

# Engineering (ENGR)

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## Courses

### **ENGR 100. Engineering Success Seminar. 1 hour.**

A general orientation course on skills pertinent to students for successful completion of their undergraduate degree. Course Information: Satisfactory/Unsatisfactory grading only. No graduation credit. Should be taken within the first semester after acceptance into the College of Engineering. Prerequisite(s): Admission to the College of Engineering. Degree-seeking students only.

### **ENGR 101. Engineering Success Seminar. 1 hour.**

General orientation course on careers in engineering with a focus on internship activities. Course Information: Satisfactory/Unsatisfactory grading only. No graduation credit. Required for participation in the Guaranteed Paid Internship Program (GPIP). Prerequisite(s): Open only to freshmen. Recommended background: Intended for freshmen who are participating in the Freshman Engineering Success Program.

### **ENGR 111. Engineering Practicum in Additive Manufacturing. 1 hour.**

Polymeric materials and process-specific aspects of lab safety; computer aided design for 3D printing including support structures; hand-on 3D printing projects; post-processing; integration with subtractive manufacturing. Course Information: Satisfactory/Unsatisfactory grading only. Extensive computer use required. Meets eight weeks of the semester. Prerequisite(s): Approval of the Department.

### **ENGR 112. Engineering Practicum in Subtractive Manufacturing. 1 hour.**

Relevant aspects of shop and machine safety; computer aided machining software; usage of manual and computer numerical control mill and router, laser cutter, lathe, drill press, belt sander and cutoff saw; integration with additive manufacturing. Course Information: Satisfactory/Unsatisfactory grading only. Meets eight weeks of the semester. Prerequisite(s): Approval of the Department.

### **ENGR 189. Minority Engineering Freshman and Transfer Student Orientation. 1 hour.**

Orientation for undergraduate minority engineering students; seminars, lectures and workshops by faculty, upperclass students, administration and industry representatives on topics relevant to ethnic minority groups. Course Information: Satisfactory/Unsatisfactory grading only. No graduation credit. Should be taken in the first semester after acceptance into the College of Engineering. Prerequisite(s): Admission to the College of Engineering. Class Schedule Information: To be properly registered, students must enroll in one Laboratory and one Lecture.

### **ENGR 193. Engineering Student Leadership Seminar. 1 hour.**

Peer student leadership topics in Engineering, team building events, self reflection, feedback and program assessment. Course Information: Satisfactory/Unsatisfactory grading only. May be repeated. Students may register in more than one section per term. No graduation credit. Prerequisite(s): Open only to freshmen.

### **ENGR 194. Special Topics in Engineering. 1-3 hours.**

Multidisciplinary engineering topics that vary from term to term depending on current student and instructor interests. Course Information: May be repeated. Students may register in more than one section per term.

### **ENGR 214. Advanced Practicum in Physical Prototyping. 1 hour.**

Advanced design software for digital manufacturing, 3d printing, CNC milling, laser and vinyl cutting, circuit boards and basic electronics and micro-controllers, shop and machine safety, relevant material properties. Course Information: Satisfactory/Unsatisfactory grading only. Extensive computer use required. Meets eight weeks of the semester. Prerequisite(s): Graduate standing; or consent of the instructor.

### **ENGR 289. Cooperative Engineering Practice. 0 hours.**

Off-campus participation in a governmental or industrial training program. Course Information: Satisfactory/Unsatisfactory grading only. May be repeated. Prerequisite(s): Enrollment in the Cooperative Engineering Program.

### **ENGR 293. Engineering Student Leadership Seminar. 1 hour.**

Peer student leadership topics in Engineering, team building events, self reflection, feedback and program assessment. Course Information: Satisfactory/Unsatisfactory grading only. May be repeated. Students may register in more than one section per term. No graduation credit. Prerequisite(s): Open only to sophomores.

### **ENGR 294. Special Topics in Engineering. 1-3 hours.**

Course on multidisciplinary engineering topics that vary from term to term depending on current student and instructor interests. Course Information: May be repeated. Students may register in more than one section per term.

### **ENGR 393. Engineering Student Leadership Seminar. 1 hour.**

Peer student leadership topics in Engineering, team building events, self reflection, feedback and program assessment. Course Information: Satisfactory/Unsatisfactory grading only. May be repeated. Students may register in more than one section per term. No graduate credit. Prerequisite(s): Open only to juniors.

### **ENGR 394. Special Topics in Engineering. 1-3 hours.**

Course on multidisciplinary engineering topics that vary from term to term depending on current student and instructor interests. Course Information: May be repeated. Students may register in more than one section per term.

### **ENGR 400. Engineering Law. 3 or 4 hours.**

Overview of the legal system. Legal principles affecting the engineering profession. Professional ethics in engineering. Intellectual property law. Basic contract and tort principles. Environmental law. Course Information: Same as MENG 400. 3 undergraduate hours. 4 graduate hours. Extensive computer use required. This is an online web-based course. Prerequisite(s): Senior standing or above.

### **ENGR 401. Engineering Management. 3 or 4 hours.**

Theory, strategy, and tactics of the use of project management including project planning, matrix management concept, and team meetings. Course Information: Same as MENG 401. 3 undergraduate hours. 4 graduate hours. Extensive computer use required. This is an online web-based course. Prerequisite(s): Senior standing or above.

### **ENGR 402. Intellectual Property Law. 3 or 4 hours.**

Patent, copyright, trade secret, mask work, and cyber-squatting legal and procedural principles; protection for novel software, biotech inventions, and business methods; and trademark protection for domain names. Course Information: Same as MENG 402. 3 undergraduate hours. 4 graduate hours. Extensive computer use required. This is an online web-based course. Prerequisite(s): Senior standing or above.

**ENGR 403. Reliability Engineering. 3 or 4 hours.**

Probability overview; statistics overview; system reliability modeling and prediction-static methods; system reliability modeling and prediction-dynamic methods; maintainability and availability; reliability optimization; and risk analysis. Course Information: Same as MENG 403. 3 undergraduate hours. 4 graduate hours. Extensive computer use required. This is an online web-based course. Prerequisite(s): Senior standing or above.

**ENGR 404. Entrepreneurship. 3 hours.**

Identify new business opportunities in technology, market value assessment, competition, business plan, funding acquisition, intellectual property protection and case studies. Course Information: Prerequisite(s): Open only to seniors; and consent of the instructor.

**ENGR 420. Engineering for Success. 1 hour.**

Interactive seminars will be given by persons with engineering degrees having shown high achievement in either engineering or non-engineering endeavors. Course Information: Satisfactory/Unsatisfactory grading only. Prerequisite(s): Junior standing or above.

**ENGR 436. Wireless Data. 3 or 4 hours.**

Data communications, existing Wireless Data Networks, planning, topology, performance, and operation. Course Information: Same as MENG 436. 3 undergraduate hours. 4 graduate hours. Previously listed as ENGR 410. Extensive computer use required. This is an online web-based course. Prerequisite(s): Senior standing or above and a course in digital communications and an introductory course in wireless communications.

**ENGR 493. Engineering Student Leadership Seminar. 1 hour.**

Peer student leadership topics in Engineering, team building events, self reflection, feedback and program assessment. Course Information: Satisfactory/Unsatisfactory grading only. May be repeated. Students may register in more than one section per term. No graduation credit. Prerequisite(s): Open only to Seniors.

**ENGR 494. Special Topics in Engineering. 1-4 hours.**

Course on multidisciplinary engineering topics that vary from term to term depending on current student and instructor interests. Course Information: May be repeated. Students may register in more than one section per term. Prerequisite(s): Junior standing or above; and consent of the instructor.