

UNIVERSITY OF CENTRAL FLORIDA  
COLLEGE OF ENGINEERING

Department of Industrial Engineering and Management Systems  
Bachelor of Science in Industrial Engineering Program

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<u>Unit Mission</u>	<u>Program Intended Outcome/Objective</u>	<u>Assessment Criteria and Procedures</u>	<u>Assessment Results/Comments</u>	<u>Use of Results</u>
The Department of Industrial Engineering and Management Systems is committed to preparing highly skilled industrial engineers and leaders for the global economy of the 21st century.	1. Current graduates possess and can apply knowledge of industrial engineering principles and techniques.	1a. A panel of faculty members familiar with the senior-level work of graduation candidates will be convened each Spring Semester. Each member of the panel will rate (outstanding, above average, average, below average, poor) each candidate's knowledge of: i.) mathematics, science, and engineering; ii.) experimental design and procedures, data analysis and interpretation; and iii.) system or process design. At least 75% of the ratings will be average or better in each of the areas listed above.	1a. Data for Spring '97 and Summer '97 graduates (percentage of ratings average or better): knowledge of math (94%), knowledge of science (94%), knowledge of engineering science (96%); knowledge of IE fundamentals (93%), ability to design an experiment (95%), ability to analyze and interpret data (97%), ability to design a system or process (95%).	1a. Criteria met. Given the high level of student performance, IEMS's expectations of student performance will be raised to 85% average or better ratings by faculty in our quest for continuous improvement.
		1b. Industrial mentors assigned to senior design project teams and project clients will complete a review of each team. At least 75% of the project teams will be judged as having applied their knowledge of 1a.i-iii at a level that meets or exceeds expectations.	1b. Every senior project team in the Spring '97 Semester was judged by its mentor and its client to have met or exceeded expectations in all areas surveyed.	1b. Criteria met. No program change warranted. Present assessment procedure to be continued.

2. Current graduates demonstrate competence in the professional practice of industrial engineering.

2a. A panel of faculty members familiar with the senior-level work of graduation candidates will be convened each Spring Semester. Each member of the panel will rate each candidate's: i.) ability to identify, formulate, and solve open-ended, unstructured, industrial engineering problems using the engineering design process in a team environment; ii.) ability to communicate effectively orally and in writing; and iii.) knowledge of contemporary issues and understanding of the impact of engineering solutions on global and societal problems. At least 75% of the candidates will have ratings of average or better in the areas listed above.

2a. Data for Spring '97 and Summer '97 graduates (percentage of ratings average or better):  
ability to identify and formulate problems (98%), oral communication skills (85%), written communication skills (83%), knowledge of contemporary issues, global/societal problems, and their relevance to IE (100%).

2a. Criteria met. Given the high level of student performance, IEMS's expectations of student performance will be raised to 85% average or better ratings by faculty in our quest for continuous improvement. Further, IEMS will determine the cause(s) of the perceived shortcomings of students in the communications area. IEMS will adopt a standard reference textbook for technical writing and presentations.

2b. Industrial mentors assigned to senior design project teams and project mentors will conclude that at least 75% of the project teams performed at an average or better level with respect to the criteria 2a.i-iii.

2b. Every senior project team in the Spring '97 Semester was judged by its mentor and its client to have met or exceeded expectations in all areas surveyed.

2b. Criteria met. No program change warranted. Present assessment procedure to be continued.

2c. A panel of outside experts will be convened to review the final presentations and reports of two or more senior project teams each year. The panel will conclude that at least 75% of the project teams reviewed performed at an average or better

2c. 4 of 5 teams reviewed were judged to be average or better in all areas. 1 team received below average ratings from 1 of 5 outside experts in the following areas: identifying a problem, structuring a problem, and knowledge of contemporary

2c. Criteria met. No program change warranted. Present assessment procedure to be continued.

<p>3. Current graduates understand and value professional ethics, integrity, and diversity.</p>	<p>level with respect to the criteria 2a.i-iii.</p>	<p>issues.</p>	<p>3. A panel of faculty members familiar with the senior-level work of graduation candidates will be convened each Spring Semester. Each member of the panel will rate each candidate's understanding of professional ethics, integrity, and diversity issues. Clients and mentors will rate each senior project team. At least 80% of faculty ratings and 80% of client and mentor ratings will be average or better for graduates' understanding and appreciation of ethics, integrity, and diversity.</p>	<p>3. Of the ratings by the IEMS faculty panel, 99% were average or better for understanding and appreciation of professional ethics, integrity, and diversity. All senior project mentors and clients judged their student team as meeting or exceeding expectations for integrity and diversity.</p>	<p>3. Criteria met. IEMS faculty think that professional ethics, integrity, and diversity are important issues for aspiring engineers. All syllabi for IEMS courses will include a statement on academic dishonesty. Professional ethics issues will be addressed in each IEMS course. Matters of diversity will also be addressed where appropriate.</p>
<p>4. Graduates seeking professional employment or admission to graduate education programs will be successful in doing so within 6 months of graduation.</p>	<p>4. At least 90 percent of graduate respondents seeking professional employment or admission to graduate education programs will accept employment or be accepted in a graduate program within 6 months of graduation.</p>	<p>4. 70% of the '96 grads (7 of 10 respondents), 100% of the '95 grads (2 of 2), and none of the '94 grads (0 of 2) and '93 grads (0 of 1) responding were employed within 6 months of graduation. 57% of the '97 grads (4 of 7) already are employed. None of the respondents report having attended graduate school.</p>	<p>4. Criterion not met, but employment of graduates is improving. IEMS will continue to increase awareness of IE among potential employers by expanding the pool of senior project clients.</p>	<p>IEMS recognizes that recruiting and marketing of students go hand in hand. Larger programs provide larger pools of qualified applicants to companies. Recent recruiting efforts intended to increase enrollment of qualified students will continue.</p>	
<p>5. Graduates are satisfied with their academic experience.</p>	<p>5a. Three years after graduation, at least 80% of respondents will</p>	<p>5a. All three respondents from the '92 through '94 classes are</p>	<p>5a. Criterion met. Since the respondents completed their</p>		

say that they are satisfied with their academic preparation in selected areas for the practice of industrial engineering. Possible ratings are "excellent", "good", "fair", and "poor".

satisfied with their IEMS educational experience. Two respondents indicate that writing skills, teamwork skills, and practical engineering skills are "fair". All other skills are rated "excellent" or "good".

degrees, several changes have been instituted in the curriculum, particularly in the senior design sequence, to address communications, teamwork, and practical engineering skills.

Further, IEMS will adopt a standard reference textbook for technical writing and presentations.

5b. Graduation candidates will be surveyed each Spring Semester. At least 80% will say that they are satisfied with their academic preparation in selected areas. Possible ratings are "excellent", "good", "fair", and "poor".

5b. Of seven 1997 graduates responding, 5 are satisfied and 2 are very satisfied with their IEMS educational experience. 4 of 7 graduates indicate their writing skills are "fair". Other skills are rated "excellent" or "good".

5b. Criterion met. IEMS will adopt a standard reference textbook for technical writing and presentations.