

ENGINEERING (AS.EGN)

ASSOCIATE OF SCIENCE

Program Outcomes: Upon successful completion of this program a student will be able to:

- employ science and mathematical skills commonly used in engineering fields.
- design a system, component, or process to meet engineering requirements.
- examine engineering problems and determine a strategy.
- describe and differentiate modern engineering tools and practices.

REQUIRED MAJOR COURSES:

COURSES SHARED BY ALL TRACKS

Course Name and Number	Units
EGN 1R Introduction to Engineering	2
MAT 3A Analytical Geometry and Calculus I	4
MAT 3B Analytical Geometry and Calculus I	4
PHY 4A General Physics I/Mechanics	4
PHY 4B General Physics II/Electricity and Magnetism	4
A programming class: Choice of EGN 5 or CSS 2A or CSS 1	3-4

Subtotal: 21-22 units

MECHANICAL/AEROSPACE/MANUFACTURING ENGINEERING TRACK

EGN 8 Statics	3
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CIVIL ENGINEERING TRACK

EGN 8 Statics	3
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ELECTRICAL ENGINEERING TRACK

EGN 6 Circuit Analysis	4
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COMPUTER/SOFTWARE ENGINEERING TRACK


EGN 6 Circuit Analysis	4
CSS 2A Object Oriented Programming	4
EGN 7L Computer Interface with the Physical World Laboratory	1

GENERAL ENGINEERING TRACK

Choose ONE of the following:

EGN 4 Materials Science and Engineering	4
EGN 6 Circuit Analysis	4
EGN 8 Statics	3

REQUIRED MAJOR ELECTIVES

SELECT ONE EMPHASIS TO FOLLOW 	Units	Mechanical/ Aerospace/ Manufacturing	Civil	Electrical	Computer	General
Number of ADDITIONAL units to choose		23	22	12	15	20
<input type="checkbox"/> EGN-1L – Introduction to Engineering Lab	1	X	X	X	X	X
<input type="checkbox"/> EGN-2 – Engineering Graphics	3	X	X			X
<input type="checkbox"/> EGN-4 – Materials Science and Engineering	4	X	X			X
<input type="checkbox"/> EGN-5 – Programming and Problem-Solving in MATLAB	3			X	X	X
<input type="checkbox"/> EGN-6 – Circuit Analysis	4	X				X
<input type="checkbox"/> EGN-7L – Computer Interface with the Physical World Laboratory	1	X		X		X
<input type="checkbox"/> EGN-8 – Statics	3					X
<input type="checkbox"/> EGN-11 – Surveying	3		X			X
<input type="checkbox"/> BIO-1 – Fundamental Biological Concepts	5					X
<input type="checkbox"/> BIO-2 – General Zoology	5					X
<input type="checkbox"/> BIO-3 – General Botany	5					X
<input type="checkbox"/> CHM-1A – General Chemistry I	5	X	X	X	X	X
<input type="checkbox"/> CHM-1B – General Chemistry II	5					X
<input type="checkbox"/> CHM-12A – Organic Chemistry I	5					X
<input type="checkbox"/> CHM-12B – Organic Chemistry I	5					X
<input type="checkbox"/> PHY-4C – General Physics III/ Waves, Heat, Light, Sound, and Modern Physics	4	X	X	X	X	X
<input type="checkbox"/> MAT-3C – Analytical Geometry and Calculus III	4	X	X	X	X	X
<input type="checkbox"/> MAT-5 – Differential Equations	3	X	X	X	X	X
<input type="checkbox"/> MAT-4 – Linear Algebra	3	X	X	X	X	X
<input type="checkbox"/> CSS-1 – Intro to Computer Science & Programming Fundamentals	4					X
<input type="checkbox"/> CSS-2A – Object Oriented Programming	4			X		X
<input type="checkbox"/> CSS-2B – Data Structures and Algorithms	4			X	X	X
<input type="checkbox"/> CSS-3 – Computer Architecture and Assembly Language Programming	4				X	X
<input type="checkbox"/> CSS-7 – Discrete Structures	4				X	X

SUBTOTAL: 37-48 UNITS

General Education –Required Courses

Students must complete one of the following General Education Plans:

CSU-GE for STEM (see page 70)

33 units

IGETC for STEM (see page 72)

31 units

Students can double-count required courses and courses for General Education

Partial IGETC-CSU or CSU-GE certification is approved to meet the AS- Engineering general education. For the partial certification: (IGETC/CSU - All AREAS will be completed with minimum units/courses as required and listed on IGETC except AREAS 3 and 4, which is approved with 6 units/2 courses. CSU-GE All AREAS will be completed with minimum units/courses as required and listed on CSU-GE except AREAS C and D, which are approved with 6 units/2 courses). These GE courses are not waived but will be completed after transfer

TOTAL: 61-74 UNITS