MODESTO JUNIOR COLLEGE CATALOG ADDENDUM - VERSION 3 2016-2017

YOSEMITE COMMUNITY COLLEGE DISTRICT

435 College Avenue
Modesto, California 95350
www.mjc.edu

ACCREDITED BY:
Modesto Junior College is a college of the Yosemite Community College District, and accredited by the Accrediting Commission for Community and Junior Colleges (ACCJC) of the Western Association of Schools and Colleges (WASC)
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ACCJC/WASC is an institutional accrediting body recognized by the Commission on Recognition of Postsecondary Accreditation and the U.S. Department of Education.

The Modesto Junior College Catalog is published annually by the Modesto Junior College Office of Instruction.

2016-2017 Catalog Addendum Version 3: Course and Program Adoptions/Revisions Dated November 30, 2016

Addendum Version 3 to the 2016-17 Modesto Junior College Catalog contains important changes and additions. This addendum was updated after the 2016-2017 Modesto Junior College Catalog went to press in April.

Parking Revisions

Students can purchase semester Parking Permits online 24 hours after registering for classes. They must log onto www.mycampuspermit.com and register their school email address to confirm eligibility. A temporary permit can be printed at time of purchase, which is valid for 10 days. The sticker Permit will be mailed to the home address within 10 days of the purchase.

Student Rights Revisions

Student Rights (pg. 355)
The Right to Petition for Specific Consideration:

A student may petition for issues related to specific courses (i.e. grade correction, course repeat, and withdrawal according to Title 5 regulations). **Issues that relate to missed deadlines and graduation requirements are not petitionable.** Petitions are reviewed by the Director of Admissions & Records and in some instances forwarded to the MJC Petitions Committee for further review. Petitions are available in the Enrollment Services Office, located on the first floor of the Student Services Building, East Campus or by visiting our website http://www.mjc.edu/studentservices/enrollment/petitions.php. All petition notifications will be delivered through MJC student email. Petition Appeals must be submitted within 30 days of denial notification in order to be considered. Contact the Enrollment Services Office for additional information. Please note: Effective fall 2016, "No-Show" Verifications are no longer accepted.

C-ID Table Revisions

C-ID #	Title	MJC Course ID
ACCT 110	Financial Accounting	BUSAD 201
ACCT 120	Managerial Accounting	BUSAD 202
AG-AB 108	Agricultural Computer Applications	AGEC 225
AG-EH 112L	Plant Identification & Usage 2	EHS 202
AG-EH 116L	Plant Propagation / Production	EHS 235
AG-PS 128L	Introduction to Soil Sciences	NR 200 (3) (4)
AJ 110	Introduction to Criminal Justice	ADJU 201
AJ 120	Concepts of Criminal Law	ADJU 203
AJ 122	Criminal Court Process	ADJU 202
AJ 124	Legal Aspects of Evidence	ADJU 204
AJ 140	Criminal Investigation	ADJU 212
AJ 200	Introduction to Corrections	ADJU 235
AJ 220	Juvenile Procedures	ADJU 232
ANTH 110	Introduction to Biological Anthropology	ANTHR 101
ANTH 120	Introduction to Cultural Anthropology	ANTHR 102
ANTH 130	Introduction to Linguistic Anthropology	ANTHR 104
ANTH 150	Introduction to Archeology	ANTHR 130
ARTH 110	Survey of Western Art from Prehistory through the Middle Ages	ART 164
ARTH 120	Survey of Western Art from Renaissance to Contemporary	ART 165
ARTH 130	Survey of Asian Art	ART 169
ARTH 150	Survey of Modern Art	ART 163
ARTS 100	2-D Foundations	ART 124
ARTS 101	3-D Foundations	ART 125
ARTS 110	Fundamentals of Drawing	ART 120
ARTS 200	Figure Drawing	ART 123
ARTS 205	Intermediate Drawing	ART 121
ARTS 210	Introduction to Painting	ART 147 or 148
BIOL 110B	Human Anatomy with Lab	ANAT 125
BIOL 120B	Human Physiology with Lab	PHYSO 101
BIOL 190	Cell and Molecular Biology	BIO 101 (4) or (5)
BUS 110	Introduction to Business	BUSAD 248
BUS 115	Business Communication	BUSAD 210
BUS 125	Business Law	BUSAD 218
CLDEV 100	Child Growth and Development	CLDDV 103
CLDEV 110	Child, Family and Community	CLDDV 109
CHEM 100	Chemistry and Society	CHEM 150
CHEM 101	Introduction to Chemistry	CHEM 143 (4) or (5)
CHEM 102	Introduction to Organic and Bio Chemistry	CHEM 144
CHEM 110	General Chemistry for Science Majors I, with Lab	CHEM 101
CHEM 120S	General Chemistry Sequence	CHEM 101 + CHEM 102
CHEM 140	Survey of Chemistry and Physics	PHSCI 180
CHEM 150	Organic Chemistry for Science Majors I, w/lab	CHEM 112 or CHEM 122
CHEM 160S	Organic Chemistry for Science Majors II, Seq. A	CHEM 112 & CHEM 113
CHEM 160S	Organic Chemistry for Science Majors II, Seq. A	CHEM 122 & CHEM 123
COMM 110	Public Speaking	COMM 100 *(formerly listed as SPCOM 100)*
COMM 115	Survey of Human Communication	COMM 102
COMM 120	Argumentation or Argumentation and Debate	COMM 104 *(formerly listed as SPCOM 104)*
COMM 120	Argumentation or Argumentation and Debate	COMM 107 *(formerly listed as SPCOM 107)*
COMM 130	Interpersonal Communication	COMM 103 *(formerly listed as SPCOM 103)*
COMM 140	Small Group Communication	COMM 106 *(formerly listed as SPCOM 106)*
COMM 150	Intercultural Communication	COMM 130 *(formerly listed as SPCOM 130)*
COMM 160B	Forensics (Speech and Debate)	COMM 105 *(formerly listed as SPCOM 105)*
COMM 170	Oral Interpretation of Literature	COMM 120 *(formerly listed as SPCOM 120)*
COMM 190	Introduction to Persuasion	COMM 110 *(formerly listed as SPCOM 110)*
COMP 122	Programming Concepts and Methodology I	CSCI 271 *(formerly listed as CMPSC 205)*
COMP 132	Programming Concepts and Methodologies II	CSCI 272 *(formerly listed as CMPSC 261)*
COMP 142	Computer Architecture and Organization	CSCI 273 *(formerly listed as CMPSC 241)*
COMP 152	Discrete Structures	CSCI 204 *(formerly listed as CMPSC 219)*

C-ID TABLE *CONTINUED*

C-ID #	Title	MJC Course ID
ECE 120	Principle and Practices of Teaching Young Children	CLDDV 101
ECE 130	Introduction to Curriculum	CLDDV 107
ECE 200	Observation and Assessment	CLDDV 167
ECE 210	Practicum in Early Childhood Education	CLDDV 127 or CLDDV 128
ECE 220	Health, Safety and Nutrition	CLDDV 111
ECE 230	Teaching in a Diverse Society	CLDDV 262
ECON 201	Principles of Microeconomics	ECON 102
ECON 202	Principles of Macroeconomics	ECON 101
EDUC 200	Intro to Elementary Classroom Teaching	SOCSC 110
ENGL 100	College Composition	ENGL 101
ENGL 105	Argument Writing and Critical Thinking	ENGL 103
ENGL 120	Introduction to Literature	ENGL 102
ENGL 130	Survey of American Literature 1	ENGL 135
ENGL 135	Survey of American Literature 2	ENGL 136
ENGL 140	Survey of World Literature 1	ENGL 131
ENGL 145	Survey of World Literature 2	ENGL 132
ENGL 160	Survey of British Literature 1	ENGL 137
ENGL 165	Survey of British Literature 2	ENGL 138
ENGL 180	Children's Literature	ENGL 169
GEOG 110	Introduction to Physical Geography	GEOG 101
GEOG 120	Introduction to Human Geography	GEOG 102
GEOG 125	World Regional Geography	GEOG 110
GEOG 140	California Geography	GEOG 104
GEOG 155	Intro to Geographic Info Systems and Techniques, with Lab	GEOG 109
GEOL 100	Physical Geology	GEOL 160
GEOL 101	Physical Geology with Lab	GEOL 161
GEOL 111	Historical Geology with Lab	GEOL 166
GEOL 121	Earth Science with Lab	EASCI 161
GEOL 200	Geology of California	GEOL 165
HIST 130	United States History from 1877	HIST 101
HIST 140	United States History from 1865	HIST 102
HIST 160	World Civilization from the 16th Century	HIST 107
HIST 170	Western Civilization I	HIST 104
HIST 180	Western Civilization II	HIST 105
IT IS 120	Bus Inform Systems, Cmptr Inform Systems	CSCI 220 *(formerly listed as CMPSC 202)*
JOUR 100	Introduction to Mass Communications	COMM 132
KIN 100	Introduction to Kinesiology	PE 124
KIN 101	First Aid and CPR	HE 101
MATH 210	Single Var. Calculus I - Early Transcendentals	MATH 171
MATH 220	Single Var. Calculus II - Early Transcendentals	MATH 172
MATH 230	Multivariable Calculus	MATH 173
MATH 900S	Single Variable Calculus Sequence	MATH 171 and MATH 172
MATH 910S	Differential Equations and Linear Alg	MATH 174
MUS 100	Music Appreciation	MUSG 101
MUS 110	Music Fundamentals	MUST 101
MUS 120	Music Theory 1	MUST 121
MUS 125	Musicianship 1	MUST 131
MUS 130	Music Theory 2	MUST 122
MUS 135	Musicianship 2	MUST 132
MUS 140	Music Theory 3	MUST 123
MUS 145	Musicianship 3	MUST 133
MUS 150	Music Theory 4	MUST 124
MUS 155	Musicianship 4	MUST 134
MUS 160	Applied Music	MUSA 124 or MUSA 153 or MUSA 154 or MUSA 163 or MUSA 164 or MUSA 173 or MUSA 183
MUS 180	Large Ensemble	MUSE 145 or MUSE 155 or MUSA 156 or MUSE 165 or MUSE 175 or MUSE 181
NUTR 110	Introduction to Nutrition Science	FDNTR 219
NUTR 120	Principles of Food with Lab	FDNTR 220

C-ID TABLE *CONTINUED*

C-ID #	Title	MJC Course ID
PHIL 100	Introduction to Philosophy	PHILO 101
PHIL 120	Introduction to Ethics	PHILO 111
PHIL 130	History of Ancient Philosophy	PHILO 120
PHIL 140	History of Modern Philosophy	PHILO 121
PHIL 210	Symbolic Logic	CSCI 203/PHILO 103 *(formerly listed as CMPSC 103)*
PHS 101	Intro to Public Health	HE 112
PHS 102	Health and Social Justice	HE 114
PHYS 100S	Algebra/Trig Based Physics AB	PHYS 142, and PHYS 143 (4) or (5)
PHYS 105	Mechanics, Heat Wave	PHYS 142 (4) or (5)
PHYS 110	Algebra/Trig Based Physics B	PHYS 143 (4) or (5)
PHYS 140	Survey of Chemistry and Physics	PHSCI 180
PHYS 200S	Calculus-Based Physics for Scientists and Engineers: ABC	PHYS 101 and PHYS 102 and PHYS 103 (4) or (5)
PHYS 205	Calculus-Based Physics for Scientists and Engineers: A	PHYS 101 (4) or (5)
PHYS 210	Calculus-Based Physics for Scientists and Engineers: B	PHYS 103 (4) or (5)
POLS 110	Intro to American Government and Politics	POLSC 101
POLS 120	Introduction to Political Theory and Thought	POLSC 130
POLS 130	Introduction to Comparative Government and Politics	POLSC 140
POLS 140	Introduction to International Relations	POLSC 110
POLS 160	Political Science Research Methods	POLSC 165
PSY 110	Introductory Psych	PSYCH 101
PSY 115	Psychology of Personal and Social Adjustment	PSYCH 130
PSY 120	Introduction to Abnormal Psychology	PSYCH 105
PSY 130	Introduction to Human Sexuality	PSYCH 110
PSY 150	Introduction to Biological Psychology	PSYCH 103/PHYSO 103
PSY 170	Introduction to Social Psychology	PSYCH 104
PSY 180	Introduction of Lifespan Psychology	PSYCH 141
PSY 200	Introduction to Research Methods	PSYCH 102
SOCI 110	Introduction to Sociology	SOCIO 101
SOCI 115	Social Problems	SOCIO 102
SOCI 125	Introduction to Statistics in Sociology	SOCIO 105
SOCI 130	Introduction to Marriage and Family	SOCIO 125
SOCI 150	Introduction to Race and Ethnicity	SOCIO 150
SPAN 100	Elementary Spanish 1	SPAN 101
SPAN 110	Elementary Spanish 2	SPAN 102
SPAN 220	Spanish for Spanish Speakers 1	SPAN 109
SPAN 230	Spanish for Spanish Speakers 2	SPAN 110
THTR 111	Introduction to Theatre	THETR 100
THTR 114	Script Analysis	THETR 114
THTR 151	Acting I	THETR 160
THTR 152	Acting II	THETR 161
THTR 171	Stagecraft	THETR 105
THTR 173	Intro. to Stage Lighting or Lighting Design Fund.	THETR 182
THTR 174	Intro. to Stage Costume or Fund. of Costume Design	THETR 175
THTR 175	Intro. to Stage Makeup or Stage Makeup	THETR 174
THTR 191	Rehearsal and Performance in Production	THETR 133 or 134 or 135 or 136 or 159
THTR 192	Technical Theatre in Production	THETR 190

Updated 8/8/16

Course Adoptions

ELTEC 225—RESIDENTIAL WIRING **3 UNITS**

27 Lecture Hours, 81 Lab Hours

Prerequisite: Satisfactory completion of ELTEC 208.

Practical approach to the application of electrical principles, electrical code, and basics on residential wiring design applied to one and multifamily dwellings. Field trips might be required. Not repeatable. Lecture/Lab (A-F Only) **Transfer:** (CSU)

ELTEC 235—NEC: NATIONAL ELECTRICAL CODES **4 UNITS**

72 Lecture Hours

Prerequisite: Satisfactory completion of ELTEC 208.

Interpretation and application of the California Code of Regulations - Title 24 - Part 3 which regulate the installation and maintenance of electrical circuits and equipment. Field trips are not required. Not repeatable. Lecture. (A-F or P/NP) **Transfer:** (CSU)

ELTEC 322—TECHNICAL MEASUREMENTS **3 UNITS**

54 Lecture Hours

This course offers step-by-step procedures for technical measurements, calculations, and applications for electrical and mechanical technicians. The course will include methods for solving practical problems involving accurate measurements, estimations, and application of formulas. Methods will include unit conversions, measurement tolerances, accuracy, repeatability, ratios, and graphing. Field trips are not required. Not repeatable. Lecture. (A-F or P/NP)

GEOG 111—PHYSICAL GEOGRAPHY, LAB **1 UNIT**

54 Lab Hours

Corequisite: Concurrent enrollment in or satisfactory completion of GEOG 101.

This laboratory course is offered to provide supplemental exercises in topics covered in Physical Geography lecture course. Lab experiences will include map analysis and interpretation, weather forecasting, landform identification, tectonics, biogeography, and habitat analysis. Field trips might be required. Not repeatable. Lab. (A-F or P/NP) **Transfer:** (CSU, UC) **General Education:** (MJC-GE: A) (CSU-GE: B3) (IGETC: 5C)

MATH 161—TRIGONOMETRY **4 UNITS**

72 Lecture Hours

Prerequisite: Satisfactory completion of MATH 90 or qualification by the MJC assessment process.

A comprehensive course in analytic geometry and trigonometry. Topics include: trigonometric functions, their inverses and their graphs, identities and proofs related to trigonometric expressions, trigonometric equations, solving right triangles, solving triangles using the Law of Cosines and the Law of Sines, polar coordinates, and introduction to vectors. This serves as a one semester trigonometry course, or together with MATH 162, a two-semester Precalculus course sequence. Field trips are not required. Not repeatable. (A-F or P/NP) Lecture. **Transfer:** (CSU) **General Education:** (MJC-GE: D2) (CSU-GE: B4)

MATH 162—PRECALCULUS **4 UNITS**

72 Lecture Hours

Prerequisite: Satisfactory completion of MATH 161.

A comprehensive course in college algebra with integrated review of trigonometry topics in preparation for calculus. Topics include: polynomial, absolute value, radical, rational, exponential, logarithmic, and trigonometric functions and their graphs; analytic geometry, polar coordinates. Field trips are not required. Not repeatable. (A-F or P/NP) Lecture. **Transfer:** (CSU, UC) **General Education:** (MJC-GE: D2) (CSU-GE: B4) (IGETC: 2A)

MATH 181—PROBLEM SOLVING FOR CALCULUS 1 **1 UNIT**

18 Lecture Hours

Corequisite: Concurrent enrollment in MATH 171.

Designed to supplement Math 171 with additional assistance in developing problem-solving skills necessary for success. Field trips are not required. Not repeatable. (P/NP Only) Lecture. **Transfer:** (CSU, UC)

MATH 182—PROBLEM SOLVING FOR CALCULUS 2 **1 UNIT**

18 Lecture Hours

Corequisite: Concurrent enrollment in MATH 172.

Designed to supplement Math 172 with additional assistance in developing problem-solving skills necessary for success Field trips are not required. Not repeatable. (P/NP Only) Lecture. **Transfer:** (CSU, UC)

MATH 183—PROBLEM SOLVING FOR CALCULUS 3 **1 UNIT**

18 Lecture Hours

Corequisite: Concurrent enrollment in MATH 173.

Designed to supplement Math 173 with additional assistance in developing problem-solving skills necessary for success. Field trips are not required. Not repeatable. (P/NP Only) Lecture. **Transfer:** (CSU, UC)

PEC 119—DANCE AEROBICS **1 UNIT**

54 Lab Hours

Aerobic movements used in basic dance (e.g., hip hop, zumba) rhythmic activities, and exercise conditioning. Field trips are not required. Not repeatable. Lab. (A-F or P/NP) **Transfer:** (CSU, UC) **Local Requirement:** (Activities)

PHYS 112—PROBLEM SOLVING SKILLS FOR PHYSICS 102 1 UNIT

18 Lecture Hours

Corequisite: Concurrent enrollment in PHYS 102.

Designed to supplement Physics 102 in developing problem-solving skills, measuring and instrumentation techniques and applications of physical concepts and laws in a small group environment. Field trips are not required. Not repeatable. (P/NP Only) Lecture. **Transfer:** (CSU, UC)

PHYS 113—PROBLEM SOLVING AND TECHNOLOGY FOR PHYSICS 103 1 UNIT

18 Lecture Hours

Corequisite: Concurrent enrollment in PHYS 103.

Designed to supplement Physics 103 in developing problem-solving skills, measuring and instrumentation techniques and applications of physical concepts and laws in a small group environment. Not repeatable. (P/NP Only) Lecture. **Transfer:** (CSU, UC)

PHYS 121—PROBLEM SOLVING AND TECHNOLOGY FOR PHYSICS 101 1 UNIT

18 Lecture Hours

Corequisite: Concurrent enrollment in PHYS 101.

Designed to supplement Physics 101 in developing problem-solving skills, measuring and instrumentation techniques, and applications of physical concepts and laws in a small group environment. Field trips are not required. Not repeatable. (P/NP Only) Lecture. **Transfer:** (CSU, UC)

PHYS 152—PROBLEM SOLVING SKILLS FOR PHYSICS 142 1 UNIT

18 Lecture Hours

Corequisite: Concurrent enrollment in PHYS 142.

Designed to supplement Physics 142 in developing problem-solving skills, measuring and instrumentation techniques and applications of physical concepts and laws in a small group environment. Field trips are not required. Not repeatable. (P/NP Only) Lecture. **Transfer:** (CSU, UC)

PHYS 153—PROBLEM SOLVING AND TECHNOLOGY FOR PHYSICS 143 1 UNIT

18 Lecture Hours

Corequisite: Concurrent enrollment in PHYS 143.

Designed to supplement Physics 143 in developing problem-solving skills, measuring and instrumentation techniques and applications of physical concepts and laws in a small group environment. Field trips are not required. Not repeatable. (P/NP Only) Lecture. **Transfer:** (CSU, UC)

PHYS 166—PROBLEM SOLVING SKILLS AND TECHNOLOGY FOR PHYSICS 165 1 UNIT

18 Lecture Hours

Corequisite: Concurrent enrollment in PHYS 165.

Designed to supplement Physics 165 in developing problem-solving skills, measuring and instrumentation techniques and applications of physical concepts and laws in a small group environment. Field trips are not required. Not repeatable. (P/NP Only) Lecture. **Transfer:** (CSU, UC)

TUTOR 115—TUTORING FOR ESL/ELIC STUDENTS 1 UNIT

18 Lecture Hours

Prerequisite: Satisfactory completion of ENGL 101.

Corequisite: Concurrent enrollment in or satisfactory completion of TUTOR 100.

Designed to train students to become effective peer tutors specifically for speakers of English as a second or other language. Expands the role of peer tutors to include specific methods of effectively supporting ESL students. Understanding cross-cultural differences, inter-language challenges and basic English grammatical topics are emphasized. Field trips are not required. Not repeatable. (P/NP Only) Lecture. **Transfer:** (CSU)

Course Revisions

ANAT 130—ADVANCED CADAVER DISSECTION AND ANATOMICAL PREPARATION **1 UNIT**

54 Lab Hours

Prerequisite: Satisfactory completion of ANAT 125.

Limitations on Enrollment: Enrollment limited to students who receive instructor permission as regulated by the Willed Body Program.

Designed for students who have previously taken Human Anatomy and want to learn the anatomy of the human body more deeply through cadaver dissection. Intended to help prepare students entering the health professions for success in their future careers by building a more in-depth knowledge of human anatomy. Field trips might be required. Not repeatable. (A-F Only) Lab. **Transfer:** (CSU, UC)

BUSAD 200—SPREADSHEET SKILLS FOR FINANCIAL ACCOUNTING **2 UNITS**

Formerly listed as: BUSAD - 200: Spreadsheet Skills for Financial Account

18 Lecture Hours, 54 Lab Hours

Corequisite: Concurrent enrollment in or satisfactory completion of BUSAD 201 or BUSAD 310.

Recommended for Success: Before enrolling in this course, students are strongly advised to have prior knowledge of the accounting cycle if currently enrolled in BUSAD 310.

Introduction to spreadsheet software. Spreadsheet and template analysis, design, testing, and documentation as they relate to the field of accounting will be covered; hands-on experience using Microsoft Excel or a similar spreadsheet application will be used. Field trips are not required. (A-F or P/NP) Lecture/Lab. **Transfer:** (CSU)

CHEM 133—PROBLEM SOLVING SKILLS FOR CHEM 143 **1 UNIT**

18 Lecture Hours

Corequisite: Concurrent enrollment in CHEM 143.

Designed to supplement CHEM 143 with additional assistance in developing problem-solving skills necessary for success. Emphasis is placed on dimensional-analysis, nomenclature, and other basic concepts. Must be taken concurrently with CHEM 143. Field trips are not required. Not repeatable. (P/NP Only) Lecture. **Transfer:** (CSU, UC)

CLDDV 122—PROGRAMS AND ENVIRONMENTS FOR INFANTS AND TODDLERS **3 UNITS**

54 Lecture Hours

Formerly listed as: CLDDV 122: Care and Education for Infants and Toddlers, CLDDV - 122: Learning Environments Infants/Toddlers

Applies current theory and research to the care and education of infants and toddlers in group settings. Examines, essential policies, principles and practices that lead to quality care and developmentally appropriate curriculum and environments for children birth to 36 months. Field trips might be required. Not repeatable. (A-F or P/NP) Lecture. **Transfer:** (CSU) (CC: CHILD 43)

CMPET 269—NETWORKING DEVICES & SYSTEMS **1 UNIT**

54 Lab Hours

Formerly listed as: CMPET 269: Network + Certification Training Laboratory

Recommended for Success: Before enrolling in this course, students are strongly advised to complete any introductory computer course.

This course employs hands-on laboratory activities to explore computer networks, network devices, and the "Internet of Things". Materials fee required. Field trips might be required. Not repeatable. (A-F or P/NP) Lab. **Transfer:** (CSU)

DANCE 133—JAZZ 3 INTERMEDIATE/ADVANCED **1 UNIT**

Formerly listed as: THETR - 130: Jazz 3 Intermediate/Advanced

54 Lab Hours

Prerequisite: Satisfactory completion of DANCE 132.

This course is a continuation of Jazz 2. This course is a combined intermediate and advanced Jazz Dance Technique class that will continue to build on dance terminology in theory and practical training. Field trips are not required. Not repeatable. (A-F or P/NP) Lab. **Transfer:** (CSU, UC) **Local Requirement:** (Activities)

ELTEC 232—INTRODUCTION TO PROGRAMMABLE LOGIC CONTROLLERS **3 UNITS**

36 Lecture Hours, 54 Lab Hours

Formerly listed as: ELTEC 232: Introduction to Programmable Logic

Prerequisite: Satisfactory completion of ELTEC 208.

Introduction to the basic concepts of Programmable Logic Controllers. Installation, programming, maintaining, and troubleshooting programmable logic controller systems. **This course is approved by the state of California for the DAS Electrician Trainee Program. Field trips are not required. Not repeatable. Lecture/Lab. (A-F or P/NP) **Transfer:** (CSU)

ENGL 45—ACCELERATED READING, WRITING, AND REASONING **6 UNITS**

108 Lecture Hours

This is an accelerated composition class that takes the place of the English 49 and English 50 two course sequence. It focuses on the college level reading, writing, and critical thinking skills students will need for English 101 with more structure, time, tutoring, and support. Students will learn to critically read and engage in text-based writing with academic texts. Students who achieve a passing score on their writing portfolio will place directly into English 101. Field trips are not required. Not repeatable. Lecture. (A-F or P/NP)

ENGL 101—COMPOSITION AND READING **3 UNITS**

54 Lecture Hours

Prerequisite: Satisfactory completion of ENGL 45 or ENGL 50 or qualification by the MJC assessment process.

Recommended for Success: Before enrolling in this course, students are strongly advised to satisfactorily complete READ 184.

Fundamental skills in reading and writing at the college level. Emphasis on exposition, argument, research, and information competency. 8,000 word writing requirement, 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 with MLA formatting and documentation. Field trips might be required. Not repeatable. (A-F or P/NP) Lecture. **Transfer:** (CSU, UC) (CC: ENGL 1A) (C-ID: ENGL 100) **General Education:** (MJC-GE: D1) (CSU-GE: A2) (IGETC: 1A)

HE 114—HEALTH AND SOCIAL JUSTICE **3 UNITS**

54 Lecture Hours

Recommended for Success: Before enrolling in this course, students are strongly advised to satisfactorily complete ENGL 50.

This course provides an introduction to health inequities in the United States that stem from unequal living conditions. Students will explore how education, socioeconomic status, racism and gender influence health epidemics and health policy. In addition, basic skills necessary for advocating for health and social justice will be addressed. Field trips are not required. Not repeatable. (A-F or P/NP) Lecture. **Transfer:** (CSU, UC) (C-ID: PHS 102) **General Education:** (MJC-GE: B) (CSU-GE: D7)

HUMAN 196—HUMANITIES SPECIAL TOPICS: SOCIAL JUSTICE **3 UNITS**

54 Lecture Hours

Recommended for Success: Before enrolling in this course, students are strongly advised to have ENGL 101 eligibility and have completed HUMAN 101 or HUMAN 105 or HUMAN 106 or HUMAN 110 or HUMAN 130 or HUMAN 140.

This course provides an interdisciplinary examination of specialized topics in the humanities. Specifics topics change each semester, providing exposure to different issues central to cultural conceptions of social justice. Field trips might be required. Not repeatable. (A-F or P/NP) **Transfer:** (CSU, UC)

MATH 135—PROBLEM SOLVING SKILLS AND TECHNOLOGY FOR MATH 134 **1 UNIT**

18 Lecture Hours

Corequisite: Concurrent enrollment in MATH 134.

Designed to supplement MATH 134 with additional assistance in developing problem-solving skills necessary for success. Emphasis is placed on research strategies, exploration of statistical theories, problem-solving strategies unique to statistical applications, and computer lab instruction and demonstration. Field trips are not required. Not repeatable. (P/NP Only) Lecture. **Transfer:** (CSU, UC)

MATH 171—CALCULUS: FIRST COURSE **4 UNITS**

72 Lecture Hours

Prerequisite: Satisfactory completion of MATH 121 and MATH 122 or MATH 161 and MATH 162 or qualification by the 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. Field trips are not required. Not repeatable. (A-F or P/NP) Lecture. **Transfer:** (CSU, UC) (CC: MATH 18A) (C-ID: MATH 210, MATH 900 S) **General Education:** (MJC-GE: D2) (CSU-GE: B4) (IGETC: 2A)

MATH 172—CALCULUS: SECOND COURSE **4 UNITS**

72 Lecture Hours

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. Field trips are not required. Not repeatable. (A-F or P/NP) Lecture. **Transfer:** (CSU, UC) (CC: MATH 18B) (C-ID: MATH 220, MATH 900 S) **General Education:** (MJC-GE: D2) (CSU-GE: B4) (IGETC: 2A)

MATH 173—CALCULUS: THIRD COURSE **4 UNITS**

72 Lecture Hours

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. Field trips are not required. Not repeatable. (A-F or P/NP) Lecture. **Transfer:** (CSU, UC) (CC: MATH 18C) (C-ID: MATH 230) **General Education:** (MJC-GE: D2) (CSU-GE: B4) (IGETC: 2A)

MUSA 153—APPLIED VOCAL REPERTOIRE 1 **1 UNIT**

Formerly listed as: MUSIC - 133: Applied Vocal Repertoire 1

54 Lab Hours

Limitations on Enrollment: Enrollment limited to students who successfully pass an audition.

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. This class is intended for voice majors. Necessary for transfer to a four year University as a music major. Two completions allowed. Field trips are not required. (A-F or P/NP) Lab. **Transfer**: (CSU, UC) (CC: MUSIC 39) (C-ID: MUS160) **Local Requirement**: (Activities)

MUSA 154—APPLIED VOCAL REPERTOIRE 2 **1 UNIT**

Formerly listed as: MUSIC - 134: Applied Vocal Repertoire 2

18 Lecture Hours

Prerequisite: Satisfactory completion of MUSA 153.

Limitations on Enrollment: Enrollment limited to students who successfully pass an audition.

Continuation of MUSA 153 with greater emphasis on building repertoire, development of style, and preparation for transfer auditions, auditions in general and recitals. Recital and public performance participation required. This class is intended for voice majors. This is a necessary class to transfer as a music major to a four year university. Two completions allowed. Field trips might be required. (A-F orP/NP) Lecture. **Transfer**: (CSU, UC) (CC: MUSIC 56) (C-ID: MUS 160) **Local Requirement**: (Activities)

MUSA 155—VOCAL MASTER CLASS **1 UNIT**

54 Lab Hours

Formerly listed as: MUSIC 139

Development of vocal performance through the consideration and application of good vocal technique, performance practice and dramatic character development; principles applied through recital attendance and through solo, duet or ensemble performances in class and public recitals. Four completions allowed. Field trips might be required.(A-F or P/NP) Lab. **Transfer**: (CSU) **Local Requirement**: (Activities)

MUSE 871—CONCERT BAND **0 UNITS**

54 Lab Hours

Formerly listed as OLDAD 861

Rehearsal and performance of original wind literature and transcriptions for concert band. Field trips might be required. Unlimited repeats. Laboratory. Not a graded course.

NURWE 361—WORK EXPERIENCE-NURSING A **1 UNIT**

Formerly listed as: NURWE - 361: Work Experience-Nursing

54 Lab Hours

Prerequisite: Satisfactory completion of NURSE 270 and NURSE 271.

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. Orientation: 1 hour arranged. 75 hours compensated related work experience per semester equals 1 unit or 60 hours uncompensated related work experience. Field trips are not required. Not repeatable. Lab. (P/NP Only)

NURWE 362—WORK EXPERIENCE-NURSING B **2 UNITS**

Formerly listed as: NURWE - 362: Work Experience-Nursing

108 Lab Hours

Prerequisite: Satisfactory completion of NURSE 270 and NURSE 271.

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 a participating clinical agency. Students gain additional practice in nursing by applying previously learned knowledge and skills. Orientation: 1hour arranged. 150 hours compensated related work experience per semester equals 2 units or 120 hours uncompensated related work experience per semester equals 2 units. Field trips are not required. Not repeatable. Lab. (P/NP Only)

PEC 107—AQUA JOGGING **1 UNIT**

54 Lab Hours

Recommended for Success: Before enrolling in this course, students are strongly advised to demonstrate basic swimming and/or water safety skills.

A course in deep water running utilizing specialized equipment that closely mimics actual running movement. Provides neuromuscular workout that, in addition to aerobic benefits, helps keep specific muscles active. Field trips are not required. Not repeatable. (A-F or P/NP) Lab. **Transfer:** (CSU, UC) **Local Requirement:** (Activities)

PEC 115—WALKING/JOGGING FOR IMPROVED FITNESS **1 UNIT**

54 Lab Hours

Instruction in the principles of fitness through a walking/jogging program that consists of cardiovascular activity progression. Designed to build and/or improve cardiorespiratory endurance and overall fitness levels. Field trips are not required. Not repeatable. (A-F or P/NP) Lab. **Transfer:** (CSU, UC) **Local Requirement:** (Activities)

PEVM 136XABC—TRAINING AND CONDITIONING FOR TRACK AND FIELD **0.5-3 UNITS**

X= 27 Lab Hours A= 54 Lab Hours B= 108 Lab Hours C= 162 Lab Hours

Limitations on Enrollment: Enrollment limited to students who successfully pass a tryout.

Prepares the collegiate track and field athlete mentally and physically for competitive play and reduce risk of injury. Includes collegiate level track and field skill and strategy development, conditioning, sport specific strength training, agility work, speed training, and flexibility exercises; as well as team play activities. Field trips might be required. Four completions allowed. Field trips might be required. (A-F Only) Lab. **Transfer:** (CSU, UC) **Local Requirement:** (Activities)

PEVM 146XABC—TRAINING AND CONDITIONING FOR WRESTLING **0.5-3 UNITS**

X= 27 Lab Hours A= 54 Lab Hours B= 108 Lab Hours C= 162 Lab Hours

Limitations on Enrollment: Enrollment limited to students who successfully pass a tryout.

Prepares the collegiate wrestler mentally and physically for competitive play and reduced risk of injury. Includes collegiate level wrestling skill and strategy development, conditioning, sport specific strength training, agility work, speed training, and flexibility exercises; as well as team activities. Four completions allowed. Field trips are not required. (A-F Only) Lab. **Transfer:** (CSU, UC) **Local Requirement:** (Activities)

PEVM 147XABC—TRAINING AND CONDITIONING FOR ATHLETICS **0.5-3 UNITS**

X= 27 Lab Hours A= 54 Lab Hours B= 108 Lab Hours C= 162 Lab Hours

Limitations on Enrollment: Enrollment limited to students who successfully pass a tryout.

Prepares the collegiate athlete physically and mentally for competitive play and reduced risk of injury. Includes collegiate level skill and strategy development, conditioning, sport specific strength training, agility work, speed training, and flexibility exercises; as well as team play activities. Four completions allowed. Field trips might be required. (A-F Only) Lab. **Transfer:** (CSU, UC) **Local Requirement:** (Activities)

POLSC 165—POLITICAL SCIENCE RESEARCH METHODS **3 UNITS**

54 Lecture Hours

This course surveys the research methods employed in political science. Research design, experimental procedures, descriptive methods, instrumentation, and the collection, interpretation, and reporting of research data, and the ethics of research are introduced. Field trips are not required. Not repeatable. (A-F Only) Lecture. **Transfer:** (CSU, UC) (C-ID: POLS 160) **General Education:** (MJC-GE: B)

READ 40—READING COMPREHENSION **3 UNITS**

54 Lecture Hours

Designed to improve reading skills by focusing on comprehension strategies, vocabulary development, and analysis of various reading selections. Field trips are not required. Not repeatable. Lecture. (A-F Only)

RSCR 251—NEONATAL & PEDIATRIC CLINICAL PRACTICE I **0.5 UNITS**

27 Lab Hours

Prerequisite: Satisfactory completion of RSCR 242.

Corequisite: Concurrent enrollment in RSCR 244.

This course provides an introduction to respiratory care clinical practice for neonatal and pediatric patients in acute critical and chronic care environments. Field trips are not required. Not repeatable. (P/NP Only) Lab. **Transfer:** (CSU)

THETR 136—REHEARSAL AND PERFORMANCE 4 **2 UNITS**

108 Lab Hours

Limitations on Enrollment: Enrollment limited to students who successfully pass the audition process and get cast in a role.

Participation as an actor with advanced skills level in a fully supported theatre production. This course focuses on advanced techniques essential for a play production. Participation in rehearsals and public performances is required. Field trips are not required. (A-F Only) Lab. **Transfer**: (CSU, UC) (C-ID: THTR 191) **Local Requirement**: (Activities)

Program Adoptions

Animal Science
PROGRAM
(209) 575-6200

A.S. DEGREE: **VETERINARY TECHNOLOGY**

This program will provide students with the quickly evolving technical skills of the veterinary industry. Training and skill development include; the study of anatomy and physiology, disease management and prevention, client communication, animal restraint and behavior recognition, equipment maintenance, pharmaceutical calculations and emergency procedures in animal medicine. After successful completion of the program, graduates will be able to enter the workforce as veterinary assistants, lab assistants, kennel assistants, diagnostic equipment assistants, office personal and Registered Veterinary Technician Exam applicants. Contact the division office in the Agriculture Building for advising assistance.

PROGRAM LEARNING OUTCOMES

Upon satisfactory completion of this program, the student should be prepared to:

1. *Analyze the relationship of anatomy and physiology as it relates to animal health and disease prevention.*
2. *Describe the importance of proper sanitation and zoonotic disease prevention in a veterinary practice.*
3. *Demonstrate common surgical, dental and restraint techniques in a veterinary practice.*
4. *Identify the role that a veterinary technician plays in the industry and how that role varies depending on the specialty of a practice.*

PROGRAM REQUIREMENTS

To earn an Associate in Science Degree in this major the student must complete the requirements detailed in the Career Technical Education Pathway or the University Preparation Pathway which include the completion of the requirements below.

AGRICULTURE CAREER COURSES - COMPLETE 4 UNITS

AG 115 [1] Introduction to Agricultural Education & Careers 1
AG 249 [NP] Agriculture Internship 2
AG 259ABCD [NP] Agricultural Work Experience .....1 - 4

AGRICULTURE SCIENCE BREADTH COURSES-COMPLETE 9 UNITS

ANSC 200 [2] Introduction to Animal Science 3
PLSC 200 [2] Introduction to Plant Science 3
NR 200 [3] Soils 3
AGEC 210 [4] Elements of Agricultural Economics 3
AGEC 225 [4] Agriculture Computer Applications 3

MAJOR REQUIRED COURSES-COMPLETE 8 UNITS

ANSC 251 [1] Veterinary Pharmacy Procedures 2
ANSC 252 [2] Veterinary Equipment: Operation, Instrumentation, and Safety 3
ANSC 253 [3] Veterinary Laboratory Procedures 1
ANSC 254 [2] Veterinary Medical Office Procedures 2

CHOOSE ONE OPTION BELOW: SMALL ANIMAL OR LARGE ANIMAL OPTION-COMPLETE 9 UNITS

SMALL ANIMAL SCIENCE OPTION-COMPLETE 9 UNITS

ANSC 250 [NP] Veterinary Physiology, Anatomy, & Terminology 3
ANSC 255 [NP] Preparation for Veterinary Surgical and Dental Assistance 3
ANSC 256 [NP] Veterinary Assistance & Nursing: Emergency Procedures 1
ANSC 257 [NP] Veterinary Assistance and Nursing: Animal Handling 2

LARGE ANIMAL SCIENCE OPTION- COMPLETE 9 UNITS

ANSC 270 [NP] Veterinary Large Animal Physiology, Anatomy & Terminology 3
ANSC 271 [NP] Large Animal Veterinary Surgical and Dental Assistant 3
ANSC 272 [NP] Veterinary Large Animal Emergency Procedures 1
ANSC 273 [NP] Veterinary Large Animal Handling 2

Note: For Section 1: Agriculture Career Courses, students must take AG 115. Students must complete an additional 4 units in the section by taking AG 259D, or a combination of AG 259A-C, or a combination of AG 249 and AG 259A-B.

TOTAL UNITS IN A.S. MAJOR 30

CERTIFICATE OF ACHIEVEMENT: **LARGE ANIMAL VETERINARY TECHNICIAN**

This program will develop jobs skills in large animal veterinary technology as well as assist students with the qualifications set by the state of California for the Registered Veterinary Technician License. Training and skill set development include; practical handling and safety skills, equipment handling and care, large animal anatomy and nutrition, as well as diagnostic procedure and surgical assistance techniques. The program is designed for students that wish to develop practical skills in the area of large animal veterinary technology.

PROGRAM LEARNING OUTCOMES

Upon satisfactory completion of this program, the student should be prepared to:

1. *Describe the role of an RVT in a large animal practice.*
2. *Demonstrate advanced large animal handling and restraint skills.*
3. *Describe current trends in large animal medical care.*
4. *Demonstrate the use and maintenance of industry relative diagnostic equipment.*
5. *Using current veterinary industry standards, describe standard medical treatments for common large animal aliments.*
6. *Describe functional anatomy in various large animal species and how this anatomy dictates different medical procedures.*

PROGRAM REQUIREMENTS

To earn a Certificate of Achievement the student must complete the following course-work. Each course must be completed with a grade of C or better.

REQUIRED COURSES: COMPLETE 17 UNITS

ANSC 270 [1] Veterinary Large Animal Physiology, Anatomy & Terminology 3
ANSC 251 [2] Veterinary Pharmacy Procedures 2
ANSC 252 [2] Veterinary Equipment: Operation, Instrumentation, and Safety 3
ANSC 253 [1] Veterinary Laboratory Procedures 1
ANSC 254 [2] Veterinary Medical Office Procedures 2
ANSC 271 [2] Large Animal Veterinary Surgical and Dental Assistant 3
ANSC 272 [NP] Veterinary Large Animal Emergency Procedures 1
ANSC 273 [2] Veterinary Large Animal Handling 2

TOTAL UNITS FOR CERTIFICATE OF ACHIEVEMENT AWARD..... 17

Agricultural Mechanics

PROGRAM *(Mechanized Agriculture)*
(209) 575-6200

A.S. DEGREE: **IRRIGATION TECHNOLOGY**

This program will provide students with the quickly evolving technical skills of the irrigation industry. Training and skill development include; the study of plant-soil-water relationships, water management and application, system design, evaluation and installation, pumping systems, and drainage. After successful completion of the program, graduates will be able to enter the workforce as irrigation managers, pump testers and repair technicians, system designers, system installers, ditch tenders and other utility personal. Contact the division office in the Agriculture Building for advising assistance.

PROGRAM LEARNING OUTCOMES

Upon satisfactory completion of this program, the student should be prepared to:

1. *Analyze plant/soil/water relationships and determine irrigation requirements for optimum plant growth and crop yield.*
2. *Design and install an appropriate irrigation system that provides the crop water requirements in an efficient and cost effective manner.*
3. *Evaluate an existing irrigation system and make recommendations to improve distribution uniformity and efficiency.*
4. *Evaluate irrigation pump performance and make recommendations to improve overall pumping plant efficiency.*

PROGRAM REQUIREMENTS

To earn an Associate in Science Degree in this major the student must complete the requirements detailed in the Career Technical Education Pathway or the University Preparation Pathway which include the completion of the requirements below.

I. AGRICULTURE CAREER COURSES - COMPLETE 5 UNITS

AG 115 [1] Introduction to Agricultural Education & Careers 1
AG 249 [NP] Agriculture Internship 2
AG 259ABCD [NP] Agricultural Work Experience .....1 - 4

II AGRICULTURE SCIENCE BREADTH COURSES - COMPLETE 9 UNITS

AGEC 225 [1] Agriculture Computer Applications 3
PLSC 200 [1] Introduction to Plant Science 3
NR 200 [1] Soils 3

III MAJOR REQUIRED COURSES - COMPLETE 15 UNITS

AGM 235 [1] Irrigation and Drainage 3
AGM 236 [NP] Advanced Irrigation and Drainage 3
AGM 237 [NP] Irrigation Wells, Pumps, and Drive Systems 3
AGM 238 [NP] Irrigation System Design 3
AGM 239 [NP] Irrigation System Installation and Maintenance 3

TOTAL UNITS IN A.S. MAJOR 29

CERTIFICATE OF ACHIEVEMENT: **IRRIGATION CONSTRUCTION AND INSTALLATION**

This program will prepare students for jobs in the irrigation construction and installation industry. Training and skill development include; piping identification and installation, equipment operation, cost estimating, and plan interpretation. Contact the division office in the Agriculture Building for advising assistance.

PROGRAM LEARNING OUTCOMES

Upon satisfactory completion of this program, the student should be prepared to:

1. *Perform complete irrigation system installation from the pumping system to water discharge.*
2. *Develop accurate cost estimates for both irrigation components and labor costs.*
3. *Operate installation equipment such as tractors, backhoes, trenchers, graders and laser levels in a safe efficient manner.*

PROGRAM REQUIREMENTS

To earn a Certificate in this major, the student must complete the requirements below:

REQUIRED COURSES - COMPLETE 13 UNITS

AGM 210 [NP] Agricultural Welding 3
AGM 235 [1] Irrigation and Drainage 3
AGM 214 [NP] Equipment Service and Safety 1
AGM 237 [NP] Irrigation Wells, Pumps, and Drive Systems 3
AGM 239 [NP] Irrigation System Installation and Maintenance 3

TOTAL UNITS FOR CERTIFICATE OF ACHIEVEMENT AWARD..... 13

CERTIFICATE OF ACHIEVEMENT: **IRRIGATION DESIGN**

This program will prepare students for jobs in irrigation design. Training and skill development include; AutoCAD fundamentals, system hydraulics, site development and material selection. Contact the division office in the Agriculture Building for advising assistance.

PROGRAM LEARNING OUTCOMES

Upon satisfactory completion of this program, the student should be prepared to:

1. *Collect site data in regards to size, soil type, elevation differences, crop water needs, and water source in order to provide irrigation system recommendations.*
2. *Design a sprinkler irrigation system that is consistent with industry standards.*
3. *Accurately draw an irrigation system using AutoCAD software which is considered the industry standard.*

PROGRAM REQUIREMENTS

To earn a Certificate in this major, the student must complete the requirements below:

REQUIRED COURSES - COMPLETE 12 UNITS

AGM 235 [1] Irrigation and Drainage 3
AGM 238 [NP] Irrigation System Design 3
AGEC 225 [NP] Agriculture Computer Applications 3
AGM 237 [NP] Irrigation Wells, Pumps, and Drive Systems 3

TOTAL UNITS FOR CERTIFICATE OF ACHIEVEMENT AWARD 12

CERTIFICATE OF ACHIEVEMENT: **IRRIGATION MANAGEMENT**

This program will prepare students for jobs in the irrigation management industry. Training and skill development include; water management, plant-water-soil relationships, salinity management, system evaluation and improvements. Contact the division office in the Agriculture Building for advising assistance.

PROGRAM LEARNING OUTCOMES

Upon satisfactory completion of this program, the student should be prepared to:

1. *Analyze plant/soil/water relationships and determine irrigation requirements for optimum plant growth and crop yield.*
2. *Manage on farm irrigation systems in an efficient cost effective manner.*
3. *Develop irrigation schedules that optimize crop growth while conserving water.*

PROGRAM REQUIREMENTS

To earn a Certificate in this major, the student must complete the requirements below:

REQUIRED COURSES - COMPLETE 15 UNITS .....

AGM 235 [1] Irrigation and Drainage 3
AGM 236 [NP] Advanced Irrigation and Drainage 3
PLSC 200 [NP] Introduction to Plant Science 3
NR 200 [NP] Soils 3
AGEC 225 [NP] Agriculture Computer Applications 3

TOTAL UNITS FOR CERTIFICATE OF ACHIEVEMENT AWARD..... 15

CERTIFICATE OF ACHIEVEMENT: **IRRIGATION TECHNOLOGY**

This program will provide students with the quickly evolving technical skills of the irrigation industry. Training and skill development include; the study of plant-soil-water relationships, water management and application, system design, evaluation and installation, pumping systems, and drainage. After successful completion of the program, graduates will be able to enter the workforce as irrigation managers, pump testers and repair technicians, system designers, system installers, ditch tenders and other utility personal. Contact the division office in the Agriculture Building for advising assistance.

PROGRAM LEARNING OUTCOMES

Upon satisfactory completion of this program, the student should be prepared to:

1. *Analyze plant/soil/water relationships and determine irrigation requirements for optimum plant growth and crop yield.*
2. *Design and install an appropriate irrigation system that provides the crop water requirements in an efficient and cost effective manner.*
3. *Evaluate an existing irrigation system and make recommendations to improve distribution uniformity and efficiency.*
4. *Evaluate irrigation pump performance and make recommendations to improve overall pumping plant efficiency.*

PROGRAM REQUIREMENTS

To earn a Certificate in this major, the student must complete the requirements below:

I. AGRICULTURE CAREER COURSES - COMPLETE 5 UNITS

AG 115 [1] Introduction to Agricultural Education & Careers 1
AG 249 [NP] Agriculture Internship 2
AG 259ABCD [NP] Agricultural Work Experience .....1 - 4

AGRICULTURE SCIENCE BREADTH COURSES - COMPLETE 9 UNITS

AGEC 225 [1] Agriculture Computer Applications 3
PLSC 200 [NP] Introduction to Plant Science 3
NR 200 [NP] Soils 3

III. MAJOR REQUIRED COURSES - COMPLETE 15 UNITS

AGM 235 [1] Irrigation and Drainage 3
AGM 236 [NP] Advanced Irrigation and Drainage 3
AGM 237 [NP] Irrigation Wells, Pumps, and Drive Systems 3
AGM 238 [NP] Irrigation System Design 3
AGM 239 [NP] Irrigation System Installation and Maintenance 3

TOTAL UNITS FOR CERTIFICATE OF ACHIEVEMENT AWARD..... 29

Chemical Dependency Counseling
PROGRAM
(209) 575-6200

CERTIFICATE OF ACHIEVEMENT: **CHEMICAL DEPENDENCY COUNSELING**

PROGRAM LEARNING OUTCOMES

Upon satisfactory completion of this program, the student should be prepared to:

1. *Perform clinical evaluations which is the systematic approach to screening and assessment of individuals thought to have a substance use disorder; being considered for admission to addiction-related services, or presenting in a crisis situation.*
2. *Develop treatment plans which is a collaborative process in which professionals and the client develop a written document that identifies important treatment goals; describes measurable, time-sensitive action steps toward achieving those goals with expected outcomes; and reflects a signed agreement between a counselor and client.*
3. *Verbalize referrals which is the process of facilitating the client's use of available support systems, and community resources to meet needs identified in clinical evaluations and treatment plans.*
4. *Demonstrate service coordination which is the administrative, clinical, and evaluative activities that bring the client, treatment services, community agencies, and other resources together to focus on issues and needs identified in the treatment plan.*
5. *Conduct individual and group counseling sessions which is the collaborative process that facilitates client's progress towards mutually determined treatment goals and objectives.*
6. *Provide client, family, and community education which is the process of providing clients, families, significant others, and community groups with information on risks related to psychoactive substance use, as well as available prevention, treatment, and recovery resources.*
7. *Demonstrate appropriate documentation skills which involves the process of screening and intake, assessment, treatment planning, clinical reports, progress notes, discharge summaries, and other client-related data.*
8. *Uphold professional standards and ethical responsibilities which are the obligations of an addiction counselor to adhere accepted ethical and behavioral standards, conduct, and professional development.*

PROGRAM REQUIREMENTS

To earn a Certificate of Achievement in Chemical Dependency Counseling, the student must satisfactory complete the requirements detailed in the California Association for Alcohol and Drug Educators curriculum, which include completion of 36 units.

REQUIRED COURSES - 36 UNITS

HUMSR 101 [NP] Introduction to Human Services 3
HUMSR 110 [NP] Intro to Interviewing, Counseling 3
HUMSR 111 [NP] Counseling in Chemical Dependency 3
HUMSR 113 [NP] Co-Occurring Disorders 3
HUMSR 116 [NP] Drugs and Alcohol in Society 3
HUMSR 117 [NP] Interv/Treatment Strategies in Chemical Dependency 3
HUMSR 118 [NP] Pharmacology of Abused Substances 3
HUMSR 119 [NP] Intro Grp Ldrshp/Grp Process 3
HUMSR 120 [NP] Professional Development in the Helping Profession 3
HUMSR 142 [NP] Introduction to Psychosocial Rehabilitation .....3 OR
HUMSR 143 [NP] Psychosocial Rehabilitation Practice 3
HUMSR 144 [NP] Human Services Practicum 1
HUMSR 145ABD * [NP] Community Agency Practicum .....1 - 4

TOTAL UNITS FOR CETIFICATE OF ACHIEVEMENT AWARD 36

**Two completions*

Chemistry
PROGRAM
(209) 575-6173

A.S.-T DEGREE: **CHEMISTRY**

The Associate in Science in Chemistry for Transfer Degree (AS-T in Chemistry) is designed to prepare students who wish to transfer to a CSU and major in Chemistry. The Associate in Science in Chemistry for Transfer Degree (AS-T in Chemistry) will provide students with an alignment of courses required for transfer and a cohesive group of courses in the area of Chemistry. Courses in organic and inorganic chemistry will enable the student to demonstrate ability to engage in critical thinking and problem-solving in the application of Chemistry principles. The Associate in Science in Chemistry for Transfer Degree (AS-T in Chemistry) includes curriculum which focuses on practical application of problem solving skills and theory. Students who complete The Associate in Science in Chemistry for Transfer Degree (AS-T in Chemistry) will be able to demonstrate competence in the application of Chemistry. The Associate in Science in Chemistry for Transfer Degree (AS-T in Chemistry) is intended for students who plan to complete a bachelor's degree in Chemistry at a CSU campus. Students completing the Associate in Science in Chemistry for Transfer Degree (AS-T in Chemistry) are guaranteed admission to the CSU system, but not to a particular campus or major. Students transferring to a CSU campus that does accept this degree will be required to complete no more than 60 units after transfer to earn a bachelor's degree. Potential careers in the Chemistry field include those of Chemistry educator, Chemical technician and Chemical researcher in both academia and industry.

The Associate in Science in Chemistry for Transfer Degree (AS-T in Chemistry) may not be the best option for students intending to transfer to a particular CSU campus or to a university or college that is not part of the CSU system. In all cases, students should consult with a counselor for more information on university admission and transfer requirements.

PROGRAM LEARNING OUTCOMES

Upon completion of the Associate in Science in Chemistry for Transfer (AS-T in Chemistry) degree, students will be able to:

1. *Score the national median or higher on American Chemical Society General Chemistry Exam (full year).*

2. *Score the national median or higher on American Chemical Society Organic Chemistry Exam (full year).*
3. *Use of quantitative and/or qualitative analysis techniques to determine an unknown in a general chemistry laboratory setting.*
4. *Use of NMR, IR and other spectrum to determine an unknown organic compound.*
5. *Successfully transfer to a 4 year college or university and/or begin work in an entry level chemistry technician position.*

The following is required for the Associate in Science in Chemistry for Transfer Degree (AS-T in Chemistry):

(1) Completion of 60 semester units or 90 quarter units that are eligible for transfer to the California State University, including both of the following:

(A) The Intersegmental General Education Transfer Curriculum (IGETC) or the California State University General Education – Breadth Requirements.

(B) A minimum of 18 semester units or 27 quarter units in a major or area of emphasis, as determined by the community college district.

(2) Obtainment of a minimum grade point average of 2.0. All courses within the major must be completed with a C or better or "P" (Pass).

*ADTs also require that students must earn a grade of C or better or a "P" *(Pass)* in every course completed in the AA-T or AS-T Major.

PROGRAM REQUIREMENTS

To earn an Associate in Science in Chemistry for Transfer Degree, the student must complete the requirements detailed in the Transfer Model Curriculum Pathway which include completion of the requirements below.

REQUIRED COURSES: COMPLETE 18 UNITS IN CHEMISTRY

CHEM 101 [1] General Chemistry 1 .....5 and
CHEM 102 [2] General Chemistry 2 5
CHEM 122 [3] Structure and Reactivity: Organic Chemistry 1 .....4 and
CHEM 123 [4] Structure and Reactivity: Organic Chemistry 2 4

REQUIRED: COMPLETE 8 UNITS IN PHYSICS

PHYS 101 [2] General Physics: Mechanics 4
PHYS 103 [3] General Physics: Electricity, Magnetism, & Modern Physics 4

REQUIRED: COMPLETE 8 UNITS IN CALCULUS

MATH 171 [1] Calculus: First Course .....4 and
MATH 172 [2] Calculus: Second Course 4

TOTAL UNITS IN A.S.-T MAJOR 34

TOTAL DOUBLE-COUNTED UNITS.....7
GENERAL EDUCATION (CSU-GE OR IGETC FOR STEM) UNITS..... 31-33
ELECTIVE (CSU TRANSFERABLE) UNITS 2

TOTAL UNIST REQUIRED FOR A.S.-T. DEGREE..... 60

* Note: Double counting courses in GE and the major is permissible. MJC Guidance and Activities Requirement is not required for the Associate in Science in Chemistry for Transfer Degree.

Dance
PROGRAM
(209) 575-6081

A.A. DEGREE: **DANCE**

The Associate in Arts in Dance is intended for students who plan to enter the workforce as a choreographer, teacher or performing artist. Dance as an academic discipline focuses on dance as a performing art, as well as its social functions in other areas, including education, health, cultural studies, art, history, and the science of human movement. This degree provides an educational and practical foundation for students pursuing a professional career in dance. It is designed to create avenues toward further study in educational dance, intermediate to advanced technique, choreography, and dance performance. The Associate Degree in Dance will prepare students to gain entry level employment with private dance studios, charter schools and recreational programs with a dance emphasis. Career opportunities also exist in highly competitive professional dance companies, amusement parks, commercial dance, and teaching. There are choreography opportunities with dance and theatre companies. Students should be aware that career opportunities in dance performance related fields are highly competitive.

PROGRAM LEARNING OUTCOMES

Upon satisfactory completion of this program, the student should be prepared to:

1. *Demonstrate and apply knowledge of the history of dance as it relates to western culture, including Ballet, Modern, Jazz, Musical Theatre, and ethnic forms of dance.*
2. *Demonstrate technical ability to at least the intermediate level in modern, ballet, and jazz dance.*
3. *Process a mastery of dance terminology as it relates to technical skill in modern, ballet, and jazz dance.*
4. *Create dance choreography using the principles of composition for in class demonstrations or live public performances.*

PROGRAM REQUIREMENTS

To earn an Associate in Arts Degree in this major, the student must complete the requirements detailed in the University Preparation Pathway which include completion of the requirements below. Students who plan to transfer to a four year college or university should consult with a Dance faculty advisor to ensure that all required transfer courses are completed.

REQUIRED COURSES - COMPLETE 11 UNITS

DANCE 102 [NP] Introduction to World Dance 3
DANCE 111 [1] Modern Dance 1 1
DANCE 112 [2] Modern Dance 2 1
DANCE 121 [1] Ballet 1 1
DANCE 131 [1] Jazz 1 1
DANCE 155 [NP] Fundamentals of Choreography 1 2
DANCE 181 [NP] Dance Rehearsal & Performance 1 2

ELECTIVE TECHNIQUE COURSES - COMPLETE 5 UNITS

DANCE 113 [NP] Modern Dance 3 1
DANCE 114 [NP] Modern Dance 4 1
DANCE 122 [NP] Ballet 2 1
DANCE 123 [NP] Ballet 3 1
DANCE 124 [NP] Ballet 4 1

DANCE 132 [NP] Jazz 2 1
DANCE 133 [NP] Jazz 3 Intermediate/Advanced 1
DANCE 141 [NP] Hip Hop 1
DANCE 151 [NP] Movement for the Performing Artist 3

ELECTIVE PRODUCTION COURSES - COMPLETE 4 UNITS

DANCE 182 [NP] Dance Rehearsal & Performance 2 2
DANCE 183 [NP] Dance Rehearsal & Performance 3 2
DANCE 184 [NP] Dance Rehearsal & Performance 4 2
DANCE 187 [NP] Contemporary Pop Dance Rehearsal and Performance 2
DANCE 188 [NP] Dance Workshop Performance 2
DANCE 189 [NP] Dance Repertory Touring Competition 1
THETR 190 [NP] Theatre Production Workshop 1

TOTAL UNITS IN A.A. MAJOR 20

Electronics Technology
PROGRAM
(209) 575-6332

CERTIFICATE OF ACHIEVEMENT: **ELECTRICIAN**

The Electrician program prepares students for careers in electrical installation and repair for the Public Utilities, Manufacturing and Construction industries. Students will study the principles of electricity, wiring, common devices, components, and PLCs.

PROGRAM LEARNING OUTCOMES

Upon satisfactory completion of this award, the student should be prepared to:

1. *Build circuits for power distribution or motor controls based on a schematic.*
2. *Perform measurements in a circuit and draw conclusions based on them for troubleshooting purposes.*
3. *Estimate ratings for basic components that make up an electrical circuit.*

PROGRAM REQUIREMENTS

To earn a Certificate of Achievement in this major, the student must complete all courses listed in required courses category below. All required courses in the program must be completed with a C or better.

REQUIRED COURSES - COMPLETE 32.5 UNITS

ELTEC 265 [NP] Troubleshooting Techniques 1
ELTEC 322 [1] Technical Measurements 3
ELTEC 208 [1] Fundamentals of Electricity and Electronics 3
ELTEC 320 [1, 2] Electrical Safety 1
ELTEC 223 [2] Industrial Electrical Components and Control Devices 3
ELTEC 225 [2] Residential Wiring 3
ELTEC 230 [2, 3] Blueprint Reading for Electricians 2
ELTEC 235 [2, 3] NEC: National Electrical Codes 4
ELTEC 226 [3] Motors, Controls and Controllers 3
ELTEC 221 [3, 4] Instrumentation Devices and Systems 3
ELTEC 232 [3, 4] Introduction to Programmable Logic Controllers 3
ELTEC 229 [4] Commercial & Industrial Wiring 3.5

TOTAL UNITS FOR CERTIFICATE OF ACHIEVEMENT AWARD 32.5

SKILLS RECOGNITION AWARD: **AUTOMATION TECHNICIAN**

The Automation Technician Skills Recognition Award is designed for practicing technicians in the field or advanced Industrial Electronics students seeking to increase their skills in Automation and Systems Integration.

PROGRAM LEARNING OUTCOMES

Upon satisfactory completion of this program, the student should be prepared to:

1. *Analyze typical process lines that include conveyors, pumps, ventilation, and other commercial and industrial systems.*
2. *Implement modifications into existing control circuits incorporating sensing devices to enhance automated capabilities.*
3. *Analyze and modify typical control programs in standard PLCs, PACs, and HMIs devices.*

PROGRAM REQUIREMENTS

To earn a Skill Recognition Award as an Automation Technician, the student must complete the required courses below with a grade of "C" or better.

REQUIRED COURSES:

CMPET 214 [1, 2] Microprocessor Programming & Interfacing 4
ELTEC 232 [1, 2] Introduction to Programmable Logic Controllers 3
ELTEC 221 [2, 3] Instrumentation Devices and Systems 3
ELTEC 234 [3, 4] Introduction to PACs: Programmable Automation Controllers 3
ELTEC 236 [4] HMI & Industrial Communications 2

TOTAL UNITS FOR SKILLS RECOGNITION AWARD 15

SKILLS RECOGNITION AWARD: **ELECTRICAL INSTALLER**

This program provides skill preparation courses intended to quickly prepare students to begin their careers in industry as electrician assistants. Students will be exposed to basic safety, electrical theory and wiring techniques.

PROGRAM LEARNING OUTCOMES

Upon satisfactory completion of this program, the student should be prepared to:

1. *Perform common tasks related to electrical wiring following safety procedures, demonstrating professional quality and efficient workmanship.*
2. *Interpret typical schematics used in electrical installations or as descriptions of electrical controls.*
3. *Perform the required wiring of a standard circuit (e.g.: a 3-way lighting circuit) or a circuit shown in an electrical schematic.*

PROGRAM REQUIREMENTS

To earn a Skill Recognition Award as Electrical Installer, the student must complete the requirements detailed in the Career Technical Education Pathway which include completion of the requirements below. All required courses in the program must be completed with a C or better.

REQUIRED COURSES: COMPLETE 12.5 UNITS

ELTEC 208 [1] Fundamentals of Electricity and Electronics 3
ELTEC 320 [1, 2] Electrical Safety 1
ELTEC 225 [2] Residential Wiring 3

ELTEC 230 [2, 3] Blueprint Reading for Electricians 2
ELTEC 229 [4] Commercial & Industrial Wiring 3.5

TOTAL UNITS FOR SKILLS RECOGNITION AWARD 12.5

Logistics
PROGRAM
(209) 575-6332

A.S. DEGREE: **LOGISTICS AND SUPPLY CHAIN MANAGEMENT**

The A.S. in Logistics and Supply Chain Management offers students a comprehensive general logistics and supply chain foundation for entry level professional jobs in warehouse operations, distribution center operations, inventory control, transportation operations, purchasing, customer service or import/export operations.

PROGRAM LEARNING OUTCOMES

Upon satisfactory completion of this program, the student should be prepared to:

1. *Describe key logistics and supply chain functions, processes and technologies.*
2. *Apply essential logistics and supply chain concepts.*
3. *Demonstrate knowledge and skills to work successfully in an entry level professional job in the logistics and supply chain industry.*
4. *Think critically across supply chain functional areas to solve operations problems.*
5. *Use key supply chain information systems and apply technology to analyze supply chain problems.*
6. *Apply effective team working skills.*

PROGRAM REQUIREMENTS

To earn an A.S. degree in Logistics and Supply Chain Management, the student must complete the requirements detailed in the Career Technical Education Pathway or University Preparation Pathway which include completion of all required courses and three of the elective courses.

REQUIRED COURSES: COMPLETE 22 UNITS

OFADM 256 [1] Introduction to Word Processing 1
OFADM 259 [1] Introduction to Spreadsheet Software 1
OFADM 261 [1] Introduction to Databases 1
OFADM 262 [1] Introduction to Business Presentation Software 1
LOGST 201 [1] Operations Management and Lean Principles 3
LOGST 202 [1] Introduction to Supply Chain Management 3
LOGST 203 [1] Introduction to Transportation Management 3
LOGST 205 [1] Introduction to Warehouse Management 3
LOGST 206 [2]Introduction to Purchasing and Contracting 3
LOGST 207 [2] Introduction to Customer Service 3

ELECTIVE COURSES: COMPLETE THREE COURSES

BUSAD 201 [2]Financial Accounting 4
BUSAD 202 [2] Managerial Accounting 4
BUSAD 208 [2] Introduction to International Business 3
BUSAD 209 [2] Import/Export Fundamentals 3
BUSAD 210 [2] Business Communication 3
BUSAD 218 [2] Business Law 4
BUSAD 248 [2] Introduction to Business 3
ECON 101 [2] Principles of Macroeconomics 3
ECON 102 [2] Principles of Microeconomics 3
LOGST 299D [2] Logistics Internship 4
OFADM 313 [2]Office Skills 3
SUPR 351 [2] Elements of Supervision 3

TOTAL UNITS IN A.S. MAJOR ..... 31 – 34

CERTIFICATE OF ACHIEVEMENT: **LOGISTICS AND SUPPLY CHAIN MANAGEMENT**

The 2-semester advanced certificate program is designed to provide students a comprehensive general logistics and supply chain foundation for entry level professional jobs in warehouse operations, distribution center operations, inventory control, transportation operations, purchasing, and customer service or import/export operations.

PROGRAM LEARNING OUTCOMES

Upon satisfactory completion of this program, the student should be prepared to:

1. *Describe key logistics and supply chain functions and processes.*
2. *Apply essential logistics and supply chain concepts.*
3. *Demonstrate knowledge and skills to work successfully in an entry level professional job in the logistics and supply chain industry.*
4. *Think critically across supply chain functional areas to solve operations problems.*
5. *Use key supply chain information systems and apply technology to analyze supply chain problems.*
6. *Apply effective team working skills.*

PROGRAM REQUIREMENTS

To earn a Certificate of Achievement in Logistics and Supply Chain Management, the student must complete all required courses plus two of the elective courses.

REQUIRED COURSES: COMPLETE 22 UNITS

OFADM 256 [1] Introduction to Word Processing 1
OFADM 259 [1] Introduction to Spreadsheet Software 1
OFADM 261 [1] Introduction to Databases 1
OFADM 262 [1] Introduction to Business Presentation Software 1
LOGST 201 [1] Operations Management and Lean Principles 3
LOGST 202 [1] Introduction to Supply Chain Management 3
LOGST 203 [1] Introduction to Transportation Management 3
LOGST 205 [1] Introduction to Warehouse Management 3
LOGST 206 [2] Introduction to Purchasing and Contracting 3
LOGST 207 [2] Introduction to Customer Service 3

ELECTIVE COURSES: COMPLETE TWO COURSES

BUSAD 201 [2] Financial Accounting 4
BUSAD 202 [2] Managerial Accounting 4
BUSAD 208 [2] Introduction to International Business 3
BUSAD 209 [2] Import/Export Fundamentals 3
BUSAD 218 [2] Business Law 4
BUSAD 248 [2] Introduction to Business 3
LOGST 299D [2] Logistics Internship 4
OFADM 313 [2] Office Skills 3
SUPR 351 [2] Elements of Supervision 3

TOTAL UNITS FOR CERTIFICATE OF ACHIEVEMENT AWARD ..... 28 – 30

Spanish
PROGRAM
(209) 575-6159

A.A.-T DEGREE: SPANISH

The Associate in Arts in Spanish for Transfer degree includes lower division coursework that is required for transfer and the Department of Spanish offers various courses that provide students with the foundation for Spanish language study. Knowledge of Spanish is highly desirable in many fields, such as health, service industries, business, and interpreting. Beyond the immediate practical advantages of learning a foreign language, there is also the profound personal enrichment that comes from first-hand knowledge of other cultures. Students majoring in Spanish have the opportunity to become acquainted with the history, literature, and art of the Spanish-speaking world. Students are urged to discuss their plans with faculty and counselors regarding the specific lower-division requirements at the four-year colleges and universities they plan to attend.

The Associate in Arts in Spanish for Transfer degree is intended for students who plan to complete a bachelor's degree in Spanish at a California State University campus. Students completing the Associate in Arts in Spanish for Transfer degree are guaranteed admission to the CSU System, but not to a particular campus or major. Students transferring to a CSU campus that does accept this degree will be required to complete no more than 60 units after transfer to earn a bachelor's degree. The Associate in Arts in Spanish for Transfer degree may not be the best option for students intending to transfer to a particular CSU campus or to a university or college that is not part of the CSU system. In all cases, students should consult with a counselor for more information on university admission and transfer requirements.

PROGRAM LEARNING OUTCOMES

Upon completion of the Associate in Arts in Spanish for Transfer (AA-T in Spanish) degree, students will be able to do the following:

1. *Communicate orally in Spanish in real-life situations at an advanced high proficiency level.*
2. *Communicate in writing in Spanish at an advanced high proficiency level with minimal errors in grammar, spelling, and mechanics.*
3. *Read critically and write coherently about literature produced in Spanish.*

The following is required for the Associate in Arts for Spanish for Transfer Degree (A.A.-T in Spanish):

(1) Completion of 60 semester units or 90 quarter units that are eligible for transfer to the California State University, including both of the following:

(A) The Intersegmental General Education Transfer Curriculum (IGETC) or the California State University General Education – Breadth Requirements.

(B) A minimum of 18 semester units or 27 quarter units in a major or area of emphasis, as determined by the community college district.

(2) Obtainment of a minimum grade point average of 2.0.

**All courses within the major must be completed with a C or better or "P" (Pass).*

PROGRAM REQUIREMENTS

To earn an Associate in Arts in Spanish for Transfer Degree, the student must complete the requirements detailed in the Transfer Model Curriculum Pathway which include completion of the requirements below.

REQUIRED COURSES: COMPLETE 18-20 UNITS

SPAN 101 [1] Spanish 1	5
SPAN 102 [2] Spanish 2	5
SPAN 103 [3] Spanish 3	4 OR
SPAN 109 [3] Spanish for Spanish Speakers 1	5
SPAN 104 [4] Spanish 4	4 OR
SPAN 110 [4] Spanish for Spanish Speakers 2	5

LIST A: SELECT ONE

SPAN 112 [4] Introduction to Chicano/a Literature	3
SPAN 173 [4] Survey of Latin American Literature	3
ENGL 172 [4] Intro to Chicano/a Literature	3
ENGL 173 [4] Intro to Latin American Literature	3
ENGL 176 [4] Introduction to Mexican Literature	3
HIST 125 [4] History of Mexico	3
HIST 145 [4] History of Latin America	3
SOCIO 156 [4] Mexican Culture in the United States	3

TOTAL UNITS IN THE A.A.-T MAJOR	**21 – 23**
TOTAL UNITS THAT MAY BE DOUBLE-COUNTED	6-9
GENERAL EDUCATION (CSU-GE OR IGETC) UNITS	37-39
ELECTIVE (CSU TRANSFERABLE) UNITS	4-11
TOTAL UNITS REQUIRED FOR A.A.-T DEGREE	**60**

**Note: Double counting courses in GE and the major is permissible. Guidance and Activities requirements are not required for this degree.*

Program Revisions

Agricultural Mechanics
PROGRAM *(Mechanized Agriculture)*
(209) 575-6200

Biological Sciences
PROGRAM
(209) 575-6173

CERTIFICATE OF ACHIEVEMENT: **HEAVY MACHINERY MANAGEMENT**

In this program, students will develop skills and knowledge for the successful management of heavy equipment. Contact the division office in the Agriculture Building for advising assistance.

PROGRAM LEARNING OUTCOMES

Upon satisfactory completion of this award, the student should be prepared to:

1. *Describe the various employment opportunities available within the mechanized agriculture field and demonstrate the minimum educational requirements for entrance into each.*
2. *Locate, read, and interpret appropriate plans, manuals and equipment documentation in order to fabricate and/or repair equipment effectively.*
3. *Select proper tools and equipment for various applications, staying within the desired financial restraints.*
4. *Maintain tools and equipment and demonstrate the value of preventative maintenance and proper equipment usage.*

CERTIFICATE REQUIREMENTS

To earn a Certificate of Achievement, the student must complete the following course-work. Each course must be completed with a grade of C or better.

I. MAJOR REQUIRED COURSES- COMPLETE 16 UNITS

AGM 200 [NP] Introduction to Mechanical Technology 3
AGM 214 [NP] Equipment Service and Safety 1
AGM 215 [NP] Machinery Management 3
AGEC 200 [NP] Agriculture Accounting and Analysis 3
AGEC 220 [NP] Agricultural Business Management 3
AGEC 225 [NP] Agriculture Computer Applications 3

TOTAL UNITS FOR CERTIFICATE OF ACHIEVEMENT AWARD 16

A.S. DEGREE: **BIOLOGICAL SCIENCES**

ABOUT THIS EMPHASIS

This A.S. is designed as a University Preparation, Emphasis in Biological Sciences. The University Preparation degree, distinctive of the University Preparation "pathway," is designed to prepare you for transfer to a California State University (CSU) or University of California (UC) campus.

While completion of this program does not guarantee admission to a specific college or university, it allows you to complete preparatory courses that may apply toward the area of study in which you plan to major at your targeted transfer university, and to complete general education requirements required by CSU and UC for bachelor's (baccalaureate) degree. It entails an interdisciplinary approach to learning that will allow you to simultaneously meet your unique transfer goals and fulfill lower division requirements for bachelor's degree at many CSU or UC institutions. You will do this by completing a rigorous general education experience with either the CSU-GE or IGETC general education patterns, in addition to completing an emphasis in a particular field or program. How does it work? Each emphasis has been crafted to help you prepare for upper-division coursework in a baccalaureate major at a four-year university. By fulfilling the requirements of the MJC emphasis, you will also be completing some or all lower division preparation for baccalaureate major at the university.

ASSIST (www.assist.org) is a statewide database of recorded transfer agreements between community colleges and universities. You are advised to use ASSIST in selecting courses from the emphasis to ensure that the coursework applies to your baccalaureate major. University Preparation with Emphasis Prepare for transfer with some majors at MJC Not every program at MJC offers a degree designed for transfer-oriented students. However, many programs do offer AA or AS majors which function like the emphasis for transfer-oriented students. Those majors are included on the following pages to help you make the right decision when determining the best transfer-oriented path of study.

PROGRAM LEARNING OUTCOMES

Upon satisfactory completion of this award, the student should be prepared to:

1. *Apply the scientific method of discovery to problem solving situations in biology, mathematics, and chemistry.*
2. *Proficiently use the scientific vocabulary, including the key terms and concepts in biology, chemistry, and mathematics.*

PROGRAM REQUIREMENTS

To earn an Associate in Science Degree in this major, the student must complete the requirements detailed in the Career Technical Education Pathway or the University Preparation Pathway which include completion of the requirements below. See counselor or advisor for selection of courses.

REQUIRED COURSES – TAKE 12 UNITS

BIO 101 [NP] Biological Principle 4
BOT 101 [NP] General Botany 4
ZOOL 101 [NP] General Zoology 4

ELECTIVE COURSES – TAKE 9-10 UNITS

• Please refer to www.assist.org for your chosen transfer university and specific major, and use that information to select 2 courses within one discipline from the following list of electives. Additional courses may be required by your transfer university.

CHEM 101 [NP] General Chemistry 1 5
CHEM 102 [NP] General Chemistry 2....5
MATH 134 [NP] Elementary Statistics 4
MATH 171 [NP] Calculus: First Course....4
MATH 172 [NP] Calculus; Second Course 4
PHYS 142 [NP] Mechanics, Heat, and Waves 4
PHYS 143 [NP] Electricity, Magnetism, Optics, Atomic and Nuclear Structure 4

TOTAL UNITS IN A.S. MAJOR 21-22

Chemistry
PROGRAM
(209) 575-6173

A.S. DEGREE: **CHEMISTRY**

ABOUT THIS EMPHASIS

This A.S. is designed as a University Preparation, Emphasis in Chemistry. The University Preparation degree, distinctive of the University Preparation "pathway," is designed to prepare you for transfer to a California State University (CSU) or University of California (UC) campus. Chemistry is the branch of physical science that deals with the elementary substances, or forms of matter, of which all bodies are composed, the laws that regulate the combination of these elements in the formation of compound bodies, and the various phenomena that accompany their exposure to diverse physical conditions. This area of emphasis is recommended for students who wish to continue at a four year college or university as chemistry major, premedical or similar major.

PROGRAM LEARNING OUTCOMES

Upon satisfactory completion of this award, the student should be prepared to:

1. *Score the national median or higher on American Chemical Society General Chemistry Exam (full year).*
2. *Score the national median or higher on American Chemical Society Organic Chemistry Exam (full Year).*
3. *Use of quantitative and/or qualitative analysis techniques to determine an unknown in a general chemistry laboratory.*
4. *Use of NMR, IR and other spectrum to determine an unknown organic compound.*
5. *Successfully transfer to a 4 year college or university and/or begin work in an entry level chemistry technician position (statistics to be kept by department until tracking is in place).*

To earn an Associate in Science Degree in this major, the student must complete the requirements detailed in the University Preparation Pathway which include completion of the requirements below. See counselor or advisor for selection of courses.

REQUIRED COURSES – COMPLETE 10 UNITS

CHEM 101 [1] General Chemistry 1 5
CHEM 102 [2] General Chemistry 2 5

REQUIRED ORGANIC CHEMISTRY COURSES - COMPLETE 10 UNITS

CHEM 112 [3] Organic Chemistry 1 ....5 AND
CHEM 113 [4] Organic Chemistry 2 5

• Please refer to www.assist.org for your chosen transfer university and specific major, and use that information to select 2 courses to complete within one subject from the following list of electives. Additional courses may be required by your transfer university.

ELECTIVE COURSES-COMPLETE 8 UNITS

BIO 101 [NP] Biological Principles 4
BIO 111 [NP] General Biology 4
MATH 171 [NP] Calculus: First Course....4
MATH 172 [NP] Calculus: Second Course 4
MATH 173 [NP] Calculus: Third Course 4
PHYS 101 [NP] General Physics: Mechanics 4
PHYS 102 [NP] General Physics: Waves, Thermodynamics, & Optics....4
PHYS 103 [NP] General Physics: Electricity, Magnetism, & Modern Physics 4

TOTAL UNITS IN A.S. MAJOR 28

Computer Electronics
PROGRAM
(209) 575-6332

A.S. DEGREE: **COMPUTER ELECTRONICS**

The Computers and Networking Technology program provides training in electronics fundamentals as well as in-depth study of operating systems, computer hardware, wired and wireless networks, and servers. Students train for industry-standard certification examinations (A+, Network+, Security+, and Server+) and prepare for careers as computer and networking service technicians.

PROGRAM LEARNING OUTCOMES

Upon satisfactory completion of this award, the student should be prepared to:

1. *Work successfully with Industrial and Information Computer Technology applications within multiple industries.*
2. *Perform basic computer hardware and telecommunication installations and repairs in accordance with industry commonly accepted practices.*
3. *Comply with degree related institutional GELO's.*

To earn an Associate in Science Degree, the student must complete the MJC Associate Degree Requirements in addition the coursework below. All required and sufficient elective courses in the program must be completed with a C or better.

REQUIRED COURSES - COMPLETE 14 UNITS

ELTEC 300 [1] Survey of Applied Technologies 3
CMPET 206 [1, 2, 3] Personal Computer Assembly, Upgrading & Repairing 3
CMPET 210 [3, 4] Intermediate PC Servicing w/ A+ Certification Training 3
CMPET 214 [3, 4] Microprocessor Programming & Interfacing 4
CMPET 269 [3, 4] Networking Devices & Systems 1

INDUSTRIAL APPLICATION AREA - COMPLETE 6 UNITS

ELTEC 212 [1, 2, 3] Digital Principles and Circuits 3
ELTEC 232 [3, 4] Introduction to Programmable Logic Controllers 3
ELTEC 234 [3, 4] Introduction to PACs: Programmable Automation Controllers 3
MACH 218 [2, 3] Introduction to CNC Lathe Programming 2
MACH 219 [2, 3] Introduction to CNC Mill Programming 2
MACH 220 [3, 4] CNC Machine Tool Programming 2

COMPUTER PROGRAMMING AREA - COMPLETE 6 UNITS

CSCI 270 [1, 2] Introduction to Programming.....3
CSCI 221 [2, 3, 4] Programming With Visual Basic 3
CSCI 271 [2, 3, 4] Problem Solving and Programming 1 3
CSCI 273 [2, 3, 4] Assembly Language Programming 3

NETWORKING AREA - COMPLETE 6 UNITS

CSCI 240 [1, 2] Networking Essentials 4
ELTEC 208 [1, 2] Fundamentals of Electricity and Electronics.....3
CSCI 210 [3, 4] Intro to UNIX/Linux Syst & Programming 3
CSCI 213 [3, 4] Windows Server OS.....3

TOTAL UNITS IN A.S. MAJOR 32

CERTIFICATE OF ACHIEVEMENT: **COMPUTER ELECTRONICS**

The Computers and Networking Technology program provides training in electronics fundamentals as well as in-depth study of operating systems, computer hardware, wired and wireless networks, and servers. Students train for industry-standard certification examinations (A+, Network+, Security+, and Server+) and prepare for careers as computer and networking service technicians.

PROGRAM LEARNING OUTCOMES

Upon satisfactory completion of this award, the student should be prepared to:

1. *Work successfully with Industrial and Information Computer Technology applications in multiple industries.*
2. *Perform basic computer hardware, telecommunication and industrial installation and repairs in accordance with industry commonly accepted practices.*

To earn a Certificate of Achievement, the student must complete the coursework below. All required courses must be completed with a C or better.

REQUIRED COURSES - COMPLETE 14 UNITS

ELTEC 300 [1] Survey of Applied Technologies.....3
CMPET 206 [1, 2, 3] Personal Computer Assembly, Upgrading & Repairing.....3
CMPET 210 [3, 4] Intermediate PC Servicing w/ A+ Certification Training 3
CMPET 214 [3, 4] Microprocessor Programming & Interfacing 4
CMPET 269 [3, 4] Networking Devices & Systems.....1

INDUSTRIAL APPLICATION AREA - COMPLETE 6 UNITS

ELTEC 212 [1, 2, 3] Digital Principles and Circuits 3
ELTEC 232 [3, 4] Introduction to Programmable Logic Controllers.....3
ELTEC 234 [3, 4] Introduction to PACs: Programmable Automation Controllers 3
MACH 218 [2, 3] Introduction to CNC Lathe Programming 2
MACH 219 [2, 3] Introduction to CNC Mill Programming.....2
MACH 220 [3, 4] CNC Machine Tool Programming.....2

COMPUTER PROGRAMMING AREA - COMPLETE 6 UNITS

CSCI 270 [1, 2] Introduction to Programming 3
CSCI 221 [2, 3, 4] Programming With Visual Basic 3
CSCI 271 [2, 3, 4] Problem Solving and Programming 1.....3
CSCI 273 [2, 3, 4] Assembly Language Programming..... 3

NETWORKING AREA - COMPLETE 6 UNITS

CSCI 240 [1, 2] Networking Essentials 4
ELTEC 208 [1, 2] Fundamentals of Electricity and Electronics 3
CSCI 210 [3, 4] Intro to UNIX/Linux Syst & Programming 3
CSCI 213 [3, 4] Windows Server OS 3

TOTAL UNITS FOR CERTIFICATE OF ACHIEVEMENT AWARD 32

Computer Science
PROGRAM
(209) 575-6129

This program is designed to prepare students who wish to transfer to a CSU and major in Computer Science. This program will provide students with an alignment of courses required for transfer and a cohesive group of courses in the area of Computer Science. Courses such as programming, discrete structures, computer architecture and organization will enable the student to demonstrate ability to engage in critical thinking and problem-solving in the application of computer science principles. The Associate in Science in Computer Science for Transfer degree includes curriculum which focuses on practical application of problem solving skills and theory.

Students who complete the degree will be able to demonstrate competence in the application of computer science. The Associate in Science in Computer Science for Transfer is intended for students who plan to complete a bachelor's degree in Computer Science at a CSU campus.

Students completing this degree are guaranteed admission to the CSU system, but not to a particular campus or major. Students transferring to a CSU campus that does accept this degree will be required to complete no more than 60 units after transfer to earn a bachelor's degree. Potential careers in the Computer Science field include Computer Programmers, Computer Science Teachers, Software and Web Developers, and Computer and Information Systems Managers.

This degree may not be the best option for students intending to transfer to a particular CSU campus or to a university or college that is not part of the CSU system. In all cases, students should consult with a counselor for more information on university admission and transfer requirements.

A.S.-T. DEGREE: **COMPUTER SCIENCE**

PROGRAM REQUIREMENTS

To receive an Associate of Science for Transfer degree in Computer Science, the student must complete the requirements detailed in the Transfer Model Curriculum Pathway. All courses must be completed with a C or better or "P" (Pass).

The following is required for the Associate in Science in Computer Science for Transfer (AS-T in Computer Science) degree:

1. *Completion of 60 semester units or 90 quarter units that are eligible for transfer to the California State University, including both of the following:*
   - *(A) The California State University-General Education-Breadth pattern (CSU GE Breadth); OR the Intersegmental General Education Transfer Curriculum (IGETC) pattern.*
   - *(B) A minimum of 18 semester or 27 quarter units in the major or area of emphasis as determined by the community college district.*
2. *Obtainment of a minimum grade point average of 2.0.*

All courses within the ADTs also require that students must earn a C or better or a "P" (Pass) in all courses required for the major or area of emphasis.

PROGRAM LEARNING OUTCOMES

Upon satisfactory completion of this program, the student should be prepared to:

1. *Describe the organizational structure of computer hardware and its connection to computer software.*
2. *Describe how formal tools of symbolic logic and discrete structures are used to model real-life situations and relate the ideas of computational induction to recursion and recursively defined structures.*
3. *Design, implement, test, and debug algorithms to solve a variety of problems.*
4. *Design, implement, test, and debug computer programs using fundamental constructs and a variety of data structures.*
5. *Apply structured and object-oriented approaches to the design and implementation of computer programs.*

REQUIRED CORE

CSCI 204 [NP] Discrete Structures for Computer Science	3
CSCI 271 [NP] Problem Solving and Programming 1	3
CSCI 272 [NP] Problem Solving and Programming 2	3
CSCI 273 [NP] Assembly Language Programming	3
MATH 171 [NP] Calculus: First Course	4 and
MATH 172 [NP] Calculus: Second Course	4
PHYS 101 [NP] General Physics: Mechanics	4
PHYS 103 [NP] General Physics: Electricity, Magnetism, & Modern Physics	4
TOTAL UNITS REQUIRED IN A.S.-T MAJOR	**28**
TOTAL UNITS THAT MAY BE DOUBLE-COUNTED	7-9
COMPLETION OF CSU BREADTH OR IGETC (CSU)	37-39
ELECTIVE (CSU TRANSFERABLE) UNITS	2
TOTAL UNITS REQUIRED FOR A.S.-T DEGREE	**60**

**Note: Double counting courses in GE and the major is permissible. Guidance and Activities requirements are not required for the Associate in Science in Computer Science for Transfer degree.*

Earth Sciences
PROGRAM
(209) 575-6173

A.S. DEGREE: **EARTH SCIENCES**

ABOUT THIS EMPHASIS

This A. S. is designed as a University Preparation, Emphasis in Earth Sciences. The University Preparation degree, distinctive of the University Preparation "pathway," is designed to prepare you for transfer to a California State University (CSU) or University of California (UC) campus. This program is designed as an introductory study of the many branches of earth science, geology, oceanography, meteorology, and astronomy. Topics include the scientific method, natural resources, minerals, rocks, volcanism, plate tectonics, earthquakes, weathering, erosion, geological time, fresh water, oceans, ocean currents, the ocean floor, the atmosphere, clouds, storms, climate, the sun, the moon, the solar system, stars, interstellar matter, and the formation of the universe.

PROGRAM LEARNING OUTCOMES

Upon satisfactory completion of this award, the student should be prepared to:

1. *Identify, describe, and explain the causes and consequences of the various physical processes that transfer energy into, within, and out of the earth system.*
2. *Identify, describe, and explain the causes and consequences of the various chemical processes that control the transformation of matter within the earth system.*
3. *Identify, describe, and explain the causes and consequences of the various interactions between the biosphere and the physical components of the earth system.*

EMPHASIS REQUIREMENTS

To earn an Associate in Science Degree with this emphasis, the student must complete the requirements detailed in the University Preparation Pathway (p. 103) which include completion of the requirements below. See advisor for selection of courses.

REQUIRED COURSES - COMPLETE 21 UNITS

EASCI 161 [NP] Earth Science	4 OR
GEOL 161 [NP] Physical Geology	4
GEOL 166 [NP] Historical Geology	4
PHYS 101 [NP] General Physics: Mechanics	4 OR
PHYS 142 [NP] Mechanics, Heat, & Waves	4
MATH 171 [NP] Calculus: First Course	4
CHEM 101 [NP] General Chemistry 1	5

ELECTIVE COURSES - COMPLETE 8 UNITS

• Please refer to www.assist.org for your chosen transfer university and specific major, and use that information to select at least eight units from the following list of electives. Additional courses may be required by your transfer university.

ASTRO 151 [NP] Introduction to Astronomy Laboratory	1
ASTRO 160 [NP] Introduction to Modern Astronomy	3
BIO 101 [NP] Basic Biology	4
BIO 111 [NP] General Biology	4
CHEM 102 [NP] General Chemistry 2	5
EASCI 162 [NP] Introduction to Earth Science	4
GEOL 171XAB [NP] Geology Field Studies	0.5 - 2
GEOL 174 [NP] Geology Summer Field Studies	3

MATH 172 [NP] Calculus: Second Course 4
METEO 161 [NP] Introduction to Meteorology 4
NR 200 [NP] Soils 3
PHYS 142 [NP] Mechanics, Heat, & Waves 4
PHYS 143 [NP] Electricity, Magnetism, Optics, Atomic and Nuclear Structures 4
ZOOL 101 [NP] General Zoology 4

TOTAL UNITS IN A.S. MAJOR 29

Electronics Technology
PROGRAM
(209) 575-6332

A.S. DEGREE: **INDUSTRIAL ELECTRONICS**

The Industrial Electronics Program prepares students for careers as Engineering Technologists and Instrumentation/Automation Technicians. Students receive theoretical and laboratory instruction in electrical/electronic principles, analog and digital devices, electrical/electronic systems, sensors and controls, PLCs, PACs, industrial equipment, and control systems.

PROGRAM LEARNING OUTCOMES

Upon satisfactory completion of this program, the student should be prepared to:

1. *Perform basic troubleshooting and electrical oriented repairs and installations in accordance to industry standards.*
2. *Work successfully in the Power Utility, Building Trades, and/or Manufacturing Industry.*
3. *Comply with current electrical/engineering safety and environmental standards.*
4. *Natural Science (GELO): Explaining how the scientific method is used to solve problems.*
5. *Humanities (GELO): Demonstrating the ability to make well considered aesthetic judgments.*
6. *Language and Rationality (GELO): Demonstrate the ability to find, evaluate and use information in a variety of formats.*
7. *Health Education (GELO): Evaluating the impact of daily decisions on life and health.*

PROGRAM REQUIREMENTS

To earn an Associate in Science Degree, the student must complete the MJC Associate Degree Requirements in addition the coursework below. All required and sufficient elective courses in the program must be completed with a C or better.

REQUIRED COURSES: COMPLETE 32.5 UNITS

ELTEC 265 [NP] Troubleshooting Techniques 1
ELTEC 322 [1] Technical Measurements 3
ELTEC 208 [1] Fundamentals of Electricity and Electronics 3
ELTEC 205 [1, 2] Electronics Fabrication and Assembly Techniques 3
ELTEC 320 [1, 2] Electrical Safety 1
ELTEC 212 [2] Digital Principles and Circuits 3
ELTEC 223 [2] Industrial Electrical Components and Control Devices 3
ELTEC 226 [3] Motors, Controls and Controllers 3
ELTEC 232 [3] Introduction to Programmable Logic Controllers 3
ELTEC 221 [3, 4] Instrumentation Devices and Systems 3
ELTEC 229 [4] Commercial & Industrial Wiring 3.5
ELTEC 234 [4] Introduction to PACs: Programmable Automation Controllers 3

TOTAL UNITS IN A.S. MAJOR 32.5

CERTIFICATE OF ACHIEVEMENT: **INDUSTRIAL ELECTRONICS**

The Industrial Electronics Program prepares students for careers as Engineering Technologists and Instrumentation/Automation Technicians. Students receive theoretical and laboratory instruction in electrical/electronic principles, analog and digital devices, electrical/electronic systems, sensors and controls, PLCs, PACs, industrial equipment, and control systems.

PROGRAM LEARNING OUTCOMES

Upon satisfactory completion of this program, the student should be prepared to:

1. *Perform basic troubleshooting and electrical oriented repairs and installations in accordance to industry standards.*
2. *Work successfully in the Power Utility, Building Trades, and/or Manufacturing Industry.*
3. *Comply with current electrical/engineering safety and environmental standards.*

PROGRAM REQUIREMENTS

To earn a Certificate of Achievement, the student must complete the coursework below. All required courses in the program must be completed with a C or better.

REQUIRED COURSES: COMPLETE 32.5 UNITS

ELTEC 265 [NP] Troubleshooting Techniques 1
ELTEC 322 [1] Technical Measurements 3
ELTEC 208 [1] Fundamentals of Electricity and Electronics 3
ELTEC 205 [1, 2] Electronics Fabrication and Assembly Techniques 3
ELTEC 320 [1, 2] Electrical Safety 1
ELTEC 212 [2] Digital Principles and Circuits 3
ELTEC 223 [2] Industrial Electrical Components and Control Devices 3
ELTEC 226 [3] Motors, Controls and Controllers 3
ELTEC 232 [3] Introduction to Programmable Logic Controllers 3
ELTEC 221 [3, 4] Instrumentation Devices and Systems 3
ELTEC 229 [4] Commercial & Industrial Wiring 3.5
ELTEC 234 [4] Introduction to PACs: Programmable Automation Controllers 3

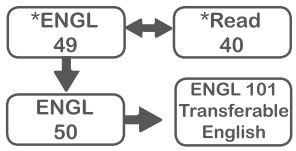
TOTAL UNITS FOR CERTIFICATE OF ACHIEVEMENT AWARD..... 32.5

English

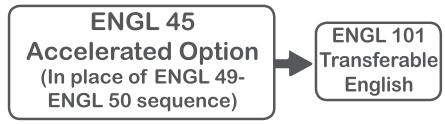
PROGRAM

(209) 575-6159

** Concurrent Enrollment or Assess out through MJC Placement Test.*



OR



Associates in Arts in English for Transfer

Required Core: 6 Units

ENGL 102 — ENGL 103

List A: 6 units/Select Two Courses

ENGL 131 | ENGL 132 | ENGL 135 | ENGL 136 | ENGL 137 | ENGL 138

List B: 3 units/Select One Course from list below or any course not used from List A

ENGL 105 | ENGL 106 | ENGL 111 | ENGL 112 | ENGL 114

ENGL 116 | ENGL 151 | ENGL 163 | ENGL 171 | ENGL 176 | ENGL 179

List C: 3 units/Select One Course from list below or any course not used from List A or B

ENGL 156 | ENGL 157 | ENGL 161 | ENGL 162 | ENGL 168

ENGL 169 | ENGL 172 | ENGL 173 | ENGL 174 | ENGL 175

2-YEAR PLAN

1ST SEMESTER — 3 units from Eng 101 — >3 units total + GENERAL EDUCATION 12 units

2ND SEMESTER — 3 units from Core, 3 units from List A — >6 units total + GENERAL EDUCATION 9 units

3RD SEMESTER — 3 units from Core, 3 units from List A — >6 units total + GENERAL EDUCATION 9 units

4TH SEMESTER — 3 units from List B (or A), 3 units from List C (or A or B) — >6 units total + GENERAL EDUCATION 9 units

General Studies
PROGRAM
(209) 575-6058

A.A. DEGREE: **GENERAL STUDIES, EMPHASIS IN LANGUAGE & RATIONALITY**

ABOUT THIS EMPHASIS

Courses in language and rationality are those that study English composition, communication, and analytical thinking. Students will develop the principles and applications of language toward logical thought, clear and precise expression, and critical evaluation of communication whatever symbol system the students use.

Follow the Career and Technical Education Pathway for associate degree on page 109 of the 2016-2017 MJC Catalog. Satisfactory completion of this pathway will result in an associate degree from Modesto Junior College.

In fulfillment of the Career and Technical Education Pathway degree requirements, select and complete a General Studies emphasis from the following pages. Coursework completed in fulfillment of a General Education requirement cannot be reapplied toward a General Studies emphasis.

For this non-transfer emphasis, complete a minimum of 18 units from the list below. Of that 18 units, select two disciplines and complete 6 units in each discipline. Students may not double-count units with General Education course

PROGRAM LEARNING OUTCOMES

Upon satisfactory completion of this award, the student should be prepared to:

1. *Demonstrate awareness of the interactive nature of communication involving effective listening, reading, writing, and speaking.*
2. *Demonstrate critical thinking in the analysis and production of communication.*
3. *Demonstrate the ability to find, evaluate, and use information in a variety of formats.*

REQUIRED COURSES - COMPLETE 18 UNITS

AGEC 225 [NP] Agriculture Computer Applications 3
BUSAD 210 [NP] Business Communication 3
COMM 100 [NP] Fundamentals of Public Speaking 3
COMM 102 [NP] Introduction to Human Communication 3
COMM 104 [NP] Argumentation 3
COMM 106 [NP] Group & Organizational Communication....3
COMM 107 [NP] Introduction to Debate 3
COMM 110 [NP] Persuasion 3
COMM 132 [NP] Introduction to Mass Communication 3
COMM 133 [NP] Mediated Communications....3
CSCI 200 [NP] Technical Computer Literacy 3
CSCI 201 [NP] General Computer Literacy 3
CSCI 203 [NP] Symbolic Logic 3
CSCI 204 [NP] Discrete Structures for Computer Science 3
CSCI 213 [NP] Windows Server OS 3
CSCI 221 [NP] Programming with Visual BASIC 3
CSCI 230 [NP] Database Management Systems....3
CSCI 253 [NP] Web Database Development 3
CSCI 271 [NP] Problem Solving and Programming 1....3
CSCI 272 [NP] Problem Solving and Programming 2....3
CSCI 273 [NP] Assembly Language Programming 3
CSCI 274 [NP] Windows Programming with Visual C++....4
ENGL 103 [NP] Advanced Composition & Critical Thinking 3
LIBR 100 [NP] Research Concepts and Practice....3
MATH 89 [NP] Intermediate Algebra Essentials 4
MATH 90 [NP] Intermediate Algebra 5
MATH 101 [NP] Mathematical Ideas and Applications 3
MATH 105 [NP] Structure of Mathematics 1 3
MATH 106 [NP] Structure of Mathematics 2 3
MATH 111 [NP] Applied College Algebra 3
MATH 121 [NP] Pre-Calculus 1 5
MATH 122 [NP] Pre-Calculus 2 5
MATH 130 [NP] Finite Mathematics 3
MATH 134 [NP] Elementary Statistics 4
MATH 138 [NP] Calculus for Business and Social Sciences 3
MATH 171 [NP] Calculus: First Course....4
MATH 172 [NP] Calculus: Second Course 4
MATH 173 [NP] Calculus: Third Course 4
MATH 174 [NP] Introduction to Differential Equations and Linear Algebra 5
PHILO 103 [NP] Symbolic Logic 3
PHILO 105 [NP] Critical Reasoning and Analytic Writing 3
PHILO 107 [NP] Philosophy of Science 3
SOCIO 105 [NP] Introduction to Statistics for the Social &Behavioral Sciences 3
SUPR 106 [NP] Group & Organizational Communication 3

TOTAL UNITS IN EMPHASIS 18

Machine Tool Technology
PROGRAM
(209) 575-6332

CERTIFICATE OF ACHIEVEMENT: **MACHINE TOOL TECHNOLOGY 1**

The Machine Tool Technology program is designed to provide training in the operation of traditional manual as well as computer operated machine tools used to produce the mechanical components used in all industrial applications. Students will receive instruction the use of lathes, milling machines, precision grinders as well as the theory and practice of precision dimensional measurement.

PROGRAM LEARNING OUTCOMES

Upon satisfactory completion of this award, the student should be prepared to:

1. *Demonstrate compliance with current machine shop safety and environmental regulations.*
2. *Perform mill, lathe, drill press, precision grinding, measurement, and basic CNC operations in accordance with industry recognized and accepted practices.*

To earn a Certificate of Achievement Award, student must complete the 15-17 required units. Each course must be completed with a C or better.

REQUIRED COURSES – COMPLETE 15-17 UNITS

MACH 211 E [1] Machine Tool Technology 1 5
MACH 212 E [2] Machine Tool Technology 2 5
MACH 213 [3 or 4] Machine Tool Technology 3 4
MACH 395AB [3 or 4] Advanced Machine Tool Technology Laboratory ..... 1-2 OR
WELD 200 [NP] Arc & Gas Welding 3

TOTAL UNITS FOR CERTIFICATE OF ACHIEVEMENT AWARD.....15-17

Welding
PROGRAM
(209) 575-6332

CERTIFICATE OF ACHIEVEMENT:
MANUFACTURING TECHNOLOGY (INTERDISCIPLINARY)

The Industrial Welding Program supports and maintains a training platform that focuses on the most common welding and sheet metal processes, certifications, and supporting technologies used in industry. The curriculum for the program is concentrated primarily on the Shielded Metal Arc, Gas Tungsten Arc, Gas Metal Arc, Flux Core Arc Welding, Oxy-Acetylene Welding, Oxy-Acetylene and Plasma Cutting. The program's courses expose students to both hands-on, laboratory and lecture learning objectives.

PROGRAM LEARNING OUTCOMES

Upon satisfactory completion of this program, the student should be prepared to:

1. *Perform the measuring and calculating of voltages, currents, and resistance in circuits and the wiring application of typical industrial equipment.*
2. *Perform typical machining, grinding, and threading operations within acceptable tolerances of general manufacturing procedures.*
3. *Demonstrate proper set-up of SMAW, GMAW, and GTAW equipment and perform typical welding procedures according to general manufacturing codes and standards.*

PROGRAM REQUIREMENTS

To earn a Certificate in this major, the student must complete the requirements below:

REQUIRED CORE: COMPLETE 25.5 UNITS

AGM 262 [NP]Hydraulics/Pneumatics 3
ELTEC 208 [NP] Fundamentals of Electricity and Electronics 3
ELTEC 229 [NP] Commercial & Industrial Wiring 3.5
ELTEC 265 [NP] Troubleshooting Techniques 1
MACH 301 [NP] Machine Shop 1 3
MACH 302 [NP] Machine Shop 2 3
WELD 200 [NP] Arc & Gas Welding 3
WELD 204 [NP] Gas Metal Arc Welding (G.M.A.W) & Flux Core Arc Welding (F.C.A.W) 3
WELD 206 [NP] Gas Tungsten Arc Welding (G.T.A.W.) 3

TOTAL UNITS FOR CERTIFICATE OF ACHIEVEMENT AWARD 25.5