

ENGINEERING (ENGR)

Courses

ENGR 001. First-Year Design Experience. 0-3 Credits.

Introduction to the engineering profession and the engineering design process. Hands-on experiences that emphasize interdisciplinary teamwork, seeking and defining problems, and developing, fabricating and/or testing solutions. Data analysis and technical communications.

ENGR 002. Graphical Communication. 0 or 2 Credits.

Project-based course. Principles of computer-aided drafting/design; production of engineering drawings including: orthographic, auxiliary, section, pictorials and dimensioning, graphics and charts; applications in specific engineering disciplines.

ENGR 010. D1:Dvrsty Issues:Math/Sci/Egr. 3 Credits.

Diversity in CEMS: under-representation, environmental justice, gender/race participation, ethical considerations, urban planning, equal opportunity, Title IX. Landscape of race/gender in STEM.

ENGR 050. First Year Engineering Seminar. 0 or 1 Credits.

This first year experience seminar course exposes students to curricular options and career paths in engineering. Also introduces basic principles of engineering design through project-based laboratories. Students interact with faculty, professionals and peers in their fields.

ENGR 090. Internship. 1-3 Credits.

On-site supervised work experience combined with a structured academic learning plan directed by a faculty member or a faculty-staff team in which a faculty member is the instructor of record, for which academic credit is awarded. Offered at department discretion.

ENGR 092. Independent Study. 1-18 Credits.

A course which is tailored to fit the interests of a specific student, which occurs outside the traditional classroom/laboratory setting under the supervision of a faculty member, for which credit is awarded. Offered at department discretion.

ENGR 095. Special Topics. 1-18 Credits.

See Schedule of Courses for specific titles.

ENGR 101. Engineering Communications. 3 Credits.

Traditional technical and scientific writing forms, including outlines, summaries, abstracts, technical descriptions, research reports/papers and proposals; written and oral technical communication with technical and nontechnical audience; electronic professional portfolio. Prerequisites: ENGS 001; Engineering major.

ENGR 112. Building Information Modeling. 1-3 Credits.

Building Information Modeling (BIM) is a digital representation integrating the design tools used by building disciplines under a single parametric computer model. Buildings, facilities and infrastructure are modeled with special attention to mechanical, plumbing, electrical and structural systems. Prerequisite: ENGR 002 or Instructor permission.

ENGR 114. Advanced 3D Drafting. 3 Credits.

Creation of geometric solid representations of physical objects using three dimensional CAD. Introduces parametric design; analysis tools; assembly simulation; dimension methods & standards; tolerances & geometric tolerancing. Further addresses the design for manufacturing of machined parts; sheet metal; mold design. Prerequisite: ENGR 002 or Instructor permission.

ENGR 115. Infrastructure & Terrain Model. 1 Credit.

Three dimensional modeling of civil infrastructure using appropriate software to automate a wide range of land surveying and civil engineering tasks such as the land surveying input, parcels, surfaces, alignments, corridors, grading, pipe networks, and earthwork. Prerequisite: ENGR 002.

ENGR 116. Virtual Instrument Engineering. 1-3 Credits.

Introduces logical and electrical circuit modeling using computer-based virtualization tools in a graphical format. Includes circuit simulation; scripting, interfacing; signal processing; control of instruments and data acquisition. Prerequisite: ENGR 002 or Instructor permission. Cross-listed with: EE 116.

ENGR 190. Internship. 1-18 Credits.

On-site supervised work experience combined with a structured academic learning plan directed by a faculty member or a faculty-staff team in which a faculty member is the instructor of record, for which academic credit is awarded. Offered at department discretion.

ENGR 192. Independent Study. 1-18 Credits.

A course which is tailored to fit the interests of a specific student, which occurs outside the traditional classroom/laboratory setting under the supervision of a faculty member, for which credit is awarded. Offered at department discretion.

ENGR 195. Special Topics. 1-18 Credits.

See Schedule of Courses for specific titles.

ENGR 197. Teaching Assistantship. 1-3 Credits.

Undergraduate student service as a teaching assistant, usually in an introductory-level course in the discipline, for which credit is awarded. Offered at department discretion.

ENGR 198. Undergraduate Research. 1-18 Credits.

Undergraduate student work on individual or small team research projects under the supervision of a faculty member, for which credit is awarded. Offered at department discretion.

ENGR 290. Internship. 1-18 Credits.

On-site supervised work experience combined with a structured academic learning plan directed by a faculty member or a faculty-staff team in which a faculty member is the instructor of record, for which academic credit is awarded. Offered at department discretion.

ENGR 292. Independent Study. 1-18 Credits.

A course which is tailored to fit the interests of a specific student, which occurs outside the traditional classroom/laboratory setting under the supervision of a faculty member, for which credit is awarded. Offered at department discretion.

ENGR 295. Special Topics. 1-18 Credits.

See Schedule of Courses for specific titles.

ENGR 296. Special Topics. 1-18 Credits.

See Schedule of Courses for specific titles.

ENGR 297. Teaching Assistantship. 1-3 Credits.

Undergraduate student service as a teaching assistant, usually in an introductory-level course in the discipline, for which credit is awarded. Offered at department discretion.

ENGR 298. Undergraduate Research. 1-18 Credits.

Undergraduate student work on individual or small team research projects under the supervision of a faculty member, for which credit is awarded. Offered at department discretion.