

**UNIVERSITY OF CENTRAL FLORIDA  
COLLEGE OF ENGINEERING**

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

November, 1998

<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>
<p>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.</p>	<p>1. Current graduates possess and can apply knowledge of industrial engineering principles and techniques.</p>	<p>1a. A panel of faculty members familiar with the senior-level work of graduation candidates will be convened every other 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 85% of the ratings will be average or better in each of the areas listed above.</p>	<p>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%).</p>	<p>1a. No program change warranted. (IEMS's expectation has been raised from 75% to 85% average or better ratings since the data was collected.)</p>
		<p>1b. Industrial mentors assigned to senior design project teams and project clients will complete a review of each team. At least 85% of the project teams will be judged as having applied their knowledge of 1a.i-iii at a level that meets or exceeds expectations.</p>	<p>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.</p>	<p>1b. No program change warranted. (IEMS's expectation has been raised from 75% to 85% average or better ratings since the data was collected.)</p>

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 every other 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 85% of the candidates will have ratings of average or better in the areas listed above.

2b. Industrial mentors assigned to senior design project teams and project mentors will conclude that at least 85% of the project teams performed at an average or better level with respect to the criteria 2a.i-iii.

2c. A panel of outside experts

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%).

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. In 1998, 22 evaluations by mentors and clients were received. In all areas but verbal communication, the ratings were "average" or "better". There were two ratings of "below average" and one rating of "poor" in the verbal communication area.

2c. In 1997, 4 of 5 teams

2a. No program change warranted. (IEMS's expectation has been raised from 75% to 85% average or better ratings since the data was collected.)  
IEMS faculty have reviewed texts on technical communications and will select a standard reference text for technical writing and presentations.

2b. No program change warranted. (IEMS's expectation has been raised from 75% to 85% average or better ratings since the 1997 data was collected.)

2c. No program change

will be convened to review the final presentations and reports of two or more senior project teams every other year. The panel will conclude that at least 85% of the project teams reviewed performed at an average or better level with respect to the criteria 2a.i-iii.

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 issues.

warranted. (IEMMS's expectation of student performance has been raised from 75% to 85% average or better ratings since the data was collected.)

3. Current graduates understand and value professional ethics, integrity, and diversity.

3. A panel of faculty members familiar with the senior-level work of graduation candidates will be convened every other 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 85% of faculty ratings and 85% of client and mentor ratings will be average or better for graduates' understanding and appreciation of ethics, integrity, and diversity.

3. Of the 1997 ratings by an IEMMS 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. In 1998, all mentors and clients providing ratings indicated that their student team met or exceeded expectations for integrity and diversity.

3. All syllabi for IEMMS courses are to include a statement on academic dishonesty. Professional ethics issues are to be addressed in each IEMMS course. Matters of diversity are to be addressed where appropriate. (IEMMS's expectation has been raised from 80% to 85% average or better ratings since the 1997 data was collected.)

4. Graduates seeking professional employment or admission to graduate education programs will be successful in doing so within 6 months of graduation.

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.

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 were employed by graduation. 2 of 3 graduates from 1998 indicate that they were looking for a position at the time of graduation; the third respondent was not looking for a

4. IEMMS will continue to increase awareness of IE among potential employers. One way is to add to the pool of senior design project clients. IEMMS recognizes that recruiting students and marketing graduates go hand in hand. Larger programs provide larger pools of qualified applicants to employers. Recruiting remains a priority

5. Graduates are satisfied with their academic experience.

5a. Three years after graduation, at least 80% of respondents will 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".

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".

position. None of the respondents report having attended graduate school.

5a. All three respondents from the '92 through '94 classes are satisfied with their IEMMS educational experience. Two respondents indicate that writing skills, teamwork skills, and practical engineering skills are "fair". All other skills are rated "excellent" or "good".

5b. Of seven 1997 graduates responding, 5 are satisfied and 2 are very satisfied with their IEMMS educational experience. 4 of 7 graduates indicate their writing skills are "fair". Other skills are rated "excellent" or "good". Survey responses were collected from 3 graduates in 1998. 2 graduates are very satisfied and the other is satisfied with their IEMMS educational experience. 2 of the graduates rated of their skills as "excellent". The other respondent thinks his/her writing

for the IEMMS faculty.

5a. Since the respondents completed their degrees, several changes have been instituted in the curriculum, particularly in the senior design sequence, to address communications, teamwork, and practical engineering skills. Additionally, the introduction of EGN 1006 and EGN 1930 have brought these topics into freshman-level courses.

Further, IEMMS faculty have reviewed texts on technical communications and will select a standard reference text for technical writing and presentations.

5b. IEMMS faculty have reviewed texts on technical communications and will select a standard reference text for technical writing and presentations.

and teamwork skills are "fair";  
presentation, critical thinking,  
and problem solving skills are  
"good"; and technical knowledge  
and practical engineering skills  
are "excellent".