ENGLISH (ENG)

ENG Class Schedule (https://courses.illinois.edu/schedule/DEFAULT/DEFAULT/ENG)

Courses

ENG 100 Engineering Orientation credit: 0 Hours.
Orientation required of new freshmen in the College of Engineering. Approved for S/U grading only.

ENG 101 Engineering at Illinois credit: 1 Hour.
Introduction to undergraduate programs of study available in the College of Engineering and the potential careers of graduates of those programs. Intended for Division of General Studies students who may be interested in becoming an Engineering major or other students who wish to explore engineering careers. Approved for S/U grading only.

ENG 150 Entrepreneurship Foundations credit: 3 Hours.
Introduction of new business formation and global entrepreneurship concepts through group projects and real-world experience. Discussion focus on defining an entrepreneur, the impact of innovation and entrepreneurship, cluster economics and societal impact, market scalability, team dynamics, product and technology development, competitive landscape, building a personal mission statement and assessment, skills competencies, and constructing dashboards. Same as TE 150. Prerequisite: This course is restricted to Innovation LLC students.

ENG 191 International Dimensions of Engineering credit: 1 Hour.
Global views of the engineering profession presented by guest speakers. Key factors for success in global engineering practice, including industrial values, economics, politics, language, cultural values, and social trends. Development of individual plans to engage in international education to enhance career preparation.

ENG 198 Special Topics credit: 1 TO 4 Hours.
Subject offerings of new and developing areas of knowledge in engineering intended to augment the existing curriculum. See Class Schedule or college course information for topics and prerequisites. Approved for both letter and S/U grading. May be repeated in the same or separate terms if topics vary.

ENG 199 Undergraduate Open Seminar credit: 0 to 5 Hours.
Approved for both letter and S/U grading. May be repeated.

ENG 200 Introduction to Innovation credit: 1 Hour.
Fundamental concepts of entrepreneurship, creativity and innovation will be explored within the context of new and existing businesses. Creative thinking and inventive problem solving will be emphasized. Same as TE 200.

ENG 201 Cooperative Engineering Seminar credit: 0 Hours.
Discussion seminar addressing insights students have gained during co-op experiences. Presentations by co-op participants and discussion of presentation skills. Approved for S/U grading only. For on-campus Cooperative Education students only.

ENG 202 Cooperative Engineering Practice credit: 0 Hours.
Full-time practice of engineering in an off-campus government, industrial or research laboratory environment. Written work report, on-line Experiential Learning Report, and on-line ABET report required. Approved for S/U grading only. May be repeated. Approval of the Director of College of Engineering Experiential Learning Programs required to enroll. For Cooperative Education students only.

ENG 210 Engineering Apprenticeship credit: 0 Hours.
Part-time practice of engineering science in an on-campus research laboratory environment; summary report required. Approved for both letter and S/U grading. May be repeated.

ENG 250 From Idea to Enterprise credit: 2 Hours.
Fundamentals of technology entrepreneurship and critical areas of the entrepreneurship process: creating a successful startup and transforming it into a sustainable business, validating an idea and taking it to market, evaluation of new ideas, forming high-performance teams, and financing a technology-based startup. Field trips to local startups, businesses, the University Research Park, and Enterprise Works incubator included along with in-depth case studies, and a hands-on class project. Same as TE 250.

ENG 251 Technology & Management Seminar credit: 1 Hour.
Same as BADM 261. See BADM 261.

ENG 298 Special Topics credit: 1 to 4 Hours.
Subject offerings of new and developing areas of knowledge in engineering intended to augment the existing curriculum. See Class Schedule or college course information for topics and prerequisites. Approved for both letter and S/U grading. May be repeated in the same or separate terms if topics vary.

ENG 299 Engineering Study Abroad credit: 0 to 18 Hours.
Illinois credit placeholder for foreign study and mechanism to maintain continuous Illinois enrollment while studying abroad. A detailed proposal must be submitted by the student for approval by the student's department and the college office prior to such study abroad. Final determination of credit and its application toward the degree is made by the college office after a review of the student's work abroad. (Summer Session, 0 to 6 hours).

ENG 300 Engineering Transfer Orientation credit: 0 Hours.
Orientation required of off-campus transfer students in the College of Engineering. Approved for S/U grading only.

ENG 310 Engineering Internship credit: 0 Hours.
Full-time or part-time practice of engineering in an off-campus government, industrial, or research laboratory environment. Written work report, on-line Experiential Learning Report and on-line ABET report required. Approved for S/U grading only. May be repeated.

ENG 315 Learning in Community credit: 3 Hours.
Service-learning dedicated to benefiting nonprofit organizations. Learning through inquiry, acquisition of skills and knowledge to address projects, and development of project and team skills. Student teams work on a project of importance proposed by and in partnership with each organization. Projects vary by term. See Class Schedule. May be repeated in the same term to a maximum of 6 hours. May be repeated in separate terms to a maximum of 12 hours.

ENG 333 Creativity, Innovation, Vision credit: 4 Hours.
Personal creativity enhancement via exploration of the nature of creativity, how creativity works, and how to envision what others may not. Practice of techniques and processes to enhance personal and group creativity and to nurture a creative lifestyle. Application to a major term project providing the opportunity to move an idea, product, process or service from vision to reality. Same as TE 333.
ENG 360  Lectures in Engineering Entrepreneurship  credit: 1 Hour.
Fundamental concepts of entrepreneurship and commercialization of new technology in new and existing businesses. Guest speaker topics vary, but typically include: evaluation of technologies and business ideas in genera; commercializing new technologies; financing through private and public sources; legal issues; product development; marketing; international business issues. Same as TE 360. May be repeated in separate terms to a maximum of 2 hours, if topics vary; instructor approval required. Prerequisite: For undergraduate students only.

ENG 397  Undergraduate Research Abroad  credit: 1 to 4 Hours.
Research completed under faculty supervision at a location outside of the United States. Topics and type of assistance vary. No graduate credit. May be repeated in separate terms up to 6 hours. Prerequisite: Consent of instructor; Department and college approval of research plan submitted prior to enrollment. Not available to freshman.

ENG 398  Special Topics  credit: 1 to 4 Hours.
Subject offerings of new and developing areas of knowledge in engineering intended to augment the existing curriculum. See Class Schedule or college course information for topics and prerequisites. Approved for both letter and S/U grading. May be repeated in the same or separate terms if topics vary.

ENG 401  Developing Breakthrough Projects  credit: 1 to 4 Hours.
Project-based exploration with teams of students working together in a large innovation and entrepreneurial context. Encourage development of innovative, leadership, and entrepreneurial skill sets, including financing, marketing, sales, operations, business plans, and management. Same as TE 401. 1 to 4 undergraduate hours. 1 to 4 graduate hours. May be repeated.

ENG 450  Startups: Inc, Fund, Contracts, IP  credit: 3 Hours.
Explore legal tools used in constructing and operating companies. Topics include: issues with business formation, intellectual property, NDA, contracts, and other corporate legal issues impacting startups. Same as TE 450. 3 undergraduate hours. 3 graduate hours.

ENG 451  Success in the Workplace  credit: 2 Hours.
Guided experiential learning that facilitates the development of professional skills for students participating in career-related internships. Basic business skills such as reading a financial statement and annual report, understanding contracts, and understanding corporate strategy. Interpersonal skills necessary to succeed in industry such as networking, leadership, and communication. 2 undergraduate hours. No graduate credit.

ENG 460  Entrepreneurship for Engineers  credit: 1 Hour.
Fundamental concepts of entrepreneurship and commercialization of new technology in new and existing engineering and high-tech businesses. Guest speaker topics vary, but typically include: evaluation of technologies and business ideas in genera; commercializing new technologies; financing through private and public sources; legal issues; product development; marketing; international business issues. Same as TE 460. 1 undergraduate hour. 1 graduate hour. Credit is not given for both ENG 360 and ENG 460.

ENG 461  Technology Entrepreneurship  credit: 3 Hours.
Product design, marketing, financials, and the general business planning preparation required for start-up companies. Many start-up companies have emerged from this course. Students can work in teams (members can be from outside of class) or individually. Students without a particular idea may be provided an option to participate in PIRL (Product Innovation Research Lab) with the School of Art & Design, but spots are limited. Same as TE 461. 3 undergraduate hours. 3 graduate hours. Prerequisite: MATH 231.

ENG 465  Business Technical Consulting  credit: 4 Hours.
Consulting process, problem definition, project management, technology commercialization, interpersonal skills, human resources management, leadership, and followership. Consulting teams formed work directly with a real business client for twelve weeks on a project jointly defined by the client and team. Same as TE 465. 4 undergraduate hours. 4 graduate hours. Credit is not given for both ENG 465 and BADM 445.

ENG 466  High-Tech Venture Marketing  credit: 2 Hours.
Cornerstone marketing concepts for innovators and engineers to enable analysis of products and technologies from a marketing perspective: engineering product development and adoption life cycle; objectives and strategies; marketing management; communication skills; sales process and tactics; special considerations for new high-tech engineering products and innovations. Same as TE 466. 2 undergraduate hours. 2 graduate hours. Credit is not given for both ENG 466 and BADM 365. Prerequisite: ENG 360.

ENG 471  Seminar Energy & Sustain Engrg  credit: 1 Hour.
Challenges of developing energy systems and civil infrastructure that are sustainable in terms of resource availability, security, and environmental impact. Guest lecturers focus on: (i) global challenges – future energy demand, geologic sources of energy, climate change, energy-water nexus, energy and security; (ii) markets, policies and systems – economic incentives, policy and law, life cycle analyses; (iii) opportunities for change – CO2 sequestration, renewable power, bioenergy feedstocks, biofuels for transportation, energy use in buildings, advanced power conversion, the smart grid. 1 undergraduate hour. 1 graduate hour. Prerequisite: MATH 220 or MATH 221; one of CHEM 104, CHEM 204, PHYS 101, PHYS 211. Recommended: NPRE 201.

ENG 491  Interdisciplinary Design Proj  credit: 1 to 4 Hours.
Disciplined, multi-department, team-structured project design experience with an overall (or major phase) end-of-term completion date. Projects involve design specification through a proposal, analyses of cost and other tradeoffs among alternative designs, design review, fabrication and assembly, functional and environmental testing, and demonstrations (as applicable). Reports and presentations at the end of each term. Individual engineering activities as well as team responsibilities. 1 to 4 undergraduate hours. No graduate credit. Senior standing required. May be repeated. Credit toward the degree is determined by the student’s major department. Prerequisite: Consent of instructor.

ENG 498  Special Topics  credit: 1 to 4 Hours.
Subject offerings of new and developing areas of knowledge in engineering intended to augment the existing curriculum. See Class Schedule or college course information for topics and prerequisites. Additional fees may apply. See Class Schedule. 1 to 4 undergraduate hours. 1 to 4 graduate hours. Approved for Letter and S/U grading. May be repeated in the same or separate terms if topics vary.

ENG 510  Engineering Practice  credit: 0 Hours.
Full-time or part-time practice of engineering in an off-campus government, industrial or research laboratory environment. Written work report, on-line Experiential Learning report, and on-line ABET report required. Approved for S/U grading only. May be repeated.

ENG 560  Managing Advanced Technol I  credit: 1 Hour.
Business perspective of managing advanced technology in industry: strategic context of advanced technology; analytical financial tools used to estimate its potential value; legal concepts important in its management; interpersonal issues related to leading and advocating on behalf of advanced technology groups. Same as TE 560.

Information listed in this catalog is current as of 04/2016
ENG 561  Managing Advanced Technol II  credit: 1 Hour.
Continuation of ENG 560. Deepening of insights previously gained by the
use of case studies. Same as TE 561. Prerequisite: ENG 560.

ENG 565  Technol Innovation & Strategy  credit: 2 Hours.
Concepts and frameworks for analyzing how firms can create,
commercialize and capture value from technology-based products and
services. Business, commercialization, and management aspects of
technology. Emphasis on reasons that existing firms or startups which
have successfully commercialized products or services fail to sustain
their success as technology changes and evolves. Same as TE 565.
Prerequisite: STAT 400.

ENG 566  Finance for Engineering Mgmt  credit: 2 Hours.
Cornerstone financial concepts for engineering management to enable
analysis of engineering projects from a financial perspective: income
statements; the balance sheet; cash flow statements; corporate
organization; the time value of money; net present value; discounted
cash flow analysis; portfolio theory. Same as TE 566. Prerequisite:
STAT 400.

ENG 567  Venture Funded Startups  credit: 1 Hour.
Concepts, tools, and language used by venture capitalists (VCs).
Venture-scale opportunity assessment and articulation; venture capital
financing and valuation; deal structure; term sheets; financial plans for
startups; customer development and marketing; product iterations; sales
execution. Same as TE 567. Prerequisite: ENG 566.

ENG 571  Theory Energy & Sustain Engrg  credit: 3 or 4 Hours.
Mathematical, scientific, engineering, and economic bases needed to
analyze sustainable energy systems and civil infrastructure. Evaluation
of current practice and future development of (i) energy extraction and
conversion processes from geological, biological, and non-biological
resources; (ii) energy usage for transportation, in residential and
commercial buildings, and by industry. 3 or 4 graduate hours. No
professional credit. Prerequisite: Credit or concurrent registration in
ENG 471.

ENG 572  Energy Systems Practicum  credit: 1 to 8 Hours.
Literature research and development of written and oral communication
skills for preparing for undertaking, completing, and reporting on an
internship or equivalent experience. Written report, development of a Web
site, and oral presentation required on how experience in an internship
or equivalent experience relates to pertinent reading material. 1 to 8
graduate hours. No professional credit. May be repeated in separate
terms to a maximum of 8 hours. Prerequisite: NPRE 481 recommended.

ENG 573  Energy Systems Project  credit: 1 to 8 Hours.
Design project pertinent to energy systems. Report, development of
a Web site, and oral presentation required. 1 to 8 graduate hours. No
professional credit. May be repeated in separate terms to a maximum of
8 hours. Prerequisite: Recommended: NPRE 481.

ENG 598  Special Topics  credit: 1 to 4 Hours.
Subject offerings of new and developing areas of knowledge in
engineering intended to augment the existing curriculum. See Class
Schedule or college course information for topics and prerequisites. May
be repeated in the same or separate terms if topics vary.