

ENGR - ENGINEERING

ENGR 600 Engineering Graduate Study Abroad

Credits 1 to 15. 1 to 15 Lecture Hours.

For students in approved study abroad and reciprocal educational exchange programs. May be taken two times for credit.

Prerequisites: Graduate classification in engineering; admission to approved program abroad; approval of study abroad coordinator.

ENGR 611 Enterprise Basics for Technical Entrepreneurs

Credits 3. 3 Lecture Hours.

Aspects of entrepreneurship for a technical enterprise; elements of a business including idea generation, startup financing, staffing, product design and production, marketing and selling a product; focus on the front end of the venture: product design and development, financing, identifying and attracting key personnel, and actually starting up company.

Prerequisites: Graduate classification in the college of engineering.

ENGR 612 Sales, Operations, and Manufacturing for Technology Companies

Credits 3. 3 Lecture Hours.

Challenges faced in a start-up entity with respect to product manufacturing, operations and supply chain management, product pricing strategies, and sales and marketing; focus on small start-up to young mid-size enterprises.

Prerequisites: Graduate classification in the college of engineering.

ENGR 621 Technology Company Management, Leadership, and Corporate Culture

Credits 3. 3 Lecture Hours.

Strategic challenges associated with enterprise management and leadership; establishing and maintaining a sustainable brand; developing an effective corporate culture; dealing with global competition; case studies in strategic thinking.

Prerequisites: Graduate classification in the college of engineering.

ENGR 630 Fundamentals of Subsea Engineering

Credits 3. 3 Lecture Hours.

Orientation to subsea engineering fundamentals; includes SURF (Subsea, Umbilicals/Controls, Risers, Flowlines) equipment and configurations; exposure to practical, industry focused problems; subsea equipment components; design considerations and design drivers; subsea production operations; integrity critical maintenance activities.

Prerequisites: Graduate classification, enrollment in the College of Engineering or approval of instructor.

ENGR 632 Subsea Project Implementation

Credits 3. 3 Lecture Hours.

Overview of the realization of a subsea development project; includes all stages from discovery to pre-commissioning of the subsea infrastructure.

Prerequisite: ENGR 630 or concurrent enrollment.

ENGR 640 Subsea Hardware Design

Credits 3. 3 Lecture Hours.

Basic elements (bolting, seals, flanges & hubs, valves, fittings, connections, and actuators) that make up subsea hardware assemblies; understanding of how these elements work together in a system.

Prerequisites: ENGR 630 or concurrent enrollment, or approval of instructor.

ENGR 641 Subsea Umbilical and Control System Design

Credits 3. 3 Lecture Hours.

A practical view of subsea umbilical and controls system project realization from concept selection through installation and offshore acceptance testing.

Prerequisites: ENGR 630, or concurrent enrollment.

ENGR 642 Subsea Pipeline Design

Credits 3. 3 Lecture Hours.

A practical view of pipeline project realization from concept selection through installation and offshore acceptance testing.

Prerequisites: ENGR 430 or ENGR 630, or concurrent enrollment, or approval of instructor.

ENGR 643 Subsea Riser Design

Credits 3. 3 Lecture Hours.

A practical view of riser project realization from concept selection through installation and offshore acceptance testing.

Prerequisites: Graduate classification; ENGR 430 or ENGR 630, or concurrent enrollment, or approval of instructor.

ENGR 650 Flow Assurance and Operability of Subsea Systems

Credits 3. 3 Lecture Hours.

Hydrocarbon production and transport from offshore fields to the host facilities, including prevention and remediation of phenomena that hinder fluid flow in production systems; subsea architecture, hydrodynamic and thermal considerations, reservoir fluid characterization and analysis, solids management, thermal hydraulics and production chemistry.

Prerequisites: Graduate classification; enrollment in the College of Engineering; ENGR 630 or concurrent enrollment, or approval of instructor.

ENGR 651 Subsea Production Operations

Credits 3. 3 Lecture Hours.

Multiphase hydrocarbon production and transport from offshore fields to host facilities under both steady-state and transient conditions; includes reservoir and SURF system management through chemical gas and water injection, surface and subsea processing, testing and maintenance through all phases of a subsea development.

Prerequisites: Graduate classification; enrollment in the College of Engineering; ENGR 630 or concurrent enrollment, or approval of instructor.

ENGR 661 Product Lean Launch for Engineers

Credits 3. 2 Lecture Hours. 2 Lab Hours.

Exercises in the creation of an engineering-centric business using lean startup principles; customer and market validation; value proposition creation; minimum viable product (MVP) development; customer value chain discovery; communication skill training; development of a business model canvas for a student-developed engineering product business idea.

Prerequisites: ENGR 611 and ENGR 662; or approval of instructor.

ENGR 662 Engineering Entrepreneurship Hour

Credit 1. 1 Lecture Hour.

Engagement with successful technology entrepreneurs from technical sectors across engineering and the nation; challenges faced by and characteristics of successful entrepreneurs and their strategies in launching and sustaining businesses on technology innovation; network with highly successful entrepreneurs and develop relations valuable to professional careers; development of speaking and presentation skills; networking with industry professionals in support of entrepreneurship.

Prerequisites: Graduate classification in College of Engineering.

ENGR 667 Project Management for Engineers

Credits 3. 3 Lecture Hours.

An introduction to project management for engineers of all disciplines; principles of managing projects throughout their life-cycle, from the identification of needs to the completion and closing stage; emphasis on the project management process and associated tools and techniques.

Prerequisites: Graduate classification in engineering and approval of instructor.

ENGR 677 Science, Technology, Engineering and Mathematics (STEM) Teaching Professional Development

Credit 1. 1 Lecture Hour.

Center for Teaching Excellence (CTE) consultation and faculty mentoring in STEM teaching; course topic and syllabus design; learning outcomes and assessment; teaching methodology; reflection on teaching philosophy; reflection on teaching as research. Must be taken on satisfactory/unsatisfactory basis.

Prerequisites: Graduate classification and approval of instructor.

Cross Listing: GEOS 677 and SCEN 677.

ENGR 681 Professional Development Seminar

Credits 0-1. 0-1 Other Hours.

Topics of interest related to the professional practice of engineering.

ENGR 684 Professional Internship

Credits 1 to 10. 1 to 10 Other Hours.

Supervised experience of one academic year in industry where students can learn to apply their textbook-based skills to problems in the real-world environment.

Prerequisites: Admission to the Doctor of Engineering program and graduate classification.

ENGR 685 Directed Studies

Credits 1 to 6. 1 to 6 Other Hours.

Design or research problems executed either individually or as a team.

Prerequisites: Graduate classification; approval of graduate advisor.

ENGR 689 Special Topics in...

Credits 1 to 4. 1 to 4 Lecture Hours.

Advanced topics of current interest in engineering. May be repeated for credit.

Prerequisite: Approval of instructor.

ENGR 698 Writing for Publication

Credits 3. 3 Lecture Hours.

Writing in academic disciplines and settings. Writing for different audiences and purposes. Style; planning and development of academic journal articles; grant proposals; correspondence; oral presentations; technical reports. Permission of departmental/college graduate advisor.

Prerequisite: advanced standing in master's/doctoral programs.