



Academic year 2024-2025

MES-Industrial Engineering - MES-MSIE Learning Outcomes

Science **NOT MET**

An ability to identify, formulate, and solve complex engineering problems by applying principles of engineering, science, and mathematics. The following rubric is used in assessment.



MEASURES	RESULTS	ACTIONS
<p>Thesis oral and written presentation</p> <p>Direct - Other</p> <p>Target</p> <p>75% of students achieve a score of 3 or above on the attached rubrics. Three faculty members evaluate the rubrics. The attached rubric has a high standard and 3 is the anticipated score for a thesis student. Since not all student projects are the same for all outcomes, the faculty selected a 75% standard.</p> <p>outcome metrics IE Masters.docx</p>	<p>NOT MET</p> <p>Thesis oral and written presentation</p> <p>■ Met ■ Approached</p>  <p>0% 100%</p> <p>Met: 67% Approached: 33%</p> <p>Met Total: 67% Not Met Total: 33%</p> <p>Analysis</p> <p>Too few students to develop an effective analysis plan. We will encourage thesis and pool data over multiple years.</p>	<p>Gather Additional Data</p> <p>COMPLETE</p> <p>The number of students graduated with thesis is too small to make policy actions. We will continue to monitor in future semesters.</p> <p>Recommended Due Date: 05/20/2025</p> <p>Other - [Encourage thesis]</p> <p>COMPLETE</p> <p>The department will encourage thesis students. Thesis allows students to have a project that can be shown on the resume and in job interviews. By having more thesis students, we can develop statistical valid analysis of our performance.</p> <p>Recommended Due Date: 05/20/2025</p>
<p>Number of Times Repeating Thesis Class</p> <p>Number of times that thesis course is required is a key measure of a students understanding of the outcomes learned in their coursework. Time required also measure time management and other characteristics. A problem with this metric would indicate a major issue with the program that would trigger a wide investigation of the issue.</p> <p>Indirect - Other</p> <p><i>Thesis: ENGR 5391</i></p> <p>Target</p> <p>Students should only take thesis course 2 semesters (thesis 1 and thesis 2). Students who require more than 2 semesters are having significant problems with one or more outcomes. Since thesis is research, requiring more than 2 semesters of thesis can occur on good projects. 50% of students should complete in two semesters. The 50% level is based on most projects being scoped to be completed in 2 semester and understanding that a few thesis projects might require additional time.</p>	<p>MET</p> <p>Number of Times Repeating Thesis Class</p> <p>■ Exceeded ■ Approached</p>  <p>0% 100%</p> <p>Exceeded: 50% Approached: 50%</p> <p>Met Total: 50% Not Met Total: 50%</p> <p>Analysis</p> <p>We had 2 students who completed in 2 semesters and 2 students who completed in 3 semesters. No students required more than 3 semesters.</p>	<p><i>No actions have been added.</i></p>

Conclusion

Too few students to develop an effective analysis plan. We will gather data over multiple years.

Design **MET**

An ability to apply engineering design to produce solutions appropriately. The following rubric is used in assessment.



MEASURES	RESULTS	ACTIONS
<p>Thesis oral and written presentation</p> <p>Direct - Other</p> <p>Target</p> <p>75% of students achieve a score of 3 or above on the attached rubrics. Three faculty members evaluate the rubrics. The attached rubric has a high standard and 3 is the anticipated score for a thesis student. Since not all student projects are the same for all outcomes, the faculty selected a 75% standard.</p> <p>outcome metrics IE Masters.docx</p>	<p>MET</p> <p>Thesis oral and written presentation</p> <p>■ Met</p>  <p>0% 100%</p> <p><i>Values are not shown when too close to each other. Click or use arrow keys to see details.</i></p> <p>Met: 100%</p> <p>Met Total: 100%</p> <p>Not Met Total:</p> <p>Analysis</p> <p>The outcome was achieved.</p>	<p>No actions have been added.</p>
<p>Number of Times Taking ENGR 5391</p> <p>Number of times that thesis course is required is a key measure of a students understanding of the outcomes learned in their coursework. Time required also measure time management and other characteristics. A problem with this metric would indicate a major issue with the program that would trigger a wide investigation of the issue.</p> <p>Indirect - Other</p> <p>Thesis: ENGR 5391</p> <p>Target</p> <p>Students should only take thesis course 2 semesters (thesis 1 and thesis 2). Students who require more than 2 semesters are having significant problems with one or more outcomes. Since thesis is research, requiring more than 2 semesters of thesis can occur on good projects. 50% of students should complete in two semesters. The 50% level is based on most projects being scoped to be completed in 2 semester and understanding that a few thesis projects might require additional time.</p>	<p>MET</p> <p>Number of Times Taking ENGR 5391</p> <p>■ Exceeded ■ Approached</p>  <p>0% 100%</p> <p>Exceeded: 50%</p> <p>Approached: 50%</p> <p>Met Total: 50%</p> <p>Not Met Total: 50%</p> <p>Analysis</p> <p>Two students required 2 semesters to complete thesis and 2 students required 3 semesters to complete. This result is reasonable and does not indicate a major issue.</p>	<p>No actions have been added.</p>

Conclusion

All 3 students had reasonable designs.

Modeling **NOT MET**

An ability to use modern engineering tools to produce engineering analysis in a systematic manner. The following rubric is used in assessment.

MEASURES	RESULTS	ACTIONS
<p>Thesis oral and written presentation.</p> <p>Direct - Presentation</p> <p>Target</p> <p>75% of students achieve a score of 3 or above on the attached rubrics. Three faculty members evaluate the rubrics. The attached rubric has a high standard and 3 is the anticipated score for a thesis student. Since not all student projects are the same for all outcomes, the faculty selected a 75% standard.</p> <p>outcome metrics IE Masters.docx</p>	<p>NOT MET</p> <p>Thesis oral and written presentation.</p> <p>■ Met ■ Approached</p>  <p>0% 100%</p> <p>Met: 67% Approached: 33%</p> <p>Met Total: 67% Not Met Total: 33%</p> <p>Analysis</p> <p>The sample size is too small. The results from multiple years will be pooled until 10 students are analyzed. Our action plans are listed under outcome 1.</p>	<p>Gather Additional Data</p> <p>COMPLETE</p> <p>This analysis is based on 3 thesis students. Additional data will be gathered in future semesters.</p>
<p>Number of Times Repeating Thesis Class</p> <p>Number of times that thesis course is required is a key measure of a students understanding of the outcomes learned in their coursework. Time required also measure time management and other characteristics. A problem with this metric would indicate a major issue with the program that would trigger a wide investigation of the issue.</p> <p>Indirect - Other</p> <p>Thesis: ENGR 5391</p> <p>Target</p> <p>Students should only take thesis course 2 semesters (thesis 1 and thesis 2). Students who require more than 2 semesters are having significant problems with one or more outcomes. Since thesis is research, requiring more than 2 semesters of thesis can occur on good projects. 50% of students should complete in two semesters. The 50% level is based on most projects being scoped to be completed in 2 semester and understanding that a few thesis projects might require additional time.</p>	<p>MET</p> <p>Number of Times Repeating Thesis Class</p> <p>■ Exceeded ■ Approached</p>  <p>0% 100%</p> <p>Exceeded: 50% Approached: 50%</p> <p>Met Total: 50% Not Met Total: 50%</p> <p>Analysis</p> <p>Two students required 2 semesters to complete thesis and 2 students required 3 semesters to complete. This result is reasonable.</p>	<p>No actions have been added.</p>

General Outcome Actions

ACTIONS

Gather Additional Data

Not Started

This outcome is based on a very limited number of students (3 total). One student was weak in this metric. We will pool results over multiple years until a valid sample size is researched.

Recommended Due Date: 05/14/2025

Conclusion

The sample size is too small.

MES-Industrial Engineering - MES-MSIE Success Outcomes

Percent employment in field within 3 months **MET**

Percent employment in field within 3 months.

MEASURES	RESULTS	ACTIONS
Employment within 3 months Direct - Counts Target 80% of students find employment within 3 months.	MET Summary Sample size is too small for meaningful data. Only 1 of the 4 graduates has been graduate more than 3 months. That graduate was successful in finding employment but does not have a LinkedIn profile that can be located. Analysis The one student in the date range for this analysis found a job. Too few students too evaluate. For our related non-thesis degree (MEM and MSIE, a LinkedIn search indicated problems for students finding jobs.	Other - [Encourage Thesis] COMPLETE Students need to be able to present research project to companies to get hired. For most students, doing a thesis is the best way to develop a project that can be demonstrated to a company. The department will strongly encourage students to do thesis work instead of coursework option. By encouraging thesis for all master students, we should be able to collect more data for this degree in future years. Recommended Due Date: 06/01/2025 Other - [Personal Branding] COMPLETE Include "Personal branding" as part of department orientation and several courses (required programming course and PIC). We need to get the students excited about building their brands. A side effect is marketing our brand to their networks. This short training could include some of the following: 1. Professional social media (LinkedIn) - describing your growth at Lamar is a part of branding. 2. Research publications (important) - Very important signal on resumes today. 3. Use electives to build a brand - Do not just take the easiest course. 4. Quality resume 5. Technical skills for their target job 6. Branding strategy. Building a brand is important in a challenging global labor market.

		<p>Branding will also increase the percentage of students who use LinkedIn and make this measure more accurate.</p> <p>This metric has too few student for this degree but the findings from the related non-thesis Master of Engineering and non-thesis master of Engineering Management can be applied.</p> <p>Recommended Due Date: 06/01/2025</p>
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Conclusion

Too few students for an effective analysis of results. A total of 4 students have graduated from the program with 3 in the spring semester. The one student who has been out of school for 3 months found a job (100%). A minimum of 10 graduates would be required for this assessment. The department will pool results over several years for next years assessment.