

<b>EME 207</b>	<b>Paramedic Medical Training (Lecture)</b>	<b>(10)</b>
<i>10 hours lecture</i>		
<b>Prerequisite:</b> Admission into Paramedic program		
<b>Corequisite:</b> EME 207L and EME 211		
<b>Note:</b> May be taken 2 times		
The study of medical diseases for Paramedic training which meets the requirements of the National Standard Curriculum for Paramedic Training. Includes ACLS training and certification.		
<b>EME 207L</b>	<b>Paramedic Medical Skills (Laboratory)</b>	<b>(1.5)</b>
<i>4½ hours laboratory</i>		
<b>Prerequisite:</b> Admission into Paramedic program		
<b>Corequisite:</b> EME 207		
<b>Note:</b> Pass/No Pass grading only; may be taken 2 times		
Application of skills necessary for the medical portion of Paramedic Training which meets the requirements of the National Standard Curriculum for Paramedic Training.		
<b>EME 208</b>	<b>Paramedic Trauma Training (Lecture)</b>	<b>(4.5)</b>
<i>4½ hours lecture</i>		
<b>Prerequisite:</b> Admission into Paramedic program		
<b>Corequisite:</b> EME 208L and EME 212		
<b>Note:</b> May be taken 2 times		
The study of traumatic emergencies for Paramedic training which meets the requirements of the National Standard Curriculum for Paramedic Training. Includes Pre-hospital Trauma Life Support training and certification.		
<b>EME 208L</b>	<b>Trauma Skills (Laboratory)</b>	<b>(.5)</b>
<i>1½ hours laboratory</i>		
<b>Prerequisite:</b> Admission into Paramedic program		
<b>Corequisite:</b> EME 208		
<b>Note:</b> Pass/No Pass grading only; may be taken 2 times		
Application of skills necessary for trauma class of Paramedic training which meets the requirements of the National Standard Curriculum for Paramedic Training. Includes Pre-hospital Trauma Life Support training and certification.		
<b>EME 209</b>	<b>Paramedic Obstetrical and Pediatric Training (Lecture)</b>	<b>(2.5)</b>
<i>2½ hours lecture</i>		
<b>Prerequisite:</b> Admission into Paramedic program		
<b>Corequisite:</b> EME 209L and EME 212		
<b>Note:</b> May be taken 2 times		
The study of Obstetrical and Pediatric emergencies for Paramedic training which meets the requirements of the National Standard Curriculum for Paramedic Training. Includes Pediatric Education for Pre-hospital Professionals.		
<b>EME 209L</b>	<b>Paramedic Obstetrical and Pediatric Skills (Laboratory)</b>	<b>(.5)</b>
<i>1½ hours laboratory</i>		
<b>Prerequisite:</b> Admission into Paramedic program		
<b>Corequisite:</b> EME 209		
<b>Note:</b> Pass/No Pass grading only; may be taken 2 times		
Application of skills necessary for the Obstetrical and Pediatric class for Paramedic Training which meets the requirements of the National Standard Curriculum for Paramedic Training. Includes Pediatric Education for Pre-hospital Professionals.		
<b>EME 210</b>	<b>Hospital Clinical Experience</b>	<b>(4)</b>
<i>12 hours laboratory</i>		
<b>Prerequisite:</b> A minimum grade of 'C' in EME 209 and EME 209L		
<b>Note:</b> May be taken 2 times		
Supervised clinical experience in acute care areas of hospitals where knowledge of advanced life support techniques is necessary.		
<b>EME 211</b>	<b>Clinical Integration I</b>	<b>(1.5)</b>
<i>4½ hours laboratory</i>		
<b>Corequisite:</b> EME 207		
<b>Note:</b> May be taken 2 times; Pass/No Pass grading only		
Application of assessment and BLS skills necessary to be successful in Paramedic Training.		

<b>EME 212</b>	<b>Clinical Integration II</b>	<b>(1.5)</b>
<i>4½ hours laboratory</i>		
<b>Corequisite:</b> EME 208 and EME 209		
<b>Note:</b> Pass/No Pass grading only; may be taken 2 times		
Application of assessment and BLS skills necessary to be successful in Paramedic Training.		

<b>EME 215</b>	<b>Field Internship</b>	<b>(9)</b>
<i>28 hours laboratory</i>		
<b>Prerequisite:</b> A minimum grade of 'C' in EME 210		
<b>Note:</b> May be taken 2 times		
Assignment to a response vehicle with a field preceptor. Includes direct patient care responsibilities in providing advanced life support.		

<b>EME 295</b>	<b>Directed Study in Emergency Medical Education</b>	<b>(1,2,3)</b>
<i>3, 6, or 9 hours laboratory</i>		
<b>Prerequisite:</b> Approval of project or research by department chairperson/director		
<b>Note:</b> May be taken 4 times		
Independent study for students who have demonstrated skills and/or proficiencies in Emergency Medical Education subjects and have the initiative to work independently on projects or research outside the context of regularly scheduled classes. Students will work under the personal supervision of an instructor.		

## Engineering (ENGR)

Contact the Physics and Engineering Department for further information.  
(760) 744-1150, ext. 2505  
Office: NS-355B

### Associate in Arts Degrees -

AA Degree requirements are listed in Section 6 (green pages).

- Engineering

### Certificates of Proficiency -

Certificate of Proficiency requirements are listed in Section 6 (green pages).

- Engineering Technician

## PROGRAMS OF STUDY

### Engineering

Provides the background to begin upper division coursework and will prepare the student for entry level jobs that require a knowledge of engineering and engineering related topics. The highly sequential nature of the engineering curriculum necessitates completion of lower division requirements before being admitted into upper division courses.

Engineering students are urged to give priority to the completion of major field requirements over the completion of general education requirements. Engineering lower division requirements are not the same for different universities. These institutions recommend that their particular lower division requirements be completed before transfer. Students should seek early assistance in planning their specific program from the Counseling Department, the Transfer Center, or the Physics/Engineering Department.

### A.A. DEGREE MAJOR\*\*

Program Requirements (Select a minimum of 11 units)		Units
DT 125 or	AutoCAD Introduction to Computer Aided Drafting	3
DT 128	SolidWorks Introduction to 3D Design and Presentation	
ENGR/		
ECHE 126	Intro Electric/Computer Engineering	4
ENGR 210	Electrical Network Analysis	3
ENGR 210L	Electrical Network Analysis Laboratory	1
ENGR 231	Engineering Measurement Analysis	3
ENGR 235	Engineering Mechanics Statics	3
ENGR 236	Engineering Mechanics Dynamics	3
ENGR 245	Properties of Materials	4

**Electives (Select a minimum of 30 units)**

**Note that mathematics courses are often prerequisite to engineering and physics courses.**

MATH 140*	Calculus/Analytic Geometry, First Course	5
MATH 141	Calculus/Analytic Geometry, Second Course	4
MATH 205	Calculus/Analytic Geometry, Third Course	4
MATH 206	Calculus with Differential Equations	4
PHYS 230*	Principles of Physics	5
PHYS 231	Principles of Physics	5
PHYS 232	Principles of Physics	4
CHEM 110*	General Chemistry	3
CHEM 115*	General Chemistry	3
CHEM 110L*	General Chemistry Laboratory	2
CHEM 115L*	General Chemistry Laboratory	2

**MINIMUM TOTAL UNITS 41**

Recommended Elective: ENGR 100

\* Courses marked with an asterisk may be used to fulfill General Education requirements.

ENG 100, ENG 202, and BIOL 100 are highly recommended as electives to fulfill General Education requirements.

\*\*Engineering A.A. Degree Major pending approval by the California Community Colleges System Office at the time of catalog publication.

## Engineering Technician

Specifically for individuals employed or seeking employment as a technician in the engineering/technical industry.

### CERTIFICATE OF PROFICIENCY

#### Program Requirements

ENGR 131	Introduction to Electronics	4
ENGR 245	Properties of Materials	4
CSIT 131	Word	1
CSIT 132	Excel	1
DT 128	SolidWorks Introduction to 3D Design and Presentation	3
PHYS 121	General Physics	4

**TOTAL UNITS 17**

### COURSE OFFERINGS

#### ENGR 100 Introduction to Engineering (1)

1 hour lecture

**Transfer acceptability:** CSU; UC

An overview of the engineering profession including not only the different engineering fields but also the specialized demands and rewards of each. It will afford the opportunity for community building among the students, who usually are otherwise isolated in the community college milieu. Group projects in the course will encourage socialization and human relations training in what is often perceived as a dry and dull profession. Academic success strategies will be explained and practiced; ethical concepts will be examined through case histories and practical applications.

#### ENGR 126 Introduction to Electrical and Computer Engineering (4)

3 hours lecture-3 hours laboratory

**Prerequisite:** A minimum grade of 'C' in MATH 140

**Transfer acceptability:** CSU

Introductory concepts covering a broad range of topics in Electrical and Computer Engineering presented in an integrated approach at a hands-on level. Students work in small teams to analyze, build, and test a small programmable robot for competition at the end of the semester. Provides basic understanding and skills for students to later build their theoretical understanding in more advanced physics and engineering courses.

#### ENGR 130 Fundamentals of Electric Circuits (4)

3 hours lecture-3 hours laboratory

**Prerequisite:** A minimum grade of 'C' in MATH 140

**Transfer acceptability:** CSU

Fundamentals of DC and AC: Ohm's Law, Kirchoff's Laws, Thevenin's Theorem, magnetism, transformers, capacitance, inductance, and tuned circuits. Laboratory covers application of theory, use of test equipment, circuit design, construction techniques, and troubleshooting carried out through traditional workstation procedures and by computer simulation programs.

#### ENGR 131 Introduction to Electronics (4)

3 hours lecture-3 hours laboratory

**Prerequisite:** A minimum grade of 'C' in ENGR 126 and/or ENGR 130

**Transfer acceptability:** CSU

Fundamentals of discrete semiconductors, linear and non-linear, analog: diodes, power supplies, transistors, and amplifiers. Fundamentals of linear and non-linear, analog, integrated circuits: thyristors, frequency effects, operational amplifiers, feedback, non-linear OPAMPS, oscillators, power supplies, and communication circuits. Laboratory covers application of theory, use of test equipment, circuit design, construction techniques, and troubleshooting.

#### ENGR 135 Integrated Electronic Circuits (4.5)

3 hours lecture-3 hours lecture/laboratory

**Prerequisite:** A minimum grade of 'C' in ENGR 130

**Transfer acceptability:** CSU

Fundamentals of linear and non linear, analog, integrated circuits: thyristors, frequency effects, operational amplifiers, feedback, non-linear OPAMPS, oscillators, power supplies, and communication circuits. Laboratory covers application of theory, use of test equipment, circuit design, construction techniques, and troubleshooting.

#### ENGR 197 Engineering Topics (.5-.5)

Units awarded in topics courses are dependent upon the number of hours required of the student. Any combination of, laboratory, or lecture/laboratory may be scheduled by the department. Refer to Class Schedule.

**Note:** May be taken 4 times

**Transfer acceptability:** CSU

Topics in Engineering. See Class Schedule for specific topic offered. Course title will designate subject covered.

#### ENGR 203 Digital/Computer Electronics (4.5)

3 hours lecture-3 hours lecture/laboratory

**Recommended preparation:** ENGR 130

**Transfer acceptability:** CSU

Fundamental logic functions of AND'ing, OR'ing, and inverting will be studied in various combinational and sequential logic circuits such as: encoders, decoders, multiplexers, demultiplexers, flip-flops, registers, counters, clocks, memories, and microprocessors. The architecture and programming of the digital microprocessor will be emphasized. The primary components required for proper operation of a PC (personal computer) will be addressed. Designing, testing, and troubleshooting of computers and special projects.

#### ENGR 210 Electrical Network Analysis (3)

3 hours lecture

**Prerequisite:** A minimum grade of 'C' in ENGR 210L and PHYS 231, or concurrent enrollment in ENGR 210L and PHYS 231

**Transfer acceptability:** CSU; UC

Circuit analysis by reduction methods, source transformations, loop and nodal analysis, OPAMP model for networks, transient analysis, alternating current circuits, impedance, power and phasor diagrams.

#### ENGR 210L Electrical Network Analysis Laboratory (1)

3 hours laboratory

**Prerequisite:** A minimum grade of 'C' in ENGR 210, or concurrent enrollment in ENGR 210

**Transfer acceptability:** CSU; UC

Laboratory exercises of circuit analysis by reduction methods, source transformations, loop and nodal analysis, OPAMP model for networks, transient analysis, alternating current circuits, impedance, power and phasor diagrams.

**ENGR 231 Engineering Measurement Analysis (3)**

2 hours lecture-3 hours laboratory

**Prerequisite:** A minimum grade of 'C' in MATH 140**Transfer acceptability:** CSU; UC

Analysis and treatment of engineering data. Probability, statistics, error theory, correlation and regression analysis, dimensional analysis, data processing, and preparation of technical reports. Laboratory experiments in hydraulic flow, surveying, heat transfer, and static and dynamic test systems.

**ENGR 235 Engineering Mechanics – Statics (3)**

3 hours lecture

**Prerequisite:** A minimum grade of 'C' in PHYS 230 and MATH 140**Transfer acceptability:** CSU; UC

Force systems and equilibrium conditions. Engineering problems covering structures, machines, distributed forces, and friction. Graphical and algebraic solutions, and vectorial analysis.

**ENGR 236 Engineering Mechanics – Dynamics (3)**

3 hours lecture

**Prerequisite:** A minimum grade of 'C' in ENGR 235**Transfer acceptability:** CSU; UC

Fundamental principles of bodies in motion; kinetics and kinematics of particles; system of particles; central force; work and energy; linear and angular momentum; moments and products of inertia; vibrations and time response; engineering applications.

**ENGR 245 Properties of Materials (4)**

3 hours lecture-3 hours laboratory

**Prerequisite:** A minimum grade of 'C' in CHEM 110 and 110L**Transfer acceptability:** CSU; UC

Physical properties of engineering materials. Atomic, molecular, and crystal lattice characteristics. Relations between these and mechanical, thermal, electrical, corrosion, and radiation properties. Metallic, ceramic, polymer, and agglomerate materials. Selection, treatment, and use of materials.

**ENGR 295 Directed Study in Engineering (1,2,3)**

3, 6, or 9 hours laboratory

**Prerequisite:** Approval of project or research by department chairperson**Note:** May be taken 4 times**Transfer acceptability:** CSU

Designed for the student who has demonstrated a proficiency in engineering subjects and the initiative to work independently on a particular sustained project which does not fit into the context of regularly scheduled classes.

**English (ENG)**

Contact the English Department for further information.

(760) 744-1150, ext. 2392

Office: P-2

**Associate in Arts Degrees -**

AA Degree requirements are listed in Section 6 (green pages).

• English

**PROGRAM OF STUDY****English**

Focuses on the English language and literatures in English. Provides the background for students to succeed in diverse fields, such as advertising and marketing, teaching, journalism and telecommunications, law, technical writing, and business administration. Prepares students for upper division course work in English. For specific transfer requirements, the student should consult an academic counselor or the catalog for the school to which he or she wishes to transfer.

**AA DEGREE MAJOR****Program Requirements**

	Units
ENG 205 and Introduction to Literature	3
ENG 202 or Critical Thinking /Composition	
ENG 203 Critical Thinking/Composition Through Literature	4

**Literature Surveys (Select 9 Units)** Of these nine units, students must take either a two-semester survey of British literature or a semester each of British and United States literature.

ENG 210	Survey of British Literature I	3
ENG 211	Survey of British Literature II	3
ENG 220	Survey of World Literature I	3
ENG 221	Survey of World Literature II	3
ENG 225	Literature of the United States I	3
ENG 226	Literature of the United States II	3

**Elective Courses (Select 2 courses)** Any of the above courses not previously taken or pick from the following:

ENG 135	Introduction to Creative Writing	4
ENG 136	Intermediate Creative Writing	4
ENG 137	The Literary Magazine: History/Production	4
ENG 215	Introduction to the British Novel	3
ENG 230	Introduction to the American Novel	3
ENG 240	Introduction to Classical Mythology	3
ENG 245	Survey of Biblical Literature	3
ENG 250	Introduction to Shakespeare	3
ENG 260	Literature Through Film	3
ENG 265	Science Fiction	3
ENG 270	Popular Literature	3
ENG 280	Women and Literature	3

**TOTAL UNITS****22 - 24****COURSE OFFERINGS**

Any student wishing to earn an A.A. degree must complete ENG 100 with a grade of 'C' or better. The student must participate in the English placement process before enrolling in any English or English as a Second Language composition class except ENG 10 and 150. The eligibility will indicate whether the student may enroll in ENG 50 or ENG 100. Students whose first language is not English may find, however, that ESL instruction meets their needs better than immediate enrollment in ENG 10 or 50. Such students may take one or more ESL classes (ESL 101, 102, 103) instead; then by again participating in the English placement process, they may qualify for ENG 50 or ENG 100. Non resident international students may be required to take one or more classes of English as a Second Language. Students should sign up for English assessment as soon as possible because some students may take three or more semesters to finish the competence in English. Please contact the Counseling Department for the English assessment schedule.

Courses numbered under 50 are non-degree courses.

Courses numbered under 100 are not intended for transfer credit.

**ENG 10 English Essentials (4)**

4 hours lecture

**Note:** A grade of 'C' or better is required for eligibility for ENG 50

Non-degree Applicable

Offers basic instruction in grammar, usage, mechanics, sentence structure, and paragraph and essay development.

**ENG 50 Introductory Composition (4)**

4 hours lecture

**Prerequisite:** A minimum grade of 'C' in ENG 10 or eligibility determined through the English placement process**Note:** A grade of 'C' or better is required for eligibility for ENG 100

A writing course for the student who wants to develop fundamental essay writing skills, acquire an A.A. degree, or enter a transfer program, but who needs further preparation in composition skills.

**ENG 97 English Topics (1-4)**

Units awarded in topics courses are dependent upon the number of lecture hours required of the student. Refer to Class Schedule.

**Note:** May be taken 3 times

Topics in English. See class schedule for specific topic covered. Course title will designate subject covered.