



Industrial and Manufacturing Engineering Department Assessment Report – Master of Science in Industrial Engineering

Goals

The five program Goals were originally developed by the Department faculty in conjunction with the department alumni and department visiting committee for the Bachelor of Industrial Engineering degree. All the goals are also appropriate for the MSIE as well.

1. Practice industrial engineering in one or more of the following enterprise areas, for example: manufacturing systems, quality systems, operations analysis, production planning, and facilities planning and design.
2. Define and diagnose problems from an industrial engineering perspective, and implement solutions in an enterprise-wide environment.
3. Communicate effectively with technically and professionally diverse audiences at all levels of the enterprise.
4. Collaborate with others as a member or as a leader of an engineering or cross-functional enterprise team.
5. Continue to pursue life-long learning to develop knowledge professionally and keep current with the latest advancements in industrial engineering.

Outcomes

The above listed goals are met by the achievement of the following 7 program outcomes:

1. Acquired a good knowledge of some advanced engineering analysis tools.
2. Acquired a good knowledge of engineering design tools.
3. Learned how to use analysis and design tools to design practical systems.
4. Learned how to access the literature in my field of study.
5. Used the literature in my field of study (outside of texts).
6. Learned to improve my oral communications skills.
7. Learned to improve my written communications skills.



Data Collection

The MSIE students are surveyed when they file for graduation, and the responses are filed. At the end of Spring semester the responses are summarized and the summary is reviewed for problems, trends and possible changes.

Findings and Review

The Masters Student exit survey uses a 5 point scale for rating. We consider 3.00 on a 5 point scale as an acceptable level of achievement. We consider a change of 1.00 or more for a 5 point scale as significant.

The level of achievement for an outcome is calculated as the weighted average of the scores. For example, suppose 10 respondents all score an outcome as 5 on a 5 point scale. Then the score for the outcome is calculated as

level = (5*10 + 4*0 + 3*0 + 2*0 + 1*0) / 10 = 5.00

We assess each outcome in turn. In this assessment, note that although the department graduated 8 masters students, the number of respondents in the last class was only 2.

Also note that this is only the second year for submission of the NCA Assessment report for the MSIE degree. The department will work to continue to formalize the process.

Outcome 1: Acquired a good knowledge of engineering design tools.

By our admission requirements, students of the MSIE program already have a baccalaureate degree in science, mathematics or engineering and so the engineering design tools referred to are Industrial Engineering design tools. Students gain knowledge of these by their study of the core course requirements of IME520 – Design of Experiments, IME530 – Operations Research, IME560 – Manufacturing Engineering, and IME562 – Production and Inventory Control.

Response

Table with 3 columns: Masters exit survey for year, 2006, 2007. Row 1: compare to a perfect score of 5, 4.75, 4.00

Conclusions and recommendations:

The outcome appears to be achieved to an acceptable level since all scores are above 3.00. No changes are required at this time.



Outcome 2: Learned how to use analysis and design tools to design practical systems.

Response

<i>Masters exit survey for year</i>	2006	2007
<i>compare to a perfect score of 5</i>	4.37	5.00

Conclusions and recommendations:

The outcome appears to be achieved to an acceptable level since all scores are above 3.00. No changes are required at this time.

Outcome 3: Learned how to access the literature in my field of study.

Response

<i>Masters exit survey for year</i>	2006	2007
<i>compare to a perfect score of 5</i>	4.50	4.50

Conclusions and recommendations:

The outcome appears to be achieved to an acceptable level since all scores are above 3.00. No changes are required at this time.

Outcome 4: Used the literature in my field of study (outside of texts).

Response

<i>Masters exit survey for year</i>	2006	2007
<i>compare to a perfect score of 5</i>	4.75	4.50

Conclusions and recommendations:

The outcome appears to be achieved to an acceptable level since all scores are above 3.00. No changes are required at this time.

Outcome 5: Learned to improve my oral communications skills.

Response

<i>Masters exit survey for year</i>	2006	2007
<i>compare to a perfect score of 5</i>	4.50	4.00



Conclusions and recommendations:

The outcome appears to be achieved to an acceptable level since all scores are above 3.00. No changes are required at this time.

Outcome 6: Learned to improve my written communications skills.

Response

<i>Masters exit survey for year</i>	2006	2007
<i>compare to a perfect score of</i>	4.75	4.00

Conclusions and recommendations:

The outcome appears to be achieved to an acceptable level since all scores are above 3.00. No changes are required at this time.

Outcome 7: Acquired a good knowledge of some advanced engineering analysis tools.

Response

<i>Masters exit survey for year</i>	2006	2007
<i>compare to a perfect score of 5</i>	4.63	4.00

Conclusions and recommendations:

The outcome appears to be achieved to an acceptable level since all scores are above 3.00. No changes are required at this time.

Comments

The results indicate that the program outcomes are being achieved to a high level. Two areas that may need explanation are related to questions 4 through 7. The MSIE courses are technical and most of the projects and reports do not require extensive literature searches or oral presentations. Therefore, we would expect these to be low, but the results indicate that they are to the contrary, quite good. Questions 6 and 7 deal with the ability to communicate, and these also show good results.

The department will continue to work to formalize the process.