Engineering AS Major - Active

Department: Engineering & Technology

Approval: December 2012

The Associate in Science Degree in Engineering offers students the skills to design functional products and systems based on a foundation formed from engineering, physical science, and mathematics coursework. Graduates generally transfer to four-year institutions as juniors where they can major in a variety of engineering disciplines: computer, electrical, electronics, mechanical, civil, industrial, chemical, or manufacturing. Others seek employment as engineering technicians or technologists.

Engineering students on the transfer track are encouraged to complete additional general education college requirements so they may earn the AS in Engineering as they transfer to a four-year institution.

The degree program is based upon the recommendation of the Engineering Liaison Committee which represents the University of California, California State Universities, private universities, and community college engineering schools and departments.

Upon completion of this degree, students will develop an understanding of the fundamental principles of the major fields of engineering. Students will develop problem solving skills that will enable them to solve a variety of practical engineering problems using the latest software tools such as word processing, spreadsheets, computational frameworks, computer aided design, and computer programming languages.

Learning Outcomes
Upon completion of this program, students will be able to:

- Employ problem solving skills in basic engineering, physics, and chemistry topics.
- Demonstrate math skills through differential equations.
- Compose, prepare, and communicate engineering, analyses, reports and presentation using applicable software.
- Design and conduct experiments and numerical simulations, analyze, and interpret general scientific and engineering information.

Consult the catalog for specific requirements and courses available to satisfy the graduation requirements for the Associate in Science Degree. So as to not duplicate course work, it is recommended that you try to satisfy the requirements of your targeted transfer institution(s) as well as those of City College.

If you wish to substitute another class because of specific requirements of your targeted transfer institution(s) you will attend, consult with an Engineering Department Advisor.

NOTE: Four-year universities may have additional course requirements for completion of lower division. Consult the Transfer Center or an Engineering Advisor for additional information. Other technical courses that typically transfer in engineering include CHEM 101B; ENGN 1A, 1B, 24, 36, 37, 45; MATH 115, 120, 130; PHYC 4D and 4DL.

Assuming students start this AS with transfer-level math and English eligibility, the minimum time for completion is 4 semesters. Completion time will vary based on student preparation and number of units completed per semester.

Courses Required for the Major in Engineering AS

Course	Units
Recommended First Semester:	
ENGN 10A - Introduction to Engineering: The Profession	2.00
ENGN 10B - Introduction to Engineering: Software Tools and Design	2.00
MATH 110A - Calculus I	5.00
Total:	9.00
Choose one of the following Chemistry courses:	
CHEM 101A - General College Chemistry	6.00
CHEM 103A - General Chemistry for Engineering	5.00
Total:	5.00 - 6.00
Subsequent Semesters Additional Major Requirements	

ENGN 20 - Introduction to Circuit Analysis	3.00
ENGN 20L - Introduction to Circuit Analysis Laboratory	1.00
ENGN 38 - Introduction to Programming Concepts and Methodologies for Engineers	3.00
MATH 110B - Calculus II	5.00
MATH 110C - Calculus III	5.00
MATH 125 - Differential Equations	3.00
PHYC 4A - Classical Mechanics for Scientists and Engineers	3.00
PHYC 4AL - Mechanics Laboratory for Scientists and Engineers	1.00
PHYC 4B - Electromagnetism for Scientists and Engineers	3.00
PHYC 4BL - Electromagnetism Laboratory for Scientists and Engineers	1.00
PHYC 4C - Waves and Thermodynmaics for Scientists and Engineers	3.00
PHYC 4CL - Waves and Thermodynamics Laboratory for Scientists and Engineers	1.00
Total:	32.00
Total:	**46.00 - 47.00**

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