Program Learning Outcomes

The Ph.D. degree program in Mechanical Engineering is guided by a set of Learning Outcomes that define the skills, attributes, and knowledge that students should possess at the time of graduation. These learning outcomes include:

1. Mastery of fundamental concepts.
2. The ability to formulate research plans.
3. The ability to conduct independent research on open-ended research problems.
4. The ability to communicate technical concepts both orally and in writing, which lead to successful teaching practices when required.
5. The ability to maintain a current professionalization.

Assessment of Learning Outcomes

A variety of assessment tools are used for measuring student learning. These include:

1. A written examination (“Preliminary Exam”) to evaluate mastery of fundamentals. Performance on this examination is evaluated by a committee of faculty (outcome 1).
2. An oral examination (“Preliminary Exam”) to evaluate oral communication and research skills (outcomes 2, 3 and 4). Performance on this examination is evaluated by a committee of faculty.
3. Mandatory courses for TA training (ME302) and dedicated seminars as part of the Department’s Seminar Series (ME250) to discuss professionalization issues (e.g., ethics, resume/CV preparation, etc.) (outcome 5)
4. An oral examination to evaluate oral communication skills and the ability to define a research problem and plan for its solution (“Qualifying Exam”) (outcomes 2-4). Performance on this examination is evaluated by a committee of faculty.
5. Grades in courses that comprise the program of study (outcome 1). A list of core courses is outlined in the PhD program catalog. Additional courses relevant to the student’s research are suggested by the research and graduate advisor.
6. Annual evaluation of research performance by the primary thesis advisor (outcomes 2 and 3).
7. A dissertation to evaluate technical writing skills and the ability to conduct substantial novel research (outcomes 2-4). The dissertation is evaluated by the thesis committee comprised of faculty and other senior researchers.
8. A dissertation defense to evaluate oral communication skills and the ability to conduct substantial novel research (outcomes 1-4). The dissertation defense is evaluated by the thesis committee comprised of faculty and other senior researchers.
Assessment Plan for the MS Program (Plan I: Thesis)

Program Learning Outcomes
The M.S. Plan I degree program in Mechanical Engineering is guided by a set of Learning Outcomes that define the skills, attributes, and knowledge that students should possess at the time of graduation. These learning outcomes include:

1. Mastery of fundamental concepts.
2. The ability to formulate research plans (shorter scope than PhD).
3. The ability to assess current state of understanding and identify important research topics.
4. The ability to communicate technical concepts both orally and in writing.
5. The ability to maintain a current professionalization.

Assessment of Learning Outcomes
A variety of assessment tools are used for measuring student learning. These include:

1. Grades in courses that comprise the program of study (outcome 1).
2. Annual evaluation of research performance by the primary thesis advisor (outcomes 2 and 3).
3. A dissertation to evaluate technical writing skills and the ability to conduct substantial novel research. The dissertation is evaluated by the thesis committee comprised of faculty and other senior researchers (outcomes 3 and 4).
4. Mandatory courses for TA training (ME302) and dedicated seminars as part of the Department’s Seminar Series (ME250) to discuss professionalization issues (e.g., ethics, resume/CV preparation, etc.) (outcome 5).
5. A dissertation defense to evaluate oral communication skills and the ability to conduct substantial novel research (outcomes 3 and 4). The dissertation defense is evaluated by the thesis committee comprised of faculty and other senior researchers.
Assessment Plan for the MS Program
(Plan II: Comprehensive Exam)

Program Learning Outcomes
The M.S. Plan II degree program in Mechanical Engineering is guided by a set of Learning Outcomes that define the skills, attributes, and knowledge that students should possess at the time of graduation. These learning outcomes include:

1. Mastery of fundamental concepts.
2. The ability to maintain a current professionalization.

Assessment of Learning Outcomes
A variety of assessment tools are used for measuring student learning. These include:

1. Grades in courses that comprise the program of study (outcome 1).
2. A written comprehensive examination to evaluate mastery of fundamentals. Performance on this examination is evaluated by a committee of faculty (outcome 1).
3. Mandatory courses for TA training (ME302) and dedicated seminars as part of the Department’s Seminar Series (ME250) to discuss professionalization issues (e.g., ethics, resume/CV preparation, etc.) (outcome 2).