ENG in Industrial and Systems Engineering Academic Assessment Plan 2012-2013

College of Engineering
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Office of the Provost

University of Florida

Institutional Assessment

Continuous Quality Enhancement

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Academic Assessment Plan for ENG in Industrial and Systems Engineering

College of Engineering

A. Mission

University

The University of Florida is a public land-grant, sea-grant and space-grant research university, one of the most comprehensive in the United States. The university encompasses virtually all academic and professional disciplines. It is the largest and oldest of Florida's eleven universities, a member of the Association of American Universities and has high national rankings by academic assessment institutions. Its faculty and staff are dedicated to the common pursuit of the university's threefold mission: teaching, research and service.

The University of Florida belongs to a tradition of great universities. Together with its undergraduate and graduate students, UF faculty participate in an educational process that links the history of Western Europe with the traditions and cultures of all societies, explores the physical and biological universes and nurtures generations of young people from diverse backgrounds to address the needs of the world's societies.

The university welcomes the full exploration of its intellectual boundaries and supports its faculty and students in the creation of new knowledge and the pursuit of new ideas.

- *Teaching* is a fundamental purpose of this university at both the undergraduate and graduate levels.
- *Research and scholarship* are integral to the educational process and to the expansion of our understanding of the natural world, the intellect and the senses.
- *Service* reflects the university's obligation to share the benefits of its research and knowledge for the public good. The university serves the nation's and the state's critical needs by contributing to a well-qualified and broadly diverse citizenry, leadership and workforce.

The University of Florida must create the broadly diverse environment necessary to foster multi-cultural skills and perspectives in its teaching and research for its students to contribute and succeed in the world of the 21st century.

These three interlocking elements — teaching, research and scholarship, and service — span all the university's academic disciplines and represent the university's commitment to lead and serve the state of Florida, the nation and the world by pursuing and disseminating new knowledge while building upon the experiences of the past. The university aspires to advance by strengthening the human condition and improving the quality of life.

College

The College of Engineering fosters and provides world-class programs in engineering education, research and service to enhance the economic and social well-being of the citizens of Florida, the nation and the world.

Department

The Department’s mission is to develop critical thinkers and provide Industrial Engineering and Operations Research solutions for complex analytical problems in business, government and society in general.

B. Student Learning Outcomes and Assessment Measures

SLO Type	SLO	Assessment Method	Delivery Mode
Knowledge	Proficiency in the core methodological and application areas of operations research and industrial engineering, including mathematical modeling and analysis of business problems, customized development of solutions for these problems, and the use of information technologies for solution delivery.	Students must maintain satisfactory classroom performance. Assessments are carried out by exams in the two required classes (ESI 6314: Deterministic Methods of Operations Research, and 6321: Applied Probability Methods in Engineering). Assessment is performed by the course instructors (who complete a scorecard.)	Campus/EDGE
Skills	Contribution of research to the student's field of expertise through practical application.	All ENG students must write and orally defend a thesis before graduation. The thesis is evaluated based on the significance of new contributions to the field or application of existing methods to new problems. The thesis committee, including at least one committee member from outside the department, is responsible for evaluating the thesis.	Campus
Professional Behavior	Ability to effectively and professionally communicate industrial engineering concepts and information in written and oral forms.	All ENG students must write and defend a thesis before graduation. The thesis committee, including at least one committee member from outside the department, is responsible for evaluating the written and presentation.	Campus

C. Research

The ENG degree requires the writing of a thesis. This can cover the development of new theory, but emphases practical application, such as the application of a current methodology to a new problem. A member of the graduate faculty at the University of Florida advises the thesis with oversight from a committee, and each committee member must also be a member of the graduate faculty. (The graduate faculty is a subset of University of Florida faculty whose responsibility includes the development of novel research contributions. Non-graduate-faculty members can be appointed to a committee by special petition.) The thesis is to be orally defended.

D. Assessment Timeline

Program: ENG in Industrial and Systems Eng. College of Engineering

Assessment SLOs	Assessment 1	Assessment 2
Knowledge		
Proficiency in the core methodological and application areas of operations research and industrial engineering	Scorecards from instructors of ESI 6314 Deterministic Methods in Operations Research	Scorecards from instructors of ESI 6321 Applied Probability Methods in Engineering
Skills		
Contribution of research to the student's field of expertise through practical application.	Thesis defense	
Professional Behavior		
Ability to effectively and professionally communicate industrial engineering concepts and information in written and oral form	Rubrics from thesis committee	

E. Assessment Cycle

Assessment Cycle for:
Program: ENG in Industrial and Systems Eng. College of Engineering

Analysis and Interpretation: June-August
Program Modifications: Completed by November
Dissemination: Completed by December

Year SLOs	12-13	13-14	14-15	15-16
Knowledge				
Proficiency in the core methodological and application areas of operations research and industrial engineering	x	x	x	x
Skills				
Contribution of research to the student's field of expertise through practical application.	x	x	x	x
Professional Behavior				

Ability to effectively and professionally communicate industrial engineering concepts and information in written and oral form	x	x	x	x

F. Measurement Tools

The knowledge SLO is measured by means of scorecards (http://www.ise.ufl.edu/about/sacs-accreditation/) completed by instructors of ESI 6314 Deterministic Methods of Operations Research and ESI 6321 Applied Probability Methods in Engineering. These two required courses cover the core methodological and application areas of operations research and industrial engineering. The committee's acceptance of the written thesis serves as the assessment of the skills SLO. The professional behavior SLO is measured by means of the rubric completed by the thesis committee chair after the thesis defense. The rubric is attached in the appendix for reference.

G. Assessment Oversight

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H. Appendix

Figure 1. Thesis Defense Presentation Rubric.

Defense Presentation

CATEGORY \ POINTS		20		15		10		5		0
Presentation Delivery	x	Presentation flows with practice evident. Speakers are clear and engage audience.		Presentation flows with practice evident. Not all speakers engage audience.		Presentation flows with practice evident. No speakers engage audience.		Presentations suffers in parts due to lack of flow.		Presentation suffers from lack of flow with need of further practice.
Presentation Materials	x	Materials were appropriate and desgined well.		Materials were appropriate but with minor flaws (spelling, size, etc.)		Materials were appropriate but with major flaws (spelling, size, etc.)		Materials used were inappropriate.		No presentation materials utilized.
Problem Presentation		Problem and background presented clearly and succintly.	x	Problem and background given, but not in sufficient detail.		Problem and background only noted briefly.		Problem presented briefly with no background information.		Problem not defined.
Solution Presentation	x	Solution approach effectively demonstrated and questions answered effetively.		Solution approach effectively demonstrated.		Solution approach hard to follow.		Solution approach presentation incomplete.		Solution approach not presented.
Ability to Answer Questions	x	Questions were answered completely and succinctly.		Questions were answered completely but not succinctly.		Questions were answered but either incomplete or incorrect.		Questions were answered unsatisfactorily.		Questions were not answered.
		80		15		0		0		0

Subtotal	95
Add/Reduce	0
Total	95

Comments