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 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 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 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  
Credit 1. 1 Other Hour.  
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.