 230 — BLUEPRINT READING 1 Unit
Also offered as INTEC 230.
Recommended for success: Before enrolling in this course, students are strongly advised to satisfactorily complete INTEC 225 or AGM 225 and ELTEC 208.
Fundamental concepts of blueprint reading for electricians applicable in any field. Topics include construction-related blueprints (residential, commercial and industrial), machinery, automation, electronics, associated systems (hydraulic, pneumatic, communication). Lecture/Laboratory. (A-F Only) Transfer: CSU

ELTEC 232 — INTRODUCTION TO PROGRAMMABLE LOGIC CONTROLLERS 2 Units
Also offered as CMPET 232.
Introduction to the basic concepts of programmable logic controllers. Installation, programming, maintaining, and troubleshooting of microsized programmable logic controller systems. Lecture/Laboratory. Transfer: CSU

ELTEC 234 — ADVANCED TOPICS IN PROGRAMMABLE LOGIC CONTROLLERS 2 Units
Recommended for Success: Satisfactory completion of ELTEC 232 or CMPET 232 or equivalent course.
Also offered as CMPET 234.
Advanced study of programmable logic controllers and complete controller systems. Emphasis on component selection, design, and operation of industry-like controller systems. Lecture/Laboratory. Transfer: CSU

ELTEC 265 — TROUBLESHOOTING TECHNIQUES 1 Unit
Also offered as INTEC 265.
Common troubleshooting methodologies used in manufacturing today. One-solution and multiple-solution problems commonly found in everyday life through industrial processes. Prepares students to actively solve problems in personal and professional life. Lecture. Transfer: CSU

ELTEC 320 — ELECTRICAL SAFETY 1 Unit
Also offered as INTEC 320.
Understanding of electrical hazards common to business and industry. Introduction to the knowledge of common electrical injuries to employees, property damage, and how to prevent them. Basic skill development in how to recognize, evaluate, and control electrical hazards. The course covers regulatory compliance and safe work practices. (A-F Only) Approved for online and hybrid instruction.

EMS (Emergency Medical Service)

EMS 350—FIRST RESPONDER WITH HEALTH CARE PROVIDER CPR 3 Units
An entry-level course designed for firefighters and other emergency workers who will respond to medical emergencies ahead of ambulance transportation. Focuses on stabilization of ill or injured patients prior to arrival of more advanced life support. This course meets the basic requirements for most volunteer fire agencies as well as some paid fire departments. Unlimited completions. Lecture/Laboratory.

EMS 380—BASIC ECG INTERPRETATION AND INTRODUCTION TO CARDIAC CARE 3 Units
Recommended for Success: Understand basic medical terminology. Designed for students who have had little or no formal training in arrhythmia diagnosis. Emphasis will be on diagnosing the major and life-threatening arrhythmias incorporating patient assessment and treatment. Field trips may be required. One completion allowed. Lecture (A-F or P/NP). Transfer: (CC EMS 20)

EMS 389—EMERGENCY MEDICAL TECHNICIAN 1 LAB½ Unit
Prerequisite: Satisfactory completion of EMS 350 or equivalent. Concurrent enrollment in: EMS 390
Preparation in a laboratory setting for certification as an Emergency Medical Technician 1. Training in basic life support emergency care as mandated by the California Emergency Medical Services Authority. (A-F Only). Multiple completions allowed.

EMS 390—EMERGENCY MEDICAL TECHNICIAN 1 6 Units
Formerly listed as EMT 390
Prerequisite: Satisfactory completion of EMS 350; Valid CPR card
Prepares students for certification as an Emergency Medical Technician 1. Classroom instruction involves laboratory and clinical experience. Trained to provide emergency care (basic life support level) as an emergency medical service responder (police, fire, ambulance, ranger, rescue squad or industrial emergency operations). Lecture/Laboratory. Materials fee required (for infection control items and/or malpractice liability insurance). (A-F Only)

EMS 391—EMERGENCY MEDICAL TECHNICIAN 1 REFRESHER COURSE 1½ Units
Prerequisite: Satisfactory completion of EMT 390 with a grade of “C” or better or equivalent. Provides new and updated information for the Emergency Medical Technician, as well as reinforcement of basic knowledge and skills. Meets requirements for re-certification as an EMT in California. Unlimited completions. Lecture. (A-F Only)
ENGL 48 — BASIC ENGLISH SKILLS  
**Non-degree course.**
Prerequisite: Satisfactory completion of or concurrent enrollment in READ 40.
Fundamentals of writing. Emphasis on improving writing fluency, developing sentence structure, and learning to edit for spelling, punctuation and usage. Credit in this course may not be used to satisfy English requirements for Associate Degree from Modesto Junior College. (P/NP Only) Lecture. (CC ENGL 250)

ENGL 50 — BASIC COMPOSITION AND READING  
**5 Units**
Prerequisite: Satisfactory completion of ENGL 49 or qualification by the MJC Assessment Process
This course is designed for students who need to build basic English skills in writing, reading, and thinking. The course includes instruction in writing effective sentences, organizing ideas into paragraphs and essays, utilizing fundamentals of English syntax, reading academic texts, and building vocabulary. Basic critical thinking and study skills are also emphasized. Field trips may be required. One completion allowed. Applicable to the associate degree. Lecture. (A-F or P/NP) Transfers (CC ENGL 151)

ENGL 90 — WRITING THE RESEARCH PAPER  
**1 Unit**
Prerequisite: Eligibility for English 101 or concurrent enrollment in English 50.
Practice in the fundamentals of research and the writing of the research paper in both MLA and APA formats. Lecture.

ENGL 101 — COMPOSITION AND READING  
**3 Units**
Prerequisite: Satisfactory completion of ENGL 50 or qualification by the MJC Assessment Process.
Recommended for success: Satisfactory completion of READ 184.
Fundamental skills in reading and writing at the college level. Emphasis on exposition, argument, research, and information competency. Students are required to write a minimum of 8,000 words, at least 6,000 of which must be in essays that have a developed thesis. 2,000 - 3,000 words of the 8,000 must be research-based writing. MLA conventions of formatting and documentation. Field trips may be required. Lecture. (A-F or P/NP) Transfers (CC ENGL 101)

ENGL 102 — ADVANCED COMPOSITION AND INTRODUCTION TO LITERATURE  
**3 Units**
Prerequisite: Satisfactory completion of ENGL 101.
Intended primarily for university transfer students, but open to any qualified student. Advanced composition with an introduction to methods used in the analysis of literary texts. Field trips may be required. Lecture. Transfer: CSU, UC (CC ENGL 1A) General Education: (MJC-GE: D1) (CSU-GE: A2) (IGETC: 1A)

ENGL 103 — ADVANCED COMPOSITION & CRITICAL THINKING  
**3 Units**
Prerequisite: Satisfactory completion of ENGL 101.
Advanced composition course that focuses on the techniques and principles of argumentative writing. Examines style, diction, inference, evidence, reasoning, and rhetorical strategies of written argument. Students are required to write a minimum of 8,000 words, at least 6,000 of which must be in essays that have a developed thesis. Field trips may be required. Lecture. Transfer: CSU, UC (CC ENGL 1C) General Education: (MJC-GE: C2) (CSU-GE: C2) (IGETC: 3B)

ENGL 105 — CREATIVE WRITING: POETRY  
**3 Units**
Prerequisite: Satisfactory completion of ENGL 101.
Instruction and practice in writing poetry. Two maximum completions. Lecture. (MJC Activities) Transfer: CSU, UC General Education: (CSU-GE: C2)

ENGL 106 — CREATIVE WRITING: SHORT FICTION  
**3 Units**
Prerequisite: Satisfactory completion of ENGL 101.
Instruction and practice in writing shorter forms of fiction. Two maximum completions. Lecture. (MJC Activities) Transfer: CSU, UC General Education: (CSU-GE: C2)
ENGL 108—CREATIVE WRITING: AUTOBIOGRAPHY 3 Units
Prerequisite: Satisfactory completion of ENGL 101.
Instruction and practice in the writing of an autobiography. Two maximum completions. Lecture. (A-F or P/NP) (MJC Activities) Transfer: CSU, UC

ENGL 109—CREATIVE WRITING: SCRIPTWRITING 3 Units
Formerly listed as "Scriptwriting: Dramatic Writing for Film, Television, and Theater"
Prerequisite: Satisfactory completion of ENGL 101.
Instruction and practice in the writing of dramatic scripts for film, television, and theater. Field trips may be required. Two maximum completions. Lecture. (A-F OR P/NP) (MJC Activities) Transfer: CSU, UC

ENGL 112—INTRODUCTION TO THE NOVEL AND SHORT STORY 3 Units
Recommended for Success: Satisfactory completion of ENGL 101.
Introduction to the novel and short story with emphasis on intelligent reading, analysis and discussion of a range of fiction representing various types and traditions. Field trips may be required. Lecture. (A-F or P/NP) Transfer: CSU, UC General Education: (MJC-GE: C) (CSU-GE: C2) (IGETC: 3B)

ENGL 114—INTRODUCTION TO POETRY 3 Units
Recommended for Success: Satisfactory completion of ENGL 101
Analysis and discussion of poetry. Field trips may be required. Lecture. (A-F or P/NP) Transfer: CSU, UC General Education: (MJC-GE: C) (CSU-GE: C2) (IGETC: 3B)

ENGL 116—INTRODUCTION TO DRAMA 3 Units
Recommended for Success: Satisfactory completion of ENGL 101
Analysis and discussion of selected plays from classical Greek period to present. Field trips may be required. One completion allowed. Lecture. (A-F or P/NP) Transfer: CSU, UC General Education: (MJC-GE: C) (CSU-GE: C2) (IGETC: 3B)

ENGL 131—INTRODUCTION TO WORLD LITERATURE TO 1500 3 Units
Recommended for Success: Satisfactory completion of ENGL 101
Classical and medieval literature including historical backgrounds and reading in Asian, Middle Eastern, and European cultures. Lecture. One completion allowed. (A-F or P/NP) Transfer: CSU, UC General Education: (MJC-GE: C) (CSU-GE: C2) (IGETC: 3B)

ENGL 132—INTRODUCTION TO WORLD LITERATURE FROM 1500 TO PRESENT 3 Units
Recommended for Success: Satisfactory completion of ENGL 101
ENGL 132 is a continuation of ENGL 131, reading from the Renaissance to contemporary literature of Asian, Middle Eastern, European, and Latin American cultures. Lecture. One completion allowed. (A-F or P/NP) Transfer: CSU, UC General Education: (MJC-GE: C) (CSU-GE: C2) (IGETC: 3B)

ENGL 135—AMERICAN LITERATURE: TO 1850 3 Units
Prerequisite: ENGL 101 eligibility.
Survey of American literature from its beginning to mid-nineteenth century. Lecture. Field trips may be required. One completion allowed. (A-F or P/NP) Transfer: CSU, UC General Education: (MJC-GE: C) (CSU-GE: C2) (IGETC: 3B)

ENGL 136—AMERICAN LITERATURE: 1850 TO THE PRESENT 3 Units
Prerequisite: ENGL 101 eligibility.
ENGL 136 is not a prerequisite.
Survey of American literature from mid-nineteenth century to the present. Lecture. One completion allowed. Field trips may be required. (A-F or P/NP) Transfer: CSU, UC General Education: (MJC-GE: C) (CSU-GE: C2) (IGETC: 3B)

ENGL 137—SURVEY OF ENGLISH LITERATURE: TO THE 18TH CENTURY 3 Units
Recommended for Success: Before enrolling in this course, students are strongly advised to satisfactorily complete ENGL 101 and ENGL 102.
Prerequisite: Satisfactory completion of ENGL 50 or placement in ENGL 101 by MJC Assessment Process.
Survey of English literary history from the Anglo-Saxons to the 18th century with detailed study of the writings of Chaucer, Marlowe, Spenser, Shakespeare, Milton, and others. (A-F or P/NP) Lecture. Field trips may be required. Transfer: CSU, UC (CC ENGL 46) General Education: (MJC-GE: C) (CSU-GE: C2) (IGETC: 3B)

ENGL 138—SURVEY OF ENGLISH LITERATURE: 18TH CENTURY - PRESENT 3 Units
Recommended for Success: Before enrolling in this course, students are strongly advised to satisfactorily complete ENGL 101 and ENGL 102.
Prerequisite: Satisfactory completion of (ENGL 50) or placement in ENGL 101 by MJC Assessment Process.
Survey of English literary history from the 18th century to the present with detailed study of the writings of Pope, Wordsworth, Coleridge, Keats, Shelley, Tennyson, Woolf, and others. Field trips may be required. (A-F or P/NP) Lecture. Transfer: CSU, UC General Education: (MJC-GE: C) (CSU-GE: C2) (IGETC: 3B)

ENGL 151—INTRODUCTION TO FOLKLORE 3 Units
Recommended for Success: Before enrolling in this course, students are strongly advised to have satisfactorily completed ENGL 50 or to have been placed in ENGL 101 by the MJC Assessment Process.
Study of folkgroups and their manifest, social, cultural, and artifacts. Introduction to folkloristics. Methodology, folk themes, and literary symbolism. (A-F or P/NP) Lecture. Transfer: CSU, UC General Education: (MJC-GE: C) (CSU-GE: C2) (IGETC: 3B)

ENGL 156—THE BIBLE AS LITERATURE: THE HEBREW CANON AND INTERTESTAMENTAL WRITINGS 3 Units
Recommended for Success: Eligibility for ENGL 101.
Literary criticism and an appreciation of historical background and textual transmission of selected books of the Hebrew Bible (Old Testament) and Intertestamental Writings (also known as the Apocrypha) in translation. Lecture. Field trips may be required. Transfer: CSU, UC General Education: (MJC-GE: C) (CSU-GE: C2) (IGETC: 3B)

ENGL 157—THE BIBLE AS LITERATURE: THE NEW TESTAMENT 3 Units
Recommended for Success: Eligibility for ENGL 101.
Literary criticism and an appreciation of historical background and textual transmission of selected books of the New Testament. Lecture. Field trips may be required. Transfer: CSU, UC General Education: (MJC-GE: C) (CSU-GE: C2) (IGETC: 3B)

ENGL 161—FILM APPRECIATION 3 Units
An introductory course in film appreciation, emphasizing the development of sensitivity and critical judgment in audience response to film. Field trips may be required. Lecture/Viewing. Transfer: CSU, UC (CC ENGL 11) General Education: (MJC-GE: C) (CSU-GE: C1,C2) (IGETC: 3B)

ENGL 162—HISTORY OF CINEMA 3 Units
Examines the international development of cinema from 1895 to the present. Covers a wide range of both American and foreign films and offers a broad survey of major movements, styles, and genres in the history of motion pictures. Focuses specifically on the social, historical, technical, and technological factors that have shaped the film industry and the films produced by it. Field trips may be required. Lecture. (A-F OR P/NP) Transfer: CSU, UC General Education: (MJC-GE: C) (CSU-GE: C2) (IGETC: 3B)

ENGL 163—INTRODUCTION TO SHAKESPEARE 3 Units
Prerequisite: ENGL 101 eligibility.
Recommended for Success: Satisfactory completion of ENGL 101.
A reading of six to nine representative comedies, histories, and tragedies, designed to introduce the student to Shakespeare’s art. Field trips may be required. One completion allowed. Lecture. (A-F OR P/NP) Transfer: CSU, UC (CC ENGL 50) General Education: (MJC-GE: C) (CSU-GE: C2) (IGETC: 3B)
ENGL 168—ADOLESCENT LITERATURE 3 Units
Prerequisite: ENGL 101 eligibility.
Recommended for Success: Satisfactory completion of ENGL 101.
Introduction to literature for adolescents (ages 9-16). Includes types of literature, and forms drawn from a variety of ethnic and cultural sources, ways to promote interest, themes, and criteria for choosing materials. Field trips may be required. Lecture. One completion allowed. (A-F or P/NP) Transfer: CSU, UC General Education: (MJC-GE: C) (CSU-GE: C2) (IGETC: 3B)

ENGL 169—CHILDREN'S LITERATURE 3 Units
Prerequisite: ENGL 101 eligibility
Recommended for Success: Satisfactory completion of ENGL 101.
Introduction to literature for children. Includes types of literature and forms drawn from a variety of ethnic and cultural sources, storytelling, ways to promote interest, and criteria for choosing materials. Lecture. One completion allowed. Field trips may be required. Transfer: CSU, UC General Education: (MJC-GE: C) (CSU-GE: C2) (IGETC: 3B)

ENGL 171—INTRODUCTION TO AFRICAN-AMERICAN LITERATURE 3 Units
Recommended for Success: Satisfactory completion of ENGL 101.
An introduction to the contributions of black Americans in American literature from the slave era through the present. The emphasis will be upon a chronological study of major works including the following: slave narratives, folk tales, poetry, short story, novel and drama. Field trips may be required. Lecture. Transfer: CSU, UC General Education: (MJC-GE: C) (CSU-GE: C2) (IGETC: 3B).

ENGL 172—INTRODUCTION TO CHICANO LITERATURE 3 Units
Recommended for Success: Satisfactory completion of English 101.
Survey of Chicano literature in English from its beginnings to its contemporary form. Emphasis on influences that have shaped the literature and critical skills needed to evaluate and appreciate Chicano poetry, theater, fiction, and essay. Field trips may be required. Lecture. Transfer: CSU, UC General Education: (MJC-GE: C) (CSU-GE: C2) (IGETC: 3B).

ENGL 173—INTRODUCTION TO LATIN AMERICAN LITERATURE 3 Units
Prerequisite: ENGL 101 eligibility
Recommended for Success: Satisfactory completion of English 101.
An introduction to Latin American literature from its Colonial Period to the present. Emphasis on chronological survey of major works of Latin American writers studied in English translation and selected from the following: indigenous legends, chronicles, epistles, poetry, novel, drama, and short story. Field trips may be required. Lecture. One completion allowed. Field trips may be required. (A-F or P/NP) Transfer: CSU, UC General Education: (MJC-GE: C) (CSU-GE: C2) (IGETC: 3B).

ENGL 174—INTRODUCTION TO MODERN ASIAN LITERATURE 3 Units
Recommended for Success: Satisfactory completion of ENGL 101.
An introductory course on Asian literature from the 19th century to the present in its English translation. Emphasis on major works that have made an impact on western literary tradition and the social, cultural, and historical forces that have shaped these works. Lecture. One completion allowed. Field trips may be required. (A-F or P/NP) (MJC Activities) Transfer: CSU, UC General Education: (MJC-GE: C) (CSU-GE: C2) (IGETC: 3B)

ENGL 175—INTRODUCTION TO WOMEN'S LITERATURE 3 Units
Recommended for Success: Satisfactory completion of ENGL 101.
An introduction to literature by and about women, including an historical overview, archetypes, stereotypes, cultural impediments to women's writing, methods of criticism, and recent literary achievements. Lecture. Field trips may be required. Transfer: CSU, UC General Education: (MJC-GE: C) (CSU-GE: C2) (IGETC: 38)

ENGL 176—INTRODUCTION TO MEXICAN LITERATURE 3 Units
Recommended for Success: Satisfactory completion of ENGL 101.
Introduction to Mexican literature from its Colonial Period to the present. Emphasis on chronological survey of major works of Mexican writers studied in English translation and selected from the following: chronicles, epistles, poetry, novel, drama, and short story. Lecture. Transfer: CSU, UC General Education: (MJC-GE: C) (CSU-GE: C2) (IGETC: 3B).

ENGL 178—MASS MEDIA AND THE PUBLIC 3 Units
A non-technical course for the consumer of the mass media dealing with the way information is gathered and processed by the mass media, and the history of the mass media in the United States, theories of its role in society, and current problems and criticisms. Field trips may be required. Transfer: CSU, UC (CSU-GE:D7) (IGETC:4)
ENGR 101—INTRODUCTION TO SURVEYING AND TOPOGRAPHY 3 Units
Prerequisite: Satisfactory completion of MATH 115 or MATH 122.
Introduction to principles and techniques for measurement of distances, directions, and angles. Additional topics include measurement errors, traverse computations, global positioning systems, Total Station, topographic surveys, and building and curve layout. Lecture/Laboratory. Field trips may be required. Transfer: CSU, UC

ENGR 127—ENGINEERING GRAPHICS 4 Units
Prerequisite: Satisfactory completion of MATH 90 or eligibility for MATH 101 or higher as determined by MJC Assessment process.
Development of graphics skills for engineering drawings with the use of computer-aided-drafting (CAD) software. Topics include orthographic and pictorial projections, section and auxiliary views, dimensioning, tolerancing, threaded fasteners, and working drawings. Introduction to 3D modeling and engineering design. Design project required. (A-F or P/NP) Lecture/Laboratory. Materials fee may be required. Transfer: CSU, UC

ENGR 130—PROPERTIES OF MATERIALS 4 Units
Prerequisite: Satisfactory completion of CHEM 101, MATH 171, and PHYS 101
Investigation of the internal structure of metals, ceramics, polymers, composites and semiconducting materials and their effect on mechanical, electrical, magnetic and thermal properties. Laboratory investigations include metallography, tensile/compression tests and heat treatment analysis, hardness testing, and composite performance testing. Lecture/Laboratory. (A-F or P/NP) Transfer: CSU, UC

ENGR 135—ENGINEERING MECHANICS/STATICS 3 Units
Prerequisite: Satisfactory completion of PHYS 101 and MATH 172.
Static analysis of particles and rigid bodies; vector notation; analytical solutions of two- and three-dimensional structures in equilibrium; centroids, center of gravity, moments of inertia and friction. Lecture/Laboratory. (A-F or P/NP) Transfer: CSU, UC

ENGR 140—INTRODUCTION TO CIRCUIT ANALYSIS (WITHOUT LAB) 3 Units
Satisfactory prior completion of or concurrent enrollment in MATH 174 and PHYS 103.
Direct-current and alternating-current circuit analysis; steady and transient phenomena in RLC circuits; circuit theorems; single-phase and polyphase alternating-current circuits. Field trips may be required. Lecture/Laboratory. (A-F or P/NP) Transfer: CSU, UC

ENGR 141—INTRODUCTION TO CIRCUIT ANALYSIS (WITH LAB) 4 Units
Corequisite: Concurrent enrollment in or prior satisfactory completion of MATH 174 and PHYS 103.
Direct-current and alternating-current circuit analysis; steady and transient phenomena in RLC circuits; circuit theorems; single-phase and polyphase alternating-current circuits and laboratory demonstrations/exercises emphasizing circuit construction, analysis and instrumentation. Field trips may be required. Lecture/Laboratory. Materials fee may be required. (Spring) (A-F or P/NP) Transfer: CSU, UC

ENGR 220—BASIC ENGINEERING GRAPHICS 1 2 Units
Prerequisite: Satisfactory completion of MATH 90 or eligibility for MATH 101 or higher as determined by MJC assessment process.
Development of graphics skills for engineering drawings with the use of computer-aided-drafting (CAD) software. Topics include orthographic and pictorial projections, section views and auxiliary views. ENGR 220 and ENGR 221 are the two-semester equivalent of ENGR 127. Does not transfer to UC. (A-F or P/NP) Lecture/Laboratory. Transfer: CSU, UC

ENGR 221—BASIC ENGINEERING GRAPHICS 2 2 Units
Prerequisite: Satisfactory completion of ENGR 220
Continuation of ENGR 220 to include dimensioning, tolerancing, threaded fasteners, and working drawings. Introduction to 3D modeling and engineering design. Design project required. ENGR 220 and ENGR 221 are the two-semester equivalent of ENGR 127 (now inactive). (A-F or P/NP) Lecture/Laboratory. Transfer: CSU, UC

ENGR 230—FIELD SURVEYING 2 Units
Recommended for success: Satisfactory completion of Math 70 or AG 280. Also offered as AGM 230.
Selection, care and checking of tapes, levels, GPS and laser systems. Introduction to total station care and use. Field observations, note taking and office computations; use of surveying instruments and equipment for land measurement and mapping; practice in differential, profile, and contour leveling; horizontal angles, traverses, and construction problems used in public lands surveying, legal descriptions, and county records. Lecture/Laboratory. (A-F Only) Field trips required. Transfer: CSU

ENGRTC (Engineering Technology)
The Engineering Technology program prepares students to transfer to four-year college and university programs. It is for students interested in learning the more pragmatic and applications aspects of engineering, and is directed to the application of established scientific and engineering knowledge and methods. Consult with an engineering advisor for selection of courses.

ENGRTC 210—INTRODUCTION TO COMPUTER-ASSISTED DRAFTING 1 Unit
Introduction to the use of the computer as a drafting tool. Topics include basic drawing, editing and utility commands of AUTOCAD. Three maximum completions. Field trips may be required. Lecture/Laboratory. Materials fee may be required. Transfer: CSU (CC DRAFT 50A)

ENGRTC 211—INTERMEDIATE TOPICS IN COMPUTER-ASSISTED DRAFTING 1 Unit
Prerequisite: Previous experience with PC based CAD or ENGRTC 210.
Continuation of ENGRTC 210 to include topics on the use of layers, blocks, inserts, attributes, dimensioning, three-dimensional applications, and system management. Three maximum completions. Field trips may be required. Lecture/Laboratory. Materials fee may be required. Transfer: CSU (CC DRAFT 50A)

ENGRTC 212—ADVANCED TOPICS IN COMPUTER-ASSISTED DRAFTING 1 Unit
Prerequisite: Satisfactory completion of ENGRTC 211, or previous experience with PC based CAD.
Advanced topics in computer-assisted drafting including solids modeling, file management, and customization. Three maximum completions. Field trips may be required. Lecture/Laboratory. Materials fee may be required Transfer: CSU

ENGRTC 215—INTRODUCTION TO SOLID MODELING 1 Unit
Recommended for success: Previous CAD or drafting experience. Formerly listed as ENGR 215.
Introduction to the use of the computer as a Solid Modeler. Topics include working in the draft environment, solids construction, solids editing, drafting views, dimensioning, and assembly drawings. Field trips may be required. Lecture/Laboratory. (Spring) Materials fee may be required. Transfer: CSU

ENGRTC 250—MATERIALS IN ENGINEERING 3 Units
A study of the structure of metals, ceramics, polymers, composites, and semiconducting materials and their effect on mechanical, electrical, magnetic, and thermal properties. Methods used in manufacture and processing. Field trips may be required. Lecture. Materials fee may be required. Transfer: CSU

ENGRTC 251—PROPERTIES OF MATERIALS 1 Unit
Recommended for success: Completion of ENGRTC 250 or concurrent enrollment.
Materials testing, analysis, and evaluation of response models of metals, ceramics, polymers, and composites. Field trips required. Laboratory. Materials fee may be required. Transfer: CSU
ENGT C 255 — STATICS AND STRENGTH OF MATERIALS  3 Units
Recommended for Success: Satisfactory completion of MATH 122 or placement by MJC assessment process.
Study of force and moment systems. Concept of equilibrium stresses, and deformation. Effects of forces and moments acting on beams, structures, and shafts. Field trips may be required. Lecture. Material fees may be required. Transfer: CSU

ENGT C 375 — CONSTRUCTION BLUEPRINT READING  2 Units
Reading and interpreting basic two-dimensional blueprints, sketching. Terminology symbols, notes and building code practices for building trades. Field trips may be required. Lecture/Laboratory. Not offered every semester.

ENGT C 376 — MECHANICAL BLUEPRINT READING  2 Units
Reading and interpreting basic two-dimensional mechanical drawings; sketching. Terminology symbols, notes, and practices for manufacturing and fabrication trades. Field trips may be required. Lecture/Laboratory. Not offered every semester.

ENSCI (Environmental Sciences)

ENSCI 108 — ENVIRONMENTAL CONSERVATION  3 Units
Study of the world’s environment to sustain the highest quality of life. Includes study of ecology, populations, environmental pollution, conservation of natural resources including: energy, water, soils, forests, rangelands, and wildlife. Field trips required. Lecture. Transfer: CSU, UC. General Education: (MJC-GE: A) (CSU-GE: B2) (IGETC: 5B)

ENSCI 108L — ENVIRONMENTAL CONSERVATION LABORATORY  1 Unit
Prerequisite: Satisfactory completion of ENSCI 108 or concurrent enrollment in ENSCI 108. Study of environmental conservation management concepts in an experiential format. Laboratory study will encompass environmental pollution controls, population studies; energy use and alternatives; water quality use and conservation; soil analysis and land-use planning; wildlife habitat restoration; and hazardous materials analysis and alternatives. Field trips required. Laboratory. Transfer: CSU, UC.

ENSCI 109 — INTRODUCTION TO GEOGRAPHIC INFORMATION SYSTEMS  3 Units
Also offered as GEOG 109. Introduction to Geographical Information Systems (GIS). GIS centers upon mapping as a tool for identifying and assessing spatial relationships of human activity. Applications to business, economics, weather, geology, agriculture etc. Students will create, apply, and evaluate databases which generate maps. Field trips required. Lecture/Laboratory. (A-F Only). Transfer: CSU, UC.

ENSCI 110 — CALIFORNIA WATER  3 Units
An interdisciplinary examination of California’s water use and management with an historical emphasis on the politics and conflicts arising from water scarcity. Field trips may be required. Lecture/Laboratory. Materials fee may be required. (A-F Only). Transfer: CSU, UC. General Education: (MJC-GE: B) (CSU-GE: D7) (IGETC: 4)

The Literature and Language Arts division offers two programs in ESL: a non-credit, adult basic education program of courses on four levels, and a six-level credit program intended for students who plan to pursue other academic and vocational study at the college. Most ESL courses are not degree-applicable; no major is offered.

ESL 10 — ENGLISH LANGUAGE 1  10 Units
Non-degree course.
Advisories: Before enrolling in this course, students are strongly advised to satisfactorily complete ESL 901 and/or ESL 902, especially if they lack elementary listening comprehension and speaking skills. To be successful in ESL 10, students need to be able to understand, follow, and respond to basic instruction(s) in English. Elementary course in speaking, listening, reading, and writing for persons learning English as another language. Field trips may be required. Lecture. (A-F or P/NP)
ESL 20—ENGLISH LANGUAGE 2
Non-degree course.
Prerequisite: Placement in ESL 20 through assessment process or satisfactory completion of ESL 10 or equivalent course.
Continuation of ESL 10. Elementary English for persons learning English as another language. Emphasis on vocabulary and sentence structure for practical communication in school, community and work. Field trips may be required. Lecture.

ESL 23—SPOKEN ENGLISH 1
5 Units
Recommended for Success: Placement in ESL 20 or above.
Concurrent enrollment in ESL 20 or 30 recommended.
Non-degree course.
Elementary speaking improvement for students of English as a second language. Field trips may be required. Two maximum completions. Lecture.

ESL 24—ESL COMPOSITION AND READING 1
5 Units
Prerequisite: Placement in ESL 20 through assessment process or satisfactory completion of ESL 10 or equivalent course.
Concurrent enrollment in ESL 20 recommended.
Non-degree course.
Practice in reading and writing for students at the beginning (second semester) level. Significant homework may be assigned to a lab. Lecture. One completion allowed. Field trips may be required. (A-F or P/NP).

ESL 30—ENGLISH LANGUAGE 3
5 Units
Prerequisite: Placement in ESL 30 through MJC assessment process, or satisfactory completion of ESL 20 or equivalent course.
Non-degree course.
Continuation of ESL 20. Lower intermediate component for persons learning English as another language. Emphasis on review and expansion of lower intermediate grammatical structures in reading, writing, listening, and speaking. Lecture. One completion allowed. Field trips may be required. (A-F or P/NP).

ESL 34—ESL COMPOSITION AND READING 2
5 Units
Prerequisite: Placement in ESL 30 through assessment process or satisfactory completion of ESL 20 and ESL 24 or equivalent course.
Concurrent enrollment in ESL 30 recommended.
Non-degree course.
Practice in reading and writing for students at the high beginning (third semester) level of ESL courses. Continuation of ESL 24. Significant homework may be assigned to a lab. Lecture. One completion allowed. Field trips may be required. (A-F or P/NP).

ESL 40—ENGLISH LANGUAGE 4
5 Units
Prerequisite: Placement in ESL 40 through assessment process or satisfactory completion of ESL 30 or equivalent course.
Non-degree course.

ESL 40A—SKILLS FOR SUCCESS IN INTERMEDIATE GRAMMAR ½ Unit
Prerequisite: Placement in ESL 30 or higher through assessment process
Non-degree course.
Designed to provide further practice on grammar points needed for success in ESL 40 or higher; in particular, for students who are weak in prerequisite skills and/or who have failed ESL 40. These courses do not serve as prerequisites for ESL 45. Laboratory

ESL 43—SPOKEN ENGLISH 2
5 Units
Recommended for Success: Placement in ESL 40 or above.
Concurrent enrollment in ESL 40 or 45 recommended.
Non-degree course.
Speaking improvement for students of English as a second language. Field trips may be required. Two maximum completions. Lecture.

ESL 44—ESL COMPOSITION AND READING 3
5 Units
Prerequisite: Placement in ESL 40 through assessment process or satisfactory completion of ESL 30 and ESL 34 or equivalent course.
Concurrent enrollment in ESL 40 recommended.
Non-degree course.
Practice in writing multi-paragraph compositions and reading for students at the intermediate level of ESL with a comprehensive foundation in English grammar and the ability to write well-formed paragraphs in English. Continuation of ESL 34. Significant homework may be assigned to a lab. Lecture. One completion allowed. Field trips may be required. (A-F or P/NP).

ESL 45—ENGLISH LANGUAGE 5
5 Units
Prerequisite: Placement in ESL 45 through assessment process or satisfactory completion of ESL 40 or equivalent course.
Non-degree course.
Continuation of ESL 40. Higher intermediate components for persons learning English as another language. Review and expansion of higher intermediate grammatical structures in reading, writing, listening, and speaking. Lecture. (A-F or P/NP)

ESL 46—ESL COMPOSITION AND READING 4
5 Units
Prerequisite: Placement in ESL 45 through assessment process or satisfactory completion of ESL 40 and ESL 44 or equivalent course.
Concurrent enrollment in ESL 45 recommended.
Non-degree course.
Practice in writing academic essays and analysis of authentic reading for students at the higher intermediate level of ESL. Significant homework may be assigned to a lab. Lecture. One completion allowed. Field trips may be required. (A-F or P/NP).

ESL 47—ENGLISH LANGUAGE 6
5 Units
Prerequisite: Placement in ESL 47 through assessment process or satisfactory completion of ESL 45 or equivalent course.
Non-degree course.
Continuation of ESL 45. Advanced English grammar component for persons learning English as another language. Emphasis on review and expansion of advanced grammatical structures in reading, writing, listening, and speaking for success in college-level courses. Lecture. (A-F or P/NP)

ESL 48—ESL COMPOSITION AND READING 5
5 Units
Prerequisite: Placement in ESL 47 through assessment process or satisfactory completion of ESL 45 and ESL 46 or equivalent course.
Concurrent enrollment in ESL 47 recommended.
Non-degree course.
Practice in composition and reading for advanced ESL students who plan to continue in college. Preparation for reading and writing in various academic and vocational disciplines. Emphasis on writing in response to reading. Significant homework may be assigned to a lab. Lecture. One completion allowed. Field trips may be required. (A-F or P/NP).

ESL: NON-CREDIT COURSES

ESL 901—ESL: BEGINNING
Beginning English for non-English speakers. Emphasis on beginning spoken English and basic literacy. Field trips may be required. Non-graded.

ESL 902—ESL: LOWER ELEMENTARY
Elementary English with emphasis on spoken English for practical needs and preparation for advancement into credit ESL classes. Non-graded. Field trips may be required.

ESL 903—ESL: HIGHER ELEMENTARY
Elementary level English for speakers of other languages. Instruction and practice in listening, speaking, and practical reading and writing. Preparation for advancement into credit ESL classes. Non-graded. Field trips may be required.
ESL 904 — ESL: INTERMEDIATE
Intermediate level English for speakers of other languages. Instruction and practice in listening, speaking, reading and writing with a greater emphasis on academic preparation. Field trips may be required. Non-graded.

ESL 920 — ENGLISH AT WORK 1
Formerly listed as ESL 906
High beginning to lower intermediate level of English for speakers of other languages. English language skills needed to seek employment and function successfully in the workplace. Field trips may be required. Unlimited completions. Field trips may be required. Non-graded.

ESL 921 — ENGLISH AT WORK 2
Formerly listed as ESL 906
Recommended for Success: Placement by assessment process at ESL level 3 or 4 (ESL 30 or ESL 40).

FAMIL LF (Family Life)

FAMIL LF 131 — FAMILY RELATIONSHIPS
3 Units
The family and its interpersonal relationships, the formation and development of the family, adjustment within the family, the family cycle, parenthood, marriage enrichment, dissolution of marriage and remarriage, exploration of resources to strengthen the family. Lecture. (A-F or P/NP) Transfer CSU, UC General Education: (MJC-GE: E) (CSU-GE: D7,E) (IGETC:4)

FAMIL LF 242 — PARENT INVOLVEMENT
3 Units
Recommended for Success: Satisfactory completion of CLODV 245
Experience in promoting increased parent involvement and parent education in community programs. Field trips required. Lecture/Other. (Fall) Transfer: CSU

FAMIL LF 355X,A — THE CHILD IN THE FAMILY
½, 1 Unit
Influences of the family and school on the growth and development of the child from the prenatal stage through the early childhood years. Community resources that impact children. May be completed up to four times. Field trips may be required. Lecture. (A-F or P/NP)

FAMIL LF 390 — THE PROCESS OF PARENTING
1 Unit
Discussion of child growth and development related to parenting. Background for understanding parent-child relationships. Emphasis on cooperation through effective and mutually respectful communication techniques. Lecture. Three maximum completions. (A-F or P/NP)

FAMIL LF: NON-CREDIT COURSES

FAMIL LF 800 — PARENT EDUCATION
Exploration of current issues in parenting. Influences of the family and school on the growth and development of the child. Emphasis on positive and nurturing guidance techniques. Unlimited completions allowed. Field trips may be required. Non-graded.

FDNTR (Food & Nutrition)

FDNTR 219 — NUTRITION
3 Units
Recommended for Success: Satisfactory completion of Laboratory chemistry course in high school or college, or concurrent enrollment.
Concepts of nutrient requirements of the body in relation to growth maintenance, and repair at different stages of a normal life cycle; factors influencing normal metabolism; construction of an adequate diet at different ages and food safety and hunger will be examined. (A-F or P/NP) Applicable to the Associate Degree. Transfer: CSU, UC (CSU NUTR 110) (CC BIOL 50) General Education: (MJC-GE: A)

FDNTR 320 — DIET IN HEALTH AND DISEASE
3 Units
Recommended for Success: Satisfactory completion of or concurrent enrollment in FDNTR 219 or 351.
Collecting data for assessing nutrition status and planning modified diets to meet individual patient needs. Emphasis placed upon application in health care facilities. Field trips may be required. Lecture. (A-F or P/NP)

FDNTR 351 — PRACTICAL NUTRITION
3 Units
Recommended for Success: Laboratory chemistry course in high school or college or concurrently enrolled.
Basic principles of nutrition and their application. Hunger, food safety and current nutritional controversies will be examined. (A-F or P/NP) General Education: (MJC-GE: A)

FDP (Food Processing)

The student will acquire skills sufficient for technical employment in the food processing industry. The student may also prepare for transfer to a university food science major by adapting this program in consultation with an advisor. Contact the division office in the Agriculture Building for advising assistance.

FDP 200 — BASIC FOOD PROCESSING
3 Units
Introductory course for work in food processing industry. Methods of food preservation, assurance of quality; laws related to food processing, skills and techniques used by the industry. Field trips required. Lecture/Laboratory. (A-F Only) Transfer: CSU

FDP 300 — CERTIFIED PROFESSIONAL FOOD MANAGER TRAINING
1½ Units
Develops a working knowledge and familiarity with technology and strategies to manage food safely from production to consumption. Field trips may be required. Two maximum completions. Lecture. Materials fee required. (A-F Only)

FDP 301 — CERTIFIED HACCP MANAGER TRAINING
1½ Units
Recommended for Success: An understanding of basic food safety program: i.e., GMP’s, SSOPs, and fundamentals of sanitation procedures.
Elements of hazard analysis and critical control points and how they integrate into a successful food safety program for manufacturers, wholesalers, distributors and food establishment operations with the goal of HACCP certification. Field trips required. Two maximum completions. Lecture. Materials fee required. (A-F Only)
**FDP 342—INTRODUCTORY WINE EVALUATION** 1 Unit

Prerequisite: Limited to persons 21 years of age and older.
Formerly listed as PLSC 242.

The scientific study of wines, with an emphasis on using precise descriptive language for sensory evaluation: the use of the senses of sight, smell, taste and touch in a disciplined, systematic way to learn about some of the chemical and physical properties of wine. Emphasizes California varietal wines as a basis for learning about varietal wine characteristics to build a foundation for understanding the great wines of the world. Field trips may be required. Lecture/Demonstration. Two maximum completions. Materials fee required. P/NP Only.

**FDP 376—BASIC FOOD LABORATORY PROCEDURES** 1 Unit

Details of food plant laboratory procedures, emphasis on net weight, fill weight, syrup checking, and statistical quality control. Lecture/Laboratory. (A-F Only)

**FDP 378—FOOD LABORATORY INSTRUMENTS** 1 Unit

Operation, principles, importance and care of basic food laboratory instruments. Lecture/Laboratory. (A-F Only)

**FDP 379—FOOD PRODUCTS GRADING** 1 Unit

Fundamentals of food products grading. Lecture/Laboratory. (A-F Only)

**FDP 380—FOOD PRODUCTS MICROANALYSIS-A** 1 Unit

Training in insect part and fly egg determination in food products. Lecture/Laboratory. (A-F Only)

**FDP 381—FOOD PRODUCTS MICROANALYSIS-B—MOLD COUNTING** 2 Units

Instruction in mold count procedures as applied to fruit and tomato products and food plant sanitation. Includes Howard Mold, Geotrichum Mold, and Rut Count methods. Lecture/Laboratory/Other. (A-F Only)

**FDP 382—FOOD PRODUCTS MICROANALYSIS-C** 1 Unit

Principles of food bacteriology, use of materials and equipment, tests that identify the presence and number of bacteria important in the food industry. Lecture/Laboratory. (A-F Only)

**FDP 383—ENZYMES IN THE FOOD INDUSTRY** 1 Unit

Fundamentals of food enzymes and their use in the food industry; classification, production, activity, use, immobilization and inhibition, modification of food by endogenous enzymes, and the major classes of industrial enzymes. Lecture. (A-F Only)

**FDP 386—FOOD LABORATORY CHEMISTRY PROCEDURES** 1 Unit

Basic chemical principles and techniques as they are applied to chemical analysis of foods. Field trips may be required. Lecture/Laboratory. (A-F Only)

**FDP 387—FOOD PROCESSING SANITATION AND CLEANUP** 1 Unit

Introduction to the fundamentals of food processing equipment, cleanup and sanitation, types of cleaning agents, residue problems, cleanup methods and techniques. Two maximum completions. Field trips may be required. Lecture. (A-F Only)

**FDSER—CATERING** (Food Service) 2 Units

A study of catering principles and application in the production of cold and hot hors d’oeuvres, including vegetables, ham, pork, poultry, seafood, fruit, cheese, mousse and sauces for buffet service. Stresses quality and quantity control and artistic presentation. (A-F or P/NP).

**FDSER 323—CATERING** 2 Units

A study of catering principles and application in the production of cold and hot hors d’oeuvres, including vegetables, ham, pork, poultry, seafood, fruit, cheese, mousse and sauces for buffet service. Stresses quality and quantity control and artistic presentation. (A-F or P/NP).

**FILM**

**FILM 150—FILM PRODUCTION** 3 Units

Techniques of motion picture production. Students write scripts; operate camera, sound, lighting, and editing equipment to produce basic film projects. Focus on single camera “film style” techniques utilizing video production equipment. Field trips or off-site filming may be required. Lecture/Laboratory. (A-F or P/NP) Materials fee required. (MJC Activities) Transfer: CSU, UC

**FILM 151—ADVANCED FILM PRODUCTION 1** 3 Units

Recommended for Success: Satisfactory completion of FILM 150, RATV 142.

Practical applications in film production. Creative use of camera, sound, editing, and production planning. Students will produce, direct, and edit individual projects. This class will provide intermediate experience in group filmmaking, affording expanded areas of responsibility. Each group will produce a twenty-minute feature film. Field trips may be required. Two maximum completions. Lecture/Laboratory. Materials fee required. Transfer: CSU, UC

**FILM 152—ADVANCED FILM PRODUCTION 2** 3 Units

Recommended for Success: Satisfactory completion of FILM 151, RATV 142.

Continuation of FILM 151. Development of leadership skills, directing techniques, and the producing process for the film industry. Field trips may be required. Two maximum completions. Lecture/Laboratory. Materials fee required. Transfer: CSU, UC

**FILM 153—CONTEMPORARY FILM** 3 Units

Introduction to the contemporary film industry from a creative, technical and business perspective. Basic skill development in understanding the language of film, critical thinking and writing. Samples of topics explored include directorial choices, cinematic composition, decoding the ideological message, and film as it relates to popular culture and current affairs. Attendance of first run feature films at local movie theaters is required. Two maximum completions. Materials fee required. Cost of admission to view one film per semester week. Lecture. (A-F or P/NP) Transfer: CSU, UC.

**General Education:** (MJC-GE: C)

**FILM 154—MOVIES WITH A MESSAGE** 3 Units

Also offered as SOCSC 154.

A film appreciation series intended to explore what can be learned about place, culture, history, and the human experience from films, and how movies can shape perceptions, illuminate social issues, and advance political action while examining the aesthetic relationship of subject to style, form, function, and the cultural values of the film maker. May be completed up to two times. (A-F or P/NP) Lecture. Transfer: CSU, UC. General Education: (MJC-GE: C) (CSU-GE: C1)

**FILM 155—THE DOCUMENTARY FILM** 3 Units

Introduction to the history and theory of documentary film practice through the examination of a variety of documentary films (educational, propaganda, social activist, ethnographic, cinema verité, etc.) Screening and discussion of selected documentaries will be used to enhance this visual art form. (A-F or P/NP) Lecture. Transfer: CSU. Transfer: (MJC-GE: C) (CSU-GE: C1)

**FREN—FRENCH**

**FREN 51—INTRODUCTION TO PRACTICAL FRENCH 1** 3 Units

Basic conversational French for travel, work, or preparation for French 101. Field trips may be required. Lecture. Laboratory arranged. (A-F or P/NP)

**FREN 52—INTRODUCTION TO PRACTICAL FRENCH 2** 3 Units

Prerequisite: Satisfactory completion of FREN 51.

Continuation of FREN 51. Review and expansion of essentials of French grammar and vocabulary through oral expression. (A-F or P/NP)

**FREN 101—FRENCH 1** 5 Units

FREN 102—FRENCH 2 5 Units
Prerequisite: Satisfactory completion of FREN 101.
Continuation of FREN 101. Review and expansion of tenses, vocabulary, and commonly used expressions. Equivalent to the satisfactory completion of four years of high school French. (A-F or P/NP) Transfer: CSU, UC General Education: (MUC-GE: C) (CSU-GE: C2) (IGETC: 3B,6A)

FREN 103—FRENCH 3 5 Units
Prerequisite: Satisfactory completion of FREN 102.
Review of French grammar, reading and conversational practice. Includes reading and discussion in French of selections from literary works of French writers. Equivalent to the satisfactory completion of four years of high school French. (A-F or P/NP) Lecture. Transfer: CSU, UC General Education: (MUC-GE: C) (CSU-GE: C2) (IGETC: 3B,6A).

FREN 104—FRENCH 4 5 Units
Prerequisite: Satisfactory completion of FREN 103.
Review and expansion of grammatical structures covered in FREN 103. Includes reading and discussion in French of literary works of French and Francophone writers. Field trips may be required. (A-F or P/NP) Lecture/Laboratory Transfer: CSU, UC General Education: (MUC-GE: C) (CSU-GE: C2) (IGETC: 3B,6A)

FSCI (Fire Science)
The Fire Science curriculum prepares the student for a career in fire service. Students will learn about the organization and operations of fire service, proper use of fire equipment, tactics and strategies of fire fighting, specialized job skills, and management techniques. Fire Science courses dropped or inactivated Fall 1987 to Fall 1988 are valid for students completing those courses prior to deletion from the catalog. For more information, contact the Regional Fire Training Center at 549*7028.

FSCI 301—FIRE PROTECTION ORGANIZATION 3 Units
Formerly listed as FSCI 321.
Introduction to the fire service and fire protection, career opportunities in fire protection and related fields; history of fire protection; fire loss analysis; public, quasi-public and private fire protection services; specific fire protection functions. May be repeated an unlimited number of times. Field trips may be required. Lecture. (A-F Only) Transfer: (CC FIRE 1)

FSCI 302—FIRE PREVENTION TECHNOLOGY 3 Units
A basic overview of the role of fire prevention in modern fire service. Identifies the relationship of fire prevention, fire safety education, fire detection and suppression systems. Field trips may be required. Lecture. (A-F Only) Transfer: (CC FIRE 2)

FSCI 303—FIRE PROTECTION EQUIPMENT AND SYSTEMS 3 Units
Prerequisite: Satisfactory completion of FSCI 301
Formerly listed as FSCI 329.
Portable fire extinguishing equipment, sprinkler systems; protection systems for special hazards; fire alarm and detection systems. Field trips required. Lecture. Not offered every semester. (A-F Only) Transfer: (CC FIRE 3)

FSCI 304—BUILDING CONSTRUCTION FOR FIRE PROTECTION 3 Units
Prerequisite: Satisfactory completion of FSCI 301
Formerly listed as FSCI 326.
Fundamentals of building construction as it relates to fire protection. Classification by occupancy and types of construction with emphasis on fire protection features including: building equipment, facilities, fire resistant materials and high rise considerations. Field trips may be required. Lecture. (A-F Only) Transfer: (CC FIRE 4)

FSCI 305—FIRE BEHAVIOR AND COMBUSTION 3 Units
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. Lecture. (A-F Only) Transfer: (CC FIRE 5)

FSCI 309—FIRE MANAGEMENT 2E 2 Units
Prerequisite: Satisfactory completion of FSCI 356
Provides chief officers or chief officer candidates with knowledge of contemporary management issues and concepts. Key topics include governmental relations, changing settings/policy formation, program management, personnel, labor relations, and legal environment. May be repeated an unlimited number of times. Materials fee required. (A-F Only)

FSCI 311—RESCUE SYSTEMS 1 2 Units
Team organization, rescue, and environmental considerations, use of ropes, knots rigging and pulley systems, descending, rappelling, and belaying tools and techniques, subsurface rescue techniques, use of cribbing, wedges, cutting/prying/hydraulic tools, use of fire service ladders in specialized rescue situations, and day and night simulated rescue exercises. Unlimited completions. Field trips may be required. (A-F Only) Materials Fee required.

FSCI 322—FIRE SCIENCE CAREER DEVELOPMENT/PROMOTIONS 3 Units
Fire Service career development, promotion skills and techniques including mental attitude, resume, written tests, oral interviews, strategies, value and confidence building. Field trips may be required. Lecture. (A-F Only)

FSCI 323—FIRE HYDRAULICS 3 Units
Recommended for Success: Before enrolling this course, students are strongly advised to satisfactorily complete FSCI 301.
Review of applied mathematics, hydraulics laws as applied to the fire service; application of formulas and mental calculation to hydraulics and water supply problems. Lecture. (A-F Only)

FSCI 327—FIRE APPARATUS AND EQUIPMENT 3 Units
Recommended for Success: Satisfactory completion of FSCI 301
Fire apparatus design, specifications and performance capabilities; effective utilization of apparatus in fire service emergencies. Field trips may be required. May be repeated an unlimited number of times. (A-F Only)

FSCI 328—INVESTIGATION OF FIRES 4 Units
Prerequisite: Satisfactory completion of FSCI 301
Determining cause of fires (accidental, suspicious and incendiary); types of fires; related laws, introduction to arson and incendiaries; recognizing and preserving evidence; interviewing witnesses and suspects; arrest and detention procedures; court procedures and giving court testimony. Field trips may be required. Not offered every semester. Lecture. Materials fee required. (A-F Only)

FSCI 332—FIRE FIGHTING TACTICS AND STRATEGY 3 Units
Prerequisite: Satisfactory completion of FSCI 301
Principles of fire control through the utilization of manpower, equipment, and extinguishing agents on the fireground. Field trips may be required. Not offered every semester. Lecture. (A-F Only)

FSCI 336—RESCUE PRACTICES 3 Units
Recommended for Success: Satisfactory completion of FSCI 301
Rescue problems and techniques; emergency rescue equipment, toxic gases; chemicals and diseases; radiation hazards; care of victims, including respiration and resuscitation, extrication, and other emergency conditions. Unlimited completions. Field trips may be required. Not offered every semester. Lecture. (A-F Only)

FSCI 337—WILDLAND FIRE CONTROL 3 Units
Prerequisite: Satisfactory completion of FSCI 301
Introduction to factors affecting wildland fire prevention, fire behavior, and control techniques. May be repeated an unlimited number of times. Field trips may be required. Lecture. (A-F Only) Transfer: (CC FIRE 7)

FSCI 346—INSTRUCTIONAL METHODS FOR FIRE TRAINING OFFICERS 2 Units
Prerequisite: Satisfactory completion of FSCI 301
Provides a variety of methods and techniques to assist a fire training officer in selecting, developing, and organizing materials for in-service training programs. Not offered every semester. Lecture. (A-F Only)
FSCI 347—FIRE PREVENTION 1C  
Prerequisites: Satisfactory completion of FSCI 354 and 355.  
2 Units
Designed to provide fire service personnel with the third phase of State Certified Fire Prevention instruction. Includes instruction on flammable and combustible liquid hazards, storage, and extinguishment. Field trips may be required. Lecture. Materials fee will be required to pay for student's certificate and manual. Not offered every semester. (A-F Only)

FSCI 350—FIRE COMMAND 1A  
Prerequisite: Satisfactory completion of FSCI 301 or equivalent.  
2 Units
Designed to provide the prospective or active fire company officer with information and experience in command techniques. Emphasizes decision making, act of commanding, authority to command, organization structure. Planning and training for effective performance of a fire company officer at the scene of an emergency. Lecture/Laboratory. Materials fee required for State Fire Marshal Certificate and student manual. Not offered every semester. (A-F Only)

FSCI 351—FIRE COMMAND 1B  
Prerequisites: Satisfactory completion of FSCI 301 and 350.  
2 Units
Prepares fire officers for command of various emergency incidents. Emphasizes development of management and decision-making practices required for success. Topics include use of the incident command system to manage major disasters, wildland fires, multi-fatality and hazardous materials incidents. Field trips may be required. Lecture/Laboratory. Materials fee required for State Fire Marshal Certificate and student manual. Not offered every semester. (A-F Only)

FSCI 352—TRAINING INSTRUCTOR 1A  
Prerequisite: Satisfactory completion of FSCI 301  
2 Units
Designed to provide the prospective or active fire company officer with a variety of methods and techniques for training fire service personnel in accordance with latest concepts in educational development. Emphasizes teaching technical lessons, evaluating teaching and learning efficiency and the application of principles of learning through practice teaching demonstrations. Unlimited completions. Lecture/Laboratory. Materials fee required. Applicable to the associate degree (A-F Only)

FSCI 353—TRAINING INSTRUCTOR 1B  
Prerequisites: Satisfactory completion of FSCI 352  
2 Units
Designed to provide the prospective or active fire company officer with knowledge of the selection, development, organization and utilization of instructional materials for teaching technical lessons. Structured to provide fire service personnel with the professional preparation leading to standard-designated subjects instructor qualification. Lecture/Laboratory. Materials fee required for State Fire Marshal Certificate and student manual. Not offered every semester. (A-F Only)

FSCI 354—FIRE PREVENTION 1A  
Prerequisite: Satisfactory completion of FSCI 301  
2 Units
Designed to provide prospective or active Fire Company Officer and Fire Prevention personnel with basic fire prevention information. Structured to prepare the student for responding to a variety of fire prevention situations in a professional and effective manner. Field trips may be required. Lecture/Laboratory. Materials fee required for State Fire Marshal Certificate and student manual. Not offered every semester. (A-F Only)

FSCI 355—FIRE PREVENTION 1B  
Prerequisites: Satisfactory completion of FSCI 301 and 354.  
2 Units
Designed to provide fire service personnel with the second phase of state certified fire prevention instruction. Includes instruction on private water systems, fixed fire extinguishing, detection and alarm systems. Field trips required. Lecture/Laboratory. Materials fee required for State Fire Marshal Certificate and student manual. Not offered every semester. (A-F Only)

FSCI 356—FIRE MANAGEMENT 1  
Prerequisite: Satisfactory completion of FSCI 301  
2 Units
Designed to provide the fire service student with instruction in the elements of organizational process, demonstration of growth and development in the use of managerial skills, applications of the course content to fire service work and personal life, location and use of managerial resources, and development of an action plan. Field trips may be required. Lecture/Laboratory. Materials fee will be required to pay for State Fire Marshal Certificate and student manual. Not offered every semester. (A-F Only)

FSCI 357—FIRE INVESTIGATION 1A  
Prerequisite: Satisfactory completion of FSCI 301  
2 Units
Examines the national arson problem, fire investigation responsibilities, conduct of the investigator, fire chemistry, heat energy sources and explosive conditions; fire investigation techniques and legal aspects of fire investigation. Field trips required. Lecture/Laboratory. Materials fee will be required to pay for State Fire Marshal Certificate and student manual. Not offered every semester. (A-F Only)

FSCI 362—BASIC FIRE ACADEMY  
Prerequisites: Satisfactory completion of FSCI 301  
17 Units
Enrollment limited to students who have passed a physical agility test and have a valid CPR card. Students must possess both a valid CPR card and an EMT or forty-hour First Responder card. Introduction to fundamental knowledge and skills of a fire fighter as set by the State Fire Marshal. Successful completion of the course fulfills educational requirements for Fire Fighter 1, and meets most Fire Department entry-level testing prerequisites. Lecture/Laboratory. Materials fee required. Field trips may be required. Lecture/Laboratory. (A-F Only)

FSCI 364—FIRE APPARATUS DRIVER/OPERATOR 1A  
Advisories: Before enrolling in this course, students are strongly advised to satisfactorily complete FSCI 362.  
2 Units
Enrollment limited to students who possess a valid California Driver's License, class B, firefighter-restricted minimum.  

FSCI 365—EMERGENCY AID FIRST RESPONDER  
1 Unit
Designed to train fire and police personnel who are First Responders how to render emergency care until paramedics arrive at the scene. Lecture/Laboratory. Students must also submit a letter of health to the Fire Training Center. Not offered every semester. (A-F Only) Transfer: (CC EMS 157)

FSCI 367—FIRE INVESTIGATION 1B  
Prerequisite: Satisfactory completion of FSCI 257  
2 Units
Provides deeper understanding of fire investigation and builds on Fire Investigation 1A. Topics include: the juvenile fire-setter, report writing, evidence preservation and collection, interview techniques, motives, and fire fatalities. Field trips may be required. Materials fee required. (A-F Only) One completion allowed.

FSCI 371—FIRE COMMAND 2A  
Prerequisite: Satisfactory completion of FSCI 350  
2 Units
Formerly listed as FSCI 371A.  
Prepares fire officers to use management techniques and incident command system when commanding multiple alarms or large combat forces. Field trips may be required. Lecture/Laboratory. Materials fee required for State Fire Marshal Certificate and student manual. Not offered every semester. (A-F Only)

FSCI 372B—FIRE MANAGEMENT 2B  
Prerequisite: Satisfactory completion of FSCI 356  
2 Units
Covers the purpose of budgeting, budget controls, types of budgets and budget systems and justifying budgets. Field trips may be required. Lecture. Materials fee required for State Fire Marshal Certificate and student manual. Not offered every semester. (A-F Only)

FSCI 373—FIRE INSTRUCTOR 2A  
Prerequisites: Satisfactory completion of FSCI 352 and 353.  
Formerly listed as FSCI 373A.  
2 Units
Provides fire service instructor with the techniques of evaluation. Construction of written and performance tests, as well as test planning, analysis, security and evaluation of results. Lecture/Laboratory. Materials fee required for State Fire Marshal Certificate and student manual. Not offered every semester. (A-F Only)
FSCI 374—FIRE INSTRUCTOR 2B 2 Units
Prerequisites: Satisfactory completion of FSCI 352 and 353.
Formerly listed as FSCI 373B.
Designed to develop leadership skills. Group dynamics, problem solving techniques and interpersonal relations development to utilize in staff meetings and brainstorming sessions. Skills for public meetings such as panel discussions and forums. Interactive team teaching is also included. Lecture/Laboratory. Materials fee required for State Fire Marshal Certificate and student manual. Not offered every semester. (A-F Only)

FSCI 375—FIRE INSTRUCTOR 2C 2 Units
Prerequisites: Satisfactory completion of FSCI 352 and 353.
Principles of media in the instructional process; selection of audio-visual and instructional media; employment of basic and advanced forms of instructional media; use of computers in the instructional process; individualized instruction programs. Field trips may be required. Lecture/Laboratory. Materials fee required for State Fire Marshal Certificate and student manual. Not offered every semester. (A-F Only)

FSCI 381—ETHICS OF LEADERSHIP COURSE 1 3 Units
Prerequisite: Satisfactory completion of FSCI 362.
Enrollment limited to Public Safety Personnel.
First of a four-course series of the California Public Safety Leadership and Ethics Program. Course will build comprehension of the roles and responsibilities through concepts, examples, and practice. Explores current issues in human resource management encompassing workforce diversity as well as an overview of political and legal issues, to include civil rights laws. (A-F Only) Applicable to the Associate Degree. Materials fee required.

FSCI 382—ETHICS OF LEADERSHIP COURSE 2 3 Units
Prerequisite: Satisfactory completion of FSCI 362.
Enrollment limited to Public Safety Personnel.
Second of a four course series of the California Public Safety Leadership and Ethics Program. Course is designed to provide the participant with the knowledge, skills, and abilities to effectively lead others and explore issues with diversity more in-depth as well as additional ethics explorations and issues. (A-F Only) Applicable to the Associate Degree.

FSCI 398A-D,X,Z—FIRE SCIENCE SPECIAL TOPICS ½-3 Units
Prerequisite: Satisfactory completion of FSCI 301 or equivalent.
These special topics consist of short courses on specific fire agency training needs. Emphasis is on updating recently available skills, information or technology that has a direct impact on specific agency or fire problems. Course content varies with the agency training needs studied. Four maximum completions. Lecture/Laboratory depending on topic. Not offered every semester. Materials fee required. (A-F Only)

FSCI NON-CREDIT COURSES

FSCI 860—ADVANCED MEDICAL FIRST RESPONDER COURSE
Prerequisite: Satisfactory completion of FSCI 365
Designed to meet Emergency Medical Service requirements for recertification of police and fire personnel designated as first responders to the scenes of medical emergencies. Eight maximum completions. Lecture/Laboratory.

GENED
(General Education Preparation)

GENED 956—GED PREPARATION
General review of all basic high school subjects in preparation for the General Education Development tests (G.E.D) and to provide students with knowledge required for entry and success in college programs. May be completed up to four times. (Non-graded) Lecture.

GEOG (Geography)

GEOG 101—PHYSICAL GEOGRAPHY 3 Units
Recommended for Success: Satisfactory completion of ENGL 101
Physical elements of geography: emphasis on earth-sun relationships, weather, climate, and vegetation patterns; degradation processes, landforms created through glaciation, water, wind and tidal activity, and human impact upon the environment. Field trips may be required. (A-F or P/NP) Approved for on-line and hybrid instruction. Transfer: CSU, UC (TCSU GEOG 110) (CC GEOGR 13) General Education (MJC-GE: A) (CSU-GE: B1) (IGETC: 5A)

GEOG 102—CULTURAL GEOGRAPHY 3 Units
Recommended for Success: Satisfactory completion of ENGL 101
Introduction to origins and global distribution of cultures. Examines cultural adaptations to the earth, human modifications of the landscape, and patterns of human organization as exemplified in population, agriculture, language, religious, political organization, popular culture, and economic development. Issues addressed include famine, political conflict, multiculturalism, suburban sprawl, industrial relocation and third world development. Approved for online, hybrid and telecourse instruction. Transfer: CSU, UC (TCSU GEOG 120) (CC GEOGR 12) General Education (MJC-GE: B) (CSU-GE: DS) (IGETC: 4)

GEOG 104—CALIFORNIA GEOGRAPHY 3 Units
Recommended for Success: Satisfactory completion of ENGL 101, GEOG 101 or 102.
Introduction to California’s unique geography; examining political, economic, cultural, physical, and historical processes and characteristics. Field trips may be required. Lecture. Not offered every semester. Transfer: CSU, UC General Education: (MJC-GE: B)

GEOG 105—ECONOMIC GEOGRAPHY 3 Units

GEOG 109—INTRODUCTION TO GEOGRAPHIC INFORMATION SYSTEMS
Also offered as ENSCI 109.
Introduction to Geographical Information Systems (GIS). GIS centers upon mapping as a tool for identifying and assessing spatial relationships of human activity. Applications to business, economics, weather, geography, agriculture, etc. Students will create, apply and evaluated databases which generate maps. Field trips required. Lecture/Laboratory. (A-F Only) Transfer: CSU, UC (CC GEOGR 60)

GEOG 110—WORLD REGIONAL GEOGRAPHY 3 Units
Survey the world's major geographical regions and their physical, economic, political, and cultural characteristics. Emphasis is placed upon historical influences which explain current problems and conditions. Lecture. Transfer: CSU, UC (CC GEOGR 18) General Education: (MJC-GE: B) (CSU-GE: D5) (IGETC: 4)

GEOL (Geology)

GEOL 160—INTRODUCTION TO GEOLOGY 3 Units
Study of the composition of the earth, and the physical and chemical processes which shape it. Topics include plate tectonics, volcanism, earthquakes, rocks and minerals, weathering, and erosion. Credit will be granted for either GEOL 160 or 161. Field trips may be required. Lecture. Material fees may be required. Not offered every semester. Transfer: CSU, UC General Education (MJC-GE: A) (CSU-GE: B1) (IGETC: 5A)
GERM
(German)

GERM 51—INTRODUCTION TO PRACTICAL GERMAN 1  3 Units
Introduction to the essentials of spoken and written German with emphasis on daily life situations, travel and occupation.

GERM 52—INTRODUCTION TO PRACTICAL GERMAN 2  3 Units
Prerequisite: Satisfactory completion of GERM 51.
Continuation of GERM 51. Review and expansion of essentials of spoken and written German.

GERM 101—GERMAN 1  5 Units
Essentials of written and spoken German, simple composition, conversation and reading. Field trips may be required. Lecture/Laboratory. Transfer: CSU, UC (CC GUIDE 101) (IGETC: 6A)

GERM 102—GERMAN 2  5 Units
Prerequisite: Satisfactory completion of GERM 101.
Continuation of GERM 101. Review and expansion of tenses, vocabulary, and commonly used expressions. Equivalent to the satisfactory completion of three years of high school German. Field trips may be required. Lecture/Laboratory. Transfer: CSU, UC General Education (MUC-GE: C) (CSU-GE: B1) (IGETC: 6A)

GEOL

GEOL 161—PHYSICAL GEOLOGY  4 Units
Formerly listed as GEOL 160.
Study of the physical and chemical processes that shape the earth, including plate tectonics, volcanoes, weathering, and erosion; the composition of the earth; and geologic hazards, such as mass wasting, flooding and earthquakes. Laboratory topics include rock and mineral identification, and the use of maps and aerial photographs to understand erosional and tectonic processes. Field trips may be required. Lecture/Laboratory. Transfer: CSU, UC (CC ESC 5) General Education (MUC-GE: A) (CSU-GE: B1,B3) (IGETC: 5A)

GEOL 165—GEOLOGY OF CALIFORNIA  3 Units
The geologic setting and evolution of California’s geographic provinces. Emphasis is on processes that have and are still acting to shape the landscape, volcanism, earthquakes, and erosion. Field trips may be required. Lecture. Transfer: CSU, UC General Education (MUC-GE: A) (CSU-GE: B1) (IGETC: 5A)

GEOL 166—HISTORICAL GEOLOGY  4 Units
Formerly listed as GEOL 163.
Introduction to the origin, development and evolution of the earth and its inhabitants. Topics include the study of fossils and rocks, continents and ocean basins, geologic time, plate tectonics, climate change and mass extinctions. Laboratory utilizes rocks, fossils and stratigraphic principles to decipher ancient environments. Field trips may be required. Lecture/Laboratory. Transfer: CSU, UC General Education (MUC-GE: A) (CSU-GE: B1) (IGETC: 5A)

GEOL 171X,A,B—GEOLOGY FIELD STUDIES  ½, 1, 2 Units
Recommended for Success: Before enrolling in this course, students are strongly advised to satisfactorily complete or to concurrently enroll in a geology or earth science course.
Introduction to basic geological concepts through field trips to areas of geologic significance. Emphasis will be on the materials and structures that compose a landscape, and the history and evolution of the areas visited. Field trips required. Four maximum completions. Lecture/Laboratory. (A-F or P/NP) Transfer: CSU, UC (CC ESC 33)

GEOL 174—GEOLOGY SUMMER FIELD STUDIES  3 Units
Recommended for Success: Satisfactory completion of previous course in geology or earth science.
Application of principles of geology through extended field studies at selected sites in the western United States and other geologically significant locations. Skills developed in rock, mineral, and fossil identification, and use of geological field equipment. Requires ability to work and study under rigorous conditions. Lecture/Laboratory. Field trips may be required. One completion allowed. Materials fees required. Transfer: CSU

GUIDE
(Guidance)

GUIDE 109—ORIENTATION FOR FOREIGN STUDENTS  1 Unit
Education and career planning for students whose previous education has been outside the United States. Acquaints students with the college, its curriculum, facilities, services, academic regulations, vocational and certificate programs, degree and transfer requirements. Reviews extra curricular activities, personal adjustment, American customs, culture shock, survival techniques and immigration regulations. A detailed educational plan is developed. Students must complete a conference with a counselor during the semester. Lecture. (P/NP Only) Transfer: CSU (CC GUIDE 107)

GUIDE 110—EDUCATIONAL PLANNING  ½ Unit
Acquaints students with the college, its curriculum, facilities, services, academic regulations, vocational and certificate programs, degree and transfer requirements. An educational plan is developed according to each student’s needs and goals. Lecture. (P/NP Only) (MJC Guidance) Transfer: CSU (CC GUIDE 100)

GUIDE 111—CAREER AWARENESS  1 Unit
Assists students in exploring career alternatives through development of skills necessary for the research, selection and planning of a lifelong career. The role of aptitudes, interests, values, and skills will be addressed. Interests, aptitude and values tests may be used. Important aspects of occupational choice will be covered along with occupational information. An educational plan will be developed. Students must complete a conference with a counselor during the semester. Lecture. Materials fee required. (P/NP Only) (MJC Guidance) Transfer: CSU (CC GUIDE 101)

GUIDE 112—JOB DEVELOPMENT SKILLS  ½ Unit
Realities of the job market and techniques for conducting a successful job search. Emphasis on learning job application procedures, resume writing, and interview techniques. Students must complete a conference with a counselor during the semester. Two maximum completions. Lecture. (P/NP Only) (MJC Guidance) Transfer: CSU (CC GUIDE/BUSAD 25)
GUIDE 116—ORIENTATION FOR RE-ENTRY ADULTS 2 Units
For the adult student who is re-entering the educational system. The conflicts and opportunities of modern society are examined as they affect the student. Personal, educational and career goals are reviewed in the context of aptitudes, interests and values. Decision making is examined as it relates to achieving personal goals. Review of the role and function of higher education, community college education and the MJC curriculum. Conducted in an informal group setting. Includes guest speakers and audio visual presentations. Students must complete a conference with a counselor and develop an educational plan during the semester. Lecture. (P/NP Only) (MJC Guidance) Transfer: CSU, UC

GUIDE 120—SUCCESS STRATEGIES FOR TRANSFER STUDENTS 3 Units
Formerly listed as STSK-120.
Increases success in college by assisting students in obtaining skills and techniques necessary to reach their educational objectives. Explores personality, interests and values to increase self-understanding and select an appropriate major and career. Topics include: educational planning and transfer strategies, motivation, paper research strategies, note-taking, subject specific study techniques, time management and textbook study methods. Lecture. (A-F Only). (MJC Guidance) Transfer: CSU, UC

HE (Health Education)
The expanding field of health education through public or community agencies and the schools will require trained professionals for positions of leadership and supervision. The professionals will be dealing with such complex issues as physical and mental well-being, substance abuse, exercise, environmental and consumer health, disease control, human sexuality, family relations, death and dying, first aid and emergency care. Since careers in the Health Education field usually require a minimum of a four-year degree, health education majors at MJC are given an introduction to health through basic health and safety courses and are advised to follow general education and transfer requirements for four-year colleges and universities.

HE 100—STANDARD FIRST AID/CPR 1 Unit
A basic course for an Emergency Services professional or the citizen who wishes to maintain or acquire Cardiopulmonary Resuscitation (CPR) and Basic First Aid Certification. Successful course completion results in American Red Cross certification in CPR and Standard First Aid. Four complections allowed for certification renewal. Materials fee required. Lecture. Transfer: CSU, UC (CC H-HP 62)

HE 101—EMERGENCY RESPONSE/CPR FPR 3 Units
Course designed to provide the first Responder with advanced first aid capabilities necessary in an emergency to help sustain life, reduce pain, minimize the consequences of injury or sudden illness and to provide emergency care and transportation of the sick and injured. American Red Cross certification issued upon satisfactory completion. May be repeated three times for certification renewal. Lecture. Materials fee required. (A-F or P/NP) Four completions allowed. Transfer: CSU, UC (CC EMS 13)

HE 110—HEALTHFUL LIVING 3 Units
Consideration of factors in selection of a plan for healthful living. Emphasis on self-assessment through gathering and analyzing information to take charge of life while setting new goals. Focus on emotional, physical, and social wellness in achieving human potential. Lecture. Transfer: CSU, UC (CC H-HP 60) General Education (MJC-GE: E) (CSU-GE: E)

HE 111—WOMEN’S HEALTH ISSUES 3 Units

HE 118—EXERCISE AND NUTRITION FOR HEALTHY LIVING 3 Units

HE 198A,B,C—SPECIAL TOPICS AND PROBLEMS 1-3 Units
Participation in discussion, analysis, and evaluation of a special topic or problem in health education. Topics announced each semester in schedule of classes. Field trips may be required. Four maximum completions. Lecture. Transfer: CSU

HIST (History)

HIST 101—HISTORY OF THE UNITED STATES THROUGH RECONSTRUCTION 3 Units
Recommended for Success: Satisfactory completion of ENGL 101
U.S. history from pre-colonial indigenous America to the late 19th century. Causes, variations, and impacts of colonialism on Indigenous African and European Americans. The movement toward national independence and the Revolutionary War will be examined. The constitution and resulting institutions will be analyzed. National expansion, reform and resulting regional sectional social and political developments through the U.S. Civil War. Regional social, economic, and political analyses will emphasize the California State Constitution and local government. This course uses the early evolution of the relationships between local, State and Federal governments as a comparative framework for understanding contemporary relationships between local, State and Federal governments. Lecture. Transfer: CSU, UC (CC HIST 16) (TCSU HIST 130) General Education: (MJC-GE B) (CSU-GE: D6) (IGETC: 4)

HIST 102—HISTORY OF THE UNITED STATES POST CIVIL WAR 3 Units
Recommended for Success: Satisfactory completion of ENGL 101
U.S. history from the late 19th century until contemporary times. Local, state and national historic development will be traced with emphasis placed on American institutions and their role in the development of American culture. Special attention to U.S. urban and industrial processes, the country’ international role and resulting institutional developments. The role of class and ethnicity will be integrated with comparisons tracing Europeans, Indigenous, and African American experiences. Analysis of the role of technology in the formation of America. The evolution of contemporary local, State and Federal governments as they relate to politics, economics and social movements is addressed. The gradual movement toward full inclusion of all peoples of America under State and Federal Constitutional law is emphasized. Lecture. Transfer: CSU, UC (CC HIST 17) (TCSU HIST 140) General Education: (MJC-GE B) (CSU-GE: D6) (IGETC: 4)

HIST 104—WESTERN CIVILIZATIONS 3 Units
Recommended for success: Satisfactory completion of ENGL 50.
Survey of the social, economic, political, religious, intellectual, and cultural development of Western Civilization from the Neolithic to the Reformation. The course will emphasize a comparative approach to the study of ancient Mesopotamia, Egypt, and classical Greece, as well as between Rome and Byzantium. The last part of the course will stress the rise of Western Europe during the Middle Ages up to 1600, with special attention on its economic and political transformations. The development and expansion of the major monotheistic religions ( Judaism, Christianity, and Islam) will be central to this course. Lecture. Transfer: CSU, UC General Education: (MJC-GE C) (CSU-GE: D6) (IGETC: 4)

HIST 105—WESTERN CIVILIZATION 3 Units
Survey of the political, economic, social and cultural changes in the history of Western civilization from 17th century Absolutism to the present. Lecture. Transfer: CSU, UC General Education: (MJC-GE C) (CSU-GE: D6) (IGETC: 4)
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<td>century to the modern time. Historical methodological and interpretations will</td>
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<td>addressed through analysis of political, economic, technological, social and</td>
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<td>be addressed through analysis of political, economic, technological, social</td>
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<td>cultural commonalities and differences between civilizations. World</td>
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<td>and cultural commonalities and differences between civilizations. World</td>
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<td>civilization examines issues relevant to understanding race, culture,</td>
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<td>civilization examines issues relevant to understanding race, culture,</td>
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<td>ethnicity, class, gender, religion, disability and sexualities in human history.</td>
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<td>ethnicity, class, gender, religion, disability and sexualities in human history.</td>
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<td>Field trips may be required. Lecture: Transfer: CSU, UC (CC HIST 14)</td>
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<td>General Education: (MUC-GE: B) (CSU-GE: D6) (IGETC: 3B, 4)</td>
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<td>General Education: (MUC-GE: B) (CSU-GE: D6) (IGETC: 3B, 4)</td>
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<tr>
<td>HIST 112</td>
<td>TWENTIETH CENTURY AMERICA</td>
<td>3</td>
<td>Explores the political, economic, social and cultural developments of twentieth</td>
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<td></td>
<td>century United States history. Lecture: Transfer: CSU, UC (CC HIST 14)</td>
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<td>century United States history. Lecture: Transfer: CSU, UC (CC HIST 14)</td>
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<td>HIST 113</td>
<td>SOCIAL AND CULTURAL HISTORY OF THE UNITED STATES PRIOR TO THE 20th CENTURY</td>
<td>3</td>
<td>Examines the development of American society and culture prior to the 20th</td>
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<td>Recommended for Success: Satisfactory completion of ENGL 101</td>
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<td>century. Specifically analyzes the formation and evolution of American social</td>
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<td>A comparative and interactive investigation and analysis of World Civilization</td>
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<td>institutions in response to indigenous American and immigrating European and</td>
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<td>relates to the development and regulation of business, labor and agriculture,</td>
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<td>African cultures. Compares economic, political, technological and social</td>
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<td>the government’s role in the national economic process.</td>
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<td>interpretations of cultural transformation in America. Emphasis on the</td>
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<td>Lecture: Transfer: CSU, UC General Education: (MUC-GE: B) (CSU-GE: D6)</td>
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<td>evolution of State and Federal constitutional government and the principle of</td>
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<td>(IGETC: 4)</td>
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<td>inclusion. Contemporary and historic local, State and Federal government</td>
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<td>HIST 115</td>
<td>ECONOMIC HISTORY OF THE UNITED STATES</td>
<td>3</td>
<td>developments are analyzed in relation to political and social movements as</td>
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<td>Recommended for Success: Satisfactory completion of ENGL 101</td>
<td></td>
<td>a foundation for contemporary social activism. Lecture: Transfer: CSU, UC</td>
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<td></td>
<td>Also offered as ECON 115. Analysis of origins and development of business,</td>
<td></td>
<td>General Education: (MUC-GE: B) (CSU-GE: D6) (IGETC: 4)</td>
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<td>labor and agriculture from the colonial period to the present. Emphasis on</td>
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<td>HIST 119</td>
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<td>the federal government’s part in the development and regulation of business,</td>
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<td>A political, economic, technological and social history of African-American</td>
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<td></td>
<td>labor and agriculture, the government’s role in the national economic process.</td>
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<td>culture from early African forms through late 19th century America. Specific</td>
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<td>Lecture: Transfer: CSU, UC General Education: (MUC-GE: B) (CSU-GE: D2, D6)</td>
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<td>analysis of complex relationships between European, indigenous American and</td>
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<td>(IGETC: 4)</td>
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<td>African-American ethnic groups. This means frank inquiry into race, gender,</td>
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<td>HIST 116</td>
<td>WOMEN IN AMERICAN HISTORY</td>
<td>3</td>
<td>and class disparities. Special emphasis on contributions to American society</td>
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<td>Review and evaluation of the role of women in the United States and their</td>
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<td>and culture by Black peoples. Comparisons of ethnic inclusion struggles and</td>
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<td>contributions from the pre-colonial period to the present viewed within the</td>
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<td>marginalization. Emphasis on the evolution of State and Federal Constitutional</td>
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<td>content of United States and global experiences. The diversity of experience,</td>
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<td>government and and the principle of ethnic parity, disparity, and inclusion.</td>
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<td>according to socioeconomic class, ethnicity, religion, region, and sexual</td>
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<td>Contemporary and historic local, State, and Federal government developments</td>
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<td>orientation, will be emphasized, including Native American Indian, African</td>
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<td>are analyzed in relation to political and social movements as a foundation for</td>
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<td>American, Latina, and Asian American women in the United States history.</td>
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<td>contemporary activism for human rights, and economic justice. Field trips may</td>
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**General Education:**

- **MJC-GE:B**
- **CSU-GE: D3, D6, D8**
- **IGETC: 3B, 4**
HIST 155—AFRICAN AMERICANS IN THE 20TH AND 21ST CENTURIES
3 Units
Recommended for Success: ENGL 101
A political, economic, technological, and social history of African Americans from the end of the 19th century through the early 21st century. Specific analysis of complex relationships between European Americans, Latino/Chicano Americans, and African American ethnic groups. This means frank inquiry into race, gender, and class disparities. Ongoing struggles for ethnic self determination and inclusion are contrasted against institutional resistance and social marginalization. Emphasis on the evolution of State and Federal Constitutional government and the struggle for ethnic parity, disparity, and inclusion. Contemporary and historic local, State, and Federal government developments are analyzed in relation to political and social movements as a foundation for contemporary activism for human rights, and economic justice. Lecture. Transfer: CSU, UC General Education: (MJC-GE: B) (CSU-GE: D3, D6) (IGETC: 3B)

HUMAN 101—INTRODUCTION TO THE HUMANITIES
3 Units
Recommended for Success: Eligibility for ENGL 101
Introduction to major works of the humanities. Focuses on the diversity of human experience and the relationships among arts and ideas. Field trips may be required. Lecture. (A-F or P/NP) Transfer: CSU, UC (HUMAN 1) General Education: (MJC-GE: C) (CSU-GE: C2) (IGETC: 3B)

HUMAN 105—EARLY HUMANISTIC TRADITIONS
3 Units
Recommended for Success: Eligibility for ENGL 101
Examination of creative and intellectual achievements from cultures of the world beginning with Prehistory and extending to the Renaissance. Lecture. Field trips may be required. (A-F or P/NP) Transfer: CSU, UC (HUMAN 1) General Education: (MJC-GE: C) (CSU-GE: C2) (IGETC: 3B)

HUMAN 106—HUMANITIES IN THE MODERN WORLD
3 Units
Recommended for Success: Eligibility for ENGL 101
Study of creative and intellectual achievements from cultures of the world, beginning with 1600's and extending into the 20th centuries. Lecture. Field trips may be required. Not offered every semester. (A-F or P/NP) Transfer: CSU, UC (HUMAN 2) General Education: (MJC-GE: C) (CSU-GE: C2) (IGETC: 3B)

HUMAN 110—EAST MEETS WEST
3 Units
Recommended for Success: Eligibility for ENGL 101
Differences between Eastern and Western world cultures are explored. Works studied are chosen from the fields of art, music, philosophy, literature and/or architecture. Field trips may be required. Lecture. (A-F or P/NP) Fall Transfer: CSU, UC (HUMAN 2) General Education: (MJC-GE: C) (CSU-GE: C2) (IGETC: 3B)

HUMAN 130—INTRODUCTION TO WESTERN RELIGIONS
3 Units
Origin of and development of the three monotheistic religions of Western civilization, Judaism, Christianity, and Islam: scripture, beliefs, traditions, rituals, and celebrations; scriptures of all three faiths, along with the architecture and art. (A-F Only) Transfer: CSU, UC General Education: (MJC-GE: C) (CSU-GE: C2) (IGETC: 3B)

HUMAN 140—INTRODUCTION TO WORLD MYTHOLOGY
3 Units
Recommended for Success: Eligibility for ENGL 101
An overview of mythology which examines the nature, functions, and meanings of myths throughout the world, their cultural contexts, artistic expressions, and influence on contemporary life. Field trips may be required. Lecture. (A-F or P/NP) Transfer: CSU, UC General Education: (MJC-GE: C) (CSU-GE: C2) (IGETC: 3B)

HUMSR (Human Services)

The Modesto Junior College Human Services programs provide knowledge and skills involved with the delivery of a wide variety of social services through various community social work and counseling agencies.

The two-year programs are designed to prepare students for entry-level employment in human service organizations as well as to upgrade current employees. They also provide a basis for future academic training leading to degrees in Social Work, Sociology, and Psychology.

HUMSR 40—INDEPENDENT LIVING SKILLS AND ACTIVITIES
1½ Units
Non-degree course.
Provides foster youth ages 16-18 with the knowledge, information, survival skills and activities for daily living and foundation to transition from foster care to living independently in the community. Field trips may be required. (P/NP Only)

HUMSR 101—INTRODUCTION TO HUMAN SERVICES
3 Units
Development of human services in American society by private and governmental agencies at national, state, and local levels. Emphasis on contemporary programs and practices, needs served, and projected changes. Preparation for "new careers" in paraprofessional programs in the health, education and social services, such as eligibility workers, counselor aides, vocational rehabilitation aides, social service technicians, and pre-professional positions. Field trips may be required. Lecture. Transfer: CSU General Education: (MJC-GE: B)

HUMSR 103—INTRODUCTION TO HUMAN SERVICE CAREERS
½ Unit
Introduction to careers in the human services profession, personal qualities, clinical skills, and academic requirements necessary for entry-level human service positions. (A-F or P/NP) Lecture. Transfer: CSU

HUMSR 104—AGING IN AMERICA
3 Unit
Also offered as GERON 101.
Analysis of the aging process from a multidisciplinary approach, including sociology, psychology, and physiology. Students will have an opportunity to explore their beliefs, feelings, and values regarding the aged population. Field trips may be required. P/NP Only option. Lecture. Transfer: CSU

HUMSR 110—INTRODUCTION TO INTERVIEWING, COUNSELING
3 Units
Recommended for Success: Satisfactory completion of ENGL 101.
Introduction to the principles and practices of interviewing, counseling, and theoretical frameworks. Designed to assist in the preparation of paraprofessionals in the Human Services and other interrelated fields. Recognition and understanding of social problems, and the impact on human behavior. (A-F or P/NP) Applicable to the Associate Degree. Transfer: CSU

HUMSR 111—COUNSELING IN CHEMICAL DEPENDENCY
3 Units
Recommended for Success: Satisfactory completion of ENGL 101
Concepts of counseling, therapy, personality development, and theoretical frameworks relevant to chemical dependency. Designed to assist the paraprofessional in the chemical dependency profession and other related fields. Clinical skills, assessment tools, techniques, crisis intervention strategies, and resolution will be covered. (A-F or P/NP) Applicable to the Associate Degree. Transfer: CSU

HUMSR 113—CO-OCCURRING DISORDERS
3 Units
Introduction to the treatment needs of individuals who are diagnosed with a psychiatric disorder in combination with a chemical dependency disorder. Students will learn to identify, assess, and offer treatment to those with a dual diagnosis/co-occurring disorder. One completion allowed. Field trips may be required. (A-F only) Lecture. Transfer: CSU
HUMSR 114—DEATH AND DYING
Advisories: Before enrolling in this course, students are strongly advised to satisfactorily complete ENGL 101.
Exploration of feelings, belief systems, values and theoretical comprehension about death, dying, and the bereavement process from a historical, multidisciplinary, and cultural perspective. Topics include coping mechanisms, counseling the dying, suicide, grief and bereavement, terminal illness, and multi-cultural concepts about death. (A-F or P/NP) Lecture. Transfer: CSU (CC SOCIO 28). General Education: (MJC-GE-B)
3 Units

HUMSR 116—DRUGS AND ALCOHOL IN SOCIETY
Recommended for Success: Satisfactory completion of ENGL 101
An introductory course that focuses on drug and alcohol use, abuse, and dependency in society.
Covers causes for addiction, current trends, historical dimensions, prevention, treatment, multicultural considerations, and corresponding myths regarding chemical dependency and psychoactive drugs. (A-F or P/NP). Transfer: CSU
3 Units

HUMSR 117—INTERVENTION AND TREATMENT
STRATEGIES IN CHEMICAL DEPENDENCY
Recommended for Success: Satisfactory completion of ENGL 101
Prerequisite: Satisfactory completion of HUMSR 111 and 116.
Continued development in the application of therapeutic techniques, clinical skills, and strategies relative to the treatment of chemical dependency. Emphasizes the intervention process, assessment tools, crisis counseling, theoretical foundations, recovery dynamics, and family systems. (A-F or P/NP) Transfer: CSU
3 Units

HUMSR 118—PHARMACOLOGY OF ABUSED SUBSTANCES
Also listed as PSYCH 118.
Recommended for Success: HUMSR 116 or PSYCH 101.
An introduction to psychopharmacology and the process of drug addiction. Topics include classification of abused and psychotherapeutic drugs, basic principles of pharmacology, behavioral and psychological effects of drugs, major neurotransmitter systems and how they are influenced by drugs. Lecture. Transfer: CSU
3 Units

HUMSR 119—INTRODUCTION TO GROUP LEADERSHIP
AND GROUP PROCESS
An introduction to the dynamics of group interaction with an emphasis upon the individuals’ subjective experience as the group studies itself (under supervision). The factors involved in problems of communication, effective emotional responses, and personal growth will be highlighted. Emphasis on group process as a means of changing individual behavior. Field trips may be required. (A-F only) One completion allowed. Lecture. Transfer: CSU
3 Units

HUMSR 120—PROFESSIONAL DEVELOPMENT
IN THE HELPING PROFESSIONS
Formerly listed as "Profesional Development in Chemical Dependency"
Recommended for Success: Satisfactory completion of ENGL 101.
Focuses on the application of clinical skills, theoretical foundations, strategies, techniques, ethical standards, and professional development in the Human Services and Chemical Dependency profession. (A-F or P/NP) Applicable to the Associate Degree. Transfer: CSU
3 Units

HUMSR 142—INTRODUCTION TO
PSYCHOSOCIAL REHABILITATION
Introduction to the field of psychosocial rehabilitation and its application in the public mental health system. The class provides an overview of the core practice models, principles, theories, and methods in psychosocial rehabilitation as related to the social sciences, and gives students a broad view of best clinical practices, social and psychological considerations in working with individuals who have psychiatric disorders using sociological concepts, theories, and methodology. Applicable to the associate degree. Field trips may be required. Lecture. (A-F or P/NP) Transfer: CSU (CC SOCIO 28). General Education: (MJC-GE-B)
3 Units

HUMSR 143—PSYCHOSOCIAL REHABILITATION PRACTICE
Continued development in the field of psychosocial rehabilitation, and its application in the public mental health system. Designed to provide opportunities for students to practice and apply models of psychosocial rehabilitation, principles, theories, and methods related to the social sciences with individuals who have psychiatric disorders using sociological concepts and methodology. Course is not repeatable. Field trips may be required. Lecture. (A-F or P/NP) General Education: (MJC-GE-B)
3 Units

HUMSR 144—COMMUNITY AGENCY PRACTICUM
Formerly listed as HUMSR 145.
Recommended for Success: Before enrolling in this course, students are strongly advised to satisfactorily complete ENGL 101.
Analysis of field experiences of students concurrently enrolled in HUMSR 145A, or HUMSR 145B or HUMSR 145D. Class time is devoted to sharing, evaluation, and discussion of student’s supervised field experiences and placement. Continued development of clinical skills, theoretical integration, knowledge base, professional values, and competence in the helping profession. May be completed three times (A-F or P/NP). Lecture. Transfer: CSU
1 Unit

HUMSR 145A, 145B, 145D—COMMUNITY AGENCY PRACTICUM
Formerly listed as "Community Agency Fieldwork"
Prerequisite: Satisfactory completion of HUMSR 110 or 111.
Concurrent Enrollment: HUMSR 145
Supervised field experience in a variety of community social agencies. Three maximum completions in any combination of HUMSR 145 A, B, and D. (A-F or P/NP). Applicable to the Associate Degree. Transfer: CSU
1,2,4 Units

IIS (Individualized Instruction and Services)

IIS 13—IMPROVING LEARNING POTENTIAL
Non-degree course.
Specialized computer-assisted instruction for students with disabilities to maximize their learning potential and increase academic efficiency. Four maximum completions. Lecture/Laboratory. (P/NP Only)
2 Units

IIS 15—ADAPTED KEYBOARDING
Non-degree course.
Designed to teach keyboarding basics to students with disabilities who must use assistive technologies for successful access to the keyboard or monitor and/or are unable to compete successfully in mainstream keyboarding courses. Four maximum completions. Lecture/Laboratory.
2 Units

IIS 16—COMPUTER ACCESS 1
Non-degree course.
Designed for students with visual, physical, acquired brain injury, language impairment, learning disabilities or deafness. Provides training in the use of computer access technologies which enhance a disabled student’s ability to access and use microcomputers. Four maximum completions. Lecture/Laboratory.
2 Units

IIS 18—COMPUTER ACCESS PROJECTS
Non-degree course.
Designed for students with disabilities who require access to specialized assistive technologies in order to complete assignments for other classes in which they are concurrently enrolled. (A-F or P/NP) Four maximum completions. Lecture/Laboratory.
2 Units

IIS 20—MATH STRATEGIES FOR DISABLED STUDENTS
Non-degree course.
Intended for students with disabilities who need additional instruction and compensatory strategies that typically lead to success within the traditional classroom. Specialized instruction will occur in basic skills and in formulating efficient test-taking and study strategies specifically related to math. Four maximum completions. Lecture. (A-F or P/NP).
1 Unit

IIS 21—MAKING THE MOVE: TRANSITION TO COLLEGE
Non-degree course.
Intended for new and re-entry students with disabilities who need additional instruction and compensatory strategies to learn and be successful within the traditional classroom. Specialized instruction will occur in disability awareness and in formulating strategies for success in the college environment. Four maximum completions. Lecture.
1 Unit
INDIS 55—INTRODUCTION TO WOMEN’S STUDIES 3 Units
Interdisciplinary approach to the study of women and gender. Fundamental concepts in women’s studies. Modules in social sciences, arts, humanities and natural sciences. Field trips may be required. Lecture. General Education: (MJC-GE B, C)

INDIS 61—HOLLYWOOD TODAY 2 Units
A non-technical, non-transfer course for the consumer of popular contemporary films, emphasizing the central elements of film in the development of audience response. Lecture, viewing, discussion. Four maximum completions. Lecture. Fee to cover admission.

INDIS 100—INTRODUCTION TO HONORS SCHOLARSHIP 3 Units
Enrollment limited to those who have been admitted to the Honors program. Interpersonal communication theory and its practical application. Forms of philosophical inquiry that are applicable to the humanities, social sciences, arts, and physical sciences as well as their ethical and political applications. Library and information sources, including development of research strategies, and the retrieval, evaluation, and use of information. (A-F only) Transfer: CSU

INDIS 105—INTRODUCTION TO WOMEN’S STUDIES 3 Units
Recommended for Success: Satisfactory completion of ENGL 50. Interdisciplinary approach to the study of women and gender. Introduction to the concepts, philosophies, and terminology of women’s studies. Modules in social sciences, arts, humanities and natural sciences. Field trips may be required. Lecture. Transfer: CSU, UC General Education: (MJC-GE B,C), (CSU GE: D4), (IGETC: 4J)

INDIS 100—CAREERS IN DESIGN 2 Units
Introduction to educational and interior design employment opportunities. Includes portfolio and educational plan development and curriculum requirements that pertain to educational goals as they relate to interior design majors. Emphasizes personal, educational, and professional qualifications required for success in obtaining, maintaining, and advancing in the field of interior design and related professions. Field trips may be required. Lecture. (A-F or P/NP) Transfer: CSU

INDIS 120—COLOR THEORY AND APPLICATION 3 Units
Recommended for Success: Before enrolling in this course, students are strongly advised to satisfactorily complete READ 82 and ENGL 50
Corequisite: Satisfactory completion of or concurrent enrollment in INTDS 200. Basic color theory and its application to the built environment. Development of skills and knowledge applicable to interior architecture, decorative arts, and related fields of design, such as product development. Exploration of the impact of cultural heritage, the effects of environment, and the psychological implications related to the application and use of color. Field trips may be required. Lecture/Laboratory. (A-F or P/NP) Transfer: CSU

INDIS 130—FABRICS FOR INTERIORS 3 Units
Recommended for Success: Before enrolling in this course, students are strongly advised to satisfactorily complete (READ 82 and MATH 20 and ENGL 50)

INDIS 140—RENDERING AND RAPID VISUALIZATION 3 Units
Recommended for Success: Before enrolling in this course, students are strongly advised to satisfactorily complete READ 82 and ENGL 50 and MATH 20
Prerequisite: Satisfactory completion of INTDS 120, 200 and 230
Introduction to the principles and techniques used in interior illustration. Emphasis on drawing in perspective using light, shade, and shadow, and pencil rendering of furniture, interior finishes, and accessories. May be completed up to 2 times. Field trips may be required. Lecture/Laboratory. (A-F or P/NP). (MJC Activities) Transfer: CSU

INDIS 145—FUNDAMENTALS OF LIGHTING DESIGN 3 Units
Recommended for Success: Before enrolling in this course, students are strongly advised to satisfactorily complete READ 82 and ENGL 50 and MATH 50
Prerequisite: Satisfactory completion of INTDS 235
Fundamentals of lighting design, theory, and application, including the history and vocabulary. Basic study of how light affects color and vision. Survey of lighting techniques, codes, and energy efficient practices for interior designers. Field trips may be required. Lecture/Laboratory. (A-F or P/NP). Transfer: CSU

INDIS 150—HISTORY OF INTERIORS/DECORATIVE ARTS 1 3 Units
Recommended for Success: Before enrolling in this course, students are strongly advised to satisfactorily complete MATH 20 and READ 40
Corequisite: Satisfactory completion of or concurrent enrollment in INTDS 200
Survey of historical relationship between interior architecture, culture, and the decorative arts. Overview of the development of style from Antiquity to the Classical Revival Period of the nineteenth century. Social, economic, technological influences, and innovations are emphasized. Field trips may be required. Lecture. (A-F or P/NP) Transfer: CSU, UC General Education: (CSU-GE B1)

INDIS 155—HISTORY OF INTERIORS DECORATIVE ARTS 2 3 Units
Survey of the historical relationship between interior architecture, furniture, and decorative arts. Overview of styles from the Classical Revival period of the nineteenth century through the present time. Social, economic, technological influences and innovations are emphasized. Field trips may be required. Lecture. (A-F or P/NP) Transfer: CSU, UC General Education: (MJC-GE 2)
INTDS 160—ASIAN DESIGN AND DECORATIVE ARTS 3 Units
Recommended for Success: Before enrolling in this course, students are strongly advised to satisfactorily complete READ 82, AND ENGL 50 AND MATH 20.
Broad survey of historic and contemporary Asian decorative arts, architecture, interiors, and landscape design. Introduction to the influence of trade, international exhibitions, and globalization on Western design and manufacturing, including the Asian-inspired works of Western architects and designers. Survey of Asian motifs, materials, colors schemes, and resources. Field trips may be required. Lecture/Laboratory. (A-F or P/NP). Transfer: CSU

INTDS 180—BARRIER-FREE DESIGN, CODES & REGULATIONS 3 Units
Recommended for Success: Before enrolling in this course, students are strongly advised to satisfactorily complete READ 82 AND ENGL 50 AND MATH 20.
Prerequisite: Satisfactory completion of INTDS 200 AND INTDS 230.
Corequisite: Satisfactory completion of or concurrent enrollment in INTDS 215
Concepts of lifetime and barrier-free design. Related local, state, and federal regulations will be discussed. Americans with Disabilities Act (ADA), the principles of universal design and concepts of aging in place will be discussed. Field trips may be required. Preparation for the California Codes and Regulations Exam. (A-F or P/NP). Lecture/Laboratory. Transfer: CSU

INTDS 190—SUSTAINABLE AND GREEN DESIGN 3 Units
Recommended for Success: Before enrolling in this course, students are strongly advised to satisfactorily complete READ 82 AND MATH 20 AND ENGL 50.
Overview of environmentally responsible design, building practices, systems, and materials with an emphasis on residential construction and interiors. Field trips may be required. (A-F or P/NP). Lecture. Transfer: CSU

INTDS 200—INTERIOR DESIGN FUNDAMENTALS 3 Units
Overview of interior design and furnishings. Study and application of principles of color and design, period influences, selection and arrangement of decorative materials, organized selection of furnishings and materials. Includes consumer and socioeconomic considerations. Field trips may be required. Lecture: Transfer: CSU

INTDS 210—INTRODUCTION TO SALES AND MARKETING FOR DESIGN 3 Units
Introduction to sales psychology and the principles of marketing and business development for design. Increasing success in the workplace by building client relationships, understanding client needs and wants, and finding a niche. Focus on marketing methods, branding, ethics, selling design services, communication and presentation techniques, and effective use of technology. Field trips may be required. Lecture. (A-F or P/NP). Transfer: CSU

INTDS 215—INTERIOR DESIGN STUDIO 1 2 Units
Corequisite: Satisfactory completion of or concurrent enrollment in INTDS 200.
Designed to apply concepts and theories presented in the lecture course, INTDS 200, Fundamentals of Interior Design. Emphasizes the design process in developing solutions for design projects. Develops skills for using visual and oral communication tools for client presentations. Field trips may be required. A-F and P/NP. Applicable to the Associate Degree. Transfer to CSU. (CSU-GE - C). Lecture/Laboratory. Transfer: CSU

INTDS 220—INTERIOR FINISHES CONSTRUCTION MATERIALS 3 Units
Recommended for Success: Before enrolling in this course, students are strongly advised to satisfactorily complete MATH 20, ENGL 50 AND CMPSC 201, AND READ 82
Prerequisite: Satisfactory completion of INTDS 200
Corequisite: Satisfactory completion of or concurrent enrollment in INTDS 215
Survey of interior finish materials and materials used in construction. Introduction to the industry, the influence of style and technology, the selection and specification issues related to specific categories of products. Lighting, flooring, paint and wall coverings, window treatments, plumbing fixtures and appliances, textiles, furnishings and various surface materials will be included. Lecture, small group activities, product research, and field trips. Field trips may be required. Lecture/Laboratory. (A-F or P/NP). Transfer: CSU

INTDS 230—DRAFTING FOR INTERIORS 3 Units
Introduction to tools and techniques specific to drafting of interior spaces. Development of floor plans, sections, elevations, cabinetry and reflected ceiling plans relating to interior design. Incorporation of space planning, ADA guidelines, building codes, concepts of universal and lifetime design, and visual presentations. (A-F or P/NP) Field trips may be required. Lecture/Laboratory. Transfer: CSU

INTDS 235—RESIDENTIAL SPACE PLANNING 3 Units
Recommended for Success: Before enrolling in this course, students are strongly advised to satisfactorily complete READ 82, AND ENGL 50, AND MATH 20.
Prerequisite: Satisfactory completion of INTDS 200, INTDS 215 AND INTDS 230
Applies the design process to residential interior design projects. Addresses programming, space planning, concept development and design implementation to design of social, work, and private living zones. Principles and elements of design are incorporated into structural and non-structural components of interior and exterior residential environments. Field trips may be required. Lecture/Laboratory. (A-F or P/NP). Transfer: CSU

INTDS 245—KITCHEN AND BATH DESIGN 3 Units
Recommended for Success: Before enrolling in this course, students are strongly advised to satisfactorily complete READ 82, AND ENGL 50, AND MATH 20.
Prerequisite: Satisfactory completion of INTDS 235.
Overview of the basic principles of kitchen and bath design and space layout, including drawing floor plans and elevations to scale. Selection and evaluation of current products and materials, are made based upon the survey of the client’s needs. Changes in cabinetry appliances, finish materials, barrier-free design, and changing family patterns, reflecting current materials, innovations, technology, and regulations are introduced. Field trips may be required. Lecture/Laboratory. (A-F or P/NP). Transfer: CSU

INTDS 250—COMPUTER AIDED DRAFTING/ DESIGN FOR INTERIOR DESIGN
Prerequisite: Satisfactory completion of INTDS 200.
Overview and application of the basic skills and techniques of Computer Aided Drafting/Design (CADD) using designer-specific software. Floor plans, space planning, elevations and client needs are emphasized. Principles and elements of design as well as the ADA and NKBA guidelines will be applied to interior architecture, layout, lighting, finish materials & furnishings. Field trips may be required. Lecture/Laboratory. (A-F or P/NP). Transfer: CSU

INTDS 270—BUSINESS AND PROFESSIONAL PRACTICES 3 Units
Recommended for Success: Before enrolling in this course, students are strongly advised to satisfactorily complete MATH 10 or qualify through the MJC assessment process.
The business and professional management of an interior design practice, including legal issues, ethics, project programming and business practices. Introduction to field-specific software for management. Emphasis placed upon creating a business plan, developing contracts, choosing an appropriate business format, and licensing alternatives. Wholesale resource development procedures and introduction to professional examinations are included. Field trips may be required. Lecture. (A-F or P/NP). Transfer: CSU

INTEC (Industrial Technology)
Courses are intended for students interested in new career opportunities in the Manufacturing, Maintenance, Electrician, Home Building, Building and Safety Code Administration, Plant and Facilities and Production fields as well as those already working in the Industry who are interested in updating or upgrading their knowledge and skills.

INTEC 50—BASIC VOCATIONAL ENGLISH 2 Units
FOR INDUSTRIAL TECHNOLOGY
Formerly listed as INDE 50.
Reading, writing, speaking and vocabulary skill development specific to industrial technology. Designed for students who want to improve their basic language skills. For elective credit only, does not apply toward Industrial Technology major. Field trips may be required. Two maximum comple-
tions. Lecture/Laboratory.

INTEC 115 – INTRODUCTION TO TECHNICAL INDUSTRIES 1 Unit
Also offered as AUBTD 115 and AUTE 115.
Introduction to educational and technical employment opportunities. Includes an understanding of curriculum requirements that pertain to educational goals as they relate to technical majors. Assists students in setting goals and developing skills necessary for long-term success in obtaining, maintaining, and advancing in technical careers. Current events that impact technical industries and society will be discussed. History and employment opportunities in technical industries. Techniques and applications of sound shop/agency practices and hazardous waste management. Development of an educational plan and presentations by MJC counselors. Field trips may be required. Materials fee required. (MJC Guidance) Lecture/Other. (A-F Only) Transfer: CSU

INTEC 200—INTRODUCTION TO MECHANICAL TECHNOLOGY 3 Units
Also offered as AGM 200.
Basics in woodworking, cold metal, forging, plumbing and welding as related to farm maintenance and repair. Designed for agricultural students who need development in basic mechanical skills. Field trips may be required. Lecture/Laboratory. Materials fee required. (A-F Only) Transfer: CSU

INTEC 201—INTRODUCTION TO INDUSTRIAL OPERATIONS 3 Units
Introduction to policies, procedures, terminology, reports, federal and state law, safety, team building and quality programs of modern industrial and processing plants. Field trips may be required. Three maximum completions. Lecture. Transfer: CSU

INTEC 202—FUNDAMENTALS OF INDUSTRIAL TECHNOLOGY 2 Units
Students will explore common industrial production, manufacturing and fabrication processes. Field trips required. Three maximum completions. Lecture/Laboratory. Transfer: CSU

INTEC 203—INDUSTRIAL MECHANICAL COMPONENTS AND EQUIPMENT
Recommended for Success: Satisfactory completion of INTEC 202.
An introduction to common mechanical components and related equipment found in the manufacturing and processing industry. Content includes basic terminology, operation, installation and maintenance of both individual mechanical components and mechanical systems. Field trips may be required. Three maximum completions. Lecture/Laboratory. Transfer: CSU

INTEC 205—PRINCIPLES OF QUALITY CONTROL SYSTEMS 3 Units
Recommended for Success: Satisfactory completion of INTEC 201, 202, 203, 261 or Industry experience.
Principles of quality control, quality improvement methodology, and quality commitments of industrial corporations. Field trips may be required. Three maximum completions. Lecture. Transfer: CSU

INTEC 208—THE WORLD OF ELECTRICITY AND ELECTRONICS 3 Units
Also offered as ELTEC 208.
An overview of electrical and electronic phenomena as applied to consumer and industrial devices. The course examines the physical nature of electricity and magnetism and the application of the scientific method. The historical development and the socioeconomic aspects of the “electronic age” are examined. Lecture/Laboratory. Materials fee required. Guidance: Transfer: CSU General Education: (MIC GE A)

INTEC 221—INSTRUMENTATION DEVICES AND SYSTEMS 3 Units
Prerequisite: Satisfactory completion of ELTEC 211 or 208.
 Formerly listed as INDED 221.
Also offered as ELTEC 221.
An introduction to industrial instrumentation devices and systems. The principles and operation of mechanical and electrical transducers. Analysis of industrial instrumentation systems. Lecture/Laboratory. Materials fee required. (A-F Only) Transfer: CSU

INTEC 223—INDUSTRIAL ELECTRICAL COMPONENTS AND CONTROL DEVICES
Formerly listed as INDED 223.
Also offered as ELTEC 223.
An introduction to common components and control devices found in the manufacturing and processing industry. Content includes basic terminology, component identification, manufacturer's specifications, and maintenance procedures for the components and devices. Lecture/Laboratory. Materials fee required. (A-F Only) Transfer: CSU

INTEC 225—PRINCIPLES OF ELECTRICAL WIRING
Formerly listed as ELECT 225.
Also offered as AGM 225.
Fundamental principles, systems, and applications of electrical energy and the equipment necessary to manually or automatically control that energy. Field trips required. Lecture/Laboratory. Materials fee required. (A-F Only) Transfer: CSU

INTEC 226—MOTORS, CONTROLS AND CONTROLLERS 3 Units
Prerequisite: Satisfactory completion of ELTEC 211 and 208.
Formerly listed as INDED 226.
Also offered as ELTEC 226.
An introduction to AC and DC motors and the circuits which control them. Use and programming of variable frequency drive motor controllers. Lecture/Laboratory. Materials fee required. (A-F Only) Transfer: CSU

INTEC 229—COMMERCIAL AND INDUSTRIAL WIRING 3 Units
Advisories: Before enrolling in this course, students are strongly advised to satisfactorily complete (INTEC 225 OR AGM 225) AND (INTEC 208 OR ELTEC 208). Also offered as INTEC 229.
Essential insights and practices in Commercial and Industrial Wiring that develop skills for the electrical trade. Topics include the application of basic concepts in the design of electrical systems, implementation of accepted trade practices used in installations, and common troubleshooting techniques. Field trips may be required. Materials fee required. (A-F Only) Transfer: CSU

INTEC 248—ELECTRICAL CODES AND ORDINANCES 3 Units
Formerly listed as INDED 393.
Interpretation and application of national, state and local codes and ordinances which regulate the installation and maintenance of electrical circuits and equipment. Four maximum completions. Lecture. (A-F Only) Transfer: CSU

INTEC 249—ANALYSIS OF ELECTRICAL CODES
Prerequisite: Satisfactory completion of INTEC 248
Formerly listed as INDED 394.
Continuation of INTEC 248. Training in analysis of national, state and local codes and ordinances which regulate installation, alteration and maintenance of electrical circuits and equipment. Lecture. Three maximum completions. Materials fee required. (A-F Only) (Spring) Transfer: CSU

INTEC 261—INTRODUCTION TO PLANT MAINTENANCE 3 Units
Formerly listed as INDED 361.
Basic principles, methods of operation and maintenance procedures for equipment and systems of modern industrial and processing plants. Four maximum completions. Lecture. (A-F Only) Transfer: CSU

INTEC 262—HYDRAULICS/PNEUMATICS
Formerly listed as INDED 362.
Also offered as AGM 262.
Principles and practices of hydraulics/pneumatics as used in the industry. Study of the different applications and management of hydraulics for the most efficient use. Basic pneumatic principles and application systems. Field trips may be required. Two maximum completions. Lecture. Transfer: CSU

INTEC 265—TROUBLESHOOTING TECHNIQUES 1 Unit
Also offered as ELTEC 265.
Common troubleshooting methodologies used in manufacturing today. One-solution and multi-solution problems commonly found in everyday life through industrial processes. Prepares students to actively solve problems in personal and professional life. Lecture. Transfer: CSU

INTEC 300—SURVEY OF APPLIED TECHNOLOGIES 3 Units
Also offered as ELTEC 300.
Survey of applied technologies in the Advance Manufacturing, Transportation, or Construction Industry. Topics include electricity, small engines/industrial mechanics, computer software and robotics. Field trips may be required. (A-F only) Lecture/Laboratory. Applicable to the associate degree.
INTEC 301—Employability Skills 1  
Also offered as FCS 301. 
Development of basic background in non-technical skills (S.C.A.N.S.) that will increase a person’s employability in the Family and Consumer Sciences and Industrial Technology related occupations. Topics will include: Team Building, Safety, Time and Money Management. Field trips may be required. Lecture/Laboratory.

INTEC 302—Employability Skills 2  
Also offered as FCS 302. 
Development of basic background in non-technical skills (S.C.A.N.S.) that will increase a person’s employability in the Family and Consumer Sciences and Industrial Technology related occupations. Topics will include: Leadership, Safety, Industry Expectations. Field trips may be required. Lecture/Laboratory.

INTEC 303—Introduction to Teamwork Development for Industry  
Interdisciplinary approach to the study of team solutions to industrial problems. Introduction to team member selection criteria, development of team cohesiveness, team solutions to realistic industry problems, and use of computer software to solve and present team solutions. Modules in communications, computer application and industrial technology. Lecture.

INTEC 306—Introduction to Occupational Safety & Health  
Formerly listed as INSAF 361. 
Introduction to the principles and techniques of occupational safety and health. Lecture. (A-F Only)

INTEC 312—Bearings  
½ Unit 
A descriptive introduction to the common industrial bearing. Content includes basic terminology, operation and maintenance of journal bearings, ball and roller bearings, bearing seals, bearing lubrication, and bearing maintenance. Lecture.

INTEC 320—Electrical Safety  
Also offered as ELTEC 320. 

INTEC 340—Uniform Building Code, Structural  
Formerly listed as INDED 369. 
Review of building plans for compliance with structural engineering requirements as per the Uniform Building Code. Four maximum completions. Lecture. (A-F Only)

INTEC 341—Uniform Building Code, Non-Structural  
Formerly listed as INDED 370. 
Review of building plans for compliance with non-structural requirements such as occupancy types and life-safety requirements as per the Uniform Building Code. Four maximum completions. Lecture. (A-F Only)

INTEC 344—Uniform Mechanical Code  
Formerly listed as INDED 371. 
Minimum code requirements for the installation of heating, ventilating, cooling, and refrigeration systems in residential and commercial applications. Four maximum completions. Lecture. (A-F Only)

INTEC 346—Enforcement of Building Repair and Abatement Regulations  
Formerly listed as INDED 374. 
General review of housing regulations and their application to existing structures. Four maximum completions. Lecture. (A-F Only)

INTEC 350—Industrial Technology Internship  
Prerequisite: Minimum of 15 units completed in Industrial Technology major. 
Supervised field experience in Industrial Technology. Study and research related to job training. Current technical developments in industry. Two maximum completions. Lecture. Field experience arranged. (P/NP Only) (Spring)

INTEC 362—Industrial Refrigeration Systems  
Recommended for Success: Satisfactory completion of INTEC 30. 
Formerly listed as INDED 363. 
Principles underlying heat transference as used in refrigeration systems. Explanation of devices and equipment used in such systems. Lecture/Laboratory. Four maximum completions. (A-F Only)

INTEC 366—Heating Ventilation, Air Conditioning and Refrigeration  
Formerly listed as INDED 366. 
Principles of installation and maintenance of heating and cooling systems in residential and industrial facilities. Four maximum completions. Lecture/Laboratory. (A-F Only)

INTEC 367—Plumbing Principles and Methods  
Formerly listed as INDED 368. 
Principles of design, installation, and maintenance, and troubleshooting of residential and commercial piping. Discussion and activities involving application of standard plumbing practice. Field trips may be required. Lecture/Laboratory. One completion. (A-F Only)

INTEC 368—Uniform Plumbing Code  
Formerly listed as INDED 379. 
Installation and inspection of plumbing in the construction of residential units. Content based upon current Uniform Plumbing Code. Lecture. Four maximum completions. (A-F Only)

INTEC 380—Elementary Carpentry and Construction  
5 Units 
Designed to provide entry-level skills for students wanting to explore and enter the construction trades. Experiences in developing carpentry, construction, planning and employability skills utilized in the residential and commercial construction industry. Field trips may be required. Materials fees required. Lecture/Laboratory. (A-F Only)

INTEC 390, 390A, B—Advanced Manufacturing Training  
½, 1, 2 Units 
Advanced skills utilized in industry and needed by students working in the mechanical and automation areas of plant maintenance. Field trips may be required. Maximum of 10 units of INTEC 390 and INTEC 391 credit. Lecture. (A-F Only)

ITAL (Italian)  
ITAL 101—Italian 1  
5 Units 
Fundamentals of spoken and written Italian. Introduction to Italian cultures. (A-F and P/NP) Lecture. Equivalent to the satisfactory completion of two years high school Italian. Transfer: CSU, UC. (IGETC: 3A) (CSU-GE: C2)
**JRNAL** (Journalism)

**JRNAL 100—REPORTING AND WRITING FOR THE MEDIA**  
3 Units  
Prerequisite: Satisfactory completion of ENGL 50 or eligibility for ENGL 101.  
Fundamentals of reporting and ideas and information for the print, broadcast, and “new” media, including research, writing, development of news judgment and ethical standards. Basic skill development in shaping news, feature, critical review, and opinion stories according to professional standards of accuracy, completeness and style, as well as essentials of newspaper design. Prepares students to work on campus newspaper, radio, television, and newspaper website and for higher education in these fields; recommended for students interested in any branch of the media, including Internet publications. Field trips may be required. Lecture/Laboratory. (A-F or P/NP) **Transfer:** CSU, UC (CC JRNAL 1)

**JRNAL 120B,C—STUDENT NEWSPAPER PRODUCTION STAFF**  
2, 3 Units  
Corequisite: JRNAL 100  
Production of the campus newspaper, including writing, editing, advertising sales and layout, page design, and paste-up preparation for printing. Students desiring a limited participation in newspaper production, such as graphics or layout only, or limited writing only should sign up for this section. Field trips may be required. Four maximum completions but not to exceed 12 units: Laboratory. (A-F or P/NP) (MJC Activities) **Transfer:** CSU (CC JRNAL 10)

**JRNAL 146B,C—NEWSPAPER PHOTO STAFF**  
2, 3 Units  
Limitation on enrollment: Satisfactory completion of ART 170 or equivalent camera and darkroom skills.  
Photo production for the college newspaper offering experience in taking photographs, printing, sizing, and designing photo essays. Student work is published regularly and can be used to build a portfolio. Some exposure to Photoshop. Field trips may be required. Three maximum completions not to exceed 6 units: Laboratory. (A-F or P/NP) (MJC Activities) **Transfer:** CSU

**JRNAL 179—PHOTOJOURNALISM**  
3 Units  
Prerequisite: Satisfactory completion of ART 170  
Also offered as ART 179  
Study of photography as a tool in reporting news, sports and feature stories in print and online media. Examines work and approaches of professional photojournalists, develops fundamental skills in visual storytelling, camera, lighting and compositional techniques, editorial criteria, page layout, copyright and ethics. Photographs will be made with film and/or digital cameras and processed on computer. May be completed up to 2 times: (A-F or P/NP). (MJC Activities) **Transfer:** CSU

**LR** (Learning Resources)

Learning Resources offers a variety of courses that support the information competencies applicable to college-level research and lifelong learning. These courses are designed to benefit transfer students who want to develop research skills using the information resources and services found in college libraries, as well as lifelong learners seeking to acquire skills necessary to thrive in an information society. Learning Resources courses are transferable to four-year colleges and universities.

**LR 100—RESEARCH METHODOLOGY**  
2 Units  
Effective use of libraries and information sources, including development of research strategies, and the retrieval, evaluation, and use of information. Access a variety of print and electronic resources including online library catalogs, reference sources, online periodical and research databases, and the World Wide Web. Lecture. One completion allowed. (A-F or P/NP) **Transfer:** CSU

**LR 120—LIBRARY RESEARCH ON THE INTERNET**  
1 Unit  
Introduction to the Internet-based library resources, with an emphasis on the concepts and skills necessary for academic research. Analysis of advantages and limitations of web-based information; extensive practice on a variety of standard search tools, including online periodical and research databases, subject directories, search engines, and information portals; organization of online information; evaluating online information; and documentation of online information in APA and MLA formats. Lecture. (A-F or P/NP) **Transfer:** CSU

**LR 140—INTRODUCTION TO ONLINE LEARNING**  
1 Unit  
Practical and theoretical introduction to online courses, with special emphasis on online courses at Modesto Junior College. Students will discuss the rationale for web-based courses, as well as some of the difficulties inherent to the online medium. Students will also gain hands-on experience using WebCT, the course management program used for MJC’s online and hybrid classes. Lecture. **Transfer:** CSU

**MACH** (Machine Tool Technology)

The Machine Tool Technology program provides training toward the acquisition of proficiency in the use of metal removal and metal-forming machine tools. Training in calculations of cutting speeds and feeds, use of measuring tools, study of elementary metallurgy, and making adjustments are also emphasized. Special focus is given to care of equipment, orderliness, accuracy, speed, judgment, confidence and safe working habits.

**MACH 211D,E—MACHINE TOOL TECHNOLOGY 1**  
3 Units  
Prerequisite: Satisfactory completion of MATH 20 & ESL 45  
A study of basic measuring tools, (steel rules, vernier calipers and micrometers), layout tools and hand tools. Emphasis in the theory and practice in the use of drilling machines, bandsaws and lathes. This course meets California apprenticeship standards. Intended for students with little or no experience in the manufacturing industry. Field trips may be required. Two maximum completions. Materials fee required. Lecture/Laboratory. (A-F Only) **Transfer:** CSU

**MACH 212D,E—MACHINE TOOL TECHNOLOGY 2**  
4,5 Units  
Prerequisite: Satisfactory completion of (MACH 211D, or E) and MACH 301.  
Principles and fundamental use of precision grinders and advanced applications of the manual engine lathe and milling. Advanced levels of measuring systems, study of basic metallurgy, and techniques of heat treating to enhance the properties of metallic parts. Meets California apprenticeship standards. Field trips may be required. Two maximum completions. Materials fee required. Lecture/Laboratory. (A-F or P/NP) **Transfer:** CSU

**MACH 213C,D—MACHINE TOOL TECHNOLOGY 3**  
3,4 Units  
Prerequisite: Satisfactory completion of (MACH 212D, or E) and MACH 302.  
Theory and practice in the use of the dividing head, metric system, classes of fit, tool and cutter grinding, gear cutting, and dovetails. Carbide tools emphasized. Exploration and study of manufacturing processes found in use in local industries. Meets California apprenticeship standards. Field trips may be required. Two maximum completions. Materials fee required. Lecture/Laboratory. (A-F or P/NP) **Transfer:** CSU

**MACH 218—INTRODUCTION TO CNC LATHE PROGRAMMING**  
2 Units  
Recommended for Success: Previous experience in the use of manual or CNC lathes.  
The use of manual programming techniques to develop tool path codes required to produce products using two axis CNC turning equipment. Effective cutting speeds, feeds, and depth of cut for various machining operations. The use of “ canned cycles” with word address programming as well as conversational programming format will be addressed. May be completed up to 2 times. Field trips may be required. (A-F or P/NP). Materials fee required. Applicable to the Associate Degree. **Transfer:** CSU.
MACH 219—INTRODUCTION TO CNC MILL PROGRAMMING  2 Units
Recommended for Success: Previous experience in the use of manual or CNC lathes and milling machines. The previous courses and/or training must have been completed satisfactorily.

The use of manual programming techniques to develop tool path codes required to produce products using CNC milling and turning equipment. Effective cutting speeds, feeds, and depth of cut for various machining operations using "canned cycles" and word address programming format will be addressed. May be completed up to 2 times. Materials fee required. (A-F or P/NP) Applicable to the Associate Degree. Transfer: CSU

MACH 220—CNC MACHINE TOOL PROGRAMMING  2 Units
The use of manual and CAM (computer-aided manufacturing) programming techniques to develop tool path codes required to machine products using CNC milling and turning equipment. Four maximum completions. Materials fee required. (P/NP Only) Transfer: CSU

MACH 222—CNC MACHINE OPERATIONS  2 Units
Recommended for Success: Concurrent enrollment in MACH 219, 220, or 221 and previous machining experience.

The setup and operation of computer-controlled machine tools with emphasis on vertical machining centers and two axis turning centers. Primary controller operation, machine setup, tooling application, installation and adjustment and basic codes needed for editing will be addressed. Field trips may be required. Two maximum completions. Lecture/Laboratory/Other. Materials fee required. Transfer: CSU

MACH 223—ADVANCED CNC MACHINE OPERATIONS  3 Units
Prerequisite: Satisfactory completion of MACH 222.
Advanced setups, controller issues, and inspection techniques that may be encountered in the use of CNC controlled machine tools. May be completed up to 2 times. Field trips may be required. (A-F or P/NP) Materials fee required. Applicable to the Associate Degree. Transfer: CSU

MACH 301—MACHINE SHOP 1  3 Units
Study and application of basic measuring tools. (steel rulers, vernier calipers and micrometers), layout tools and hand tools. Theory and practice in the use of drilling machines, bandsaws, lathes and vertical milling machines. Meets California apprenticeship standards. Two maximum completions. Field trips may be required. Lecture/Laboratory. (A-F or P/NP) Materials fee required.

MACH 302—MACHINE SHOP 2  3 Units
Prerequisites: Satisfactory completion of MACH 211D, or E or MACH 301.
Principles and fundamentals in the use of the milling machine, band saw and surface grinder with emphasis on milling operations. Principles of metallurgy, heat treating, and the application of more advanced measuring techniques will be explored. Field trips may be required. Lecture/Laboratory. (A-F or P/NP) Materials fee required.

MACH 303—MACHINE SHOP 3  3 Units
Prerequisites: Satisfactory completion of MACH 212D, or E or MACH 302.
Theory and practice in the use of the dividing head, gearing systems, carbide tooling, and non-traditional machining systems. Field trips may be required. Lecture/Laboratory. Three maximum completions. (A-F or P/NP) Materials fee required.

MATH 312—4 AXIS MILL PROGRAMMING AND OPERATION  1 Unit
Prerequisite: Satisfactory completion of MACH 219.
The application and practice of programming, installing, and operating 4th axis rotary devices on CNC vertical machining centers. May be completed up to 2 times. Field trips may be required. (P/NP Only).

MACH 313—MANUFACTURING PROCESSES  2 Units
The exploration and study of manufacturing techniques and common industrial processes found in local industries. Field trips may be required. Two maximum completions. Lecture.

MACH 315—3D PART PROGRAMMING FOR CNC MACHINES  1 Unit
Prerequisite: Satisfactory completion of MACH 220.
The application and practice of developing a program using CAD/CAM software that will direct a CNC machining center to cut a three dimensional contoured part. May be completed up to 2 times. Field trips may be required. Materials fee required. (P/NP Only).
### Non-Transferable Math Courses (to CSU or UC)

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Title</th>
<th>Units</th>
<th>Prerequisite</th>
<th>General Education</th>
<th>Transfer &amp; Liberal Studies</th>
</tr>
</thead>
<tbody>
<tr>
<td>MATH 10</td>
<td>INTRODUCTION TO MATHEMATICS</td>
<td>4 Units</td>
<td>Satisfactory completion of MATH 90 or qualification by MJC math assessment process.</td>
<td>(MJC-GE: D2) (CSU-GE: B4)</td>
<td>(IGETC: C2)</td>
</tr>
<tr>
<td>MATH 20</td>
<td>PRE-ALGEBRA</td>
<td>5 Units</td>
<td>Satisfactory completion of MATH 20 or qualification by MJC math assessment process.</td>
<td>(MJC-GE: D2)</td>
<td>(CSU-GE: B4)</td>
</tr>
<tr>
<td>MATH 50</td>
<td>BUSINESS MATHEMATICS</td>
<td>3 Units</td>
<td>Satisfactory completion of MATH 20 or qualification by MJC math assessment process.</td>
<td>(MJC-GE: D2)</td>
<td>(CSU-GE: B4)</td>
</tr>
<tr>
<td>MATH 70</td>
<td>ELEMENTARY ALGEBRA</td>
<td>5 Units</td>
<td>Satisfactory completion of MATH 20 or qualification by MJC math assessment process.</td>
<td>(MJC-GE: D2)</td>
<td>(CSU-GE: B4)</td>
</tr>
<tr>
<td>MATH 71</td>
<td>ELEMENTARY ALGEBRA 1</td>
<td>3 Units</td>
<td>Satisfactory completion of MATH 20 or qualification by MJC math assessment process.</td>
<td>(MJC-GE: D2)</td>
<td>(CSU-GE: B4)</td>
</tr>
<tr>
<td>MATH 72</td>
<td>ELEMENTARY ALGEBRA 2</td>
<td>3 Units</td>
<td>Satisfactory completion of MATH 71.</td>
<td>(MJC-GE: D2)</td>
<td>(CSU-GE: B4)</td>
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<tr>
<td>MATH 80</td>
<td>PLANE GEOMETRY</td>
<td>3 Units</td>
<td>Satisfactory completion of MATH 70 or qualification by MJC math assessment process.</td>
<td>(MJC-GE: D2)</td>
<td>(CSU-GE: B4)</td>
</tr>
<tr>
<td>MATH 88</td>
<td>ALGEBRA WITH APPLICATIONS</td>
<td>3 Units</td>
<td>Satisfactory completion of MATH 70 or qualification by MJC math assessment process.</td>
<td>(MJC-GE: D2)</td>
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### General Education/Transfer & Liberal Studies

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</tr>
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<tr>
<td>MATH 101</td>
<td>MATHEMATICAL IDEAS AND APPLICATIONS</td>
<td>3 Units</td>
<td>Satisfactory completion of MATH 90 or qualification by MJC math assessment process.</td>
<td>(MJC-GE: D2)</td>
<td>(CSU-GE: B4)</td>
</tr>
<tr>
<td>MATH 105</td>
<td>STRUCTURE OF MATHEMATICS 1</td>
<td>4 Units</td>
<td>Satisfactory completion of MATH 90 or equivalent qualification by MJC math assessment process.</td>
<td>(MJC-GE: D2)</td>
<td>(CSU-GE: B4)</td>
</tr>
<tr>
<td>MATH 106</td>
<td>STRUCTURE OF MATHEMATICS 2</td>
<td>4 Units</td>
<td>Satisfactory completion of MATH 90 or qualification by MJC math assessment process.</td>
<td>(MJC-GE: D2)</td>
<td>(CSU-GE: B4)</td>
</tr>
<tr>
<td>MATH 111</td>
<td>APPLIED COLLEGE ALGEBRA</td>
<td>3 Units</td>
<td>Satisfactory completion of MATH 90 or qualification by MJC math assessment process.</td>
<td>(MJC-GE: D2)</td>
<td>(CSU-GE: B4)</td>
</tr>
<tr>
<td>MATH 121</td>
<td>PRE-CALCULUS 1</td>
<td>5 Units</td>
<td>Satisfactory completion of MATH 90 or qualification by MJC math assessment process.</td>
<td>(MJC-GE: D2)</td>
<td>(CSU-GE: B4)</td>
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</tbody>
</table>

### Pre-Calculus

<table>
<thead>
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<tr>
<td>MATH 121</td>
<td>PRE-CALCULUS 1</td>
<td>5 Units</td>
<td>Satisfactory completion of MATH 90 or qualification by MJC math assessment process.</td>
<td>(MJC-GE: D2)</td>
<td>(CSU-GE: B4)</td>
</tr>
</tbody>
</table>
MATH 122—PRE-CALCULUS 2 5 Units
Prerequisites: Satisfactory completion of MATH 121.
Together with Math 121, a two-semester Precalculus course sequence. A comprehensive course in analytic geometry and trigonometry. Topics include: vectors, rotation of axes, conic sections, polar and parametric functions, trigonometric functions, analytic trigonometry, linear and nonlinear systems, and matrix algebra. Lecture. (A-F or P/NP) Transfer: CSU, UC (CC MATH 12) General Education: (MJC-GE: D2) (CSU-GE: B4) (IGETC: 2)

Statistics, Computers, and Applications

MATH 130—FINITE MATHEMATICS 3 Units
Prerequisite: Satisfactory completion of MATH 90 or equivalent or qualification by MJC assessment process.
Set theory, probability and counting techniques. Markov chains, matrices and linear systems, linear programming, applications to business and behavioral and social sciences. Lecture. Transfer: CSU, UC (CC MATH 12) General Education: (MJC-GE: D2) (CSU-GE: B4) (IGETC: 2)

MATH 134—ELEMENTARY STATISTICS 5 Units
Prerequisite: Satisfactory completion of MATH 90 or qualification by MJC assessment process.
Elements of descriptive and inferential statistics, including probability, discrete and continuous probability distributions, hypothesis testing, and regression analysis, ANOVA, and nonparametric statistics. Lecture. Materials fee required. (A-F or P/NP) Transfer: CSU, UC (CC MATH 2) General Education: (MJC-GE: D2) (CSU-GE: B4) (IGETC: 2)

MATH 138—CALCULUS FOR BUSINESS AND SOCIAL SCIENCES 3 Units
Prerequisite: Satisfactory completion of MATH 90 or qualification by MJC assessment process.
Concepts of function and limit, applied calculus emphasizing techniques of differentiation and integration for business economics applications; partial derivatives. Lecture. (A-F or P/NP) Transfer: CSU, UC General Education: (MJC-GE: D2) (CSU-GE: B4) (IGETC: 2)

Calculus

MATH 171—CALCULUS: FIRST COURSE 5 Units
Prerequisite: Satisfactory completion of MATH 121 and MATH 122 or qualification by MJC assessment process.
Fundamental foundations of differential and integral calculus. Topics include: limits, continuity, differentiation, curve sketching, applications of differentiation, integration, the Fundamental Theorem of Calculus, and applications of integration. (A-F or P/NP) Lecture. Transfer: CSU, UC (CC MATH 18A) (TCSU MATH 210) (TCSU MATH SEQ A) General Education: (MJC-GE: D2) (CSU-GE: B4) (IGETC: 2)

MATH 172—CALCULUS: SECOND COURSE 5 Units
Prerequisite: Satisfactory completion of MATH 171.
A continuation of MATH 171. Topics include: techniques of integration, applications of integration, introductory differential equations, differentiation and integration of parametric and polar equations, and infinite sequences and series. Lecture. (A-F or P/NP) Transfer: CSU, UC (CC MATH 220) (TCSU MATH SEQ A) (CC MATH 18B) General Education: (MJC-GE: D2) (CSU-GE: B4) (IGETC: 2)

MATH 173—CALCULUS: THIRD COURSE 5 Units
Prerequisite: Satisfactory completion of MATH 172.
A continuation of MATH 172. The extension of calculus concepts to three dimensions and functions of multiple variables. Topics include: vectors and solids in 3-space, the calculus of vectors, partial differentiation, multiple integration, applications of partial differentiation and integration, and line and surface integrals. (A-F or P/NP) Lecture. Transfer: CSU, UC (CC MATH 18C) (TCSU MATH 230) General Education: (CSU-GE:B4) (IGETC:2)

MATH 174—INTRODUCTION TO LINEAR ALGEBRA AND DIFFERENTIAL EQUATIONS 5 Units
Prerequisite: Satisfactory completion of MATH 173.
Linear algebra topics including linear equations, vector spaces, scalar products, linear transformations, determinants and eigenvalues. Differential equation topics including solutions to first order equations, higher order linear equations, series solutions, systems of equations, and Laplace transforms. (A-F or P/NP) Lecture. Transfer: CSU, UC (TCSU MATH 260) General Education: (CSU-GE:B4) (IGETC:2)
MDAST 350—MEDICAL TRANSCRIPTION 3 Units
Recommended for Success: Satisfactory completion of MDAST 321, OFADM 203 or equivalent, OFADM 311 or equivalent.
Entry-level course to prepare students to take the Medical Transcriptionist Certification Exam offered by the American Association for Medical Transcription (AAMT) to qualify as a Certified Medical Transcriptionist (CMT). Covers use of computers to transcribe physician dictation including progress notes, letters, consultations, procedures and radiology reports heard through the earphones of a transcribing machine. Two maximum completions. Lecture. Materials fee required. Transcribing machine, earphones and supplies required.

MDAST 352—MEDICAL CODING/CPT 3 Units
Recommended for Success: Before enrolling in this course, students are strongly advised to satisfactorily complete MDAST 121.
Entry-level course that covers the use of Current Procedural Terminology (CPT), a coding system developed by the American Medical Association (AMA) to convert widely accepted, uniform descriptions of medical, surgical, and diagnostic services rendered by health care providers into five-digit numeric codes. This course along with Medical Assisting 353 prepares students to take the Certified Coding Specialist Examination offered by the American Health Information Management Association (AHIMA). Unlimited completions. (A-F or P/NP) Lecture.

MDAST 353—MEDICAL CODING/ICD 3 Units
Recommended for Success: Satisfactory completion of MDAST 321 or equivalent.
Formerly listed as MDAST 352: Medical Coding Specialist.
Enter-level course that covers the International Classification of Diseases, 9th Revision, Clinical Modification (ICD-9-CM) which is designed for the classification of patient morbidity (sickness) and mortality (death) information for statistical purposes and for the indexing of hospital records by disease and operation for data storage and retrieval. This course along with Medical Assisting 352 prepares students to take the Certified Coding Specialist Examination offered by the American Health Information Management Association (AHIMA). Two maximum completions. Lecture. (A-F or P/NP) Two completions allowed.

MDAST 354—INTERMEDIATE MEDICAL CODING/ICD9CM 3 Units
Recommended for Success: Before enrolling in this course, students are strongly advised to satisfactorily complete MDAST 321, MDAST 353, and MDAST 353.
Continued development in various settings where ICD-9-CM is used, such as specialties, physician offices, medical group practices, medical clinics, billing companies, and hospitals. Fundamental skills include ICD-9-CM coding, guidelines/conventions, use of the ICD-9-CM manual, and numerous coding exercises (including excerpts from actual patient records). (A-F or P/NP). Field trips may be required. Lecture.

METEO 161—INTRODUCTION TO METEOROLOGY 4 Units
Recommended for Success: Before enrolling in this course, students are strongly advised to satisfactorily complete (MATH 70 or PHYS 160) and (EASCI 161)
Introduction to atmospheric structure, weather monitoring techniques, solar radiation, thermodynamics, air pressure, humidity, cloud formation, wind patterns, planetary circulation patterns, storms, and severe weather (including thunderstorms, tornadoes, and hurricanes), and the causes and consequences of climate and climate change. Lab activities emphasize gathering and analysis of meteorological data (both archived and real time) to understand and predict weather events. Lecture/Laboratory. Field trips may be required. (A-F or P/NP). Transfer: CSU General Education: (MIC-GE:A) (CSU-GE: B1, B3) (IGETC:5A)

METEO 171,A,B,C—METEOROLOGY FIELD STUDIES ½,1,2,3 Units
Prerequisite: Satisfactory completion of or concurrent enrollment in METEO 160.
Field trips to areas of meteorological interest. Emphasis on the weather, climate, and meteorological significance of the regions visited. May be repeated to six maximum units. Lecture/Laboratory. Materials fee may be required. Transfer: CSU, UC (For UC only: must be taken for 3 units.)

MICRO (Microbiology)

MICRO 101—MICROBIOLOGY 4 Units
Prerequisite: Satisfactory completion of (BIO 111 or 101 or AP Biology score of 4 or 5) and (CHEM 143 or AP Chemistry Score of 4 or 5). For information on AP scores and requisites, see “Prerequisite Challenge Process.”
Includes the study of microbial metabolism, genetics, and varieties; immunity, infection, and antimicrobials. Intended for students entering the health professions. Field trips may be required. Lecture/Laboratory. Materials fee required. Transfer: CSU, UC (CC BIOL 65) General Education: (MIC-GE: A) (CSU-GE: B2,B3) (IGETC: SB)

METEO (Meteorology)

METEO 151—INTRODUCTION TO METEOROLOGY LABORATORY 1 Unit
Prerequisite: Satisfactory completion of or concurrent enrollment in METEO 160.
Practical experience using meteorological charts and instruments, techniques in surface observations, weather map analysis and weather forecasting. Field trips required. Laboratory. Materials fee may be required. Transfer: CSU, UC General Education: (CSU-GE: B3) (IGETC: 5A)

METEO 160—INTRODUCTION TO WEATHER AND CLIMATE 3 Units
Introduction to weather and climate with emphasis on topics such as air pollution, clouds, precipitation, fog, storms, weather forecasting, the greenhouse effect, ozone depletion, and global warming. Field trips may be required. Lecture. Materials fee may be required. Transfer: CSU, UC (CC ESC 62) General Education: (MIC-GE: A) (CSU-GE: B1) (IGETC: 5A)
MUSIC DEPARTMENT COURSE ID CROSSWALK

In the 2009-2010 MJC academic year, the Music Department has new course ID's. Below is a crosswalk that will allow you to quickly identify new course IDs for what formerly were MUSIC courses.

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New Departments:
- MUSA: Music: Applied
- MUSC: Music: Commercial
- MUSE: Music: Ensembles
- MUSG: Music: General
- MUSI: Music: Independent Activities in
- MUSP: Music: Stage Production
- MUST: Music: Theory

MUSA 123—INTERMEDIATE PIANO
(Formerly listed as MUSA 122)
Recommended for Success: Satisfactory completion of MUSA 122 or equivalent.
Fundamental techniques of piano playing; review of scales and basic keyboard harmony; means of increasing skill in sight reading, musical interpretation of the score, memorization and playing by ear; introduction to repertoire from various stylistic periods; emphasis on the essentials of advanced piano study; analysis of the pianistic problems involved in selected repertoire from various stylistic periods; participation in student recitals. Four maximum completions. Field trips may be required. Lecture/Laboratory Transfer: CSU, UC (CC MUS 41A, 41B)

MUSA 124—ADVANCED PIANO
(Formerly listed as MUSA 123)
Recommended for Success: Satisfactory completion of MUSA 123 or equivalent.
Study of advanced techniques of piano playing; review of scales and arpeggios; study of repertoire from various stylistic periods. Emphasis on preparation of solo repertoire for recital performance. Four maximum completions. Lecture/Laboratory Transfer: CSU, UC

MUSA 131—ORGAN 1
(Formerly listed as MUSA 124)
Recommended for Success: Satisfactory completion of MUSA 121 or equivalent.
History construction and literature for the organ, use of foot pedals, coordination of hands and feet, and comparison of popular and classical styles; development of repertoire. Four maximum completions. Lecture/Laboratory. Not offered every semester. (MJC Activities) Transfer: CSU, UC

See “Repeat Limitations on Music Courses.” Students must meet performance and repertoire standards before proceeding to successive levels in the following classes.
MUSA 132—ORGAN 2  
1 Unit  
(Formerly listed as MUSIC 125)  
Prerequisite: Satisfactory completion of MUSA 131 or equivalent  
Limitation on enrollment: Ability to coordinate keyboard manuals and pedals together  
using basic rhythms, melodic, and chordal structures.  
Development of skills introduced in MUSA 131; analysis of practice methods to overcome technical  
problems. Discussion of service playing and music suitable for various forms of worship. Preparation  
for recitals. Four maximum completions. Lecture/Laboratory. (A-F or P/NP) Transfer: CSU, UC  

MUSA 133—ORGAN 3  
1 Unit  
(Formerly listed as MUSIC 126)  
Prerequisite: Satisfactory completion of MUSA 132 or equivalent  
Limitation on enrollment: Ability to coordinate keyboard manuals and together using basic  
rhythms, melodic, and chordal structures.  
Study and analysis of organ literature from baroque, classical, romantic and contemporary periods;  
function of the organ in solo and accompanimental forms; opportunity for practical experience in  
both areas; emphasis on cumulative repertoire. Four maximum completions. Lecture/Laboratory  
(A-F or P/NP) Transfer: CSU, UC  

MUSA 135—ELEMENTARY HARPSCORD  
1 Unit  
(Formerly listed as MUSIC 181)  
Recommended for Success: Satisfactory completion of MUSA 121  
Introduction to the basic skills of harpsichord performance. Literature from the Renaissance,  
Baroque and Early Classical periods. Performance techniques will include figured bass, vocal and  
instrumental accompanying. Field trips may be required. Four maximum completions. Lab/studio  
activity/individualized instruction. (Fall) (MJC Activities) Transfer: CSU, UC  

MUSA 141—ELEMENTARY GUITAR  
1 Unit  
(Formerly listed as MUSIC 163)  
Recommended for Success: Satisfactory completion of MUSA 101  
Examination of the basic elements of classical guitar technique and repertoire. Technical works  
will emphasize posture, correct right- and left-hand technique, as well as treble clef note-reading  
in first position. The course will introduce sight-reading on easy melodies as well as chord charts.  
Chord coverage will include: closed finger chords, open finger chords, and bar chords. The student  
is responsible for providing a nylon-stringed guitar, a guitar tuner, and a foot stool. All students will  
perform in a semi-formal performance at the end of the semester. Four maximum completions.  
Lecture/Laboratory. (MJC Activities) Transfer: CSU, UC (CC MUSIC 49)  

MUSA 142—GUITAR ENRICHMENT  
1 Unit  
(Formerly listed as MUSIC 164)  
Prerequisite: Satisfactory completion of MUSA 141  
Improvement of guitarists accompaniment technique, analytical skills, and performance competence.  
Music education majors are strongly encouraged to enroll. Special attention will be given to  
chord chart sight reading, contrapuntal reading, and principles of bass clef reading (continuo).  
Technical work will include all the major and minor diatonic scales, selected etudes emphasizing  
position shifts, arpeggiation and solo passage works. Students will be required to participate in a  
formal recital at the end of the term. Lecture/Laboratory. Field trips required. Four maximum  
completions. Transfer: CSU, UC  

MUSA 143—GUITAR ADVANCEMENT  
2 Units  
(Formerly listed as MUSIC 174)  
Prerequisite: Satisfactory completion of MUSA 142  
Designed to fill the gap between MUSA 142 and MUSA 144. Elements of intermediate level  
technique and repertoire in both class and one-on-one sessions. Field trips may be required. Four  
maximum completions. Lecture/Laboratory. (MJC Activities) Transfer: CSU, UC  

MUSA 144—INTERMEDIATE GUITAR  
1 Unit  
(Formerly listed as MUSIC 165)  
Prerequisite: Satisfactory completion of MUSA 142  
Continuation of MUSA 142. Expanding on topics already covered. Emphasis given to sight-reading  
both on treble and bass clefs. Students are required to play all diatonic major and minor scales,  
as well as selected Sor Etudes. At the end of the term, students will perform a solo jury, which will  
consist of a technical work and contrasting works from the Renaissance, Baroque, Classical and  
Contemporary eras. Interdisciplinary ensemble performance is desired for this class. Students will  
be required to participate in a formal recital at the end of the term. Field trips required. Lecture/Labora-  
tyory. Four maximum completions. Transfer: CSU, UC  

MUSA 145—APPLIED CLASSICAL GUITAR  
1 Unit  
(Formerly listed as MUSIC 166)  
Prerequisite: Satisfactory completion of MUSA 144  
Designed for performance majors intending to transfer to four-year institutions. The curricula will  
cover materials necessary to provide the appropriate skill level for upper division coursework at most  
universities. Students must perform a thirty-minute recital as a completion requirement for the  
course. A fifteen-minute jury may substitute for the recital requirement. Field trips required. Lecture/  
Laboratory. Four maximum completions. (MJC Activities) Transfer: CSU, UC (CC MUSIC 50)  

MUSA 151—ELEMENTARY VOICE 1  
1 Unit  
(Formerly listed as MUSIC 131 Elementary Voice)  
Development of the singing voice through consideration and application of the basic elements of  
tone production, i.e., breathing, resonance, diction, posture; principles applied through group and  
individual vocal exercises and singing. Field trips may be required. Four maximum completions.  
Lecture/Laboratory. (MJC Activities) Transfer: CSU, UC  

MUSA 152—ELEMENTARY VOICE 2  
1 Unit  
Recommended for Success: Previous vocal experience.  
(Formerly listed as MUSIC 132 and titled "Intermediate Voice")  
Further development of the singing voice through consideration and application of the basic elements  
of tone production, i.e., breathing, resonance, diction, posture; principles applied through group and  
individual vocal exercises and singing. Field trips may be required. Four maximum completions.  
Lecture/Laboratory. (MJC Activities) Transfer: CSU, UC  

MUSA 153—APPLIED VOCAL REPERTOIRE 1  
1 Unit  
(Formerly listed as MUSIC 133 and titled "Intermediate Voice")  
Concurrent enrollment required in MUSA 153  
Limitation on enrollment: Basic ability to sight read music and sing within the tonal center.  
Study and performance of vocal solo literature with emphasis on building repertoire; development  
of style, and preparation for recitals. Recital and public performance participation required. Intended  
for voice majors. Four maximum completions. Lecture/Rehearsal. Transfer: CSU, UC (CC MUSIC 39)  

MUSA 154—APPLIED VOCAL REPERTOIRE 2  
1 Unit  
(Formerly listed as MUSIC 134—Advanced Voice)  
Recommended for Success: Satisfactory completion of MUSA 153  
Concurrent enrollment in: MUSA 155  
Limitation on enrollment: Intermediate ability to sight read music and sing within the  
tonal center.  
Continuation of MUSA 153 with greater emphasis on building repertoire, development of style,  
and preparation for recitals. Recital and public performance participation required. Intended for  
voice majors. Four maximum completions. Lecture/Rehearsal. (A-F or P/NP) Transfer: CSU, UC (CC  
MUSIC 56)  

MUSA 155—VOCA MASTER CLASS  
1 Unit  
(Formerly listed as MUSIC 139)  
Concurrent enrollment required: MUSA 151, MUSA 152, MUSA 153, or MUSA 154.  
Development of vocal performance through consideration and application of good vocal technique,  
performance practice, and dramatic character development; principles applied through solo, duet, or  
ensemble performances in class and public recitals. Lecture/Laboratory. Transfer: CSU  

MUSA 161—ELEMENTARY STRINGS  
1 Unit  
(Formerly listed as MUSIC 127)  
Introduction to the playing of orchestra stringed instruments (violin, viola, cello, bass). Designed  
for students with no previous instrumental music experience, students who wish to review funda-  
mentals of instrumental music, and experienced instrumentalists who wish to learn a secondary  
instrument. Field trips may be required. Four maximum completions. Lecture/Laboratory. (MJC  
Activities) Transfer: CSU, UC
**MUSA - MUSE**

**MUSA 163—APPLIED MUSIC (VIOLIN AND VIOLA)** 1 Unit
(Formerly listed as MUSC 128)
Concurrent Enrollment required in MUSE 165
Study and performance of violin and viola solo literature. Recital and public performance participation required. Field trips may be required. Four maximum completions. Lecture/Laboratory.
Transfer: CSU, UC

**MUSA 164—APPLIED MUSIC (CELLO AND BASS)** 1 Unit
(Formerly listed as MUSC 129)
Concurrent Enrollment required in MUSE 165 or MUSE 161.
Study and performance of cello and bass solo literature. Recital and public performance participation required. Field trips may be required. Four maximum completions. Lecture/Laboratory.
Transfer: CSU, UC

**MUSA 171—INTRODUCTION TO BRASS AND PERCUSSION** 1 Unit
(Formerly listed as MUSC 140)
Techniques necessary for individual and group performance. Designed for students with no previous experience in instrumental music, students who wish to review fundamentals of instrumental music, and experienced instrumentalists who wish to learn a secondary instrument. Students must own or have access to an appropriate instrument. Public performances may be required. Four maximum completions. Lecture/Laboratory. (MJC Activities) Transfer: CSU, UC

**MUSA 173—APPLIED MUSIC (Brass and Percussion)** 1 Unit
(Formerly listed as MUSC 142)
Recommended for Success: Satisfactory completion of MUSA 171.
Study and performance of brass and percussion solo literature. Recital and public performance participation required. Student must own or have access to an appropriate instrument appropriate for this course. Field trips may be required. Four maximum completions. (A-F or P/NP) Lecture/Laboratory. Transfer: CSU, UC (MJC Activities)

**MUSA 181—INTRODUCTION TO WOODWINDS** 1 Unit
(Formerly listed as MUSC 180)
Techniques necessary for individual and group performance. Designed for students with no previous experience in instrumental music, students who wish to review fundamentals of instrumental music, and experienced instrumentalists who wish to learn a secondary instrument. Students must own or have access to an appropriate instrument. Four maximum completions. Not offered every semester. Lecture/Laboratory. (A-F or P/NP) (MJC Activities) Transfer: CSU, UC

**MUSA 183—APPLIED MUSIC (Woodwind)** 1 Unit
(Formerly listed as MUSC 144)
Limitation on enrollment: Ability to read music and play a woodwind instrument at an intermediate level, which will be tested during the first week of class.
Study and performance of woodwind solo literature. Recital and public performance participation required. Field trips may be required. Four maximum completions. Lecture/Laboratory. Transfer: CSU, UC (CC MUSIC 52)

**MUSC (Music: Commercial)**

See “Repeat Limitations on Music Courses.” Students must meet performance and repertoire standards before proceeding to successive levels in the following classes.

**MUSC 111—RECORDING ARTS 1** 2 Units
(Formerly listed as MUSC 172)
Also offered as RATV 172
Recommended for Success: Before enrolling in this course, students are strongly advised to satisfactorily complete MUSC 121 and MUSC 122.
Introduction to the terminology and practices of the recording arts. Properties of sound, microphone placement, multi-track recording, mixing and mastering. Lab time and materials fee will be required. Two completions allowed. Field trips may be required. (A-F or P/NP) (MJC Activities) Transfer: CSU

**MUSC 112—RECORDING ARTS 2** 2 Units
(Formerly listed as MUSC 178)
Also offered as RATV 178
Recommended for Success: Before enrolling in this course, students are strongly advised to satisfactorily complete MUSC 112.
Advanced topics in the recording studio relating to the digital recording process. In depth study of microphone choice and placement, microphone pre-amplifiers and analog processors, direct inputting, non-destructive digital editing, software plugins, automation techniques, mixing and mastering in the recording process. Laboratory time required. Materials fee required. Four completions allowed. Transfer: CSU (MJC Activities)

**MUSC 121—INTRODUCTION TO THE SYNTHESIZER AND MIDI** 2 Units
(Formerly listed as MUSC 170)
Introduction to synthesizer and electronic keyboard sound design and operational procedures. MIDI (Musical Instrument Digital Interface) music studio techniques will be examined and utilized in an electronic music studio environment. Music acoustics, electronic music composition, synthesizer live performance, digital sampling, audio recording and music software programs will be explored. (A-F or P/NP) Four completions allowed. (MJC Activities) Transfer: CSU

**MUSC 122—ELECTRONIC MUSIC 2** 1 Unit
(Formerly listed as MUSC 171)
Recommended for Success: Satisfactory completion of MUSC121 or previous synthesizer/ tape recording and MIDI music studio experience.
Applied topics in electronic music composition, MIDI (Musical Instrument Digital Interface) music studio procedures, sampling, tape and digital recording. Performance in an electronic music concert is expected. Field trips may be required. Four maximum completions. Laboratory (A-F or P/NP) (MJC Activities) Transfer: CSU

**MUSC 126—MUSIC PRODUCTION FOR MULTIMEDIA** 2 Units
(Formerly listed as MUSC 168)
Also offered as RATV 168
Designed for the student with an interest in music composing, music production, sound design and sound effects. The course will explore production of music for recording artists, music videos, demos, public service announcements, radio programs, graphics animations, commercials, jingles, and TV/film scoring through the use of MIDI sequencing, digital multitrack recording and SMPTE synchronizing. Four completions allowed. (MJC Activities) (A-F or P/NP) Transfer: CSU

**MUSE (Music: Ensemble)**

See “Repeat Limitations on Music Courses.” Students must meet performance and repertoire standards before proceeding to successive levels in the following classes.

**MUSE 145—GUITAR ORCHESTRA** 2 Units
(Formerly listed as MUSC 173)
Prerequisite: Satisfactory completion of MUSA 142. Enrollment limited to those with some sight-reading ability.
Concurrent Enrollment: MUSA 142
The Modesto Junior College Guitar Orchestra will focus on international classical and folkloric guitar ensemble repertoire. Students will be exposed to a large and multicultural repertoire for large guitar groups. This is a performance class, and students are required to perform in different venues representing the college’s guitar department. Two recitals will be required. Field trips required. Four maximum completions. Laboratory/Rehearsal. (MJC Activities) Transfer: CSU, UC

**MUSE 151—MASTERWORKS CHORUS** 1 Unit
(Formerly listed as MUSC 154)
Previous experience in a large choral ensemble.
A choral ensemble for all levels of singers. Study and performance of one large-scale work or program of shorter choral works, drawn from the standard repertoire of classical, folk, and popular music. Public performances required. Four completions allowed. Laboratory. (MJC Activities) Transfer: CSU, UC (CC MUSIC 66)
MUSE 155—CONCERT CHOIR 1 Unit
(Formerly listed as MUSIC 152)
Limitation on enrollment: Ability to match pitch, sing melodies in tune, and sight read
limitation on credit. A large choral ensemble for intermediate and advanced level singers. Public performances of
multi-cultural programs from a variety of historical periods. Field trips required. Four maximum
completions. Rehearsal/Other (A-F or P/NP) (MJC Activities) Transfer: CSU, UC

MUSE 156—CHAMBER CHOIR 1 Unit
(Formerly listed as MUSIC 153 - Singers
Prerequisite: Satisfactory completion of audition.
A small choral ensemble for advanced singers. Public performances of historically and culturally
varied music. Field trips required. Four maximum completions. Rehearsal/Other. (MJC Activities)
Transfer: CSU, UC (CC MUSIC 69)

MUSE 161—COMMUNITY ORCHESTRA 1 Unit
(Formerly listed as MUSIC 162)
Recommended for Success: Previous experience in instrumental music course or equivalent.
Rehearsal and public performance of orchestral music from all eras and a variety of cultures.
Rehearsal/Other. Field trips may be required. Four maximum completions. (MJC Activities) Transfer: CSU, UC (CC MUSIC 76)

MUSE 165—STRING ORCHESTRA 2 Units
(Formerly listed as MUSIC 150)
Formerly listed as "Orchestra"
Limitation on enrollment: Ability to sight read music and adjust intonation on a bowed
string instrument.
Recommended for success: MUSA 163 or MUSA 164
Rehearsal and public performance of orchestral music for strings from all eras and a variety of
cultures. Focus on developing bowing and left hand technique. Four maximum completions up to 8
units. Field trips may be required. (A-F or P/NP) (MJC Activities) Transfer: CSU, UC

MUSE 166—CHAMBER MUSIC ENSEMBLES (STRINGS) 1 Unit
(Formerly listed as MUSIC 151)
Recommended for Success: Concurrent Enrollment in MUSE 165 or MUSE 161
Limitation on Enrollment: Previous experience in instrumental music.
Rehearsal and performance of chamber ensemble literature. Ensemble may be made up of varying
numbers of string instruments. Recital and public performance required. Field trips may be required.
Four maximum completions. Rehearsal/Other. (MJC Activities) Transfer: CSU, UC (CC MUSIC 78)

MUSE 171—CONCERT BAND 1 Unit
(Formerly listed as MUSIC 161)
Limitation on enrollment: Previous experience in instrumental music or Satisfactory
completion of MUSA 171 or MUSA 181.
Rehearsal and performance of original wind literature and transcriptions for concert band. Student
must own or have access to appropriate instrument. Field trips required. Four maximum comple-
tions. (A-F or P/NP) Rehearsal/Laboratory. (MJC Activities) Transfer: CSU, UC

MUSE 175—SYMPHONIC BAND 2 Units
(Formerly listed as MUSIC 146)
Rehearsal and performance of original wind literature and transcriptions for band. Field trips may be
required. Student must own or have access to an appropriate instrument. Four maximum comple-
tions. Lecture/Laboratory. (A-F or P/NP) (MJC Activities) Transfer: CSU, UC

MUSE 176—CHAMBER ENSEMBLES (Band Instruments) 1 Unit
(Formerly listed as MUSIC 145)
Concurrent Enrollment: MUSE 175 or MUSE 171.
Rehearsal and performance of chamber ensemble literature. Ensembles may be made up of varying
numbers of woodwind, brass, and percussion instruments. Recital and public participation required.
Student must own or have access to an appropriate instrument. Field trips may be required. Four
maximum completions. Rehearsal. (A-F or P/NP) Transfer: CSU, UC (MJC Activities) (CC MUSIC 78)

MUSE 181—JAZZ BAND 2 Units
(Formerly listed as MUSIC 149)
Prerequisite: Previous experience in instrumental music and/or jazz ensembles.
Study and performance of jazz literature in both traditional and contemporary styles. Field trips may
be required. Four maximum completions. (MJC Activities) Transfer: CSU, UC (CC MUSIC 72)

MUSE 185—EVENING JAZZ BAND 1 Unit
(Formerly listed as MUSIC 147)
Limitation on Enrollment: Student must have previous experience playing jazz ensemble
music.
Study and performance of jazz literature in both traditional and contemporary styles. Field trips may be
required. Four maximum completions. Rehearsal. (A-F or P/NP) (MJC Activities) Transfer: CSU, UC

MUSE 186—PEP BAND 1 Unit
(Formerly listed as MUSIC 148)
Preparation of music for sports events, rallies and other student body activities. Participation in
certains, rallies, and football games required; sectional rehearsals and additional rehearsal time
required if needed. Field trips required. Four maximum completions. Lecture/Other. Not offered
every semester. (MJC Activities) Transfer: CSU, UC

MUSE 191—CONDUCTING 1 1 Unit
(Formerly listed as MUSIC 114)
Prerequisites: Satisfactory completion of MUST 101 MUST 102 or eligibility for MUST 121
via Music placement test.
The study of style and technique of conducting. Emphasis on gestures and score analysis. Field trips
may be required. Lecture. (Spring) Transfer: CSU, UC

MUSE 192—CONDUCTING 2 1 Unit
(Formerly listed as MUSIC 115)
Prerequisite: Satisfactory completion of MUSE 191
Continuation of MUSE 191 with special emphasis on applied aspects of conducting. Field trips may
be required. Lecture. (Spring) Transfer: CSU, UC

MUSE: NON-CREDIT COURSES

MUSE 851—MASTERWORKS CHORUS
(Formerly listed as OLDAD 854—MASTERWORKS CHORUS)
Study and performance of either one large-scale work or program of shorter works. Public performance
required. Not a graded course. Lecture/Laboratory.

MUSE 861—COMMUNITY ORCHESTRA
(Formerly listed as OLDAD 862—COMMUNITY ORCHESTRA)
Study and performance of a combination of large-scale and shorter works for orchestra. Public
performance required. Field trips may be required. Laboratory/Rehearsal. Unlimited repeats. Not a
graded course.

MUSE 871—CONCERT BAND
(Formerly listed as OLDAD 861—CONCERT BAND)
Prerequisite: Previous experience in instrumental music or Satisfactory completion of
MUSA 171 or 160.
Rehearsal and performance of original wind literature and transcriptions for concert band. Field trips
may be required. Laboratory/Rehearsal. Not a graded course.
MUSG — MUSIC (Music: General)

MUSG 101 — MUSIC APPRECIATION 3 Units
(Formerly listed as MUSIC 110)
Survey course emphasizing the development of the listener’s perception of the basic elements of music. Illustrations encompass various types of folk and traditional music, traditional classical music from a variety of historical periods, and musical material of a contemporary nature. Lecture. Field trips may be required. One completion allowed. (A-F or P/NP) Transfer: CSU, UC General Education: (MJC-GE: C) (CSU-GE: C1) (IGETC: 3A)

MUSG 102 — INTRODUCTION TO WORLD MUSIC 3 Units
(Formerly listed as MUSIC 169)
Exploration of traditional/contemporary folk music of Africa, Asia, Latin America, Europe and the U.S. from the perspective of music as culture. Investigations of the impact/influence of migratory patterns, social-political processes, and how ethnicities are formed in relation to music. Field trips are required. Lecture. Transfer: CSU, UC General Education: (MJC-GE: C) (CSU-GE: C1) (IGETC: 3A)

MUSG 111 — INTRODUCTION TO AMERICAN POPULAR MUSIC 3 Units
(Formerly listed as MUSIC 118)
Survey course emphasizing the listeners perception and understanding of the elements of American Popular music. Illustrations will cover folk, jazz, musical theatre, and rock styles of popular art music. Field trips may be required. Lecture. Transfer: CSU, UC General Education: (MJC-GE: C) (CSU-GE: C1) (IGETC: 3A)

MUSG 112 — THE MUSIC OF THE BEATLES 3 Units
(Formerly listed as MUSIC 190)
A survey of the musical styles by the Beatles dating from 1958-1970. Emphasis will be placed on identifying the various musical periods, the stylistic practices in their compositions, their performances and interviews. Lecture. (A-F Only) Transfer: CSU, UC

MUSG 121 — HISTORY OF WESTERN MUSIC 1 3 Units
(Formerly listed as MUSIC 112)
Survey of musical styles by master composers dating from the ancient period through the end of the baroque period (1750). Various historical periods, the stylistic practices in composition and performance, musical compositions of the most prominent composers from each historical period. Field trips may be required. Lecture/Laboratory. (A-F or P/NP) Transfer: CSU, UC General Education: (MJC-GE: C) (CSU-GE: C1) (IGETC: 3A)

MUSG 122 — HISTORY OF WESTERN MUSIC 2 3 Units
(Formerly listed as MUSIC 113)
A general survey of the musical styles by master composers dating from the classical period (1750) to the present. Emphasis will be placed on identifying the various historical periods, the stylistic practices in composition and performance, utilizing the musical compositions of the most prominent composers from each historical period. Field trips may be required. One completion allowed. Lecture/Laboratory. Transfer: CSU, UC General Education: (MJC-GE: C) (CSU-GE: C1) (IGETC: 3A)

MUSI — MUSIC (Music: Independent Activities)

MUSI 101 — MUSIC THEATRE WORKSHOP 2 Units
(Formerly listed as MUSIC 157)
Recommended for Success: Previous vocal experience. Intended for those interested in singing and acting. Study and performance of musical theatre. Public performance is required. Four maximum completions. Field trips may be required. Lecture/Laboratory. Transfer: CSU, UC General Education: (MJC-GE: C) (CSU-GE: C1) (IGETC: 3A)

MUSI 153 — ADVANCED MUSICAL THEATRE WORKSHOP 2 Units
(Formerly listed as MUSIC 158)
Recommended for Success: Satisfactory completion of MUSI 151/MUSIC 157 or equivalent. Intended for those interested in singing and acting. Study and performance of musical theatre. Public performance is required. Field trips may be required. Four maximum completions. Lecture/Laboratory. Transfer: CSU, UC

MUST — MUSIC (Music: Theory)

MUST 101 — MUSIC FUNDAMENTALS 1 3 Units
(Formerly listed as MUSIC 100)
Basic music theory concepts such as rhythm, musical notation, tonality, scales, key signatures, intervals and chords. Basic aural skills concepts such as rhythmic drills and sight singing using solfege. (A-F Only) Lecture. Transfer: CSU, UC General Education: (CSU-GE: C1) (IGETC: 3A)

MUST 102 — MUSIC FUNDAMENTALS 2 3 Units
(Formerly listed as MUSIC 101)
Prerequisite: Satisfactory completion of MUST 101/MUSIC 100
Recommended for Success: Satisfactory completion of MUSG 121/MUSIC 120 and MUST 130/MUSIC 197.
A continuation of MUST 101. Further study of intervals, rhythm, chord construction with application to the keyboard, ear training, sight singing, and simple dictation. Lecture/Laboratory. Transfer:
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Units</th>
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<tbody>
<tr>
<td>MUST 103</td>
<td>MUSIC, BIRTH TO K: THEORY AND PRACTICE</td>
<td>3</td>
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<tr>
<td>(Formerly listed as MUSIC 176)</td>
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<tr>
<td>Also offered as CLDDV 293</td>
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<tr>
<td>Recommended for Success: Before enrolling in this class students are strongly advised to possess the following basic music skills: ability to read music (note names, melody and rhythm) and define and apply basic music vocabulary, or have successfully completed one or more of the following courses; MUST 101/MUSIC 100, MUSA 121/MUSIC 120, MUSA 161/MUSIC 127, MUSA 161/MUSIC 131 or MUSA 153/MUSIC 133.</td>
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<tr>
<td>Introduce to the methods of teaching music to children (birth to Kindergarten). Theories on the developing mind and the benefit of musical understanding to musicianship as well as overall child development. Kodaly, Orff, Dalcroze and other methods will be covered. Relationship of child development theory and developmentally appropriate practice. Study of classroom implementation process. First in a two course sequence. Field trips may be required. (A-F or P/NP) Lecture. Transfer: CSU.</td>
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<tr>
<td>MUST 106</td>
<td>MUSIC, BIRTH TO K: APPLICATION</td>
<td>3</td>
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<tr>
<td>(Formerly listed as MUSIC 177)</td>
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<tr>
<td>Also offered as CLDDV 294</td>
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<tr>
<td>Prerequisite: Satisfactory completion of CLDDV 293/MUST 103/MUSIC 176.</td>
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<tr>
<td>Application of the methods of teaching music to children (birth to Kindergarten) at an infant/toddler or preschool center with instructor supervision. Students will continue to draw connections between basic music skills, methods of teaching theories, child development, and developmentally appropriate practice. Second in a sequence of two courses. Field trips may be required. (A-F or P/NP) Lecture. Transfer: CSU.</td>
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<tr>
<td>MUST 111</td>
<td>RHYTHMIC SKILLS</td>
<td>1</td>
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<tr>
<td>(Formerly listed as MUSIC 119)</td>
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<tr>
<td>Introduction to terminology and symbols used in the rhythmic notation of music, and to facilitate the development of the ability to read, write and accurately perform rhythmic figures with proper inflexion and artistic phrasing. Four maximum completions. Lecture/Laboratory. Not offered every semester.</td>
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<td>Transfer: CSU</td>
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<tr>
<td>MUST 120</td>
<td>MUSIC THEORY REVIEW</td>
<td>1</td>
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<tr>
<td>(Formerly listed as MUSIC 183)</td>
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<tr>
<td>Prerequisite: Satisfactory completion of MUST 101, or have had at least two years of high school or community ensemble performance experience; and have declared music as their major.</td>
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<td>Designed to prepare music majors for the required music theory sequence; review of fundamentals of music theory, rhythmic and pitch notation, terminology, diatonic intervals, modes, inversions, figured bass. Roman numeral analysis. Lecture. (A-F or P/NP) Transfer: CSU</td>
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<tr>
<td>MUST 121</td>
<td>MUSIC THEORY 1</td>
<td>3</td>
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<tr>
<td>(Formerly listed as MUSIC 102)</td>
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<tr>
<td>Recommended for Success: Before enrolling in this course, students are strongly advised to satisfactorily complete MUST 101.</td>
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<tr>
<td>Concurrent enrollment required in MUST 131/MUSIC 104.</td>
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<tr>
<td>Brief review of primary music fundamentals topics; tonality, introduction to common harmonic practice through exercises in part-writing and figured bass; simple exercises in guided composition and Roman numeral analysis. (A-F or P/NP). Transfer: CSU, UC (CC MUSIC 20A) General Education: (IGETC: 3A)</td>
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<tr>
<td>MUST 122</td>
<td>MUSIC THEORY 2</td>
<td>3</td>
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<tr>
<td>(Formerly listed as MUSIC 103)</td>
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<tr>
<td>Recommended for Success: Before enrolling in this course, students are strongly advised to enroll concurrently in MUST 122.</td>
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<tr>
<td>Prerequisite: Satisfactory completion of MUST 121.</td>
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<tr>
<td>Concurrent enrollment in MUST 130.</td>
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<tr>
<td>Continued development of technique in common harmonic practice through analysis, part-writing, and figured bass; exercises and original composition. Introduction to modulation and secondary dominants; introduction to phrase and period structure; introduction to all seventh chord types (A-F or P/NP). Transfer: CSU, UC (TCSU MUS 140) (CC MUSIC 201) General Education: (IGETC: 3A)</td>
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<tr>
<td>MUST 123</td>
<td>MUSIC THEORY 3</td>
<td>3</td>
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<tr>
<td>(Formerly listed as MUSIC 106)</td>
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<tr>
<td>Prerequisites: Satisfactory completion of MUST 122</td>
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<tr>
<td>Concurrent Enrollment: MUST 130</td>
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<td>Recommended for Success: Concurrent enrollment in MUST 133.</td>
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<tr>
<td>Continuation of the study of structural elements of music such as melody, rhythm, harmony and form with emphasis on the organization of these elements; study of chromatic alteration, expansion of harmonic resources through chromaticism; study of binary and sonata form. Lecture. Not offered every semester. Transfer: CSU, UC (CC MUSIC 21A) General Education: (IGETC: 3A)</td>
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<tr>
<td>MUST 124</td>
<td>MUSIC THEORY 4</td>
<td>3</td>
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<tr>
<td>(Formerly listed as MUSIC 107)</td>
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<tr>
<td>Prerequisites: Satisfactory completion of MUST 123</td>
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<tr>
<td>Concurrent Enrollment: MUST 130</td>
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<td>Recommended for Success: Concurrent enrollment in MUST 134.</td>
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<tr>
<td>Continued development of analytical techniques; study of fugue and basic tonal counterpoint; introduction to impressionism and to twentieth century structural techniques; study of ternary structures and rondo form. Lecture. Not offered every semester. Transfer: CSU, UC (CC MUSIC 21A) General Education: (IGETC: 3A)</td>
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<tr>
<td>MUST 130</td>
<td>PRACTICA MUSICA</td>
<td>1</td>
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<tr>
<td>(Formerly listed as MUSIC 197)</td>
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<tr>
<td>Concurrent Enrollment: MUST 121, MUST 122, MUST 123 or MUST 124.</td>
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<tr>
<td>Development of aural and rhythmic skills by means of computer assisted participation. Exposure to standard western art music repertoire by means of guided listening. Four maximum completions. Laboratory. Transfer: CSU (TCSU MUS 160)(CC MUSIC 4A)</td>
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<tr>
<td>MUST 131</td>
<td>AURAL SKILLS 1</td>
<td>1</td>
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<tr>
<td>(Formerly listed as MUSIC 104)</td>
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<tr>
<td>Corequisite: Satisfactory completion of or concurrent enrollment in MUST 121</td>
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<tr>
<td>Introduction to sight singing techniques using ‘moveable Do’, solfege and rhythmic syllables; supplements the study of music theory by practical application of concepts learned through singing, rhythmic reading analysis and dictation. (A-F or P/NP) Lecture/Laboratory. Transfer: CSU, UC (CC MUS 2, CAN MUS SEQ A)</td>
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<tr>
<td>MUST 132</td>
<td>AURAL SKILLS 2</td>
<td>1</td>
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<tr>
<td>(Formerly listed as MUSIC 105)</td>
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<tr>
<td>Corequisite: Satisfactory completion of or concurrent enrollment in MUST 122.</td>
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<tr>
<td>Continuation of MUST 131; further development of techniques for sight singing, taking melodic and rhythmic dictation. (A-F or P/NP) Transfer: CSU, UC</td>
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<tr>
<td>MUST 133</td>
<td>AURAL SKILLS 3</td>
<td>1</td>
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<td>(Formerly listed as MUSIC 108)</td>
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<tr>
<td>Prerequisite: Satisfactory completion of MUST 132</td>
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<tr>
<td>Recommended for Success: Concurrent enrollment in MUST 123.</td>
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<td>Continuation of materials presented in preceding applied music theory courses. Development of individual proficiency in sight-singing, dictation, aural, rhythmic and keyboard skills. Field trips may be required. Lecture/Laboratory. (Fall) Transfer: CSU, UC (CC MUSIC 5B)</td>
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<tr>
<td>MUST 134</td>
<td>AURAL SKILLS 4</td>
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<tr>
<td>(Formerly listed as MUSIC 109)</td>
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<tr>
<td>Prerequisite: Satisfactory completion of MUST 133</td>
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<tr>
<td>Recommended for Success: Concurrent enrollment in MUST 124.</td>
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<tr>
<td>Continuation of materials presented in preceding applied music theory courses. Development of individual proficiency in sight-singing, dictation, aural, rhythmic and keyboard skills. Field trips may be required. Lecture/Laboratory. (Spring) Transfer: CSU, UC (CC MUSIC 5B)</td>
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</table>
NR  (Natural Resources)

In this program the student will develop skills and knowledge in animal/plant science and I.D., mechanics, communications, public relations, and computations specific to become a park ranger maintenance person, or private entrepreneur in allied jobs including game farm worker. This program will also prepare the student for transfer to a state university or university program when the General Education requirements are completed. Contact the division office in the Agriculture Building for advising assistance.

NR 50—SURVEY OF NATURAL RESOURCES  3 Units
Survey of natural resources, their importance to society and ecological principles of resource conservation, identification, conservation, and use of renewable and non-renewable resources; career opportunities and industries associated with natural resources. Field laboratories, including some Saturdays, required. Lecture/Laboratory.

NR 200—SOILS  4 Units
Study of soil derivation, classification and characteristics. Soil use and management including erosion, moisture, retention, structure, cultivation, organic matter and microbiology. Laboratory topics include soil type, classification, and soil reaction, soil fertility and physical properties of soil. Field laboratories required. Lecture/Laboratory. (A-F Only) Transfer: CSU, UC General Education: (MJC-GE:A) (CSU-GE: B1, B3)

NR 215—WILDLIFE PRODUCTION  3 Units
Wildlife production and management and its relationship to humans; managing game for sustained yields. Production principles for common game species found in this area; habitat improvement; species compatibility and interrelationships; wildlife and fish identification. Field trips required. Lecture/Laboratory. (A-F Only) Transfer: CSU [CC NATRE 160] General Education: (MJC-GE:A)

NR 220—INTRODUCTORY FORESTRY  3 Units
Introduction to the integrated management of trees, soils, water, fish and wildlife for the production of wood and fiber products. Emphasis will be on both the traditional and emerging uses of the forest resources to satisfy human needs and the protection of the public trust. Field trips required. (A-F Only) Transfer: CSU, UC (ICC FORES 1) General Education: (MJC-GE:A)

NR 222—NATIVE TREE AND SHRUB IDENTIFICATION  3 Units
Formerly listed as: "Native Plants Identification"
The study of botanical characteristics, taxonomy, physiology, and community relationships of the major trees and shrubs in California and the Western United States. Includes discussion of commercial uses and geographic ranges of native plants common to the region. Field trips outside of regular class hours. Field trips required. (A-F Only). One completion allowed. Transfer: CSU.

NR 224—INTRODUCTION TO FOREST MEASUREMENT  3 Units
Recommended for Success: Satisfactory completion of EHS 201 or 202 or NR 220 or 222 or 376, or equivalent.
Introduction to principles and practices of interpreting aerial photographs. Emphasis on vegetation mapping, road reconnaissance and inventory techniques. Use of aerial photographs to obtain location, area, vegetation types, timber volume. Explanation of Geographic Information Systems and its application to forestry and natural resources. Field trips required. Lecture/Laboratory. (A-F Only) Transfer: CSU (CC NATRE 160)

NR 230—OUTDOOR/FOREST RECREATION  3 Units
A study of historic, social, political, economic, and environmental factors influencing outdoor recreation at federal, state, and local levels. Survey of conflicts in natural resources land use and solutions to these conflicts. Maintenance and operation of recreational facilities. Field trips may be required. (A-F Only) Transfer: CSU

NR 376—FORESTRY TECHNOLOGY  3 Units
Additional training in silviculture, cruising, forest management, harvesting, and regulations as determined by the California Forest Practice Act. Field trips required. Lecture/Laboratory. (A-F Only) Transfer: (CC FORTEC 160)

NR 379—WILDLAND FIRE CONTROL  1 Unit
Introduction to fundamentals of wildland fire behavior, basic fire fighting strategy, methods of attack to suppress wildland fires. Course is taught in conjunction with U.S. Forest Service. Field trips required. Lecture/Laboratory. (A-F Only) (CC NATRE 22)

NURSE  (Nursing)

NURSE 40—NURSE ASSISTANT  5 Units
Recommended for Success: High school diploma or GED Enrollment limited to students who: have had a physical examination within the last three months, can provide confirmation of a PPD, and can successfully pass a criminal background screening through the Livescan fingerprint process. Preparation for employment as a nurse assistant in a skilled nursing facility. Upon satisfactory completion of the course, the student is eligible to take the state examination for certification as a Certified Nurse Assistant (CNA). Based on the Model Curriculum for Nurse Assistant Training and Assessment Program following Department of Health Services Guidelines. Organized in fifteen units with content ranging from role and responsibilities of the CNA to death and dying. Student must attend lecture on Thursday and Friday 1 p.m. - 5 p.m. for the first 2 weeks of the term. No lab the first 2 weeks of the term. Approximate lab hours 6 a.m. to 2:30 p.m. Purchase of appropriate uniforms for the clinical site is the responsibility of the student. The state certification test fee is the responsibility of the student. Materials fee required. (A-F Only).

NURSE 115—INTRODUCTION FOR NURSING MAJORS  ½ Unit
Acquaints students with the academic requirements and curriculum for the Associate Degree Nursing program. Students view the role and function of the nurse. Students analyze their educational needs and goals and choose alternatives to enhance success through nursing education. Students will understand the curriculum requirements that pertain to them and begin to formulate an educational plan for an associate of science degree in nursing. The role of aptitudes, interests, values and skills will be addressed. Important aspects of nursing as an occupational choice will be covered along with information regarding the nursing profession. Field trips are not required. (P/NP Only)
Transfer: CSU

NURSE 259—LVN TRANSITION: ROLE CHANGE PREPARATION  1 Unit
Prerequisite: Students must provide evidence of licensure as a Licensed Vocational Nurse (LVN) in the State of California, and completion of ADN program prerequisites. Concurrent enrollment in NURSK 800 Applies skills and knowledge required for Licensed Vocational Nurses desiring to enter the 3rd semester of the Associate Degree Nursing program. Concepts and principles of the Nursing Process; role transition; legal, ethical and regulatory issues; and clinical skills inherent in the Registered Nurse role. Lecture/Laboratory. Materials fee required. One completion allowed. (Fall, Spring) (A-F Only).
Transfer: CSU

Transfer: CSU (CC NATRE 160) (CSU (CC NATRC 181) (MJC-GE:A) (CSU-GE: B1, B3) (MJC-GE:A) (CSU-GE: B1, B3)

Transfer: CSU (CC NATRE 160) (CSU (CC NATRC 181) (MJC-GE:A) (CSU-GE: B1, B3) (MJC-GE:A) (CSU-GE: B1, B3)

Transfer: CSU (CC NATRE 160) (CSU (CC NATRC 181) (MJC-GE:A) (CSU-GE: B1, B3) (MJC-GE:A) (CSU-GE: B1, B3)
NURSE 260—NURSING PROCESS: PHARMACOLOGY 2 Units
Prerequisite: Acceptance into the Associate Degree Nursing program.
Concurrent enrollment in: NURSE 261 and NURSK 800
Recommended for Success: Satisfactory completion of FDNTR 219
Enrollment limited to: Capacity of MJC Nursing Program
Introduction to concepts of Pharmacology, including pharmacokinetics, pharmaceutical systems of measurements and calculations, drug classifications, and nursing responsibilities in medical administration. Lecture. One completion allowed. (Fall, Spring) (A-F Only) Transfer: CSU

NURSE 261—NURSING PROCESS: FUNDAMENTALS 8 Units
Prerequisites: Acceptance into the MJC Associate Degree Nursing Program
Concurrent enrollment in: NURSE 260 and NURSK 800
Recommended for Success: Satisfactory completion of NURSE 115, FDNTR 219
Enrollment limited to: Capacity of MJC Nursing Program
Applies fundamental concepts and principles of the nursing process to the care and needs of patients within the acute care setting. Focus on assessment and care of patients experiencing alterations in basic health needs. Practice of basic clinical skills in a simulated lab setting prior to beginning care in the acute care facility. Additional theoretical principles include therapeutic communication, patient teaching, professional ethics, and legal aspects of nursing. Lecture/Laboratory. Field trips may be required. Materials fee required. One completion allowed. (Fall, Spring) (A-F Only) Transfer: CSU

NURSE 262—NURSING PROCESS: SKILLS ½ Unit
Prerequisites: Satisfactory completion of NURSE 260 and NURSE 261
Concurrent enrollment in: NURSK 800
Enrollment limited to: Capacity of MJC Nursing Program
Prepares the nursing student to perform nursing skills necessary for satisfactory participation in the obstetrics and pediatric clinical setting. Skills include intravenous therapy, gavage feeding, infant bathing, delivery table set-up, and correct administration of medications. Materials fee required. Laboratory. (A-F Only) (Fall, Spring) Transfer: CSU

NURSE 263—NURSING PROCESS: MATERNITY 4 Units
Formerly listed as “NURSE 252 - Nursing Process 2”
Prerequisite: Satisfactory completion of NURSE 260 and 261
Corequisite: NURSK 800
Enrollment limited to: Capacity of MJC Nursing Program
Applies the basic principles and concepts of the nursing process to meeting the needs of the childbearing woman, family, and patient with alterations of the reproductive system. Health maintenance, prevention of illness, and patient/family teaching in the hospital and community setting will be emphasized. Includes socio-cultural-spiritual aspects of the family. Field trips may be required. Lecture/Lab. (Fall, Spring) (A-F Only) Transfer: CSU

NURSE 264—NURSING PROCESS: PEDIATRICS 4½ Units
Formerly listed as “NURSE 252 - Nursing Process 2”
Prerequisite: Satisfactory completion of NURSE 260 and 261 with a grade of “C” or better.
Corequisite: NURSK 800
Enrollment limited to: Capacity of MJC Nursing Program
Applies the principles and concepts of the nursing process to making the adaptation needs of the pediatric patient and patient with alterations of the reproductive system. Family-centered care in the hospital and outpatient settings will be emphasized. Health maintenance and prevention of illness is emphasized in patient/family teaching throughout the course. Field trips may be required. One completion allowed. Lecture/Lab. (Fall, Spring) (A-F Only) Transfer: CSU

NURSE 265—NURSING PROCESS: MEDICAL-SURGICAL 6 Units
Formerly listed as “NURSE 253 - Nursing Process 3”
Prerequisites: Satisfactory completion of NURSE 262, 263, and 264 with a grade of “C” or better
Concurrent enrollment in: NURSK 800
Enrollment limited to: MJC Nursing Program capacity
Applies the principles and concepts of the nursing process that focus on promoting adaptation of adolescent through senescent clients with serious or complex health alterations. Students will complete didactic units in oxygenation, cardiovascular, hematological, immunological, and oncologic nursing. Acute hospital settings and hospice services will be utilized for the clinical practicum of the course. Lecture/Lecture/Laboratory. Materials fee required. Field trips may be required. One completion allowed. (Fall, Spring) (A-F Only) Transfer: CSU

NURSE 266—NURSING PROCESS: MENTAL HEALTH 4 Units
Formerly listed as “NURSE 253 - Nursing Process 3”
Prerequisites: Satisfactory completion of NURSE 262, 263, and 264
Concurrent enrollment in: NURSK 800
Enrollment limited to: MJC Nursing Program capacity
Applies the principles and concepts of the nursing process to meet the needs of clients with psychiatric disorders across the life span. Mental health maintenance, prevention of illness, patient/family teaching, and therapeutic communication/relationships will be emphasized. Students will be assigned to an acute psychiatric setting and tertiary areas that support and provide community mental health care services. Lecture/Lecture/Laboratory. Field trips may be required. One completion allowed. (Fall, Spring) (A-F Only) Transfer: CSU

NURSE 267—NURSING PROCESS: 11 Units
Formerly listed as “NURSE 254 - Nursing Process 4”
Prerequisites: Satisfactory completion of NURSE 265 and 266
Concurrent enrollment in: NURSK 800
Enrollment limited to: MJC Nursing Program capacity
Includes advances in medical/surgical concepts and principles in the nursing process. Promotes role transition from student nurse to professional nursing through a clinical preceptorship. The student is responsible for all clinical skills learned in previous semesters, acquires new skills and takes a clinical competency test in the acute care setting. The Five-week, 156 hour preceptorship is the capstone of the nursing program, encompassing all clinical, technical, and critical thinking skills learned in the program, and emphasizing leadership in management of the patient care. In preceptorship, the student works directly with a registered nursing preceptor in the acute care facility. Materials fee required. Materials fee required. One completion allowed. (Fall, Spring) (A-F Only) Transfer: CSU

NURSE 350—VOCATIONAL NURSE 1 14 Units
Enrollment limited to those admitted to the CNA to LVN program
Applies the fundamentals of nursing to the care and needs of patients within the acute and long-term hospital setting. Care of patients with alterations in basic health care needs. Practice of fundamental clinical skills in a simulated lab setting prior to beginning care in the hospital. Lecture/Lecture/Laboratory. Field trips required. (A-F Only)

NURSE 351—VOCATIONAL NURSE 2 12 Units
Prerequisite: Satisfactory completion of NURSE 350
Apply concepts of care for adults with disorders of the musculoskeletal system, integumentary system, and cardiopulmonary-system. Apply concept of mental health, wellness and illness, in health care. Practical experience will be in skilled nursing, health care clinics, and acute care settings. Lecture/Lab. (A-F Only)

NURSE 352—VOCATIONAL NURSE 3 13 Units
Prerequisite: Satisfactory completion of NURSE 351.
Applies the basic principles and concepts of the nursing process to meet the adaptation needs of adult patients with disorders of the neurological system, gastrointestinal system, urinary system, endocrine system and the eye, ear, nose, and throat. Practical experience will be in skilled nursing facilities, health care clinics and acute care settings. (A-F Only) Lecture/Laboratory.

NURSE 353—VOCATIONAL NURSE 4 9 Units
Prerequisite: Satisfactory completion of NURSE 352
Applies basic nursing knowledge to the care and needs of adult patients with disorders of the reproductive system, during normal maternity nursing care and pediatric patients. Practical experience will be gained in the acute hospital setting. Nursing leadership principles are introduced. (A-F Only). Lecture/Laboratory. Materials fee required.
NURSE - OFADM

NURSE 354—VOCATIONAL NURSE 5 2 Units
Prerequisite: Satisfactory completion of NURSE 353
Applies the basic principles and concepts of the nursing process and leadership during preceptorship in a skilled nursing facility or health care facility. Lecture/Laboratory. (A-F Only)

NURSE 355—INTRA-VENOUS THERAPY 1 Unit
Enrollment limited to Licensed Vocational Nurses or those who are eligible for NCLEX-PN
Applies the foundation and basic concepts of infusion therapy, including LVN nursing responsibilities in the initiation, maintenance, and therapeutic modalities of intra-venous therapy. The course focuses on risk management and legal responsibilities, quality assessment and competency criteria, infection control practices related to infusion therapy, fundamentals of fluid and electrolyte balance, and special needs of the pediatric and geriatric population. (A-F Only) Lecture/Laboratory. Materials Fee Required.

NURSK (Nursing: Skills)

NON-CREDIT COURSES

NURSK 800—NURSING SKILLS DEVELOPMENT
Concurrent Enrollment: NURSE 40, 259, 261, 262, 263, 264, 265, 266 or 267
Provides simulated clinical experiences in a supervised laboratory setting for students who must use the Allied Health skills laboratory to achieve the objectives of a course in which they are enrolled. Unlimited repeats. Laboratory.

NURSE (Nursing: Work Experience)

Modesto Junior College serves the needs of its students and those of the community through its Cooperative Vocational Work Experience Program. A program objective is to provide guidance and opportunity for career planning by students in the real laboratory of the community’s business and industries. Work experience education results when it encompasses a systematic plan whereby students, while in college, gain realistic employment experiences through part-time work.

Students should consult their advisors to determine divisional practice on work experience units acceptable toward major requirements. Pay may or may not be received for work experience programs depending upon the type and place of employment.

NURWE 361—WORK EXPERIENCE-NURSING 1 Unit
Corequisite: Satisfactory completion or concurrent enrollment: NURSE 262, 263, 264, 265, 266 or 267. If enrolled in Work Experience during the summer, the student must be in good standing in the Associate Degree Nursing (ADN) program and be enrolled in NURSE 299A or one other college course. Enrollment in a minimum of 7 units which may include Cooperative Vocational Work Experience. Summer session students need only complete one other course, regardless of units. Must be employable as Nurse Assistant.
Provides the student enrolled in the ADN program an opportunity to obtain nursing experience in a structured clinical work/study community service program in participating clinical agencies. Students gain additional practice in nursing by applying previously learned knowledge and skills. Lecture: 1 hour arranged. 75 hours related work experience per semester equals 1 unit.

NURWE 362—WORK EXPERIENCE-NURSING 2 Units
Corequisite: Satisfactory completion or concurrent enrollment: NURSE 262, 263, 264, 265, 266 or 267. If enrolled in Work Experience during the summer, the student must be in good standing in the Associate Degree Nursing (ADN) program and be enrolled in NURSE 299A or one other college course. Enrollment in a minimum of 7 units which may include Cooperative Vocational Work Experience. Summer session students need only complete one other course, regardless of units. Must be employable as Nurse Assistant.
Provides the student enrolled in the ADN program an opportunity to obtain additional nursing experience in a structured clinical work/study community service program in participating clinical agencies. Students gain additional practice in nursing by applying previously learned knowledge and skills. Lecture: 1 hour arranged. 150 hours related work experience per semester equals 2 units. May be completed up to 4 times. (P/NP only).

NURWE 385A-D—WORK EXPERIENCE VOCATIONAL NURSE 1 1-4 Units
Concurrent enrollment: NURSE 350
The Nursing Work Experience is designed to provide an opportunity for students enrolled in Vocational Nursing Program to participate in relevant work experiences in a community clinical agency participating in nursing work experience. Students acquire knowledge, skills, and attitudes necessary for success in the field of nursing. (P/NP Only)

OFADM (Office Administration)

OFADM 201—INTERMEDIATE KEYBOARDING 1 Unit
Recommended for Success: Before enrolling for this course, students are strongly advised to have completed at least one semester of keyboarding and type a minimum of 45 gross words per minute on a five-minute test.
First of three modules in OFADM 203. Further development of keyboarding with an emphasis on speed and accuracy; practice and drill on production keyboarding, drill and practice on formatting techniques and procedures for setting up business letters; academic and business reports; tables, business forms, including interoffice memoranda, resumes, minutes, and agendas. Individualized instruction. Open entry/open exit. (A-F Only) Transfer: CSU

OFADM 202—INTERMEDIATE KEYBOARDING 2 Units
Recommended for Success: Before enrolling for this course, students are strongly advised to have completed at least one semester of keyboarding and type a minimum of 45 gross words per minute on a five-minute test.
Second of three modules in OFADM 203. Further development of keyboarding with an emphasis on speed and accuracy; practice and drill on production keyboarding, drill and practice on formatting techniques and procedures for setting up business letters; academic and business reports; formal reports and all components, tables, business forms, including interoffice memoranda, resumes, minutes, and agendas. Individualized instruction. Open entry/open exit. (A-F Only) Transfer: CSU

OFADM 203—INTERMEDIATE KEYBOARDING 3 Units
Recommended for Success: Before enrolling for this course, students are strongly advised to have completed at least one semester of keyboarding and type a minimum of 45 gross words per minute on a five-minute test.
Further development of keyboarding with an emphasis on speed and accuracy; practice and drill on production keyboarding, drill and practice on formatting techniques and procedures for setting up business letters; academic and business reports; formal reports and all components, tables, business forms, including interoffice memoranda, resumes, minutes, and agendas. Also, the design and creation of effective office forms and publications, such as letterheads, notepads, cover pages, announcements, flyers, and newsletters. Individualized instruction. Open entry/open exit. (A-F Only) Transfer: CSU
OFADM 231—INTERMEDIATE WORD PROCESSING 3 Units
Recommended for Success: Satisfactory completion of OFADM 203 and either OFADM 330 or CMPSC 274.
Intermediate word processing features such as mail merge, macros, styles, graphics, tabs, and sorts. Features will be applied in creating business documents. Two maximum completions. Lecture/Laboratory. Transfer: CSU (CC OFTEC 121)

OFADM 232—ADVANCED WORD PROCESSING AND DESKTOP PUBLISHING 3 Units
Recommended for Success: Before enrolling in this course, students are strongly advised to: satisfactorily complete CMPSC 231 or OFADM 231), or demonstrate prior knowledge of word processing software.
Application of advanced word processing techniques and procedures including those features relating to desktop publishing. For students who are already knowledgeable in word processing software. Field trips are not required. Lecture/Laboratory. (A–F or P/NP) Transfer: CSU

OFADM 301—BEGINNING KEYBOARDING 1½ Units
Development of basic alpha/numeric keyboarding skills needed for the operation of the keyboard by touch. Drills to develop speed and accuracy on straight copy. Designed for students with no previous keyboarding/typing writing experience. Lecture/Laboratory. (A–F Only) Transfer: CSU (CC OFTEC 120)

OFADM 302—BEGINNING DOCUMENT PROCESSING 1½ Units
Recommended for Success: Satisfactory completion of OFADM 301 or ability to keyboard by touch at 25 GWAM.
Further development of speed and accuracy on the alpha/numeric keyboard. Instruction in opening, saving, naming, printing documents; deletion and addition of text; margin/tab settings; spacing techniques; text editing techniques; vertical/horizontal centering, basic business letter, memo and report formats. Laboratory. (A–F Only) Transfer: CSU (CC OFTEC 120)

OFADM 303—KEYBOARDING FOR SPEED AND ACCURACY ½ Unit
Recommended for Success: Satisfactory completion of OFADM 301 or ability to keyboard by touch at 25 GWAM.
Keyboarding course designed to diagnose a student's current keyboarding skills needs, prescribe appropriate practice materials, measure skill development, improve speed and accuracy, and continually evaluate the skill-building process. Four maximum completions. (A–F Only)

OFADM 304—PROFESSIONAL ENGLISH FOR BUSINESS 3 Units
Recommended for Success: Satisfactory completion of ENGL 49 or equivalent placement by the MJC assessment process.
Review of the mechanics of correct English usage as applied in the business environment. Emphasis on sentence structure, word usage, punctuation, spelling, business vocabulary, dictionary usage, grammar review, and proofreading. Heavy emphasis is placed on the use of various business documents throughout the course for students to apply their writing skills. Lecture.

OFADM 305—RECORDS MANAGEMENT 3 Units
Filing rules and their application to alphabetic, numeric, geographic, and subject systems; establishing manual and computer filing systems; records, control, retention, transfer, equipment, and supplies, micrographics; using the computer to store, organize, maintain, and retrieve information. Field trips may be required. Lecture/Laboratory.

OFADM 311—BUSINESS EDITING AND PROOFREADING 3 Units
Recommended for Success: Ability to keyboard by touch.
Development of skills in transcribing typed and handwritten notes using word processing and voice recognition tools. Emphasis will be placed on the mechanics of letter styles, as well as grammar, punctuation, spelling, vocabulary, syllabication, capitalization, proofreading, and use of figures. One completion allowed. (A–F or P/NP) Lecture.

OFADM 312—ALPHABETIC NOTETAKING 3 Units
Recommended for Success: Before enrolling in this course, students are strongly advised to satisfactorily complete OFADM 301.
Abbreviated writing system, using the alphabet, designed to give students a quick and easy method of writing in a short period of time. Designed for academic or job-related activities with emphasis on increasing speed in taking notes for college or business. Lecture. (A–F Only)

OFADM 313—OFFICE SKILLS 3 Units
A study of various positions available in an office. Emphasis on location, skills, salary, benefits and retirement packages of office positions. Covers entry-level skills and experiences necessary for beginning office positions, including career planning, telephone and time management skills. Recommended as a first semester course for students pursuing an Office Administration or Clerical certificate or degree. Field trips may be required. Lecture.

OFADM 314—OFFICE PROCEDURES AND TECHNOLOGIES 3 Units
Recommended for Success: Satisfactory completion of OFADM 203 or 231.
A study of the attributes and skills needed to work in an office. Explores duties of receptionist, office clerk, word processing operator, and administrative assistant. Covers topics in telecommunications, reprographics, oral and written communications, mailing and shipping, and financial record keeping. Field trips may be required. Lecture. (Fall-Only) (CC OFTEC 131)

OFADM 315—TODAY'S OFFICE 2 Units
Recommended for Success: Before enrolling in this course, students are strongly advised to have completed all Required Courses for Office Administration or Clerical degree or certificate.
Provides a simulated office environment to give students the experience that is often necessary in obtaining and keeping an office position. Students will be "hired" as an employee within the simulated office with the availability of transferring to other positions later in the course. Application of skills and knowledge necessary to be an effective employee will be emphasized. Upon mastery of necessary skills, students may be placed as interns in offices to gain additional experience. The course should be taken in the student's last semester before graduation or certificate completion. (A–F or P/NP) Laboratory. (Spring Only)

OFADM 320—TELEPHONE TECHNIQUES 1 Unit
Development of effective use of the telephone. Scenarios include appropriate greetings, placing callers on hold, dealing with difficult callers, and communication on the telephone. Telephone equipment and services are also covered. Lecture/Laboratory. (A–F or P/NP)

OFADM 328A,B—MACHINE TRANSCRIPTION 1,2 Units
Recommended for Success: Satisfactory completion of (OFADM 311 or 304) and ability to keyboard 40 gross words per minute on a five minute test.
Introduction and practice in the use of a standard transcribing machine. Individualized instruction in the keyboarding of general business documents including letters, memoranda and reports. Open entry/open exit. Two maximum completions for 328A only. (A–F Only) Transfer: CSU (CC OFTEC 121)

OFADM 330—BEGINNING WORD PROCESSING 3 Units
Recommended for Success: Beginning keyboarding or equivalent.
Introduction to the use and capabilities of word processing software with hands on experience in creating, revising and printing documents. Course designed for initial exposure to word processing. Students who have completed CMPSC 201, 202, or 274 or OFADM 356 should enroll in OFADM/CMPSC 231. Two maximum completions. Lecture/Laboratory.

OFADM 331—INTRODUCTION TO COMPUTERS AND WINDOWS 1 ½ Unit
Recommended for Success: Ability to keyboard by touch.
Basic introduction to computers and the Windows Operating Environment. Course will explain components of a computer system and provide hands-on training using a personal computer with Windows software. Course is for students new to using personal computers and the Windows environment. Lecture/Laboratory. Materials fee required. (A–F Only)

OFADM 351—INTRODUCTION TO COMPUTERS AND WINDOWS 2 ½ Unit
Recommended for Success: Ability to keyboard and OFADM 351.
Continuation of OFADM 351. Explores Windows accessories, providing hands-on experience in the use of the features and use of a graphical user interface. Lecture/Laboratory. Materials fee required. (A–F Only)
OFADM 353—INTRODUCTION TO COMPUTERS AND WINDOWS
1 Unit
Recommended for Success: Ability to keyboard.
A combination of OFADM 351 and 352 courses. Basic introduction to computers and the Windows Operating Environment. Explains components of a computer system and provides hands-on training using a personal computer. Intended for students new to using personal computers and the Windows environment. Lecture/Laboratory. Materials fee required. (A-F Only)

OFADM 354—INTRODUCTION TO WORD PROCESSING 1
½ Unit
Recommended for Success: Ability to keyboard by touch.
An introductory course in word processing. Features of word processing software presented in a hands-on learning environment. Lecture/Laboratory. Materials fee required. (A-F Only)

OFADM 355—INTRODUCTION TO WORD PROCESSING 2
½ Unit
Recommended for Success: Satisfactory completion of OFADM 354
A continuation of the OFADM 354 course—Introduction to Word Processing. The course is designed for learning document processing through application of word processing software features. Lecture/Laboratory. Materials fee required. (A-F Only)

OFADM 356—INTRODUCTION TO WORD PROCESSING
1 Unit
Recommended for Success: Ability to keyboard by touch.
A combination of the OFADM 354 and 355 courses. A beginning course in the use of word processing software. Features of the software will be explained and demonstrated in a hands-on learning environment. Lecture/Laboratory. Materials fee required. (A-F Only)

OFADM 357—INTRODUCTION TO SPREADSHEET SOFTWARE 1
½ Unit
Recommended for Success: Satisfactory completion of OFADM 351
Introduction to spreadsheet software. Spreadsheets features applied to the creation of worksheets. Lecture/Laboratory. Materials fee required. (A-F Only)

OFADM 358—INTRODUCTION TO SPREADSHEET SOFTWARE 2
½ Unit
Recommended for Success: Satisfactory completion of OFADM 357
A continuation of OFADM 357. Spreadsheet charts, worksheet layout, sorting and copying. Two maximum completions. Lecture/Laboratory. Materials fee required. (A-F Only)

OFADM 359—INTRODUCTION TO SPREADSHEET
1 Unit
Recommended for Success: Satisfactory completion of OFADM 353
A combination of OFADM 357 and 358. Introduction to spreadsheet features applied to the creation of worksheets, charts, worksheet layout, sorting, and copying. Lecture/Laboratory. Materials fee required. (A-F Only)

OFADM 360—INTRODUCTION TO DATABASES
1 Unit
Recommended for Success: Satisfactory completion of OFADM 353
A beginning course using features of database software. Course is designed to enable students to learn and apply the features of database software to organize information and to work with stored information. Two maximum completions. Lecture. Materials fee required. (A-F Only)

OFADM 361—INTRODUCTION TO BUSINESS PRESENTATION SOFTWARE
1 Unit
Recommended for Success: Satisfactory completion of OFADM 353
A beginning course using computer software to design slides, outlines, note pages, and audience handouts for business presentations. Two maximum completions. Open entry/open exit. Materials fee required. (A-F Only)

OFADM 362—UNDERSTANDING THE INTERNET
1 Unit
Fundamentals of using the internet. Topics included in the course: internet terminology, use of browsers, search engines and sites, downloading of files and e-mail. (A-F Only)

OFADM 363—GRAMMAR IN THE OFFICE
1 Unit
Basic English grammar for office employees. Emphasis on parts of speech, subject and verb agreement, pronoun usage, sentences, punctuation, number usage, and business terms. Proofreader’s marks and symbols are introduced, and strategies for effective business writing are presented. Open entry/open exit. (A-F Only)

OFADM 366—PROOFREADING TECHNIQUES
1 Unit
Recommended for Success: Satisfactory completion of OFADM 304
A self-paced course addressing the skills needed to identify mechanical and content errors in handwritten or printed text by using proofreader’s marks. Grammar, punctuation, and spelling rules will be reviewed. (A-F Only)

OFADM 375—10-KEY ON THE COMPUTER
1 Unit
Recommended for Success: Satisfactory completion of OFADM 301 or ability to keyboard by touch.
Touch system of numeric keys on the 10-key pad. Materials fee required. Open entry/open exit. (A-F Only)

OLDAD (Older Adults)

NON-CREDIT COURSES

OLDAD 820—JEWELRY AND METALCRAFT
Techniques and the construction of jewelry from copper, bronze, sterling silver, and gold; setting of stones in jewelry; and techniques of the lost wax method of casting. Designed for older adults but open to all students. Unlimited repeats. Field trips may be required. Laboratory. Not a graded course.

OLDAD 822—LAPIDARY
Basic lapidary skills, faceting, grinding, polishing, and mounting of semiprecious, precious, and ornamental stones. How to recognize, procure, and develop gem materials, experiment with, and display gem ornamentation showing utility and craftsmanship. Diamond saw cutting, carving in stone table tops, and the making of mosaics and intarsia. Designed for older adults but open to all students. Unlimited repeats. Field trips required. Laboratory. Not a graded course.

OLDAD 830—PUBLIC SPEAKING: TALKING IT OUT
Development of effective listening, thinking and speaking skills among the older adult population. Course builds and reinforces speech development skills. Unlimited repeats. Lecture. Not a graded course.

OLDAD 874—CLOTHING CONSTRUCTION THROUGH KNITTING
Learn care of different types of fiber such as wool, cotton, and synthetic, the importance of gauge and weights of yarn and their uses. Basic skill development in knit, pearl, cast on and cast off, increase and decrease. Introduction to different knitting techniques such as intarsia, mosaic, fair isle, and decorative stitches and ways to implement them into garments. Not a graded course.

PE (Physical Education)

The Physical Education program at MJC offers a balanced approach based upon the individual interests and needs of the student. In addition to a wide spectrum of physical education activity classes, MJC offers intercollegiate competition in many sports and adaptive physical education courses. Theory classes are offered in basketball, football, track and field, wrestling, softball, and baseball. Since the majority of career opportunities in Physical Education exist for students completing a bachelor's degree, general education and transfer courses are...
Courses should be selected with the assistance of a Physical Education faculty advisor. Students interested in a career in Physical Education are encouraged to take a variety of activity classes each semester, thereby broadening their activity skills before transfer.

Repeat Limitations on Physical Education Courses
No activity may be taken more than four times, regardless of the number of skill levels it may have listed. Persons who have met the limit of repetition of credit courses as stated in the catalog may audit the course with the approval of the instructor. Auditors receive no credit for class work, no grade, and no record is kept of their performance in class. Enrollment is allowed after the first day of instruction. An Audit Enrollment Form can be obtained in the Admissions office after staff verify that the repeat limit has been reached. This form must be signed by the instructor and the student and turned in to the Admissions Office along with a payment of $15.00 per unit paid to the Business Office. Students enrolled in ten (10) or more units at the time audit enrollment occurs will not be assessed the fee up to three (3) units.

For purposes of this limitation, activities are defined as Adaptive, Baseball, Basketball, Body Mechanics, Bowling, Cross Country, Dance, Divinng, Fencing, Football, Golf, Gymnastics, Lifesaving, Racquetball, Self-Defense, Soccer, Softball, Swimming, Table Tennis, Tennis, Track and Field, Volleyball, Water Polo, Weight Training, and Wrestling.

• CSU - 12 units maximum.

• UC - See UC All Campus Credit List for credit limitations

(Available in Counseling Office)

Activities Requirement for Degree

Physical Education classes used to fulfill the graduation activities requirement must be from the PEA, PEC, PEM, PEW, PEVM, or PEVV class listings.

PE 90A, B — ASSISTING IN ADAPTED PHYSICAL EDUCATION 1, 2 Units
Prerequisite: Satisfactory completion of PE 122
Experience working with physically limited students enrolled in the PEA programs. Emphasis on application and improvement in skills acquired in PE 122. Opportunity to work with students with a wide range and varying degrees of disabilities and disease manifestations. PE 90A has four maximum completions and PE 90B has two maximum completions. Laboratory.

PE 100—INTRODUCTION TO PHYSICAL EDUCATION 3 Units
History, philosophy, and principles of physical education. Study of the aims and objectives of modern physical education with emphasis on the development of basic philosophy and background for the profession of physical education. Lecture. (A-F Only) Transfer: CSU, UC

PE 101—BASKETBALL THEORY 1 Unit

PE 102—OFFENSIVE FOOTBALL THEORY 2 Units
An analysis of offensive position and team play. Critical analysis of offensive techniques, rules, physical and mental training procedures, and film evaluation. Lecture. Transfer: CSU, UC

PE 103—TRACK AND FIELD TEAM CONCEPTS 1 Unit
Specialized approach to track and field. Rules, training procedures, strategy, and performance evaluation. Two maximum completions. Lecture. Transfer: CSU, UC

PE 104—WRESTLING THEORY 1 Unit

PE 105—DEFENSIVE FOOTBALL THEORY 2 Units
An analysis of defensive position and team play. Critical analysis of defensive techniques, rules, physical and mental training, and film evaluation. Lecture. Transfer: CSU, UC

PE 106—OFFENSIVE BASEBALL THEORY 2 Units
An analysis of offensive techniques, position and team play. Coverage of rules and training procedures. Two maximum completions. Lecture/Laboratory. Not offered every semester. Transfer: CSU, UC

PE 107—DEFENSIVE BASEBALL THEORY 2 Units
Analysis of defensive techniques, position and team play. Coverage of rules and training procedures. Two maximum completions. Lecture/Laboratory. Not offered every semester. Transfer: CSU, UC

PE 108—CARE AND PREVENTION OF ATHLETIC INJURIES 3 Units
Designed for prospective coaches, trainers, health and physical educators, and athletes, to aid in the recognition, evaluation and care of athletic injuries. Techniques in taping, prevention, and rehabilitation of injuries. Sport specific injuries are examined and discussed to familiarize students with the multitude of injuries that can occur in sporting activities. Lecture. (A-F or P/NP) Transfer: CSU, UC

PE 109—PEAK PERFORMANCE THROUGH MENTAL TRAINING 3 Units
The study of and practical experience in techniques for maximizing sport and dance performance through the development of mental skills and strategies for stress control, imagery, goal setting, and concentration. Lecture. Transfer: CSU, UC

PE 110—OFFICIATING: SPRING SPORTS 3 Units
Regulations and techniques of officiating baseball and softball. Lecture. (Fall) Transfer: CSU, UC

PE 111—APPLICATION OF SPORTS MEDICINE 3 Units
Prerequisite: Satisfactory completion of PE 108
Practical application of modalities and techniques used in the treatment and care of athletic injuries for the prospective Athletic Trainer. Emphasis on injury recognition, development of conditioning and reconditioning programs, and taping techniques to enable athletes to return to competitive activities. Lecture. (A-F Only) Transfer: CSU, UC

PE 113—OFFENSIVE/DEFENSIVE SOFTBALL THEORY 1 Unit
Analysis of offensive and defensive techniques, strategies, positions and team play which includes rules and physical and mental training procedures. Two maximum completions. Lecture/Laboratory. Not offered every semester. Transfer: CSU, UC

PE 114—CROSS COUNTRY CONCEPTS 1 Unit

PE 115—OFFICIATING: FALL SPORTS 3 Units
Regulations and techniques of officiating football, basketball. (A-F or P/NP). Lecture. Transfer: CSU, UC

PE 116—FOOTBALL TEAM PLAY CONCEPTS 2 Units
Essential concepts of team-building in football. Goal-setting and development of individual roles. Exploration of team communication processes and activation of leadership of the successful football team. Provides both the participant and the future mentor specialized exposure for an in-depth survey of team building in regard to the sport of football. Lecture/Laboratory. Field trips may be required. (A-F or P/NP) (Fall) Transfer: CSU, UC
PE 120 —SPORTS AND SOCIETY 3 Units
Examine sports as a significant aspect of modern culture and a major institution of modern society. Topics that will be analyzed include: gender and sports, the relationship between organized sports and aggression, sports as an economy, and the issues of social class and race in sports (A-F or P/NP)
Transfer: CSU, UC

PE 121 —COACHING EFFECTIVENESS 3 Units
Role of coach in athletics, ethics, leadership and management principles, psycho-social aspects of athlete behavior management, motor learning, physiological systems and physical training theory. Lecture: (A-F of P/NP) Transfer: CSU

PE 122 —ADAPTED PHYSICAL EDUCATION THEORY AND LAB 3 Units
Common definitions, scope and basic concepts of Adapted Physical Education. A study of specific disabilities, with a primary focus on identification, etiology and implications for physical education. Course includes practical experience in the field. Intended for students interested in pursuing a career in physical therapy, nursing, adapted physical education, gerontology or fields requiring one to work with individuals with disabilities. Lecture/Laboratory Transfer: CSU, UC (A-F Only)

PE 130 —PERSONAL TRAINER HEALTH FITNESS INSTRUCTOR 3 Units
Recommended for Success:  Satisfactory completion of PEC 195, PEC 197, or PEW 192
Basic competency in designing and implementing fitness programs for a healthy population. Features both practical and theoretical instruction as well as career advice. Emphasis on safe and efficient methods of teaching cardiovascular training, resistance training, balance training and flexibility training for individuals or groups. Covers a broad range of exercise physiology, exercise program design, anatomy of major muscle groups, interval and circuit training, exercise biomechanics, advance lifting techniques, the basics of working with special populations, and exercise progression. Lecture. Maximum one completion. (A-F or P/NP) Transfer: CSU

PE 132 —AQUATIC FITNESS & HEALTH INSTRUCTOR 3 Units
Basic competency in designing and implementing aquatic fitness programs for a healthy population. Features both practical and theoretical instruction as well as career advice. Emphasis on safe, effective and efficient methods of teaching cardiovascular training, resistance training, balance training, and flexibility training for group aquatic exercise. Covers a broad range of exercise physiology, exercise program design, anatomy of major muscle groups, water laws, the basics of working with special populations, and modifications. Field trip may be required. (A-F or P/NP) One completion allowed. Lecture Transfer: CSU

PE 141 —SUPERVISION IN ATHLETIC TRAINING 2 Units
Policies and procedures, emergency protocols, vital signs, blood borne pathogens, and daily functions that are necessary for the student to work in the Athletic Treatment Center. Students will develop a plan using decision-making strategies, analysis, and an awareness of the factors related to medical protocols. The students will work in the Athletic Treatment Center with our athletes and coaches for an in-depth experience related to sports medicine. Field trips may be required. Four maximum completions. Lecture/Laboratory (A-F Only) Transfer: CSU

PE 194 —INTRODUCTION TO WORLD DANCE 3 Units
Also offered as THETR 194.
A survey of dance and its development as an art form through social, political and cultural context. Investigation of cultural traditions and styles; values, aesthetics and more will be explored. (A-F only) Lecture: Transfer: CSU, UC General Education: (MJC-GE:C)(CSU-GE: C1) (IGETC: 3A)

PE 349 —WORK EXPERIENCE: PHYSICAL EDUCATION 1-4 Units
Concurrent Enrollment in a minimum of 7 units, which may include Cooperative Vocational Work Experience.
Designed for physical education and health majors who wish to combine classroom experience with an expansion of skills or knowledge acquired at a site of employment or volunteer basis. Work must relate to the student’s area of study. Maximum 4 units may be earned per semester. May be repeated to a maximum of 16 units work experience credit. (Cooperative General Work Experience is included in this maximum.) Also offered during May, June, and July. (A-F Only) Maximum four completions.

PEA —ADAPTED PHYSICAL EDUCATION: ADAPTED ACTIVITIES

PEA 104 —ADAPTED STRENGTH DEVELOPMENT 1 Unit
Recommended for Success: Provide medical verification of disability and recommendation of medical specialist.
Development and maintenance of muscular strength for students with physical/medical limitations. Emphasis on encouraging independence and teaching lifelong fitness knowledge and skills. Four maximum completions. Lecture/Laboratory/Other (MJC Activities) Transfer: CSU, UC

PEA 106 X, A —FUNCTIONAL WATER EXERCISE ½,1
Recommended for Success: Medical verification of physical or learning disability or motor problems.
A specialized course in physical fitness involving group aquatic exercises which include range of motion, strength, endurance, and flexibility training. Specialized adapted equipment appropriate for limited mobility conditions may be used. (MJC Activities) Transfer: CSU, UC

PEA 107 —ADAPTED SWIMMING 1 Unit
Recommended for Success: Medical verification of physical or learning disability or motor problems. Basic swimming and water safety skills.
A specialized course in physical exercise which includes personalized and group swim exercises which include strength, endurance, and flexibility training and instruction in improving and/or modifying swimming skills. (MJC Activities) Transfer: CSU, UC

PEA 108 —ADAPTED AQUATICS 1 Unit
Recommended for Success: Medical verification of physical or learning disability or motor problems.
A specialized course in physical exercise which includes personalized and group aquatic exercises for strength, endurance, and flexibility may which can involve specialized adapted equipment appropriate to one’s disability or injury. (MJC Activities) Transfer: CSU, UC

PEA 116 —ADAPTED RUN/WALK 1 Unit
Recommended for Success: Medical verification of physical or learning disability or motor problems.
Personalized and group exercises that include development of an overall fitness routine involving conditions for walking and/or running: balance, gait, functional motor control, developmental movement, strength and endurance. Emphasis on encouraging independence and teaching lifelong fitness knowledge and skills. Recommended for students with physical and learning disabilities. Laboratory. Four maximum completions. (MJC Activities) Transfer: CSU, UC

PEA 119 —ADAPTED SPORTS 1 Unit
Recommended for Success: Medical verification of physical or learning disability or motor problems.
Introduces students with a physical and/or developmental disabilities to a variety of sports. Students will safely participate in sports such as, but not limited to, softball, volleyball, tennis, Frisbee, soccer, basketball, and golf. Laboratory. Four maximum completions. (Spring) (MJC Activities) Transfer: CSU

PEA 141 —ADAPTED FITNESS 1 Unit
Recommended for Success: Provide medical verification of physical or learning disability or motor problems.
A specialized course in physical exercise which includes individual and group exercises that include development of an overall fitness routine involving all aspects of body conditioning: balance, flexibility, functional motor control, developmental movement, strength and endurance. There will be an emphasis on encouraging independence and teaching lifelong fitness knowledge and skills. Four maximum completions. Lecture/Laboratory. (MJC Activities) Transfer: CSU, UC
PEA 154—BACK BASICS
1 Unit
Recommended for Success: Medical verification of physical or learning disability or motor problems.
Intended for students with medically verified physical disabilities. Improvement of back health including, structure of healthy spine and musculature, common deviations and back injuries and proper body mechanics. Students participate in flexibility training, Pilates, body mechanics, and a progressive exercise program to build musculature and correct posture. Students learn how to perform daily living activities while maintaining back health. Laboratory. Four maximum completions. (MJC Activities) Transfer: CSU, UC

NON-CREDIT COURSES

PEA 800—ADAPTIVE EXERCISE FOR MATURE ADULTS
Use of adaptive weight room and equipment for body maintenance, strengthening, and conditioning. Designed for students with disability limitations. Unlimited repeats. Lecture/Laboratory.

PEC (Physical Education: Coed Activities)

PEC 102, A—WATER AEROBICS
½, 1 Unit
Formerly listed as PEW 102
Designed to elevate the heart rate to contribute to cardiovascular fitness; provide increased resistance for strength improvement with virtually no impact; help joints move through their range of motion, promoting flexibility. Lecture/Laboratory. Not offered every semester. (MJC Activities) Transfer: CSU, UC

PEC 106X, A—BADMINTON
½, 1 Unit
Basic skills, rules, strategy, practice in singles and doubles play. Lecture/Laboratory. (MJC Activities) Transfer: CSU, UC

PEC 108, A—DEEP WATER AEROBICS
½, 1 Unit
Recommended for Success: Basic swimming and water skills
Group aquatic exercises utilizing strength, endurance, flexibility training in deep water which can involve specialized aquatic equipment. (MJC Activities) Transfer: CSU, UC

PEC 111,A—BEGINNING RACQUETBALL
½, 1 Unit
Fundamentals of racquetball. Participation at local court. Expenses are the responsibility of the student. Lecture/Laboratory. (MJC Activities) Transfer: CSU, UC

PEC 112, A—INTERMEDIATE RACQUETBALL
½, 1 Unit
Recommended for Success: Satisfactory completion of PEC 111
Intermediate skills and theory. Basic singles and doubles play. Participation at local court. Expenses are the responsibility of the student. Lecture/Laboratory. (MJC Activities) Transfer: CSU, UC

PEC 118, A—BOWLING
½, 1 Unit
Fundamentals of bowling. Students are required to pay line and shoe charges at bowling alley. Lecture/Laboratory. (MJC Activities) Transfer: CSU, UC

PEC 120 X,A—HIP HOP
½, 1 Unit
Also listed as THETR 170
Fundamental skills of hip hop dance derived from the current dance vernacular and culture. Dance movement education, exploration, and recreation. May be completed up to 4 times. (A-F or P/NP) Lecture/Laboratory. (MJC Activities) Transfer: CSU, UC

PEC 122, A—BEGINNING MODERN DANCE
½, 1 Unit
Also offered as THETR 185.
Emphasis on basic modern dance technique, beginning composition, improvisation, dance history and philosophy. Dance as an art form and recreation. Four completions allowed. (A-F or P/NP) Lecture/Laboratory. (MJC Activities) Transfer: CSU, UC

PEC 123X,A—INTERMEDIATE MODERN DANCE
½, 1 Unit
Also offered as THETR 186X, A.
Recommended for Success: Before enrolling in this course, students are strongly advised to satisfactorily complete PEC 122X,A or THETR 186X,A.
Emphasis on intermediate modern dance technique, intermediate composition, improvisation, partnering, dance history and philosophy. Dance as art form and as recreation. Four completions allowed. (A-F or P/NP) Lecture/Laboratory. (MJC Activities) Transfer: CSU, UC

PEC 124X, A—ADVANCED MODERN DANCE
½, 1 Unit
Also offered as THETR 187.
Recommended for Success: Before enrolling in this course, students are strongly advised to complete PEC 123X,A or THETR 186X,A or equivalent.
Emphasis on composition, improvisation, expression, dance history and philosophy; an outlet for expressive movement ideas. Four completions allowed. (A-F or P/NP) Lecture/Laboratory. (MJC Activities) Transfer: CSU, UC

PEC 126, A—JAZZ DANCE
½, 1 Unit
Also offered as THETR 188.
Technique of Jazz Dance with explorations into contemporary derivations of jazz. Emphasis is given to technical style of this form, and to the interrelationship of music and movement. Field trips may be required. Lecture/Laboratory. (MJC Activities) Transfer: CSU, UC

PEC 128X, A—AEROBICS
½, 1 Unit
Aerobic movements for improved cardiovascular condition, muscle tone, flexibility, balance, agility, coordination and weight control. Lecture/Laboratory. (A-F or P/NP) (MJC Activities) Transfer: CSU, UC

PEC 130X, A—INTERNATIONAL FOLK DANCE
½, 1 Unit
International folk dance is accessible to the average person in good condition at this introductory level. Dances which originated with people living in or native to various countries/areas, such as Middle East, Balkans, Russia, etc. Dance exploration and recreation. Three maximum completions. (A-F or P/NP) Lecture/Laboratory. (MJC Activities) Transfer: CSU, UC

PEC 133X,A—BALLET 1
½, 1 Unit
Also offered as THETR 189.
Fundamental ballet techniques and terminology. Lecture/Laboratory. (MJC Activities) Transfer: CSU, UC

PEC 134X, A—CONTACT IMPROVISATION
½, 1 Unit
Contact improvisation is an exciting movement art form, exploring the vast potential for movement generated by two or more people, communicating spontaneously through weight, motion and touch. Four maximum completions. Lecture/Laboratory. (MJC Activities) Transfer: CSU, UC
PEC 135 — SPRINGBOARD DIVING 1 Unit
Springboard diving course for students of all ability levels. Workouts will include stretching, strength development, flexibility and coordination exercises, techniques of the approach, hurdle, press, takeoff, flight and entry. Mid-air maneuvers will be identified and practiced on one meter and three meter diving boards as skill levels increase. Basic water safety and related safety issues will be included. Four completions allowed. (A-F or P/NP) (MJC Activities) Transfer: CSU, UC

PEC 136 — INDOOR ROCK CLIMBING 1 Unit
Indoor rock climbing class covering climbing techniques, safety equipment, and basic safety skills used by climbers and belayers. Classes will be held at StoneHenge Climbing Gym of Modesto. Facility use fee required. Field trips may be required. Four completions allowed. (A-F or P/NP) (MJC Activities) Transfer: CSU, UC

PEC 140X,A — EXERCISE FOR FITNESS ½,1 Unit
A course in physical fitness with emphasis on cardiovascular improvement and respiratory efficiency through a variety of physical activities consisting of continuous motion exercises. Lecture/Laboratory. (MJC Activities) Transfer: CSU, UC

PEC 143X,A — BEGINNING GOLF ½,1 Unit
Fundamentals of golf. Maximum four completions. (A-F or P/NP) Lecture/Laboratory. (MJC Activities) Transfer: CSU, UC

PEC 144X,A — INTERMEDIATE GOLF ½,1 Unit
Recommended for Success: PEC 143 or equivalent. Further application of golf fundamentals and rules. Maximum four completions. (A-F or P/NP) Lecture/Laboratory. (MJC Activities) Transfer: CSU, UC

PEC 145X,A — ADVANCED GOLF ½,1 Unit
Recommended for Success: PEC 144 or equivalent. Golf course play and skills improvement on individual basis. Maximum four completions. (A-F or P/NP) Lecture/Laboratory. (MJC Activities) Transfer: CSU, UC

PEC 147X,A — GYMNASTICS ½,1 Unit
Tumbling, floor exercise, stunts, and acrobatic skills are taught and practiced in progression and combined for skill development. (A-F or P/NP) Four completions allowed. Lecture/Laboratory. (MJC Activities) Transfer: CSU, UC

PEC 148X,A — YOGA FOR BETTER HEALTH ½,1 Unit
Fitness class using Yoga postures, breathing, and relaxation techniques to increase flexibility and strength, balance and coordination. Appropriate for all ages and learning abilities. Lecture/Laboratory. (A-F or P/NP) Four completions allowed. (MJC Activities) Transfer: CSU, UC

PEC 150X,A — INTERMEDIATE YOGA FOR BETTER HEALTH ½,1 Unit
Recommended for Success: PEC 148 or prior experience in yoga. Intermediate class using yoga postures, breathing, and relaxation techniques to increase flexibility, strength, balance and coordination. Lecture/Laboratory. (MJC Activities) Transfer: CSU, UC

PEC 157 — ADVANCED JUDO 1 Unit
Recommended for Success: Before enrolling in this course, students are strongly advised to complete PEC-167A or demonstrate basic judo skills and competencies along with a knowledge and understanding of judo concepts, terminology, etiquette, and methods of scoring, timekeeping, and elimination systems.
Instruction in skills, techniques, and knowledge necessary for student to safely and effectively participate in advanced judo for personal and competitive purposes. (A-F or P/NP) Laboratory. Four completions allowed. (MJC Activities) Transfer: CSU, UC

PEC 159 — SPIRIT LEADERSHIP TRAINING 3 Units
Instruction, training and development of a corps of spirit leaders to promote enthusiasm for school athletic activities. (MJC Activities) Transfer: CSU, UC

PEC 164,A — SELF DEFENSE ½,1 Unit
A practical course in self defense. Practice of various basic techniques and principles of balance, leverage, and momentum. Discussion of how to avoid threatening situations in the home or on the street. Four completions allowed. (A-F or P/NP) Lecture/Laboratory. (MJC Activities) Transfer: CSU, UC

PEC 165 X,A — JUDO ½,1 Unit
Instruction and practice in the basic skills of the sport of Judo. Course will cover the terminology, etiquette along with throwing and grappling techniques, with integration of various Katas (forms) and Randori (free exercise). May be completed up to four times. (A-F or P/NP). (MJC Activities) Transfer: CSU, UC

PEC 166X,A — INTERMEDIATE JUDO ½,1 Unit
Advisories: Before enrolling in this course, students are strongly advised to satisfactorily complete PEC 165.
Instruction and practice in the intermediate skills of the sport of Judo. Course will cover the terminology, etiquette along with throwing and grappling techniques, with integration of various Katas (forms) and Randori (free exercise). May be completed up to four times. Lecture. Laboratory. (A-F and P/NP) Transfer: CSU, UC.

PEC 168,A — BEGINNING SWIMMING ½,1 Unit
Recommended for Success: Must be comfortable in shallow water. Class conducted in a shallow pool.
Basic skills of floating, breathing, kicking, pulling, using arms and legs. Lecture/Laboratory. (A-F or P/NP) Four completions allowed. (MJC Activities) Transfer: CSU, UC

PEC 169X,A — INTERMEDIATE SWIMMING ½,1 Unit
Recommended for success: Satisfactory completion of PEC 168A. Continued development in basic stroke techniques and endurance for intermediate swimming. May be completed up to 4 times. (A-F or P/NP). Applicable to the Associate Degree. (MJC Activities) Transfer: CSU, UC

PEC 170X,A — ADVANCED SWIMMING ½,1 Unit
Recommended for Success: Students are strongly advised to satisfactorily complete PEC 168.
Continued development in stroke techniques, and workout knowledge for advanced swimming. Four completions allowed. Lecture/Laboratory. (MJC Activities) [A-F or P/NP] Transfer: CSU, UC

PEC 171,A — SWIM FOR FITNESS ½,1 Unit
Recommended for Success: Ability to handle self in deep water.
To meet individual needs in basic stroke techniques and endurance swimming for intermediate and/or advanced swimmers. Lecture/Laboratory. (MJC Activities) Transfer: CSU, UC

PEC 172 — LIFEGUARD TRAINING 1 Unit
Prerequisite: Pass swimming pre-test, be at least 15 years old on the first day of class.
Preventive lifeguarding, learning how to recognize specific characteristic behaviors of patrons at an aquatic facility; facility emergency planning. First Aid and CPR for the Professional Rescuer included. Successful course completion results in American Red Cross certification in lifeguard training, CPR and first aid. (A-F or P/NP). Four completions allowed. Materials fee required. (MJC Activities) Transfer: CSU, UC

PEC 174X,A — TABLE TENNIS ½,1 Unit
Instruction in basic skills, rules, strategy, practice in singles and doubles play, plus supplemental films, video tapes and class competition. Four completions allowed. (A-F or P/NP) Lecture/Laboratory. (MJC Activities) Transfer: CSU, UC

PEC 175X,A — BEGINNING TENNIS ½,1 Unit
Fundamental skills in tennis. Four completions allowed. (A-F or P/NP) Lecture/Laboratory. (MJC Activities) Transfer: CSU, UC
PEC 176X,A—INTERMEDIATE TENNIS ½,1 Unit
Recommended for Success: Before enrolling in this course students are strongly advised to satisfactorily complete PEC 175X,A.
Development of net and backcourt skills and strategies, net play, volleying, and proficiency in rules, terminology, and etiquette. Four completions allowed. Lecture/Laboratory. (MJC Activities) (A-F or P/NP) Transfer: CSU, UC

PEC 177,A—ADVANCED TENNIS ½,1 Unit
Recommended for Success: Before enrolling in this course students are strongly advised to satisfactorily complete PEC 176 or equivalent.
Skills and strategy of competitive tennis, including tournaments, and ladder play. Four completions allowed. (A-F or P/NP) Lecture/Laboratory. (MJC Activities) Transfer: CSU, UC

PEC 178,A—TOURNAMENT TENNIS ½,1 Unit
Recommended for Success: Before enrolling in this course students are strongly advised to satisfactorily complete PEC 177A.
Designed for the expert tennis player and includes intraclass competition. Four completions allowed. (A-F or P/NP) Lecture/Laboratory. (MJC Activities) Transfer: CSU, UC

PEC 179,A—TRACK AND FIELD ½,1 Unit
Generalized training techniques for track and field. Lecture/Laboratory. (MJC Activities) Transfer: CSU, UC

PEC 182,A—TRAINING FOR DISTANCE RUNNING ½,1 Unit
Become better prepared for endurance distance running with organized training runs. Information on creating an effective training program, nutrition, weight training and cross training. Field trips may be required. Lecture/Laboratory. (MJC Activities) Transfer: CSU, UC

PEC 183,A—VOLLEYBALL ½,1 Unit
Fundamentals of volleyball. Lecture/Laboratory. (MJC Activities) Transfer: CSU, UC

PEC 184,A—POWER VOLLEYBALL ½,1 Unit
Recommended for Success: PEC 183 or equivalent.
Power volleyball for team play. Advanced offensive and defensive strategy and game skills. Lecture/Laboratory. (MJC Activities) Transfer: CSU, UC

PEC 185,A—HIKING 1 ½,1 Units
This course emphasizes using and creating familiarity with trails within this area (a parameter of no more than two hours by car). Lectures will also cover the use of compass and map, various hiking themes, hiking activities, hiking safety, and awareness of the unique aspects of areas to be hiked. Lecture/Laboratory. Four maximum completions. Field trips required. (MJC Activities) Transfer: CSU, UC

PEC 186,A—INTERMEDIATE VOLLEYBALL ½,1 Unit
Recommended for Success: Satisfactory completion of PEC 183
Intermediate skills and theory. Intermediate offensive and defensive strategy. Lecture/Laboratory. (A-F Only) Four completions allowed. (MJC Activities) Transfer: CSU, UC

PEC 187,A—PILATES FOR FITNESS ½,1 Unit
A fitness class that utilizes the Pilates exercise system focused on improving flexibility and strength for the total body through a series of controlled movements. Pilates exercises can improve posture, alignment, coordination and balance. Movements are designed to tone muscles without putting stress on the spine. For people of all ages and fitness levels. Lecture/Laboratory. (MJC Activities) Transfer: CSU, UC

PEC 190X,A—ADVANCED WATER POLO ½,1 Unit
Recommended for Success: Satisfactory completion of PEC 189 or equivalent.
Advanced team play and game strategy in water polo for recreation exercise. Four completions allowed. Lecture/Laboratory. (A-F or P/NP) (Summer) (MJC Activities) Transfer: CSU, UC

PEC 191—POWERLIFTING 1 Unit
Prerequisite: Satisfactory completion of PEC 195 or PEW 192.
Advanced techniques of effective strength training in a supervised program with an emphasis on traditional powerlifting using free weights and supplemental exercise programs. (P/NP). May be completed up to 4 times. (MJC Activities) Transfer: CSU, UC

PEC 195—WEIGHT TRAINING 1 Unit
Principles and procedures of effective strength training techniques in a supervised weight training program. Lecture/Laboratory. (P/NP only) Four completions allowed. (MJC Activities) Transfer: CSU, UC

PEC 197—ADVANCED WEIGHT TRAINING 1 Unit
Recommended for Success: Satisfactory completion of PEC 195
Strength training in a supervised weight training program with emphasis on Olympic lifts with free weights. May be completed up to 4 times. (P/NP Only). Applicable to the Associate Degree. (MJC Activities) Transfer: CSU, UC

NON-CREDIT COURSES

PEC 825—ADVANCED BASKETBALL TEAM PLAY 1 Unit
An introduction to advanced concepts and skills of collegiate basketball play for high school students. Laboratory. (Non-graded) Summer

PEC 841—FITNESS FOR LIFE 1 Unit
Exercises designed to modify personal attitudes and actions toward health and physical activity. Exercise modalities may include, but are not limited to, pilates, weight training, aerobics, walking/jogging, and yoga. Four completions allowed Non-graded Unlimited repeats. Lecture/Laboratory

PEM (Physical Education: Men's Activities)

PEM 108X, A—BASEBALL ½,1 Unit
Fundamentals and theory of baseball. Lecture/Laboratory. Four completions allowed. (A-F or P/NP) (MJC Activities) Transfer: CSU, UC

PEM 111X,A—BASEBALL - TEAM PLAY CONCEPTS ½,1 Unit
Team play approach to game of baseball. Lecture/Laboratory. (MJC Activities) Four completions allowed. (A-F or P/NP) Transfer: CSU, UC

PEM 112X, A—BEGINNING BASKETBALL ½,1 Unit
Fundamentals of basketball. Four completions allowed Lecture/Laboratory. (MJC Activities) (A-F or P/NP) Transfer: CSU, UC

PEM 113X,A—INTERMEDIATE BASKETBALL ½,1 Unit
Intermediate skills and theory. Basic team play concepts. Lecture/Laboratory. (MJC Activities) Transfer: CSU, UC

PEM 114X, A—ADVANCED BASKETBALL ½,1 Unit
Advanced skills, theory and concepts of competitive team play. May be completed up to 4 times. (A-F or P/NP) Lecture/Laboratory. (MJC Activities) Transfer: CSU, UC

PEM 140X, A—TOUCH FOOTBALL AND KANAKI ½,1 Unit
Discussion and practical applications of rules and strategy, with emphasis on individual movements found in offensive and defensive touch football and kanaki. Four completions allowed. (A-F or P/NP) Lecture/Laboratory. (MJC Activities) Transfer: CSU, UC

PEM 141X,A—ADVANCED TOUCH FOOTBALL ½,1 Unit
Recommended for Success: Before enrolling in this course, students are strongly advised to satisfactorily complete PEM 140A.
Conditioning; skills, rules, and strategies with emphasis on the passing game to prepare for participation in advanced football. (A-F or P/NP) Lecture/Laboratory. (MJC Activities) Transfer: CSU, UC

PEM 162X,A—SOCCER ½,1 Unit
Practical application of basic offensive and defensive tactics; individual and team skills; strategy and rules review; scrimmages. (A-F or P/NP) Applicable to the Associate Degree. Lecture/Laboratory. (MJC Activities) Transfer: CSU, UC
PEVM (Physical Education: Varsity Men's Activities)

Courses listed below offer advanced instruction and intensive training in sports fundamentals to develop teams for intercollegiate competition. A varsity activity may be taken a maximum of four times. Participation in intercollegiate sports requires concurrent enrollment in not less than 12 units of work, nine of which must be in courses counting toward the associate degree, remediation, transfer and/or certification. Special medical examinations are required for students participating in competitive sports. Verification of insurance is also required. Participation in a second sport or a second year of a sport requires a 2.0 grade point average and 24 units passed.

PEVM 100—VARSITY BASEBALL 3 Units
Instruction, training and competition in intercollegiate baseball. Laboratory/Other. (Spring) (MJC Activities) Transfer: CSU, UC

PEVM 105—MEN'S VARSITY BASKETBALL (Fall) 3 Units
Recommended for Success: PE 101
Instruction, training and competition in intercollegiate basketball. Laboratory/Other. (Fall) (MJC Activities) Four completions allowed. (A-F Only) General Education (Activities) Transfer: CSU, UC

PEVM 106—MEN'S VARSITY BASKETBALL (Spring) 1½ Unit
Recommended for Success: PEVM 105
Continued instruction, training and competition in intercollegiate basketball. Laboratory/Other. (Spring) (MJC Activities) Transfer: CSU, UC

PEVM 110—MEN'S VARSITY CROSS-COUNTRY 3 Units
Instruction, training and competition in intercollegiate cross country running. Laboratory/Other. (Fall) (MJC Activities) Transfer: CSU, UC

PEVM 115—MEN'S VARSITY FOOTBALL 3 Units
Instruction, training, and competition in intercollegiate football. Laboratory/Other. (Fall) (MJC Activities) Transfer: CSU, UC

PEVM 120—MEN'S VARSITY GOLF 3 Units
Instruction, training, and competition in intercollegiate golf. Laboratory/Other. (Spring) (MJC Activities) Transfer: CSU, UC

PEVM 122—MEN'S VARSITY SOCCER 3 Units
Instruction, training, and competition in intercollegiate soccer. Laboratory/Other. (Fall) (MJC Activities) Transfer: CSU, UC

PEVM 125—MEN'S VARSITY SWIMMING AND DIVING 3 Units
Recommended for Success: Concurrent enrollment in PEC 170, 195
Instruction, training, and competition in intercollegiate swimming and diving. Laboratory/Other. (Spring) (MJC Activities) Transfer: CSU, UC

PEVM 130—MEN'S VARSITY TENNIS 3 Units
Instruction, training, and competition in intercollegiate tennis. Laboratory/Other. (Spring) (MJC Activities) Transfer: CSU, UC

PEVM 140—MEN'S VARSITY WATER POLO 3 Units
Recommended for Success: Concurrent enrollment in PEC 170, 195
Instruction, training and competition in intercollegiate water polo. Laboratory/Other. (Fall) (MJC Activities) Transfer: CSU, UC

PEVM 145—VARSITY WRESTLING 3 Units
Instruction, training, and competition in intercollegiate wrestling. Laboratory/Other. (Fall) (MJC Activities) Transfer: CSU, UC

PEVW (Physical Education: Varsity Women's Activities)

Courses listed below offer advanced instruction and intensive training in sports fundamentals to develop teams for intercollegiate competition. A varsity activity may be taken a maximum of four times.

Participation in intercollegiate sports requires concurrent enrollment in not less than 12 units of work, nine of which must be in courses counting toward the associate degree, remediation, transfer, and/or certification. Special medical examinations are required for students participating in competitive sports. Insurance is also required. Participation in a second sport or a second year of a sport requires a 2.0 grade point average and 24 units passed.

PEVW 100—WOMEN'S VARSITY BASKETBALL (Fall) 3 Units
Instruction, training and competition in intercollegiate basketball. Laboratory/Other. (Fall) (MJC Activities) Transfer: CSU, UC
PEW 101—WOMEN’S VARSITY BASKETBALL (Spring) 1½ Units
Recommended for Success: Satisfactory completion of PEW 100
Continued instruction, training and competition in intercollegiate basketball. Laboratory/Other. (Spring) (MJC Activities) Transfer: CSU, UC

PEW 103—WOMEN’S VARSITY CROSS COUNTRY 3 Units
Instruction, training, and competition in intercollegiate cross country running. Laboratory/Other. (Fall) (MJC Activities) Transfer: CSU, UC

PEW 115—WOMEN’S VARSITY GOLF 3 Units
Instruction, practice, and competition in intercollegiate golf. Four completions allowed. Laboratory. (MJC Activities) Transfer: CSU, UC

PEW 120—WOMEN’S VARSITY SOFTBALL 3 Units
Instruction, training, and competition in intercollegiate softball. Laboratory/Other. (Spring) (MJC Activities) Transfer: CSU, UC

PEW 123—WOMEN’S VARSITY SOCCER 3 Units
Instruction, training and competition in intercollegiate soccer. Laboratory/Other. (Fall) (MJC Activities) Transfer: CSU, UC

PEW 125—WOMEN’S VARSITY SWIMMING AND DIVING 3 Units
Instruction, training, and intercollegiate competition in swimming and diving. Laboratory/Other. (Spring) (MJC Activities) Transfer: CSU, UC

PEW 130—WOMEN’S VARSITY TENNIS 3 Units
Instruction, training, and competition in intercollegiate tennis. Laboratory/Other. (Spring) (MJC Activities) Transfer: CSU, UC

PEW 135—WOMEN’S VARSITY TRACK AND FIELD 3 Units
Instruction, training, and competition in intercollegiate track and field events. Laboratory/Other. (Spring) (MJC Activities) Transfer: CSU, UC

PEW 140—WOMEN’S VARSITY VOLLEYBALL 3 Units
Instruction, training, and competition in intercollegiate volleyball. Laboratory/Other. (Fall) (MJC Activities) Transfer: CSU, UC

PEW 145—WOMEN’S VARSITY WATER POLO 3 Units
Instruction, training and competition in intercollegiate water polo. Four maximum completions. Laboratory/Other. (Fall) (MJC Activities) Transfer: CSU, UC

PEW 180X, A—WOMEN’S SOFTBALL ½,1 Unit
Discussion and practical application of rules, strategy, fielding, throwing, base running, team offense, and team defense used in fastpitch softball. Four completions allowed. (A-F or P/NP) Lecture/Laboratory. Not offered every semester. (MJC Activities) Transfer: CSU, UC

PEW 192—WOMEN’S WEIGHT TRAINING 1 Unit
Introduction to individual opportunities in development of power, strength, flexibility and/or endurance through weight training. (P/NP only). (MJC Activities) Transfer: CSU, UC

Pharmacy Technician
Courses offered through Community Education (209) 575-6063

PHILO (Philosophy)

PHILO 101—PHILOSOPHY 3 Units
A critical and critical examination of some of the "Great Questions" philosophers have pursued from ancient times to the present. Some of these include: What is human nature? What is real? Do we have free will? Does God exist? What can we know? How should we act? What is the source of evil? And, what is the nature of truth? (A-F or P/NP) Lecture. Transfer: CSU, UC (CC PHILO 1) General Education: (MJC-GE: C) (CSU-GE: C2) (IGETC: 3B)

PHILO 103—SYMBOLIC LOGIC 3 Units
Also offered as CMPSC 103.
An introduction to modern deductive logic, includes sentential and predicate logic with identity theory and definite descriptions. Lecture. Transfer: CSU, UC General Education: (MJC-GE: D2) (CSU-GE: A3)

PHILO 105—REASONING 3 Units
Prerequisite: Satisfactory completion of ENGL 101
An examination of logic and its practical application in everyday situations, including problem solving, advertisement discrimination, political evaluation and argumentation. Lecture. Transfer: CSU, UC General Education: (MJC-GE: D2) (CSU-GE: A3) (IGETC: 1B)

PHILO 107—PHILOSOPHY OF SCIENCE 3 Units
Prerequisite: Satisfactory completion of ENGL 101
Systematic study of the methods of scientific inquiry. Application of critical thinking through philosophical analysis of scientific methodology. Significant emphasis on essay writing in developing analytic skills. For both science and non-science majors. Lecture. Transfer: CSU, UC General Education: (MJC-GE: D2) (CSU-GE: A3) (IGETC: 1B)

PHILO 111—ETHICS: THEORY AND APPLICATION 3 Units
Systematic study of reflective choice, standards of right and wrong by which it may be guided and attainable goods toward which it may be directed. Readings on concepts of good, duty, egoism, altruism, freedom, personal and social responsibility. Lecture. Transfer: CSU, UC General Education: (MJC-GE: C) (CSU-GE: C2) (IGETC: 3B)

PHILO 113—PHILOSOPHY OF ART 3 Units
An examination of the central features of art as well as alternative accounts of art and aesthetic experience including discussions of beauty, representation, and truth. Field trips may be required. (A-F or P/NP) Transfer: CSU General Education: (MJC-GE:C)(CSU-GE: C2)(IGETC:3B)

PHILO 115—RELIGION: A PHILOSOPHICAL AND COMPARATIVE INQUIRY 3 Units
Introduction to the philosophical problems of religion and a comparative analysis of religious traditions and spiritual practices. Topics include the nature and existence of God, faith and reason, religious knowledge, language and experience in human life. Lecture. (A-F or P/NP) Transfer: CSU, UC (CC HUMAN/PHILO 4) General Education: (MJC-GE: C) (CSU-GE: C2) (IGETC: 3B)
PHILO 120—HISTORY OF PHILOSOPHY: ANCIENT 3 Units
Western ideas and philosophies from ancient Greece to the 15th century, with a consideration of prominent Eastern philosophies. The primary focus is on Greek and Roman philosophy, and the development of Christian philosophy through the middle ages. Some of the topics include free will/determinism, the nature of existence, being, definition and logic. (A-F or P/NP) Lecture. Transfer: CSU, UC. General Education: (MJC-GE: C) (CSU-GE: C2) (IGETC: 3B)

PHILO 121—HISTORY OF PHILOSOPHY: MODERN 3 Units
Western ideas and philosophers in the 17th and 18th centuries, with a consideration of the rise of modern science, rationalist and empiricist philosophies, and the critical and transcendental philosophy of Kant (A-F and P/NP) Lecture. Transfer: CSU, UC. General Education: (MJC-GE: C) (CSU-GE: C2) (IGETC: 3B)

PHILO 123—TWENTIETH CENTURY PHILOSOPHY 3 Units

PHILO 130—POLITICAL THEORY 3 Units
A study of social and political thought using classical and contemporary writings, with emphasis on current issues. Ideologies discussed include democracy, socialism, capitalism, communism, fascism, and anarchism. (A-F or P/NP) Lecture. Transfer: CSU, UC General Education: (CSU-GE: D8) (IGETC: 4)

PHILO 135 —ENVIRONMENTAL ETHICS 3 Units
How ought we to relate to the rest of nature? What, if anything, is the value of wilderness and wild animals? Are we morally bound to use technology in an ecologically responsible manner? Course will address questions and issues such as these that arise when considering the relationship between human beings and the environment. Topics include animal rights, land use policy, sustainability, bioengineering, climate change, environmental justice. Theoretical approaches include deep ecology, anthropocentrism, ecol Feminism, and pragmatism. (A-F or P/NP) Lecture. Transfer: CSU, UC General Education: (MJC-GE: C)

PHILO 140—PHILOSOPHY AND FILM 3 Units
An introduction to philosophical problems and reasoning through an analysis of films. Topics discussed include philosophy of life and existence, political ideologies, the nature of aesthetic experience, and theories of film. Field trips may be required. Lecture/Laboratory Transfer: CSU, UC. General Education: (CSU-GE: D8) (IGETC: 3B)

PHILO 164—PHYSICAL SCIENCE ENVIRONMENTAL LABORATORY 1 Unit
Corequisite: Satisfactory completion of or concurrent enrollment in PHSCI 161.
Laboratory and practical experience in the physical sciences. Emphasis on measuring techniques, data analysis, and the scientific method. (A-F or P/NP). Laboratory. Transfer: CSU, UC General Education: (MJC-GE: A) (CSU-GE: B3)

PHYS 101—GENERAL PHYSICS: MECHANICS 4 Units
Prerequisites: Satisfactory completion of PHYS 165 and MATH 171.
Concurrent Enrollment: MATH 172
Introduction to calculus-based physics: linear, rotational, and oscillatory mechanics with computer applications. Field trips may be required. Lecture/Laboratory/Discussion. Materials fee may be required. (Spring) Transfer: CSU, UC. General Education: (CSU-GE: B1, B3) (IGETC: 5A)

PHYS 102—GENERAL PHYSICS: WAVES, THERMODYNAMICS, AND OPTICS 4 Units
Prerequisites: Satisfactory completion of PHYS 101 and MATH 172.
Continuation of calculus-based physics: thermodynamics, wave motion, acoustics, and optics. Field trips may be required. Lecture/Laboratory/Discussion. Materials fee may be required. (Fall) Transfer: CSU, UC. General Education: (CSU-GE: B1, B3) (IGETC: 5A)

PHYS 103—GENERAL PHYSICS: ELECTRICITY, MAGNETISM & MODERN PHYSICS 4 Units
Prerequisites: Satisfactory completion of PHYS 101 and MATH 172.
Continuation of calculus-based Physics 101, electricity, magnetism, and modern physics. Field trips may be required. Lecture/Laboratory/Discussion. Materials fee may be required. (Spring) Transfer: CSU, UC. General Education: (CSU-GE: B1, B3) (IGETC: 5A)

PHYS 142—MECHANICS, HEAT AND WAVES 4 Units
Prerequisite: Satisfactory completion of MATH 115 or 122 or qualification by the MJC Assessment process.
Non-calculus introduction to principles and laws of mechanics, thermodynamics and waves. Field trips may be required. Lecture/Laboratory/Discussion. One completion allowed. (A-F or P/NP) Transfer: CSU, UC. General Education: (MJC-GE: A) (CSU-GE: B1, B3) (IGETC: 5A)

PHYS 143—ELECTRICITY, MAGNETISM, OPTICS, ATOMIC AND NUCLEAR STRUCTURE 4 Units
Prerequisite: Satisfactory completion of PHYS 142
Continuation of PHYS 142, including electricity, magnetism, light and atomic structure. Field trips may be required. Lecture/Laboratory/Discussion. Field trips may be required. One completion allowed. Materials fee required. Transfer: CSU, UC. General Education: (CSU-GE: B1, B3) (IGETC: 5A)

PHYS 160—DESCRIPTIVE INTRODUCTION TO PHYSICS 3 Units
Prerequisite: Satisfactory completion of MATH 90, or eligibility for MATH 101 or higher as determined by MJC Assessment process.
A survey course of selected topics in physical inquiry to include mechanics, wave motion, thermodynamics, electromagnetism, and modern physics. Physical theory is explored on a conceptual level with emphasis placed on applying physical principles to everyday phenomena. (A-F or P/NP) Lecture. Transfer: CSU, UC. General Education: (CSU-GE: B1, B3) (IGETC: 5A)

PHYS 164—PHYSICS ENVIRONMENTAL LABORATORY 1 Unit
Co-requisite: Concurrent enrollment in or satisfactory completion of PHYS 160.
Laboratory and practical experience in physics. Emphasis on measuring techniques, data analysis, and the scientific method. (A-F or P/NP) Laboratory. Transfer: CSU, UC General Education: (MJC-GE: A) (CSU-GE: B3)

Phlebotomy
Courses offered through MJC Community Education (209) 575-6063
PHYS 165—INTRODUCTORY PHYSICS 5 Units
Recommended for Success: Before enrolling in this course, students are strongly advised to satisfactorily complete MATH 122 or to be eligible for enrollment in MATH 171 as determined by the MJC Assessment Process.
Introduction to physics through the study of laboratory measurement in selected topics: include mechanics, wave motion, thermodynamics, and electricity and magnetism. Develops the theoretical and experimental foundation for PHYS 101 and PHYS 142. Lecture/Laboratory. (A-F or P/NP) Transfer: CSU, UC General Education: (MUC-GE: A) (CSU-GE: B1, B3) (IGETC: 5A)

PHYS 180—CONCEPTUAL PHYSICS: A HANDS-ON APPROACH 4 Units
Prerequisite: Satisfactory completion of MATH 90 or eligibility for MATH 101 or higher as determined by MJC Assessment Process.
A survey course of selected topics in physical inquiry to include motion, waves, heat, energy, electricity, magnetism, and modern physics. Physical theory is explored on a conceptual level with emphasis placed on applying physical principles to everyday phenomena. To include a weekly activity/laboratory session designed to provide students with practical experience in applying physical concepts. (A-F or P/NP) Transfer: CSU, UC General Education: (MUC-GE: A) (CSU-GE: B1, B3) (IGETC: 5A)

PHYSO (Physiology)

PHYSO 101—INTRODUCTORY HUMAN PHYSIOLOGY 5 Units
Prerequisite: Satisfactory completion of ANAT 125 and CHEM 143 and (BIO 101 or BIO 111)
Study of body function, organ system integration, communication, and homeostasis at the biochemical, cellular, and systemic level. Includes control of osmolarity, protein synthesis and cellular metabolism, cellular communication, neural information processing, blood movement and hemostasis, fluid balance, respiration and digestion; reproduction; sensory perception and control of movement. Intended for students entering health professions (A-F or P/NP) One completion allowed. Lecture/Lab Transfer: CSU, UC (CC BIOL 60) General Education: (MUC-GE: A) (CSU-GE: B2, B3) (IGETC: SB)

PHYSO 103—INTRODUCTION TO NEUROSCIENCE 3 Unit(s)
Prerequisite: Satisfactory completion of PSYCH 101
Also offered as PSYCH 103
Introduction to the biological basis of behavior. Emphasis on divisions of the nervous system, neuroanatomy, neurophysiology, psychopharmacology as applied to the understanding of perceptual processes, psychoactive drugs, movement, regulation of hunger and thirst, sexual behavior, sleep, learning and memory, language, emotion, reward and stress, psychopathology. Appropriate for all students interested in the behavioral and biological sciences. (A-F and P/NP) Transfer to CSU, UC General Education: (MUC-GE: A) (CSU-GE: B2, B3) (IGETC: SB)

PLSC (Plant Science)

PLSC 50—PREPARATORY PLANT SCIENCE 3 Units
Preparation in plant science including structure, growth processes, propagation, physiology, growth media, biological competitors, and post-harvest factors of food, fiber, and ornamental plants. (A-F or P/NP)Lecture.

PLSC 200—INTRODUCTION TO PLANT SCIENCE 3 Units
Introduction to plant science, including structure, growth processes, propagation, physiology, growth media, biological competitors, and post-harvest factors of food, fiber, and ornamental plants. Lecture. (A-F Only) Transfer: CSU, UC General Education: (MUC-GE: A) (CSU-GE: B2)

PLSC 205—FIELD CROPS 3 Units
Economic importance, adaptation, cultural practices, irrigation, integrated pest management, cost analysis, calendar of operations, and marketing in the production of field crops (including: barley, oats, wheat, corn, grain sorghum, alfalfa, rice, dry beans, sugar beets, cotton, and seed crops). Lecture/Laboratory. (A-F Only) Transfer: CSU

PLSC 215—VEGETABLE CROPS 3 Units
Vegetable crops common to the area, economic importance, cultural sequence, fertilization, irrigation, cultivation, integrated pest control, harvest and related factors; marketing, cost analysis, risks, environmental relationships including moisture, temperature, soil and weather in the production of vegetable crops. Field trips required. Lecture/Laboratory. (A-F Only) Transfer: CSU, UC

PLSC 230—FRUIT SCIENCE 3 Units
Elementary culture of fruit and nut crops including growth and fruiting habits, varieties, characteristics and adaptations; environmental factors influencing local fruit production; pruning and training procedures on local fruit crops. Lecture/Laboratory. (A-F Only) Transfer: CSU, UC General Education: (MUC-GE: A)

PLSC 235—PLANT PROPAGATION/PRODUCTION 3 Units
Recommended for Success: Satisfactory completion of PLSC 200 and/or EHS 210. Also offered as EHS 235.
Plant propagation and production practices with emphasis on nursery operations including sexual and asexual reproduction, planting, transplanting, fertilizing, plant pest and disease control, structures and site layout. Preparation and use of propagating and planting mediums. Use and maintenance of common tools and equipment. Regulations pertaining to plant production. Field trips required. One completion allowed. Lecture/Laboratory. Not offered every semester. (A-F Only) Transfer: CSU

PLSC 241—VITICULTURE 3 Units
California grape production; study of table and wine grape varieties, uses, adaptations and products, production practices, propagation and planting, training, pruning and irrigation systems; recognition and control of grape pests and diseases. Student is required to design a new vineyard and critique an existing operation. Field trips required. Lecture/Laboratory. (A-F Only) (Fall) Transfer: CSU, UC

PLSC 250—PLANT NUTRITION AND FERTILIZER 3 Units
Recommended for Success: Before enrolling in this course, students are strongly advised to satisfactorily complete NR 200.
An overview of plant nutrition principles in order to understand fertilizers, amendments, their uses, value, application, and relationship to soils and to crops grown in this area. Deficiency symptoms, pH, soil and plant tissue testing, and environmental factors and concerns. Field trips required. Lecture/Laboratory. Transfer: CSU, UC (A-F Only)

PLSC 255—PLANT PEST CONTROL 3 Units
Study of crop mites and insects, their morphology, identification, life cycles, host and habitat relationships, methods and materials of control. Lecture/Laboratory. (A-F Only) Transfer: CSU

PLSC 260—PLANT DISEASE CONTROL 3 Units
Study of common local crop diseases, their economic importance, identification, life cycles, host and habitat relationships, and methods of control. Field trips required. Lecture/Laboratory. (A-F Only) Transfer: CSU

PLSC 287—INTEGRATED PEST MANAGEMENT 1 Unit
Formerly listed as PLSC 387
Current topics and discussion on integrated pest management, designed to satisfy Department of Pesticide Regulation requirements for certified pesticide applicator's continuing education. Field trips may be required. Unlimited completions. Lecture. (A-F Only) Transfer: CSU

PLSC 385—PRUNING 1 Unit
Pruning of deciduous fruits, nuts and vines. Care and maintenance of tools and equipment. Proper irrigation, fertilization, and insect control also included. Field trips required. Lecture/Laboratory. Saturday labs. (A-F Only)
POLSC—Political Science

POLSC 101—AMERICAN POLITICS
Introduction to United States politics emphasizing the essential institutions, groups, beliefs, behaviors and processes that comprise the American political system at the national, state, and local levels. Special attention to rights and obligations of citizenship. Lecture. Transfer: CSU, UC (TSU POLSC 110) (CC POLSC 10) General Education: (MUC-GE: B) (CSU-GE: DB) (IGETC: 4)

POLSC 102—THE CONSTITUTION AND THE RIGHTS OF AMERICANS
Introduction to U.S. constitutional government emphasizing the principles and problems of a constitutional system; governmental powers and sources of power at the national, state and local levels. Special emphasis on the role of the courts and the rights and responsibilities of democratic citizenship, including units on racial and sexual discrimination, the rights of the accused, privacy, political participation, and freedom of expression and religion. Special attention to current constitutional problems at the national and state levels. Lecture. (A-F or P/NP) Transfer: CSU, UC General Education: (MUC-GE: B) (CSU-GE: DB) (IGETC: 4)

POLSC 110—INTERNATIONAL RELATIONS
Introduction to principles and practices of international politics emphasizing problems of war and peace, foreign policies of major powers, problems of developing countries. Transfer: CSU, UC (CC POLSC 14) General Education: (MUC-GE: B) (CSU-GE: DB) (IGETC: 4H)

POLSC 111—WAR AND PEACE: FROM LENIN TO AL QAEDA
Formerly listed as “War and Peace in the Twentieth Century.” Survey of major events and personalities in the history of international politics since 1914. Topics include: World War I and II, the Russian Revolution, key personalities – Lenin, Stalin, Churchill, Mussolini, the Cold War, rise of communism in Asia, revolution in nuclear weapons and the third world; collapse of the Soviet Union, the post-cold war period. (A-F or P/NP). Approved for online instruction. Transfer: CSU, UC General Education: (CSU-GE: DB) (IGETC: 4H) (MUC-GE: B)

POLSC 120—CALIFORNIA POLITICS AND PROBLEMS
Analysis of government institutions, politics, issues and political behavior in California in constitutional, social, economic and cultural perspective. Included are studies of issues confronted by U.S. and California state, county, city and regional governments including political representation, resources and energy, land use and planning, population growth, poverty, education, criminal justice, pollution, budgets and taxation. Special attention to the rights and obligations of citizenship. One day field trip to State Capital may be required. Lecture. Transfer: CSU, UC General Education: (MUC-GE: B) (CSU-GE: DB) (IGETC: 4)

POLSC 130—POLITICAL THEORY
Studies major political theorists and their analysis of political concepts, including democracy, freedom, justice, power, and political leadership. Investigates how political theory is practically relevant and connected to current political issues. (A-F or P/NP) Transfer: CSU, UC General Education: (CSU-GE: DB) (IGETC: 4H)

POLSC 131—AMERICAN POLITICAL THOUGHT
Examines American political thought and culture from the European discovery of the New World to the Civil War. Detailed study of the writings of the Puntans, Jefferson, Madison, Frederick Douglass, Sarah Grimke, Thoreau, Melville, Lincoln, and others. (A-F or P/NP) Approved for online and hybrid instruction. Applicable to the Associate Degree. One completion allowed. Transfer: CSU, UC General Education: (MUC-GE: B) (CSU-GE: DB) (IGETC: 4)

POLSC 140—COMPARATIVE POLITICS
Recommended for political science majors. Comparative survey of major totalitarian, authoritarian and democratic political systems. Emphasis on Great Britain, France, Germany, Russia, People’s Republic of China, Japan and selected Third World countries. Participation in Model United Nations may be required. Lecture. Transfer: CSU, UC General Education: (MUC-GE: B) (CSU-GE: DB) (IGETC: 4H)

POLSC 145—THIRD WORLD IN INTERNATIONAL POLITICS
3 Units
Problems and future prospects for third world nations: focus on political, economic, and social development; ethnicity and ethnic conflict, civil wars; role of the developed world and international institutions in aiding third world countries. (A-F or P/NP). Applicable to the Associate Degree. Transfer: CSU, UC General Education: (MUC-GE: B) (CSU-GE: DB) (IGETC: 4)

POLSC 151—WOMEN AND POLITICS
3 Units
The status and role of women in American politics from philosophical, empirical, and historical perspectives. The unique place of women in American political history, public policy development, the law, and as political leaders. Women in the international political arena, including leaders and public policy issues. Lecture. Field trips may be required. Transfer: CSU, UC General Education: (MUC-GE:B)(CSU-GE: D4, DB) (IGETC: 4)

PORTG—Portuguese

PORTG 51—INTRODUCTION TO PRACTICAL PORTUGUESE 1
Basic conversational Portuguese. Emphasis on the development of conversational skills rather than on reading and writing. Recommended for students who wish to refresh their Portuguese-language background, or who need preparation for PORTG 101. Lecture/Laboratory. (Fall)

PORTG 52—INTRODUCTION TO PRACTICAL PORTUGUESE 2
Recommended for Success: PORTG 51. A continuation of PORTG 51. Recommended for those who need it for their work, travel, or to prepare for PORTG 101. Lecture/Laboratory. (Spring)

PSYCH—Psychology

PSYCH 51—PSYCHOLOGY IN EVERYDAY LIFE
3 Units
Recommended for Success: Satisfactory completion of ENGL 49. Principles of human behavior and personality development and their application to today’s world, including personal and job-related problem solving skills. Lecture. Applicable to the Associate Degree. (A-F or P/NP) General Education: (MUC-GE: B)
PSYCH 101—GENERAL PSYCHOLOGY 3 Units
Recommended for Success: Before enrolling in this course, students are strongly advised to meet the eligibility requirements for ENGL 101.
Introduction to the areas, concepts, methods and facts of the science of psychology as they relate to the understanding of behavior. Lecture. (A-F and P/NP) Transfer: CSU, UC (CC PSYCH 1) General Education: (MJC-GE: B)(CSU-GE: D9)(IGETC: 4)

PSYCH 102—RESEARCH METHODS 3 Units
Prerequisite: Satisfactory completion of PSYCH 101
Recommended for Success: Before enrolling in this course, students are strongly advised to complete ENGL 101.
An introductory examination and application of various research methods used by psychologists in order to describe, predict, and explain behavior. Field trips may be required. Lecture. Transfer: CSU, UC

PSYCH 103—INTRODUCTION TO NEUROSCIENCE 3 Unit(s)
Prerequisite: Satisfactory completion of PSYCH 101
Also offered as PHYS 103

PSYCH 104—SOCIAL PSYCHOLOGY 3 Units
Recommended for Success: Before enrolling in this course, students are strongly advised to satisfactorily complete PSYCH 101 and to be eligible for ENGL 101.
Study of how individuals affect and are affected by other people in their interaction with one another. The relationship between social behavior and internal processes (attitudes, beliefs, self-concept) will also be examined. (A-F or P/NP) Lecture. Transfer: CSU, UC General Education: (MJC-GE: B)(CSU-GE: E)(IGETC: 4)

PSYCH 105—ABNORMAL PSYCHOLOGY 3 Units
Recommended for Success: PSYCH 101
An examination of the broad questions of normality in the context of biological, psychological, sociological, and cultural factors; including major theoretical, diagnostic and treatment approaches. Field trips required. Lecture. Transfer: CSU, UC (MJC-GE: B)(CSU-GE: D9)(IGETC:4)

PSYCH 106—HUMAN SEXUALITIES 3 Units
Study of human sexualities from a biopsychosocial perspective. The intersections of biology, culture, ethnicity, race, social class, sexual orientation and gender as they relate to sexualities will be explored throughout the course. (A-F and P/NP) Lecture. Transfer: CSU, UC (CC PSYCH 5) General Education: (MJC-GE: E)(CSU-GE: E)(IGETC: 4)

PSYCH 107—PSYCHOLOGY OF GENDER 3 Units
Recommended for Success: PSYCH 101
A survey of various factors in the development of gender identity and gender roles, including psychological, sociological, biological and cultural influences. Lecture. Field trips may be required. Transfer: CSU, UC (MJC-GE: B)(CSU-GE: D4, D9)(IGETC:4)

PSYCH 110—PHARMACOLOGY OF ABUSED SUBSTANCES 3 Units
Also offered as HUMSR 118.
Recommended for Success: HUMSR 116 or PSYCH 101.
An introduction to psychopharmacology and the process of drug addiction. Topics include classification of abused and psychotherapeutic drugs, basic principles of pharmacology, behavioral and psychological effects of drugs, major neurotransmitter systems and how they are influenced by drugs. Lecture. Transfer: CSU

PSYCH 130—PERSONAL ADJUSTMENT 3 Units
The study of personal growth and adjustment. Includes discussion of personality, development, interpersonal relationships, stress management, work, and other concerns of individuals in society. Lecture. (A-F or P/NP) Transfer: CSU (CC PSYCH 30) General Education: (MJC-GE: E)(CSU-GE: E)

PSYCH 141—HUMAN LIFESPAN 3 Units
Recommended for Success: Before enrolling in this course, students are strongly advised to satisfactorily complete PSYCH 101 and meet the eligibility requirements for ENGL 101.

PSYCH 120—PSYCHOLOGY OF LEARNING 3 Units
Recommended for Success: PSYCH 101

PUBLIC SAFETY
For Public Safety course descriptions, please see FSCI (Fire Science)

RATV (Radio/Television)

RATV 101—VOICE AND ARTICULATION 3 Units
Formerly listed as “Basic Voice and Artication”
Also offered as SPCM 101 and THEIR 101.
Training program in basic voice and articulation. Emphasis on critical listening, self-analysis and self-improvement in tone production and control, voice quality, articulation and pronunciation. Introduction to the International Phonetic Alphabet. This is not a class for persons with a major speech or language delay or disorder. (A-F or P/NP) One completion allowed. Lecture. Transfer: CSU, UC (CC DRAMA/SPCM 18)

RATV 131—INTRODUCTION TO RADIO PRODUCTION 3 Units
Formerly listed as “RATV 131 - Radio Control Room and Studio Production”
Theory and operation of broadcast audio control room and studio equipment. Basic planning and production techniques for radio programs, station promotions, commercial and public service announcements. Field trips may be required. Lecture/Laboratory. One completion allowed. (A-F or P/NP) Lecture/Laboratory. Transfer: CSU

RATV 132—ADVANCED RADIO PRODUCTION 1 4 Units
Prerequisite: RATV 131
Students operate a limited power radio station incorporating standard broadcast procedures and practices and exercising their skills in the production of commercials and public service announcements, promotional announcements, news, and remote broadcasts. Students may produce programs for community commercial stations. Field trips may be required. Two maximum completions. Lecture/Laboratory. Transfer: CSU

RATV 133—ADVANCED RADIO PRODUCTION 2 4 Units
Prerequisite: RATV 132
Continuation of RATV 132. Refinement of skills utilizing digital recording and equipment operation. Students will prepare an audition tape for entry level in the job market. Outside speakers from broadcast industry will be featured. Field trips may be required. Two maximum completions. Lecture/Laboratory. Transfer: CSU

RATV 134—TELEVISION STUDIO PRODUCTION 3 Units
Introduction to television production techniques. This course offers and exciting blend of theory, critical and practical work, with access to the college TV studio facilities. Students will work in teams to produce their own programs and have many hands-on and skill-building opportunities in the areas of creative concept and script development, technical operation of television studio equipment art direction and set design, multi-camera directing and performing in front of a camera. Lecture/Laboratory. Materials fee required. (MJC Activities) Transfer: CSU
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<td>RATV 135</td>
<td>ADVANCED TELEVISION PRODUCTION 1</td>
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<td>RATV 136</td>
<td>ADVANCED TELEVISION PRODUCTION 2</td>
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<tr>
<td>RATV 137</td>
<td>RADIO PROGRAMMING AND BROADCAST</td>
<td>3 Units</td>
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<td>RATV 138</td>
<td>WRITING FOR RADIO AND TELEVISION</td>
<td>3 Units</td>
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<td>RATV 141</td>
<td>DOCUMENTARY PRODUCTION</td>
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<td>RATV 142</td>
<td>LIGHT, SOUND, CAMERA AND EDITING WORKSHOP</td>
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<td>RATV 143</td>
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<td>RATV 150</td>
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<td>RATV 168</td>
<td>MUSIC PRODUCTION FOR MULTIMEDIA</td>
<td>2 Units</td>
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<tr>
<td>READ 40</td>
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<td>READ 45</td>
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<td>READ 62</td>
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<td>READ 82</td>
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**RATV - READ**

Recommended for Success: RATV 134, 142.

- Practical applications in single and multiple camera television production. Creative use of camera, sound, editing, and production planning. Students will produce, direct, and edit individual features that will be incorporated into a half-hour television program. This class will provide expanded responsibilities in producing, directing, and operating video and audio equipment in remote and studio productions. Field trips may be required. Two maximum completions. Lecture/Laboratory.

**RATV 136—ADVANCED TELEVISION PRODUCTION 2**

Recommended for Success: RATV 135, 142.

- Continuation of RATV 135. Development of leadership skills, directing techniques, and the producing process for the television industry. Field trips may be required. Two maximum completions. Lecture/Laboratory. Materials fee required. Transfer: CSU

**RATV 137—RADIO PROGRAMMING AND BROADCAST ANNOUNCING**

Formerly listed as: “RATV 137 - Radio and Television Announcing”

Recommended for Success: Computer/Internet literacy.

- Performance for the electronic media. Includes announcing, newscasting, interview, and narration. Practical development of radio and television announcing skills through practice and evaluation. Maximum one completion. Field trips may be required. Lecture/Laboratory. Transfer: CSU

**RATV 138—WRITING FOR RADIO AND TELEVISION**

- Applied studies in the techniques of writing for radio and television, including the gathering and writing of news, commercials and public service announcements, radio features and short dramatic scripts. Includes interview techniques, storyboarding, and the presentation of newscasts. Lecture/Laboratory. Transfer: CSU

**RATV 141—DOCUMENTARY PRODUCTION**

- Designed to explore the various forms and styles of documentary films and videos through critical analysis and hands-on experience. Using a workshop approach, students will learn the process and skills needed to research, write, produce and direct a 15 to 20-minute television documentary. (A-F or P/NP) Lecture/Laboratory. Not offered every semester. (MJC Activities) Transfer: CSU General Education: (CSU-GE:C1)

**RATV 142—LIGHT, SOUND, CAMERA AND EDITING WORKSHOP**

- Designed to explore the fundamental technical and aesthetic principles of lighting, sound, editing and camera operation. Expanded knowledge in the areas of technical planning, interior and exterior lighting design, sound recording and enhancement techniques, composing dynamic images with a camera and final digital editing. Prepares students for work in film, television, and digital production. (A-F or P/NP) Lecture/Laboratory. (MJC Activities) Transfer: CSU

**RATV 143—NON-LINEAR VIDEO EDITING**

Recommended for Success: Basic computer operating skills.

- An introduction to the primary elements and basic interface of non-linear video editing. Students learn to perform basic editing functions and to operate the computer software and hardware user interface. Topics include basic software setup including preferences and settings; capturing video and audio files and signals; editing and trimming techniques; audio creation and editing; file finishing and output. Field trips may be required. Lecture/Laboratory. Transfer: CSU

**RATV 150—INTRODUCTION TO MASS COMMUNICATION**

- Exploration of the impact of the mass media on American society and culture, within a global perspective, and the importance of being more conscious “consumers” of the mass media. Explores the growing variety of career options. Topics include the origin, development and contemporary structure of the print, electronic and digital media, including the Internet, and how they shape the economic, political and social fabric of society, the impact of technology, legal and ethical issues, and social issues including gender and cultural diversity. Field trips may be required. Lecture. Transfer: CSU General Education: (MUC-GE-C)

**RATV 168—MUSIC PRODUCTION FOR MULTIMEDIA**

Also offered as MUSC 126

- Designed for the student with an interest in music composing, music production, sound design and sound effects. The course will explore production of music for recording artists, music videos, demos, public service announcements, radio programs, graphics animations, commercials, jingles, and TV/film scoring through the use of MIDI sequencing, digital multitrack recording and SMPTE synchronizing. Four completions allowed. (A-F or P/NP) (MJC Activities) Transfer: CSU

**RATV 172—RECORDING ARTS 1**

Also offered as MUSC 111

Recommended for Success: Before enrolling in this course, students are strongly advised to satisfactorily complete MUSC 121 and MUSC 122.

- Introduction to the terminology and practices of the recording arts. Properties of sound, microphone placement, multi-track recording, mixing and mastering. Lab time and materials fees will be required. Two completions allowed. Field trips may be required. (A-F or P/NP)(MJC Activities) Transfer: CSU

**RATV 178—RECORDING ARTS 2**

Also offered as MUSC 112

Recommended for Success: Before enrolling in this course, students are strongly advised to satisfactorily complete MUSC 111

- Advanced topics in the recording studio relating to the digital recording process. In depth study of microphone choice and placement, microphone pre-amplifiers and analog processors, digital inputting, non-destructive digital editing, software plugins, automation techniques, mixing and mastering in the recording process. Laboratory time required. Materials fee required. Four completions allowed. (MJC Activities) Transfer: CSU

**READ (Reading)**

**READ 21—VOCABULARY DEVELOPMENT**

- Non-degree course.

- Course is designed to improve the vocabulary of students who are functioning at the pre-collegiate level. Appropriate for students who score below 60 on the Accuplacer assessment test. Three maximum completions. Lecture. (A-F Only)

**READ 40—READING COMPREHENSION**

- Non-degree course.

- Designed to improve the student’s comprehension of pre-collegiate reading materials. Appropriate for students who score below the 10th percentile on the MUC Reading Assessment. Three maximum completions. Lecture. (A-F Only)

**READ 45—ELEMENTS OF READING**

- Non-degree course.

- A computer-based and workshop-based course for students who want to review elements of reading. Offered in the Center for Learning Assistance. Orientation required. Open-entry/Open-exit. (P/NP Only)

**READ 62—COLLEGE VOCABULARY**

- Development of college level vocabulary. Use of context clues and structural analysis emphasized. Lecture. (A-F Only)

**READ 82—COLLEGE READING - COMPREHENSION**

- Recommended for Success: A minimum of 10th percentile on the reading assessment or READ 40 with a C or better.

- Course is designed to improve student’s comprehension and retention of college level materials. Lecture. Maximum one completion. (A-F Only)
READ 184—CRITICAL READING 3 Units
Recommended for Success: Satisfactory completion of READ 82 or recommendation of the reading assessment.
Reading for inferred ideas, evaluation of ideas, tone, mood, and style. Discussion of application of reader's knowledge to reading material. This course with a grade of “C” or better meets MJC reading proficiency requirements. Appropriate for students who score above 85 on the Accuplacer assessment test. Lecture. (A-F Only) Transfer: CSU

REC (Recreation)
With increased urbanization, expanded leisure time, and public awareness of the value of recreational activities, trained leaders are needed to organize and administer programs in a variety of settings. Since most jobs in Recreation require a four-year college degree, students in the Recreation program at MJC are encouraged to follow the four-year college transfer pattern and also to complete theoretical and practical recreation classes. Students are also advised to take electives in the fields of art, drama, music, sports, and activities. Considerable flexibility in the Recreation program is allowed in designing an individualized program to strengthen career needs and specialization areas selected by the student.

REC 110—SOCIAL RECREATION LEADERSHIP 3 Units
A theory and activity course that teaches leadership techniques and strategies of recreational activities with an emphasis on the integration of individuals into group programs. Lecture. (A-F and P/NP) Transfer: CSU

RLES (Real Estate)
RLES 380—REAL ESTATE PRINCIPLES 3 Units
Real estate principles and laws in California, including contracts, deeds, land titles, liens, escrows, leases, financing, land descriptions, mandatory disclosures, terminology, ethics, fair housing and licensing. Field trips may be required. Lecture. Transfer: (C C RLEST 1)

RLES 381—REAL ESTATE PRACTICES 3 Units
Prerequisite: Satisfactory completion of RLES 380
Practices and techniques of broker and salesperson including listing, prospecting, advertising, disclosures, selling, escrow procedures, financing, exchanges, property management and leases, land utilization and development, public relations and professional ethics, and fair housing in real estate business. Field trips may be required. Lecture. Transfer: (C C RLEST 5)

RLES 382—LEGAL ASPECTS OF REAL ESTATE 1 3 Units
Prerequisite: Satisfactory completion of RLES 381
California real property laws including the principle legal aspects of ownership, acquisition and transfer of real property, legal descriptions, contracts, escrow procedures, forms of trust and foreclosure, liens and restrictions, legal instruments. Lecture. Not offered every semester. Transfer: (C C RLEST 10)

RLES 384—REAL ESTATE FINANCE 3 Units
Prerequisite: Satisfactory completion of RLES 380 or 381.
Lending regulations, policies and procedures applicable to financing residential, multi-family, commercial and special purpose properties. Special attention to the money market, sources of funds and FHA and VA loans as factors in property financing. Lecture. Not offered every semester.

RLES 385—REAL ESTATE APPRAISAL, RESIDENTIAL 3 Units
Prerequisite: Satisfactory completion of RLES 380
Examination of appraisal process to determine property value on cost, sales comparison, and income basis. Consideration of neighborhood and site analysis, residential style and functional utility, three approaches to value, reconciliation of value indicators, and Uniform Standards of Professional Practice. Field trips may be required. Lecture.

RLES 392—BASIC ESCROW PROCEDURES 3 Units
Prerequisite: Satisfactory completion of RLES 380 or 381.
Basic escrow elements and practices. Terms, phraseology, and documents. Preparation of instructions and statements and their use, legal descriptions, vesting of title, balancing, credits and credits, loan payoffs and dispensing funds. Lecture. Not offered every semester.

RSCR (Respiratory Care)
RSCR 220—INTRODUCTION TO RESPIRATORY CARE PRINCIPLES 5 Units
Prerequisite: Satisfactory completion of CHEM 143 with a grade of “C” or .
Covers basic physical principles necessary for the practice of respiratory care to include the following: medical terminology, fundamentals of general bedside patient care skills, underlying physical principles of respiratory care equipment, indications for the use of oxygen and aerosol therapy and related equipment. Field trips may be required. Lecture/Laboratory. Materials fee required. (A-F Only) (Spring) Transfer: CSU

RSCR 222—BASIC CARDIOPULMONARY ANATOMY AND PHYSIOLOGY 3 Units
Prerequisites: Satisfactory completion of AP 150 or (ANAT 125 and PHYS 101.) Formerly listed as RSCR 202.
Structure and functions of the pulmonary and cardiovascular systems. Application of laws of gas and fluid physics to the cardiopulmonary system. Field trips may be required. Lecture. (A-F Only) (Fall) Transfer: CSU

RSCR 224—RESPIRATORY CARE THEORY 2 5 Units
Prerequisites: Satisfactory completion of RSCR 220. Formerly listed as RSCR 203.
Theoretical foundation for basic treatment modalities utilized in respiratory care. Topics covered include: hyper-inflation therapies, chest physical therapy, basic airway care and cardiopulmonary pharmacology. Associated equipment will be covered during scheduled labs. Field trips may be required. Lecture/Laboratory. Materials fee required. (A-F Only) (Fall) Transfer: CSU

RSCR 230—CLINICAL 1 1 Unit
Concurrent Enrollment: RSCR 220
Formerly listed as RSCR 205.
Clinical experience in oxygen therapy, aerosol-humidity therapy and other basic respiratory care modalities used in area hospitals. Two maximum completions. Field trips may be required. Laboratory. Materials fee required (items for infection control and/or malpractice liability insurance). (P/NP Only) (Spring, Summer: for those students with AP 150 during Spring.) Transfer: CSU

RSCR 232—CLINICAL 2 3½ Units
Prerequisites: Satisfactory completion of RSCR 230.
Concurrent Enrollment: RSCR 224
Formerly listed as RSCR 206.
Clinical experience in the various routine respiratory care procedures and the equipment used in area hospitals. Attention is paid to the student performing critical evaluations of current therapy and the application of clinical practice guidelines. Field trips may be required. Two maximum completions. Laboratory. (Fall) (P/NP Only) Transfer: CSU

Transfer:
RCR (Respiratory Care)
RSCR 233—CRITICAL CARE PROCEDURES 4½ Units
Prerequisites: Satisfactory completion of RSCR 222, 224 and MICRO 101.
Theory and application of critical care procedures for second-year respiratory care students. This includes advanced theory and application of mechanical ventilators, associated pathophysiology and pharmacology, microbiological issues in respiratory care, application of ECG interpretation and chest x-ray interpretation. Field trips may be required. Lecture/Laboratory. (Spring) (A-F Only) Transfer: CU
RSCR 234—NEONATAL-PEDIATRIC RESPIRATORY CARE 2 Units
Introduction to respiratory care in the neonatal patient. Topics include fetal and neonatal development, resuscitation, pathophysiology, and neonatal and pediatric respiratory care procedures. Also open to those holding valid Respiratory Care Practitioner or Registered Nurse license. Field trips may be required. Lecture. (Summer) (A-F Only) Transfer: CU
RSCR 237—CURRENT ISSUES IN RESPIRATORY CARE 3 Unit
Prerequisites: Satisfactory completion of RSCR 240 and 242.
Specialty areas in Respiratory Care: home care, skilled nursing facility care, management and administrative issues, pulmonary rehabilitation and education, metabolic studies, nutrition, sleep studies, assisting physicians in procedures, and blood gas analysis. Course also includes a comprehensive review to prepare students for state and national examination. Field trips may be required. Lecture: (Summer) (A-F Only) Transfer: CU
RSCR 238—SELF-DIRECTED STUDY ½ Unit
Prerequisites: Satisfactory completion of RSCR 242.
Preparation for therapist level clinical simulation exam. Students spend 1.5 hours per week on a self-directed basis completing computerized clinical teaching and testing simulations. Also open to those possessing a valid RCP license. Three maximum completions. Laboratory. Materials fee required. (P/NP Only) (Fall) Transfer: CU
RSCR 240—ADVANCED CARDIOPULMONARY PHYSIOLOGY AND DIAGNOSTICS 4½ Units
Prerequisites: Satisfactory completion of RSCR 222 and 224.
Formerly listed as RSCR 211.
Advanced cardiopulmonary physiology and diagnostics for the second year respiratory care student. Includes advanced arterial blood gas analysis, indices of oxygenation, chest x-ray interpretation, hemodynamic monitoring, laboratory testing, capnography, and ECG interpretation with an emphasis on clinical setting application. Also includes discussion of various pathologies caused by cardiovascular conditions. Field trips may be required. Lecture. (A-F Only) (Spring) Transfer: CU
RSCR 242—CRITICAL CARE PROCEDURES 4½ Units
Prerequisites: Satisfactory completion of RSCR 222, 224 and MICRO 101.
Formerly listed as RSCR 212.
Theory and application of critical care procedures for second-year respiratory care students. This includes advanced theory and application of mechanical ventilators, associated pathophysiology and pharmacology, microbiological issues in respiratory care, application of ECG interpretation and chest x-ray interpretation. Field trips may be required. Lecture/Laboratory. (Spring) (A-F Only) Transfer: CU
RSCR 243—NEONATAL-PEDIATRIC RESPIRATORY CARE 2 Units
Introduction to respiratory care in the neonatal patient. Topics include fetal and neonatal development, resuscitation, pathophysiology, and neonatal and pediatric respiratory care procedures. Also open to those holding valid Respiratory Care Practitioner or Registered Nurse license. Field trips may be required. Lecture. (Summer) (A-F Only) Transfer: CU
RSCR 246—CURRENT ISSUES IN RESPIRATORY CARE 3 Unit
Prerequisites: Satisfactory completion of RSCR 240 and 242.
Specialty areas in Respiratory Care: home care, skilled nursing facility care, management and administrative issues, pulmonary rehabilitation and education, metabolic studies, nutrition, sleep studies, assisting physicians in procedures, and blood gas analysis. Course also includes a comprehensive review to prepare students for state and national examination. Field trips may be required. Lecture: (Summer) (A-F Only) Transfer: CU
RSCR 248—SELF-DIRECTED STUDY ½ Unit
Prerequisites: Satisfactory completion of RSCR 242.
Preparation for therapist level clinical simulation exam. Students spend 1.5 hours per week on a self-directed basis completing computerized clinical teaching and testing simulations. Also open to those possessing a valid RCP license. Three maximum completions. Laboratory. Materials fee required. (P/NP Only) (Fall) Transfer: CU
RSCR 250—CLINICAL 3 3½ Units
Prerequisites: Satisfactory completion of RSCR 232.
Concurrent Enrollment: RSCR 240 and 242.
Formerly listed as RSCR 213.
Clinical experience in the various critical care respiratory procedures and the equipment used for these procedures in various area hospitals. Field trips may be required. Two maximum completions. Laboratory. Materials fee required. (P/NP Only) (Spring) Transfer: CU
RSCR 251—NEONATAL AND PEDIATRIC CLINICAL PRACTICE 1 ½ Unit
Prerequisites: Satisfactory completion of RSCR 242
Concurrent Enrollment: RSCR 244
Introduction to respiratory care clinical practice in perinatal, neonatal and pediatric care. Field trips may be required. Laboratory. (Summer) (A-F Only) (P/NP Only) Transfer: CU
RSCR 252—PHYSICIAN ROUNDS FOR RESPIRATORY CARE ½ Unit
Concurrent Enrollment: RSCR 244 and 246.
Formerly listed as RSCR 210.
Opportunity for interaction between physicians and respiratory care students to determine the appropriateness of a respiratory care plan; includes use of computer instruction in formulating adequate care plans and use of respiratory care protocols. Laboratory. (P/NP Only) (Fall) Transfer: CU
RSCR 253—NEONATAL AND PEDIATRIC CLINICAL PRACTICE 2 ½ Unit
Prerequisites: Satisfactory completion of RSCR 242
Concurrent Enrollment: RSCR 244
Additional respiratory care clinical practice in perinatal, neonatal and pediatric care. Field trips may be required. Laboratory. (Summer) (A-F Only) (P/NP Only) Transfer: CU
RSCR 255—CLINICAL 4 4½ Units
Prerequisites: Satisfactory completion of RSCR 244
Concurrent Enrollment: RSCR 246
Formerly listed as RSCR 254.
Continued clinical experience in critical care units and introduction to clinical care in the neonatal intensive care unit as well as alternative site respiratory care. Field trips may be required. Laboratory. Materials fee required (items for malpractice liability insurance). (Fall) (P/NP Only) Transfer: CU
RSCR 257—CLINICAL PRECEPTORSHIP 2½ Units
Prerequisites: Satisfactory completion of RSCR 244
Concurrent Enrollment: RSCR 246
Formerly listed as RSCR 256.
Four week clinical preceptorship in which student must demonstrate proficiency in all areas of clinical respiratory care practice. Field trips may be required. Laboratory. (P/NP Only) (Fall) Transfer: CU

SIGN (Sign Language)

SIGN 125—ASL: BEGINNING COMMUNICATION WITH THE DEAF 3 Units
Introduction to the American Manual Alphabet and American Sign Language, designed to provide basic conversational skill in the language used among most deaf people in the United States. Equivalent to the first two years of high school ASL. Field trips may be required. Lecture. Equivalent to the satisfactory completion of two years high school sign language. (A-F or P/NP) Transfer: CU, UC General Education: (MJC-GE: C) (CSU-GE: C2) (IGETC: 3B, 6A)
SIGN 126—ASL: INTERMEDIATE COMMUNICATION WITH THE DEAF 3 Units
Prerequisite: Satisfactory completion of SIGN 125.
Communicating with and interpreting for the Deaf through use of the American Manual Alphabet and American Sign Language. Equivalent to the satisfactory completion of three years of high school ASL. Field trips required. Lecture. (A-F or P/NP) Transfer: CU, UC General Education: (MJC-GE: C) (CSU-GE: C2) (IGETC: 3B,6A)
SIGN 127—ASL: ADVANCED COMMUNICATION WITH THE DEAF 3 Units
Prerequisite: Satisfactory completion of SIGN 126.
Extensive development of and practice in American Sign Language for those who would like to interpret for the Deaf or for those want to become professionals working in the Deaf community. Equivalent to the satisfactory completion of four years of high school ASL. (A-F or P/NP) Transfer: CU, UC General Education: (MJC-GE: C) (CSU-GE: C2) (IGETC: 3B, 6A)
**SM (Sheet Metal)**

The Vocational Sheet Metal courses teach layout, measurement, forming, and installation as well as the mathematics required for sheet metal fabrication. Curriculum is developed and closely monitored in consultation with local air conditioning and heating contractors.

**SM 331—VOCATIONAL SHEET METAL AND INSTALLATION 1**  
3 Units  
Formerly listed as SM 31.  
Tools and machinery used by sheet metal trades. Training in the procedures using patterns, cutting, making seams and riveting metals. Safety in sheet metal shop. Basic mathematical application. Opportunities in the trade. Field trips may be required. Lecture. (A-F Only)

**SM 332—VOCATIONAL SHEET METAL AND INSTALLATION 2**  
3 Units  
Prerequisite: Satisfactory completion of SM 331  
Formerly listed as SM 32.  

**SM 333—VOCATIONAL SHEET METAL AND INSTALLATION 3**  
3 Units  
Prerequisite: Satisfactory completion of SM 332  
Formerly listed as SM 33.  

**SM 334—VOCATIONAL SHEET METAL AND INSTALLATION 4**  
3 Units  
Prerequisite: Satisfactory completion of SM 333  
Formerly listed as SM 34.  

**SM 335—VOCATIONAL SHEET METAL AND INSTALLATION 5**  
3 Units  
Prerequisite: Satisfactory completion of SM 334  
Formerly listed as SM 35.  
Sheet metal pattern development and pattern drafting. Continued study of mathematics for sheet metal fabrication. Field trips may be required. Lecture. (A-F Only)

**SM 336—VOCATIONAL SHEET METAL AND INSTALLATION 6**  
3 Units  
Prerequisite: Satisfactory completion of M 335  
Formerly listed as SM 36.  
Continuation of mathematics for sheet metal fabrication, pattern development and pattern drafting. Field trips may be required. Lecture. (A-F Only)

**SM 337—VOCATIONAL SHEET METAL AND INSTALLATION 7**  
3 Units  
Prerequisite: Satisfactory completion of SM 336  
Formerly listed as SM 37.  
Advanced study of mathematics for sheet metal fabrication, sheet metal pattern development and pattern drafting. Field trips may be required. Lecture. (A-F Only)

**SM 338—VOCATIONAL SHEET METAL AND INSTALLATION 8**  
3 Units  
Prerequisite: Satisfactory completion of SM 337  
Formerly listed as SM 38.  
Advanced training in conjunction with the manipulation skills acquired in daily work, to develop well qualified sheet metal workers. Field trips may be required. Lecture. (A-F Only)

**SOCIO (Sociology)**

**SOCIO 101—INTRODUCTION TO SOCIOLOGY**  
3 Units  
The study of human social interaction, groups and societies with emphasis upon culture, social differences, institutions and change. Field trips may be required. Lecture. Transfer: CSU, UC (TCSU SOC 1) General Education: (MJC-GE: B) (CSU-GE: D0) (IGETC: 4)

**SOCIO 102—SOCIAL PROBLEMS IN THE UNITED STATES**  
3 Units  
The experiences of caregivers and patients from several ethnic minority groups. The study of contemporary social problems within the American society emphasizing, among other topics, alcohol and drugs, crime and violence, family problems, power, race, and gender inequalities. Construction of possible solutions to social problems will also be discussed. Field trips may be required. Lecture. Transfer: CSU, UC (CC SOCIO 2) (TCSU SOC 120) General Education: (MJC-GE: B) (CSU-GE: D0) (IGETC: 4)

**SOCIO 125—SOCIOLOGY OF THE FAMILY**  
3 Units  
Comparative and historical treatment of the family. Analysis of kinship and family structure, roles and relationships within the family. Assessment of contemporary society on the family in America. Lecture. Transfer: CSU, UC (CC SOCIO 12) General Education: (CSU-GE: D0) (IGETC: 4)

**SOCIO 131—SOCIOLOGY OF MEDICINE: CROSS-CULTURAL PERSPECTIVES**  
3 Units  
The experiences of caregivers and patients from several ethnic minority groups (Hispanic, African American and Southeast Asian) provide access to an understanding of some of the meanings and traditions of health in the U.S. Definitions of health and strategies of healing as well as the distribution of illness in our stratified, multicultural society are examined. The influence of Western biomedicine, its network of roles and relationships and the effects of economics and bioethics on health care delivery are evaluated. Field trips may be required. Lecture. Transfer: CSU, UC. General Education: (MJC-GE: B)

**SOCIO 150—ETHNICITY AND CULTURE IN AMERICA**  
3 Units  
A multidisciplinary study of ethnic and racial groups in the United States including Asian-Americans, African-Americans, Hispanics, among others. Emphasizes emergence, change, marginality, and integration of major ethnic groups in the United States. Field trips may be required. Lecture. Transfer: CSU, UC (CC SOCIO 5) General Education: (MJC-GE: B) (CSU-GE: D0, D3) (IGETC: 4)

**SOCIO 154—AFRICAN-AMERICAN CULTURES AND COMMUNITIES**  
3 Units  
A sociological exploration of the social and historical forces shaping contemporary African-American experiences and their multiple statuses in American society. Effects of stratification, conflict and change as well as the historical and current roles of the family within dynamic communities are emphasized. Lecture. One completion allowed. Transfer: CSU, UC General Education: (MJC-GE: B) (CSU-GE: D0, D3) (IGETC: 4)

**SOCIO 156—MEXICAN CULTURE IN THE UNITED STATES**  
3 Units  
Contemporary Mexican-American Culture, problems and contributions, origins and nature. Intergroup contacts and conflicts. Field projects concern Mexican-American assimilation within the region. Lecture. Once completion allowed. Transfer: CSU, UC General Education: (MJC-GE: B) (CSU-GE: D0, D3) (IGETC: 4)
SOCSC (Social Science)

SOCSC 58—STUDENT LEADERSHIP DEVELOPMENT  2 Units
Theory and practice of leadership. Prepares students for productive involvement in community service, college activities, and civic governance. Designed especially but not exclusively, for students participating in student government and club activities. Field trips may be required. Two maximum completions. Lecture/Laboratory. (MJC Activities) Transfer: (EC GUIDE 115)

SOCSC 105 — WOMEN’S STUDIES  3 Units
Recommended for Success: ENGL 101; INDIS 55 or 105
A multidisciplinary introduction to the origins, purpose, subject matter, and methods of feminist theory in the social sciences. This course explores political, economic, social, cultural, and historical issues from a feminist perspective. The focus is on classic feminist texts: how they have changed gender roles in society, how feminist politics have evolved, and how they have shaped contemporary world views. Lecture. Transfer: CSU, UC. General Education: (MJC-GE: B, C) (CSU-GE: D4) (IGETC: 4)

SOCSC 109—INTRODUCTION TO EDUCATION - PRACTICUM IN TUTORING  2 Units
Orientation to the teaching profession. Designed for prospective elementary, secondary or college teachers but open to all. Students are required to observe and tutor in an appropriate educational setting. Partially meets field experience requirement for teaching credential program at CSU Stanislaus. Fingerprint clearance and TB clearance is required. Lecture. Transfer: CSU (CC INDIS 10)

SOCSC 110—INTRODUCTION TO EDUCATION  3 Units
Orientation to the teaching profession. Designed for prospective elementary, secondary or college teachers but open to all students. Students are required to observe and participate in community classrooms. Meets field experience requirements for teaching credential program. Fingerprint clearance and TB clearance is required. Lecture. Transfer: CSU, UC (CC INDIS 12) General Education: (MJC-GE: B)

SOCSC 120A, 120B, 120C—COMPUTER APPLICATIONS IN THE SOCIAL SCIENCES  1,2,3 Units
Application of computers to social sciences activities. Writing, research, data collection, simulations, survey and laboratory research. Field trips may be required. May be repeated to six units maximum. Lecture or Laboratory. Transfer: CSU

SOCSC 154 – MOVIES WITH A MESSAGE  3 Units
Also offered as FILM 154.
A thematic film course aimed at using the medium of film to broaden the awareness of current societal and global issues, focusing on different topics semester to semester. Selected sequences of feature films, documentaries, unusual foreign and domestic releases will explore how filmmakers depict aspects of history, culture, religion, race, gender, class, ideology and other issues in a global perspective. Course will cover related elements of film style and theory, such as the relationship of subject to style, form and function. Field trips may be required. Lecture. Transfer: CSU, UC General Education: (MJC-GE: C)(CSU-GE:C1)

SPAN (Spanish)

SPAN 45, A, B, C—PRACTICAL SPANISH FOR THE PROFESSIONS  
½, 1, 2, 3 Units
Non-degree course.
Conversational Spanish for people working with the Spanish-speaking in the following areas: health, education, law enforcement, social work, agriculture, construction, public safety, and business. Occupational topics vary from semester to semester. May be repeated for credit as topic changes. Field trips may be required. Lecture. Multiple completions not to exceed 9 units in any combination.

SPAN 51—INTRODUCTORY SPANISH  3 Units
Formerly listed as “SPAN 51 - Introduction to Practical Spanish.” Slow-paced, non-transferable course designed for people who have never studied a foreign language, especially Spanish. Basic Spanish grammar and pronunciation. Field trips may be required. Lecture/Laboratory. Transfer: (CC SPAN 10A) General Education: (MJC-GE: C)

SPAN 52—INTRODUCTORY SPANISH  3 Units
Formerly listed as “SPAN 52 - Introduction to Practical Spanish 2”
Prerequisite: Satisfactory completion of SPAN 51 or equivalent introductory course.
Slow-paced, non-transferable course designed for people who wish to continue from SPAN 51. Basic Spanish grammar and pronunciation. Field trips may be required. Lecture/Laboratory. One completion allowed. General Education: (MJC-GE: C)

SPAN 101—SPANISH 1  5 Units
Fundamentals of spoken and written Spanish. Field trips may be required (A-F or P/NP). Approved for hybrid and telecourse instruction. Equivalent to the satisfactory completion of two years high school Spanish. Transfer: CSU, UC (CC SPAN 1A) General Education: (MJC-GE: C) (CSU-GE: C2) (IGETC 6A)

SPAN 102—SPANISH 2  5 Units
Prerequisite: Satisfactory completion of SPAN 101.
Continuation of SPAN 101. Emphasis on preterite and imperfect tenses of the indicative mood. Equivalent to the completion of three years of high school Spanish. (A-F or P/NP) Transfer: CSU, UC (CC SPAN 1B) General Education: (MJC-GE: C) (CSU-GE: C2) (IGETC 6A)

SPAN 103—SPANISH 3  5 Units
Prerequisite: Satisfactory completion of SPAN 102.
Continuation of Spanish 102. Includes Spanish grammar, conversation, reading and composition. Also includes reading and discussion in Spanish of selections from literary works of Spanish and Latin American writers. Equivalent to the satisfactory completion of four years of high school Spanish. Lecture/Laboratory (A-F or P/NP) Transfer: CSU, UC (TCSU SPAN 130, TCSU CAN SEQ B) (CC SPAN 2A) General Education: (MJC-GE: C) (CSU-GE: C2) (IGETC 38,6A)

SPAN 104—SPANISH 4  5 Units
Prerequisite: Satisfactory completion of SPAN 103.
Review and expansion of grammatical structures covered in Spanish 101-103. Includes a review of the uses of the subjunctive and the reading and discussion of literary works of Spanish and Latin American writers. (A-F or P/NP) Field trips may be required. Transfer: CSU, UC (TCSU CAN SEQ B, TCSU SPAN 140) (CC SPAN 2B) General Education: (MJC-GE: C) (CSU-GE: C2) (IGETC 38,6A)

SPAN 109—SPANISH FOR SPANISH SPEAKERS:  4 Units
Fundamentals
Recommended for Success: Near native ability to speak and understand Spanish, but little or no formal academic training in the language. Determined by test. Fundamentals of spoken and written Spanish for speakers with little or no academic study of Spanish. Includes major elements of Spanish grammar and focuses on improving oral and written communication skills. Taught in Spanish. Field trips may be required. (A-F or P/NP) One completion allowed. Transfer: CSU, UC General Education: (MJC-GE: C) (CSU-GE:C2)
SPAN 100—SPANISH FOR SPANISH SPEAKERS: INTERMEDIATE 4 Units
Prerequisite: Satisfactory completion of SPAN 109 or equivalent skill level, as determined by test.
A continuation of SPAN 109. Completes the study of grammar and helps Spanish-speaking students further improve their oral and written communication skills. Taught in Spanish. Lecture. Field trips may be required. (A-F or P/NP) One completion allowed. Transfer: CSU, UC General Education: (MJC-GE: C) (CSU-GE:C2) (IGETC: 6A)

SPAN 112—INTRODUCTION TO CHICANO/AMERICAN LITERATURE 3 Units
Prerequisite: Satisfactory completion of SPAN 104 or SPAN 110. Overview of the historical development and current trends in Chicano/a literature; taught in Spanish. Offered in the Spring semester. Field trips may be required. Approved for hybrid instruction (A-F or P/NP) Applicable to the Associate Degree. Transfer: CSU, UC General Education: (MJC-GE:C) (CSU-GE:C2) (IGETC: 3B,6A)

SPAN 173—SURVEY OF LATIN AMERICAN LITERATURE 3 Units
Prerequisite: Satisfactory completion of SPAN 104 or SPAN 110. Introduction to Latin American literature from its Colonial Period to the present; a chronological survey of major works from different literary movements and from various genres such as chronicles, poetry, short story, essay, drama, and the novel. Taught in Spanish. Offered in the Fall semester. Field trips may be required. Lecture. (A-F or P/NP) Transfer: CSU, UC General Education: (MJC-GE:C) (CSU-GE:C2) (IGETC: 3B)

SPCOM (Speech Communication)

The Speech Communication Program at Modesto Junior College offers students a variety of courses which incorporate both theory and performance instruction. These include public speaking, argumentation and debate, organizational communication, intercultural and interpersonal communication, contest speaking and forensics competition which includes debate and individual events. The MJC Forensics Team has captured a number of state and national championships. The program also offers courses in practical speech communication and voice improvement. Most courses are available to students in both day and evening hours.

SPCOM 100—FUNDAMENTALS OF PUBLIC SPEAKING 3 Units

SPCOM 101—VOICE AND ARTICULATION 3 Units
Formerly listed as “Basic Voice and Articulation” Also offered as RAVT 101 and THTR 101.
Training program in basic voice and articulation. Emphasis on critical listening, self-analysis and self-improvement in tone production and control, voice quality, articulation and pronunciation. Introduction to the International Phonetic Alphabet. This is not a class for persons with a major speech or language delay or disorder. (A-F or P/NP) One completion allowed. Lecture. Transfer: CSU, UC (CC DRAMA/SPCOM 18)

SPCOM 102—INTRODUCTION TO HUMAN COMMUNICATION 3 Units
The study of human communication including verbal, nonverbal and listening skills. Effective oral participation in interpersonal contexts, group discussions, and individual presentations in public settings. Lecture. (A-F or P/NP) Transfer: CSU, UC (CC SPCOM 4) General Education: (MJC-GE:D2) (CSU-GE: A1) (IGETC: 1C)

SPCOM 103—INTERPERSONAL COMMUNICATION 3 Units
Principles of interpersonal communication including perceptual, verbal and nonverbal elements. The study of theory, research findings, concepts and skills in interpersonal relationships as applied to various interactions, such as the male/female relationship, the family, and the workplace. Lecture. Transfer: CSU, UC (TCSU COMS 150) General Education: (MJC-GE:D2) (CSU-GE:D7)

SPCOM 104—ARGUMENTATION 3 Units
Prerequisite: Satisfactory completion of ENGL 101
Primary emphasis on argumentation as the study of analysis, evidence, reasoning, refutation and rebuttal, etc., in oral and written communication. Significant component of instruction in written argumentation, with special attention to the essay form. “Critical Thinking” approaches to commercial, legal, political, and academic argumentation and persuasion. Field trips may be required. Lecture. Transfer: CSU, UC (CC SPCOM 2) General Education: (MJC-GE: D2) (CSU-GE: A3) (IGETC: 1B)

SPCOM 105—FORENSICS DEBATE 2 Units
Formerly listed as “SPCOM 105—Forensics Workshop” Principles of debate applied through participation in competitive debate. Students will participate in intercollegiate forensics. Competitive events include parliamentary, NFA Lincoln/Douglas and policy debate. Four completions allowed. Field trips required. Laboratory (A-F or P/NP) (MJC Activities) Transfer: CSU (CC SPCOM 7)

SPCOM 106—GROUP & ORGANIZATIONAL COMMUNICATION 3 Units
Formerly listed as “SPCOM 106 - Organizational Communication” Also offered as SUPR 106.
Communication within and between groups and organizations while enhancing relevant individual communication skills. Emphasis on communication and organizational theory as basis for focus on such communication processes as interviewing, task-oriented discussion, problem solving, leadership, conflict resolution and negotiation, communication climate, and organizational culture. One completion allowed. (A-F or P/NP) Lecture. Transfer: CSU General Education: (MJC-GE: D2)

SPCOM 107—INTRODUCTION TO DEBATE 3 Units
Argumentation principles and the debate format. Emphasis on case construction, methods of attack and defense, communication strategies, and various forms of debate. Field trips may be required. Lecture. Transfer: CSU, UC General Education: (MJC-GE: D2) (CSU-GE: A3)

SPCOM 109—WOMEN IN MANAGEMENT 3 Units
Formerly listed as “SPCOM 109 —MANAGERIAL SKILLS FOR WOMEN” Communication and leadership skills for effective business management. Emphasis on the women’s movement into management positions, effective communication strategies in organizations, building teams, supervising employees, interpersonal skills, assertiveness training and decision-making skills. Lecture. (A-F or P/NP) Field trips are not required. Lecture. Transfer: CSU

SPCOM 110—PERSUASION 3 Units
Development of abilities to plan and deliver persuasive presentations through a combination of methods involving the study of “real” communicative events, i.e., trials, sales presentations, political campaigns, sermons, etc., and the preparation and presentation of own works. Survey of recent research in attitude change and persuasive communication. Field trips may be required. Lecture. (A-F or P/NP) (MJC Activities) Transfer: CSU, UC General Education: (MJC-GE: D2) (CSU-GE: A3) (IGETC: 1C)

SPCOM 115—FORENSICS PLATFORM SPEECHES 2 Units
Principles of applied speech communication through participation in competitive speech performances. Students will participate in intercollegiate forensics. Competitive events include informative speaking, persuasive speaking, communication analysis, speech to entertain, after dinner speaking, extemporaneous speaking, and impromptu speaking. (A-F or P/NP) (Laboratory) Field trips are required. Four completions allowed. (MJC Activities.)

SPCOM 120—ORAL READING AND INTERPRETATION 3 Units
Also offered as THEIR 120.
Skills in oral interpretation of literature, choice of material, involvement with material, communication of author’s thought, emotion and language, expanded knowledge of literature and literary forms. Credit given for either THEIR 120 or SPCOM 120, but not both. Lecture/Laboratory. (A-F and P/NP) Transfer: CSU, UC (CC DRAMA 20) General Education: (MJC-GE: C) (CSU-GE: C1)
COURSE 122—INTRODUCTION TO READERS’ THEATRE  3 Units
Also offered as THETR 122.
Study of oral interpretation principles as they apply to group and choral reading. Emphasis will be placed upon the preparation and performance of Readers’ Theatre productions. Students will be provided with the necessary theory, practice, and criticism to develop skills for organization and oral presentation of Readers’ Theatre materials. Lecture. Field trips may be required. (MJC Activities) Transfer: CSU, UC General Education: (CSU-GE: C1)

COURSE 123—STORYTELLING  3 Units
Formerly listed as “SPCOM 123—Storytelling: The Interpretation of Children’s Literature” Also offered as THETR 123.
Introduction to the art of storytelling focusing on the preparation and presentation of literature. Emphasis is placed upon selection of materials, analysis, preparation, and presentation of various genres of stories. Designed to develop the adult reader’s knowledge, critical ability and appreciation of literature, as well as critical listening of others sharing literature. Field trips may be required. Lecture. One completion allowed. (A-F or P/NP) (MJC Activities) Transfer: CSU General Education: (CSU-GE: C1)

COURSE 124—ADVANCED READERS’ THEATRE  3 Units
Recommended for Success: Satisfactory completion of (SPCOM 120 or 122) or (THETR 120 or 122.) Also offered as THETR 124.
Continued development of the construction and direction of Readers’ Theatre performances suitable for public presentation. Emphasis on analysis of reading materials and helping others enhance communication skills through vocal control and physical expression. Field trips may be required. Lecture. Transfer: CSU, UC General Education: (MJC-GE: C) (CSU-GE: C1)

COURSE 125—FORENSICS INTERPRETATION EVENTS  3 Units
Principles of applied speech communication through participation in competitive interpretation of literature performances. Students will participate in intercollegiate forensics. Competitive events include prose, poetry, drama, duo, and oral interpretation plus readers’ theatre. Four completions allowed. Field trips are required. (A-F or P/NP) Laboratory. (MJC Activities) Transfer: CSU

COURSE 130—INTERCULTURAL COMMUNICATION  3 Units
Examines the influence of culture on human communication. Students will learn skills to communicate effectively with people from different cultures. Theoretical and practical models are explored. Emphasis on cultural identity, relationships, stereotyping, prejudice, nonverbal and verbal cues, values, beliefs, and norms. Field trips may be required. Lecture. (A-F or P/NP) Transfer: CSU, UC (CC SPCOM 5) General Education: (MJC-GE: D2) (CSU-GE: D3 or D7) (IGETC: 4)

COURSE 145—PARLIAMENTARY PROCEDURE  1 Unit
Also offered as AGGE 145.
Introduction to Parliamentary Procedure. Preparing for and participating in meetings as a member, officer, and chairperson. Rank and use of motions. Two completions allowed. Lecture. (A-F or P/NP) Transfer: CSU

STSK  (Study Skills)

STSK 25—STUDENT SUCCESS STRATEGIES  1 Unit
Designed to increase the student’s success in college and to facilitate the transition to the workplace. Practical emphasis on goal setting, time management, study skills and interpersonal communication. This class does not meet guidance requirements for graduation. Lecture.

STSK 78—COLLEGE STUDY SKILLS  3 Units
Introduction to educational, psychological and social factors necessary for college success. Topics include: goal-setting, time management, note-taking, textbook reading, test-taking skills, memorization, concentration, motivation, writing and speaking, critical and creative thinking, learning styles, use of technology, diversity, health, relationships, finances, educational planning, and career development. Acquaints students with the college, its curriculum, facilities, services, regulations, programs, degree and transfer requirements. Lecture. (MJC Guidance) (A-F Only) (CC GUIDE 100)

SUPR  (Supervisory Management)

SUPR 106—GROUP & ORGANIZATIONAL COMMUNICATION  3 Units
Formerly listed as “SUPR 106—Organizational Communication” Also offered as SPCOM 106.
Communication within and between groups and organizations while enhancing relevant individual communication skills. Emphasis on communication and organizational theory as basis for focus on such communication processes as interviewing, task-oriented discussion, problem solving, leadership, conflict resolution and negotiation, communication climate, and organizational culture. One completion allowed. (A-F or P/NP) Lecture. Transfer: CSU General Education: (MJC-GE: D2)

SUPR 351—ELEMENTS OF SUPERVISION  3 Units
Nature and function of supervisor’s role in business, industry and government. The skills and techniques of effective management will be examined and applied in terms of attaining maximum results through the cooperative efforts of others. Lecture.

SUPR 364—TOTAL QUALITY MANAGEMENT  3 Units
Recommended for Success: SUPR 351, BUSAD 240. Also offered as BUSAD 364.
This course provides an introduction to W. Edward Deming’s philosophy of Total Quality Management and its implications for improving the competitiveness of American business in the international economy. A variety of related management topics is also presented. Lecture.

THETR  (Theatre)

THETR 100—INTRODUCTION TO THEATRE ARTS  3 Units
Investigation of process of collective art of theatre, the role of actor, director, playwright, designer, technician and audience. Survey of theatre origins, its development as an art form, and its social, political and cultural implications in history. Attendance at MJC theatre productions required; 25 hours required work on productions or a 10 page term paper. Field trips may be required. Materials fee may be required to cover cost of theatre tickets. Lecture. Transfer: CSU, UC (CC DRAMA 10) General Education: (MJC-GE: C) (CSU-GE: C1) (IGETC: 3A)
THETR 101 — VOICE AND ARTICULATION 3 Units
Formerly listed as “Basic Voice and Articulation
Also offered as RATV 101 and SPCM 101.
Training program in basic voice and articulation. Emphasis on critical listening, self-analysis and
self-improvement in tone production and control, voice quality, articulation and pronunciation.
Introduction to the International Phonetic Alphabet. This is not a class for persons with a major
speech or language delay or disorder. (A-F or P/NP) One completion allowed. Lecture. (MJC Activities) Transfer: CSU, UC (CC DRAMA/SPCOM 18)

THETR 102 — WORLD THEATRE 3 Units
Survey of world theatre and its development as an art form through social, political and cultural
contexts. Investigation of cultural traditions and styles, values, aesthetics will be explored. Field trips
required. Lecture. Transfer: CSU, UC. General Education: (MJC-GE: C) (CSU-GE:C1)(IGETC: 3A)

THETR 103 — DANCE REPERTORY REHEARSAL AND PERFORMANCE 3 Units
Recommended for Success: Before enrolling in this course, students are strongly advised to
satisfactorily complete THETR 192.
Preparation and presentation of a modern/contemporary dance performance for public viewing.
Four completions allowed. (A-F or P/NP) Transfer: CSU, UC

THETR 120 — ORAL READING AND INTERPRETATION 3 Units
Also offered as THETR 120.
Skills in oral interpretation of literature, choice of material, involvement with material; communica-
tion of author’s thought, emotion and language; expanded knowledge of literature and literary
forms. Credit given for either THETR 120 or SPCM 120, but not both. Lecture/Laboratory. (A-F and
P/NP) Transfer: CSU, UC (CC DRAMA: 20) General Education: (MJC-GE: C) (CSU-GE: C1)

THETR 122 — INTRODUCTION TO READERS’ THEATRE 3 Units
Also offered as SPCM 122.
Study of oral interpretation principles as they apply to group and choral reading. Emphasis will be
placed upon the preparation and performance of Readers’ Theatre productions. Students will be
provided with the necessary theory, practice, and criticism to develop skills for organization and
oral presentation of Readers’ Theatre materials. Lecture. Field trips may be required. (MJC Activities)
Transfer: CSU, UC (CC DRAMA 22) General Education: (CSU-GE: C1)

THETR 123 — STORYTELLING 3 Units
Formerly listed as “SPCOM 123 - Storytelling: The Interpretation Of Children’s Literature”
Also offered as SPCM 123.
Introduction to the history of storytelling and the techniques of critical listening to, preparation and
presentation of literature. Emphasis on sources, selection of materials, analysis, preparation and
presentation of prose, verse, and drama. Designed to develop the adult reader’s knowledge, critical
ability, and appreciation of literature. Field trips may be required. Lecture. One completion allowed.
(A-F or P/NP) (MJC Activities) Transfer: CSU General Education: (CSU-GE: C1)

THETR 124 — ADVANCED READERS’ THEATRE 3 Units
Recommended for Success: Satisfactory completion of (SPCOM 120 or 122) or (THETR 120 or
122.)
Also offered as SPCM 124.
Continued development of the construction and direction of Readers’ Theatre performances suitable
for public presentation. Emphasis on analysis of reading materials and helping others enhance com-
munication skills through vocal control and physical expression. Field trips may be required. Lecture.
Transfer: CSU, UC General Education: (MJC-GE: C) (CSU-GE: C1)

THETR 131 — FUNDAMENTALS OF CHOREOGRAPHY 2 Units
Introduction into the creative process involved in composing dance. The knowledge of composi-
tional components will be explored, crafted, and aesthetically analyzed. Exploration of qualities
and dynamics, elements of dance, performance qualities will be addressed through technique,
improvisation, and compositional studies. Field trips required. Four maximum completions. Lecture/
Laboratory. (MJC Activities) Transfer: CSU, UC

THETR 150 — ELEMENTS OF PLAYWRITING 3 Units
Recommended for Success: Satisfactory completion of ENGL 101 & THETR 100.
Introduction to the writing of dramatic scripts for the stage, culminating in a staged reading of
completed drafts with actors before an audience. Field trips required. Two maximum completions.
Lecture/Laboratory. Transfer: CSU General Education: (MJC-GE: C) (CSU-GE: C1,C2)

THETR 160 — FUNDAMENTALS OF ACTING 3 Units
Survey of the various elements of the actor art leading to an understanding and appreciation of
the physical, mental, and emotional basis of performance. Reading plays, analysis of public per-
formances, role analysis and fundamentals of scene playing are included. Required for Theatre Arts
majors. Recommended for those who may wish to participate in play production. Lecture/Labora-
tory. Field trips may be required. (MJC Activities) Transfer: CSU, UC (CC DRAM 42, CAN DRAM 8)
General Education: (CSU-GE: C1)

THETR 161 — INTERMEDIATE ACTING 3 Units
Prerequisite: Satisfactory completion of THETR 160 or equivalent.
Intensive study of plays through group reading and analysis of theme, content, and character. Scenes
from the plays under discussion will be rehearsed and performed with a final public performance
culminating the experience. Includes preparation of dramatic material and actor psychology for au-
ditions. Four maximum completions. Field trips may be required. Lecture/Other. (Spring) Transfer:
CSU, UC General Education: (CSU-GE: C1)

THETR 164 — IMPROVISATIONAL ACTING 3 Units
Intensive study of the basic techniques of stage games and improvisational acting with specific
concentration on improvisational theatre formats. Course will culminate in a public improvisational
performance. May be completed up to 3 times. Field trips may be required. (A-F or P/NP). App-
licable to the Associate Degree. (MJC Activities) Transfer: CSU, UC (CC DRAMA 46)

THETR 165 — HISTORY OF THE AMERICAN MUSICAL THEATRE 3 Units
The art of the American musical theatre: the role of the performer, director, music director, book
writer, composer, lyricist, choreographer, producer, designers, and audience. Survey of the origins
of music theatre beginning with “The Black Crook” (1866) through the present, its development as
an art form, and its relationship to other art forms and the audience. Attendance at musical theatre
productions required. Lecture. Tickets fees are required. (P/NP Only) Transfer: CSU, UC. General
Education: (MJC-GE: C) (CSU-GE: C1) (IGETC: 3A)

THETR 170 X,A — HIP HOP ½,1 Unit
Also listed as PEC 120X, A
Fundamental skills of hip hop dance derived from the current dance vernacular and culture. Dance
movement education, exploration, and recreation. May be completed up to 4 times. (A-F or P/NP).
(MJC Activities) Transfer: CSU, UC

THETR 175 — STAGE COSTUMING 3 Units
Principles and practice of theatrical costuming. Emphasis on the design of individual costumes and
the coordination of an entire theatrical production. Field trips may be required. Lecture/Laboratory/
Other. Not offered every semester. (MJC Activities) Transfer: CSU, UC

THETR 178 — INTRODUCTION TO SCENERY DESIGN 3 Units
Recommended for Success: Satisfactory completion of THETR 100
Introduction to the art and practice of scenery design for the stage. The process of design, selection
of proper materials, safety aspects of scenery, physical, and psychological considerations of design-
ing scenery for the stage. Practical application will include assisting in the design and execution of
scenery for an actual production. Field trips may be required. Lecture/Laboratory. (MJC Activities)
Transfer: CSU, UC

THETR 182 — PRACTICAL STAGE LIGHTING 3 Units
Recommended for Success: Satisfactory completion of THETR 100
An introduction to the art and practice of lighting design for the stage. Lectures will include: the
use and control of stage lighting instruments, choosing color, basic electricity, the physical and psy-
chological properties of light as applied to stage illumination. Practical application in lab work will
include assisting in the design of an actual production. Field trips may be required. Lecture/Labora-
tory. Not offered every semester. Transfer: CSU, UC

THETR 192 — CONTEMPORARY THEATRE 2 Units
Also offered as SPCM 192.
Continuing study of Modern Drama. Introduction of contemporary playwrights, world literature and
theatre of the present day. Theatre production experiences may include directing, designing, and/or
performing. Field trips required. Two maximum completions. Lecture/Laboratory. Transfer: CSU,
UC (CC DRAMA 21)

THETR 193 — DRAMA STAGING AND PERFORMANCE 2 Units
Field trips required. Lecture/Laboratory. Transfer: CSU, UC (CC DRAMA 21) (CSU-GE: C1)

THETR 194 — INTERMEDIATE THEATRE PRODUCTION 2 Units
Field trips required. Lecture/Laboratory. Transfer: CSU, UC (CC DRAMA 21)

THETR 200 — ADVANCED TECHNICAL THEATRE 2 Units
Field trips required. Lecture/Laboratory. Transfer: CSU, UC (CC DRAMA 21)

THETR 201 — THE THEATRE OF THE TWENTIETH CENTURY 2 Units
Field trips required. Lecture/Laboratory. Transfer: CSU, UC (CC DRAMA 21)
Investigation of cultural traditions and styles, values, aesthetics and mores will be explored. Field trips may be required. Four maximum completions. Lecture/Laboratory. (MJC Activities) Transfer: CSU, UC

THETR 194 — INTRODUCTION TO WORLD DANCE 3 Units
A survey of dance and its development as an art form through social, political and cultural context. Investigation of cultural traditions and styles, values, aesthetics and mores will be explored. Field trips required. (A-F or P/NP) Lecture: Transfer: CSU, UC General Education: (MJC-GE: C) (CSU-GE: C1) (IGETC: 3A)
VOCWE
(Work Experience, Vocational)

Modesto Junior College serves the needs of its students and those of the community through its Work Experience program. A program objective is to provide guidance and opportunity for career planning students in the real laboratory of the community's businesses, industries, and public agencies. Work experience education results when it encompasses a systematic plan whereby students, while in college, gain realistic employment experiences through work.

Two Work Experience programs are offered: General Work Experience and Vocational Work Experience. Employment may be on a paid or volunteer basis and may be at work sites on or off campus. For General Work Experience, please see WKEX (Work Experience, General).

Designed to provide extended learning opportunities in students' chosen occupational fields, Vocational Work Experience programs become practical laboratories for reinforcing in-school training. Students should consult their advisors to determine divisional practice on work experience units acceptable toward major requirements.

Vocational work experience classes are available in all discipline areas using the number 349 A, B, C, D (1-4 units) except Nursing (see Nursing Program). With the exception of Administration of Justice, Agriculture, Child Development and Nursing, Vocational Work Experience students must register for and attend VOCWE 349S. During the first lecture meeting, the instructor will assist the student in adding to his or her schedule the appropriate Vocational Work Experience class depending on the student's academic goals and employment setting.

VOCWE 349S—VOCATIONAL WORK EXPERIENCE SEMINAR 0 Units

Designed to accompany vocational work experience courses in all discipline areas (with the exception of Administration of Justice, Agriculture, Child Development and Nursing). Provides an orientation to the structure of cooperative work experience education and develops specific knowledge and skills related to employment situations through the accomplishment of goals. Includes job applications, resumes, interpersonal relationships, career selection, and relevant employment laws, regulations and policies. Lecture. Non graded. Maximum completions as needed to accompany DIV 349 A, B, C, or D.

VOCWE 349 A, B, C, D—WORK EXPERIENCE 1, 2, 3, 4 Units

Prerequisite: Enrollment in a minimum of 7 units which may include Cooperative Work Experience and completion of or concurrent enrollment in one core or elective course in designated program.

Designed for students who wish to combine classroom experience with an expansion of skills or knowledge acquired at a site of employment on a paid or volunteer basis. Work must directly relate to the student's area of study. Conversely, student should have a designated area of study demonstrated by completion of or concurrent enrollment in at least a minimal number of courses in that designated program. Sixteen maximum units in any combination of vocational work experience courses. Lecture. Lab: 75 paid hours or sixty unpaid hours of related work experience per semester equals 1 unit.

WELD
(Welding)

WELD 200—ARC & GAS WELDING 3 Units
Introduction and basic instruction in theory and techniques in oxyacetylene welding and cutting and shielded metal arc welding. Safety and machine operation in the welding shop will be presented in lecture as well as "hands on" laboratory experiences. Field trips may be required. Welding rod required. Lecture/Laboratory. Transfer: CSU, A-F Only

WELD 204—GAS METAL ARC (MIG) AND FLUX CORE ARC WELDING (FCAW) 3 Units
Prerequisite: WELD 200
Formerly listed as WELD 202.
Welding stainless steel, aluminum, and ferrous metals using the Metallic Inert Gas (MIG)/Flux Core Arc Welding (FCAW) processes. Qualification procedures for the American Welding Society (A.W.S.) D1-1 certification for mild steel and aluminum. Field trips may be required. Lecture/Laboratory. Welding rod required. Transfer: CSU.

WELD 206—GAS TUNGSTEN ARC WELDING (TIG) 3 Units
Prerequisite: WELD 200
Formerly listed as WELD 202.
Advanced arc welding procedures for stainless steel, aluminum, and ferrous metals utilizing the gas tungsten arc welding (TIG) process. The American Society of Mechanical Engineers (A.S.M.E.) certification qualification procedure. Field trips may be required. Lecture/Laboratory. Welding rod required. Transfer: CSU.

WELD 300—INTERMEDIATE WELDING 3 Units
Prerequisite: WELD 200
Intermediate level instruction in the application of S.M.A.W. (shielded metal arc welding) and oxy-fuel cutting equipment, testing procedures and tolerances to meet A.W.S. (American Welding Society) and A.S.M.E. (American Society of Mechanical Engineers) codes. Course provides additional skill building preparatory to certification coursework. Field trips required. Welding rod required. Lecture/Laboratory.

WELD 325—DESIGN AND FABRICATION PROCESSES 3 Units
Prerequisite: WELD 200 and 204.
Theory of drawing to include techniques of sketching out ideas through the development and layout of final blueprints. Estimating cost including the selection of appropriate materials and fabrication processes. Projects are required. Two maximum completions. Field trips may be required. Lecture/Laboratory. (A-F Only)

WELD 340—PIPE WELDING 3 Units
Prerequisite: WELD 200 and 300.
Introduction to general pipe fitting, welding procedures, applied layout and fit-up techniques. Field trips required. Three maximum completions. Lecture/Laboratory. Welding rod required. Not offered every semester.
WKFSK 801—INTRODUCTION TO WORKFORCE DEVELOPMENT SKILLS
Training for employees on how to achieve success in any career situation. Explores elements of communication, team building, active listening and job retention skills. Open entry/open exit. Lecture. Field trips may be required. Four maximum completions.

WKFSK 802—THE ART OF ACTIVE LISTENING
Training for employees on maximizing the effectiveness of communication in the workplace and elsewhere. Explores helpful listening techniques, dealing with listening problems, and negotiating win-win situations. Open-entry/open-exit. Lecture. Field trips may be required. Four maximum completions.

WKFSK 803—TROUBLESHOOTING ON THE JOB
Training for employees on efficient and effective problem solving. Topics discussed include problem definition, finding the root cause, creating solutions, implementation of solutions and monitoring for success. Open-entry/open-exit. Lecture. Field trips may be required. Four maximum completions.

WKFSK 804—THE ART OF TEAMWORK
Training for employees on becoming a true “team player.” Topics covered include: team roles, facilitation, team communication, reaching agreements, team goal-setting, and effective leadership. Open-entry/open-exit. Lecture. Field trips may be required. Four maximum completions.

WKFSK 810—SKILLS FOR SUCCEEDING AT A NEW JOB
Intended for those just starting to work who are looking for skills to achieve success as a new employee. Explores in-depth job retention skills including job transition concepts, workplace expectations, customer service, attitude feedback and balancing work and personal life. Field trips may be required. Four maximum completions. Lecture.

WKFSK 820—APPLIED MATHEMATICS FOR THE WORKPLACE
An easy-to-use, computerized, open-entry/open-exit applied mathematics course. Methods to solve one-step mathematical operations and utilize these skills with work-related problems. Examples and situations focus on applying problem-solving skills in real-world situations. Uses a variety of interactive exercises so that the learner can practice each concept. A calculator function and formula sheet are available to the learner with a simple mouse-click. Detailed solutions to the problems are explained, allowing students to analyze their mistakes. A full human-voice sound track and immediate feedback aid learning. Non-graded. Approved only for online instruction.

WKFSK 821—LOCATING INFORMATION
An easy-to-use, computerized, open-entry/open-exit course. Develops skills in using information presented in workplace graphics such as memos, tables, charts, and graphs. Examples and situations focus on applying this ability in real-world situations. Uses a variety of interactive exercises so that the learner can practice each concept. A full human-voice sound track and immediate feedback aid learning. Non-graded. Approved only for online instruction.

ZOOL 101—GENERAL ZOOLOGY
4 Units
Prerequisite: BIO 101
Principles of animal life and classification. Survey of major animal and protzoan phyla with emphasis on evolutionary relationships, structural and physiological adaptations and ecological importance. Field trips required. Lecture/Laboratory. Transfer: CSU, UC (CC BIOL 4) (TCSU BIOL SEQ A) General Education: (CSU-GE: B2, B3) (IGETC SB)

ZOOL 110—ANIMAL BIOLOGY
3 Units
A phylogenetic survey of animal life including structure and function, genetics, ecology, evolution, development and reproduction as they pertain to animals. Not open to students who have completed BIO 101. Not a substitute for ZOOL 101. Field trips may be required. Lecture/Laboratory. Transfer: CSU, UC General Education: (MJC-GE:A)(CSU-GE: B2,B3)
Success through the MJC Honors Program . . .

Travis Koch did not go to college after graduating from Turlock Christian High School in 1993, primarily because he was not sure what he wanted to study. Instead, when his parents moved to Montana, he followed them, and when his parents relocated back to the Turlock area a year later, Travis stayed in Missoula. He started his own residential remodeling business, met his wife, and started a family. He also became friends with several University of Montana graduate students; it was discussions with them that solidified his decision to study history. After 12 years in Montana, Travis sold his business, moved his family back to Stanislaus County, and enrolled at MJC in fall 2006.

With his sights set on transferring to a university, obtaining a graduate degree, and ultimately becoming a college history professor, Travis wasted no time in tackling his undergraduate studies. “When I came to MJC I was very focused. I knew what I wanted to major in and the classes I wanted to take.” He selected MJC because it was convenient, affordable, and familiar. However, he credits MJC with fine-tuning his educational direction. “MJC helped me refine my goals and consider how best to achieve them, and alerted me to potential career obstacles.”

Travis is naturally curious, and perhaps it is his inquisitive nature that drives his passion for delving into the past. He excelled in his academic endeavors, winning an achievement award in science and becoming the first student to enroll in MJC’s Honors Program. He was also one of four MJC students selected to present an honors project at the Bay Area Honors Research Symposium, hosted by Stanford University in April 2008. Travis became the first student to complete the Honors Program, transferring to Stanford in fall 2008 as one of only 20 transfer students admitted last year out of a pool of 1,200 applicants!

Not just a motivated student, Travis is a family man who works to balance his commitments as a husband and father alongside his studies. With his son and third child born just four days before his first honors class, he has little time for extra-curricular activities. However, when a free moment presents itself, he expands the collection of moths and butterflies that he has been gathering since he was five years old. He also enjoys traditional longbow archery, roasting his own coffee beans in a vintage hot-air popcorn popper, and reading, with his favorite authors being Mark Helprin and Fyodor Dostoyevsky.

Now a history major at Stanford, Travis remembers Professor Chad Redwing’s “Humanities in the Modern World” as one of the MJC classes he enjoyed most “because he’s a brilliant professor who is very engaging with students.” Travis is enthusiastic about his experience at MJC and identifies the closer interaction with professors as the major benefit provided by Honors participation. He is also complimentary of the diversity of programs offered at MJC. “Because of MJC’s recognition of the diverse needs of students and the community, almost anyone can have their educational needs met at the college.”

So what is this future professor’s recipe for college success? “Use the instructors’ office hours to talk with them and they will help you. Then, do your work! Don’t expect a free ride. They will help anyone who is committed and willing to work hard.”

“The professors are so helpful and interested in students being successful that if someone is willing to try the Honors Program, the instructors will strive to help them get through it.”

Travis Koch