

ENGINEERING SCIENCE

Associate in Science Degree | Transfer Degree | Department of Engineering, Physics and Technology

The Engineering Science curriculum is designed for students with a special interest in engineering and provides a thorough preparation in mathematics and physical science.

Graduates of this program may transfer to a senior college to continue their education in engineering and earn a baccalaureate degree in engineering.

Curriculum Coordinator: Dr. A. Lal

ENGINEERING SCIENCE CURRICULUM (PATHWAYS)

60 Credits required for AS Degree

Required Core

- A. English Composition (6 Credits)
 - B. Mathematical and Quantitative Reasoning¹
 - MTH 30 Pre-Calculus Mathematics *OR* MTH 31 Analytic Geometry and Calculus I (4 Credits)
 - C. Life and Physical Science¹
 - PHY 31 Physics I (4 Credits)
- SUBTOTAL 14**

Flexible Core

- A. World Cultures and Global Issues² (3 Credits)
 - B. U.S. Experience in its Diversity² (3 Credits)
 - C. Creative Expression² (3 Credits)
 - D. Individual and Society² (3 Credits)
 - E. Scientific World¹
 - PHY 32 Physics II (4 Credits) AND
 - CHM 11 General Chemistry I (4 Credits)
- SUBTOTAL 20**

Major Requirements

- EGR 11 Introduction to Engineering Design (1 Credit)
- EGR 21 Analysis Tools for Engineers *OR* EGR 31 Circuit Analysis (2-3 Credits)
- MTH 31 Analytic Geometry and Calculus I (0-4 Credits)
- MTH 32 Analytic Geometry and Calculus II (5 Credits)
- MTH 33 Analytical Geometry and Calculus III (5 Credits)
- MTH 34 Differential Equations and Selected Topics in Advanced Calculus (4 Credits)
- PHY 33 Physics III (4 Credits)
- Restricted Electives³ (0-5 Credits)

SUBTOTAL 26

¹ This program has received a waiver to require students to take MTH 30 or MTH 31 to fulfill Required Core Area B, PHY 31 to fulfill Required Core Area C, PHY 32 to fulfill Flexible Area E and CHM 11 to fulfill the 6th Flexible Area course. Note that MTH 30 is a prerequisite to MTH 31. If students transferring into this program complete different courses in these areas, they will be certified as having completed the Common Core requirements, but it may not be possible for them to finish their degree within the regular number (60) of credits.

² In choosing courses to fulfill Pathways Flexible Core requirements for Areas A, B, C and D, students are strongly advised to select courses from no fewer than three (3) different departments.

³ Select from the following:

- CHM 12 General Chemistry II (4 Credits) or CHM 22 General Chemistry II with Qualitative Analysis (5 Credits)
- CHM 31 Organic Chemistry I (5 Credits)
- EGR 21 Analysis Tools for Engineers (2 Credits)
- EGR 31 Circuit Analysis (3 Credits)
- ENG 223 Scientific and Technical Writing (3 Credits)
- ELC 96 Digital Systems I (4 Credits)