

Assessment Plan for Bachelor of Science in Mechanical Engineering

Identifying Information

School/College: College of Engineering

Undergraduate Degree/Major Program Name: Bachelor of Science in Mechanical Engineering

Faculty Director Contact/Title: Professor John Mitchell

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Student Learning Goals

The Mechanical Engineering curriculum is designed so that, by the time of graduation, students will have developed the following attributes:

- (a) an ability to apply knowledge of mathematics, science, and engineering
- (b) an ability to design and conduct experiments, as well as to analyze and interpret data
- (c) an ability to design a system, component, or process to meet desired needs within realistic constraints such as economic, environmental, social, political, ethical, health and safety, manufacturability, and sustainability
- (d) an ability to function on multidisciplinary teams
- (e) an ability to identify, formulate, and solve engineering problems
- (f) an understanding of professional and ethical responsibility
- (g) an ability to communicate effectively
- (h) the broad education necessary to understand the impact of engineering solutions in a global, economic, environmental, and societal context
- (i) a recognition of the need for, and an ability to engage in life-long learning
- (j) a knowledge of contemporary issues
- (k) an ability to use the techniques, skills, and modern engineering tools necessary for engineering practice

Plan for Assessing Each Student Learning Goal

Tables 1 and 2 provide plans for direct and indirect assessment of the ME learning goals.

Table 1. Direct assessment of ME student learning goals in required coursework, and collection plans.

Direct assessment in courses	ME Student Learning Goals											Data most recently collected	Cycle for Data Collection
	(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	(j)	(k)		
EPD 397 Tech Com				X		X	X	X	X	X		Spring 2014 – Fall 2014	Every 2 years
ME 314						X		X	X			Fall 2014	Every 3 years
ME 349/351/352			X	X		X	X	X				Fall 2014	Every 3 years
ME 342	X				X						X	Fall 2014	Every 3 years
ME 364	X				X						X	Fall 2014	Every 3 years
ME 370		X		X			X				X	Fall 2014	Every 3 years

Table 2. Indirect assessment activities where ME learning goals are assessed, and data collection plans.

Indirect Assessment Activities	ME Student Learning Goals													Data most recently collected	Cycle for Data Collection
	a	b	c	d	e	f	g	h	i	j	k	l			
EBI Senior Exit Survey	X	X	X	X	X	X	X	X	X	X	X	X		Fall 2014	Every year
Alumni Survey ¹														Fall 2014	Every <u>three</u> years

¹ ME uses the Alumni Survey to assess only our Educational Objectives and not our Learning Goals/Student Outcomes. Our Program Educational Objectives are broad, inspirational goals that we hope our graduates achieve a few years after graduation. Our PEO's are related to the student outcomes, but are broader goal statements.

Also provide answers to the following questions as part of your assessment plan:

1. **Who is responsible for assessment?** (identify an individual or team who will coordinate the implementation of the plan on an annual basis): **Dr. John Mitchell**

2. **What is the plan for review of the assessment information?**

The assessment results are sent to the Department Chair and to the Curriculum Committee. The Curriculum Committee, in consultation with the Chair, reviews the results and reports on them to the faculty at the Department meetings.

3. **What is the plan for production of an annual summary report?**

The Assessment Committee prepares a report summarizing the results of the assessment for the Curriculum Committee. The Curriculum Committee reports regularly to the faculty at the Department Meetings. Additionally, the Curriculum Committee prepares extensive minutes that cover the actions taken and distributes these minutes to the faculty.

4. **How will recommendations be implemented?**

The Curriculum Committee reviews the assessment results and decides if changes to the curriculum are needed. If changes are required, the committee discusses the results with the appropriate faculty involved in the courses to develop changes. Proposed changes are then discussed at the Department meetings and approved and then implemented as needed.

Undergraduate Degree Program Curriculum Mapping Worksheet

This worksheet **must be included** with the submission of the program’s assessment plan. Below are the ME learning goals (a through k) mapped to the required courses in the program.

Curriculum Map	The degree to which each course or experience contributes to which learning goal is indicated by “H” for high and “M” for Moderate.										
<u>Degree Program Courses or Experiences</u>	a	b	c	d	e	f	g	h	i	j	k
ME 231							H				
ME 331					M		M				H
ME 240	H				H						
ME 340	H		M		H						H
ME 342	H		M	M	H	M	M	M	H	M	M
ME 361	H				H						H
ME 363	H		M		H			M	M	M	H
ME 364	H		M		H			H	M	M	H
ME 306	H		M		H			M		M	H
ME 307		H	M	M			H				H
ME 313		M		M		H	M	H	H	M	M
ME 314		M	M	M		H	M	H	H	M	M
ME 368		H		H			H	M	M	M	M
ME 370		H		H		M	H	H	M	M	M
ME 349			H	H		H	H	M	M	M	M
ME 351			H	H		H	H	M	M	M	M
ME 352			H	H		H	H	M	M	M	M