

Civil and Environmental Engineering (CIV ENG)

CIV ENG 11 Engineered Systems and Sustainability 3 Units

Department: Civil and Environmental Engineering

Course level: Undergraduate

Term course may be offered: Spring

Grading: Letter grade.

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

Prerequisites: Chemistry 1A, Mathematics 1A.

An introduction to key engineered systems (e.g., energy, water supply, buildings, transportation) and their environmental impacts. Basic principles of environmental science needed to understand natural processes as they are influenced by human activities. Overview of concepts and methods of sustainability analysis. Critical evaluation of engineering approaches to address sustainability.

Formerly known as Engineering 11. Instructors: Harley, Horvath, Hunt, Nelson

CIV ENG 24 Freshman Seminars 1 Unit

Department: Civil and Environmental Engineering

Course level: Undergraduate

Terms course may be offered: Fall and spring

Grading: The grading option will be decided by the instructor when the class is offered.

Hours and format: 1 hour of Seminar per week for 15 weeks.

The Berkeley Seminar Program has been designed to provide new students with the opportunity to explore an intellectual topic with a faculty member in a small-seminar setting. Berkeley seminars are offered in all campus departments, and topics vary from department to department and semester to semester.

Course may be repeated for credit as topic varies. Course may be repeated for credit when topic changes.

CIV ENG C30/MEC ENG C85 Introduction to Solid Mechanics 3 Units

Department: Civil and Environmental Engineering; Mechanical Engineering

Course level: Undergraduate

Terms course may be offered: Fall, spring and summer

Grading: Letter grade.

Hours and format: 3 hours of lecture and 1 hour of discussion per week.

4.5 hours of lecture and 1.5 hours of discussion per week for 10 weeks.

7.5 hours of lecture and 2.5 hours of discussion per week for 6 weeks.

Prerequisites: Mathematics 53 and 54 (may be taken concurrently); Physics 7A.

A review of equilibrium for particles and rigid bodies. Application to truss structures. The concepts of deformation, strain, and stress. Equilibrium equations for a continuum. Elements of the theory of linear elasticity. The states of plane stress and plane strain. Solution of elementary elasticity problems (beam bending, torsion of circular bars). Euler buckling in elastic beams.

Instructors: Armero, Papadopoulos, Zohdi

CIV ENG 60 Structure and Properties of Civil Engineering Materials 3 Units

Department: Civil and Environmental Engineering

Course level: Undergraduate

Terms course may be offered: Fall and spring

Grading: Letter grade.

Hours and format: 2 hours of Lecture and 3 hours of Laboratory per week for 15 weeks.

Introduction to structure and properties of civil engineering materials such as asphalt, cements, concrete, geological materials (e.g. soil and rocks), steel, polymers, and wood. The properties range from elastic, plastic and