

Engineering (ENGIN)

ENGIN 7 Introduction to Computer Programming for Scientists and Engineers 4 Units

Department: Engineering

Course level: Undergraduate

Terms course may be offered: Fall, spring and summer

Grading: Letter grade.

Hours and format: 2 hours of Lecture, 1 hour of Discussion, and 4 hours of Laboratory per week for 15 weeks. 3 hours of Lecture, 1.5 hours of Discussion, and 6 hours of Laboratory per week for 10 weeks.

Prerequisites: Mathematics 1B (maybe taken concurrently).

Elements of procedural and object-oriented programming. Induction, iteration, and recursion. Real functions and floating-point computations for engineering analysis. Introduction to data structures. Representative examples are drawn from mathematics, science, and engineering.

The course uses the MATLAB programming language. Sponsoring departments: Civil and Environmental Engineering and Mechanical Engineering.

Formerly known as 77.

ENGIN W7 Introduction to Computer Programming for Scientists and Engineers 4 Units

Department: Engineering

Course level: Undergraduate

Term course may be offered: Summer

Grading: Letter grade.

Hours and format: 3 hours of web lecture, 1.5 hours of web discussion, and 6 hours of web laboratory per week for 10 weeks. This is an online course.

Prerequisites: Mathematics 1B (may be taken concurrently).

Elements of procedural and object-oriented programming. Induction, iteration, and recursion. Real functions and floating-point computations for engineering analysis. Introduction to data structures. Representative examples are drawn from mathematics, science, and engineering. The course uses the MATLAB programming language.

Instructor: Papadopoulos

ENGIN 10 Engineering Design and Analysis 3 Units

Department: Engineering

Course level: Undergraduate

Terms course may be offered: Fall and spring

Grading: Letter grade.

Hours and format: 3 hours of Lecture and 3 hours of Laboratory per week for 15 weeks.

This is an introduction to the profession of engineering and its different disciplines through a variety of individual design and analysis projects. Hands on creativity, teamwork, and effective communication are emphasized. Common lecture sessions address the essence of engineering design, the practice of engineering analysis, the societal context for engineering projects and the ethics of the engineering profession. Students develop design and analysis skills, and practice applying these skills to illustrative problems drawn from various mechanical engineering topics such as material testing, aerodynamics, controls and design.

Course Objectives: The objectives of the course are to: enhance critical thinking and design skills; introduce students to a broad view of engineering analysis and design; reinforce the importance of mathematics and science in engineering design and analysis; emphasize communication skills, both written and oral; develop teamwork skills; offer experience in hands on, creative engineering projects; provide an introduction to different fields of engineering; and introduce students to professional ethics and the societal context of engineering practice.

Student Learning Outcomes: Through active participation in this course, students will: begin to recognize the role of mathematics and