

Civil Engineering Major — B.S.**C E 180. Senior Project (2)**

Prerequisite: senior standing in civil engineering or permission of instructor; approved subject; I E 182W or concurrently; C E 185 concurrently. Study of a problem under supervision of a faculty member; final typewritten report required. Individual project except by special permission. When taken concurrently, C E 180 and 185 satisfy the senior major requirement for the B.S. in Civil Engineering.

C E 185. Civil Engineering Practice (1)

Prerequisite: senior standing in civil engineering or permission of instructor; C E 180 concurrently. Practice of civil engineering; opportunities in civil engineering; transition from student to professional engineer; engineering ethics. Evaluation of design requirements, economic, and social considerations; student presentations. When taken concurrently, C E 180 and 185 satisfy the senior major requirement for the B.S. in Civil Engineering.

Communicative Disorders Major — B.A.**C D 110. Diagnostic Procedures (3)**

Prerequisite: senior standing or permission of instructor; C D 80, 90, 95, 102, 103, 105 must be taken concurrently with C D 107 (1 unit). Seminar in the selection and use of various speech, language, voice, and prosody tests and procedures used in the diagnostic process. Satisfies the senior major requirement for the speech pathology and audiology options of the B.A. in Communicative Disorders. (2 lecture, 2 lab hours)

C D 164. Elementary School Subjects for the Deaf (3)

Prerequisite: senior standing; C D 80, 95, 106; 12 upper-division units in the major; and permission of instructor. Seminar in detailed study of the process of teaching reading to deaf children. Investigation of classroom procedure and presentation of content areas (math, science, social studies); integration with visual instructional materials. Includes observation and demonstration. Satisfies the senior major requirement for the education of the deaf option of the B.A. in Communicative Disorders. (2 lecture, 2 lab hours)

**Computer Engineering Major — B.S.
Electrical Engineering Major — B.S.****ECE 180. Senior Project (2)**

Prerequisite: senior standing in electrical and computer engineering or permission of instructor; I E 182W or concurrently; approved subject. Study of a problem under supervision of faculty member; final typewritten report required. Individual project except by special permission. When taken in addition to ECE 183A, B, C, or D, this course satisfies the senior major requirement for the B.S. in Electrical Engineering and the B.S. in Computer Engineering. (Former E E 180)

ECE 183A. Electronic Circuits and Electrical Networks Laboratory (1)

Prerequisite: ECE 124, 138, 138L. Senior design laboratory. Signal measurement and analysis techniques for communication networks; discrete, hybrid, and integrated electronic circuit design and testing; analog and digital filter realization; computer-aided analysis and design of circuits and networks. When taken in addition to ECE 180, this laboratory satisfies the senior major requirement for the B.S. in Electrical Engineering and the B.S. in Computer Engineering. (3 lab hours) (Former E E 183A)

ECE 183B. Digital Devices and Systems Laboratory (1)

Prerequisite: ECE 85, 128. Senior design laboratory. Familiarization with a real-time microcomputer board, assembly language programming techniques, I/O interfacing, documentation, debugging, and testing. When taken in addition to ECE 180, this laboratory satisfies the senior major requirement for the B.S. in Electrical Engineering and the B.S. in Computer Engineering. (3 lab hours) (Former E E 183B)

ECE 183C. Physical Electronics and Electromagnetics Laboratory (1)

Prerequisite: ECE 114, 128, 128L, 136, 136L. Senior design laboratory. Solid state device and characterization; rf component design with stripline and microstrip techniques; electromagnetic signal analysis; noise reduction techniques; antenna pattern measurements; laser system design. When taken in addition to ECE 180, this laboratory satisfies the senior major requirement for the B.S. in Electrical Engineering and the B.S. in Computer Engineering. (3 lab hours) (Former E E 183C)

ECE 183D. Electrical Power and Control Systems Laboratory (1)

Prerequisite: ECE 121, 121L, 155 (or concurrently). Senior design laboratory. Mea-

surement of characteristics and testing of power systems, computer-aided design and simulation of power and control systems; design and testing of feedback control systems; parametric study of control system implementation. When taken in addition to ECE 180, this laboratory satisfies the senior major requirement for the B.S. in Electrical Engineering and the B.S. in Computer Engineering. (3 lab hours) (Former E E 183D)

Computer Science Major — B.S.**C Sci 198. Project (3)**

Prerequisite: senior standing in computer science or permission of instructor and approved subject. See *Criteria for Thesis and Project*. Study of a problem under the supervision of a faculty member. Presentation by the student in a seminar setting and a final report are required. Satisfies the senior major requirement for the B.S. in Computer Science. Approved for *SP* grading.

Construction Management Major — B.S.**Const 134. Architectural Design Problems (3)**

Prerequisite: senior standing or permission of instructor; Const 132. Conceptual planning and design of a large scale architectural project responding to the social and cultural context of the environment. Employing team research and analysis leading to the design and presentation on individual solutions with graphic and three-dimensional techniques. Satisfies the senior major requirement for the architecture specialty of the B.S. in Construction Management. (6 lab hours)

Const 150. Heavy Construction (3)

Prerequisite: senior standing or permission of instructor; Const 105, 116, 120. Problems and methods of solution in heavy construction from earth moving, paving, compacting to tunneling; administrative procedures, quantity surveying, estimating, scheduling, and bidding. Satisfies the senior major requirement for the B.S. in Construction Management. (2 lecture, 2 lab hours; field trips)

Const 151. Heavy Building Construction (3)

Prerequisite: senior standing or permission of instructor; Const 150. Problems and methods of solutions in the construction of heavy buildings; site, excavations, foundations, framework, heavy timber, reinforced concrete, structural steel, ma-