

Table 4. Mapping of general education outcomes to the student learning outcomes and assessment methods of major courses in the B.S. in Mechanical Engineering program

<b>General Education Outcomes (CPP GE)</b>	<b>Course</b>	<b>Appropriate Learning Outcomes</b>	<b>Assessment Method</b>
<i>1a. Write Effectively</i>	ME 2011/L	5. Writing a professional report	Lab reports & project
	ME 3131L	2. Ability to write a technical report	Lab reports
	ME 4271	5. Ability to communicate effectively, both orally and written, in a professional manner.	Project

<i>1c. Find, evaluate, use and share information effectively and ethically</i>	ME 2011/L	2. Planning the procedure for a measurement test 3. Executing a team-based engineering test and performing uncertainty analysis	Lab reports & project
	ME 2331/L	2. Ability to develop engineering specifications 4. Ability to develop and evaluate concept designs 5. Ability to develop detail design models 10. Ability to work in teams, build prototypes of the design and present	Homework & projects
	ME 3131L	1. Ability to perform an engineering experiment 4. Ability to reduce experimental data	Lab reports & projects
	ME 3250/L	1-7. Ability to conduct design analysis, develop models, and design/select components for machinery applications 8. Ability to conduct a team design project	Consultation, progress reports, projects, & oral presentation
	ME 3501L	2. Ability to analyze, interpret, and extract material properties from load/displacement and torque/twist data 4. Ability to design and implement an experimental program based on an open ended question of mechanics or materials, and to analyze and interpret the data obtained from the experiment or select a material for a specified application.	Lab reports & activities
	ME 4271	1-4. 1. Ability to use Excel Solver to solve complex problems. 2. Ability to design and analyze a piping network system 3. Ability to design and analyze various heat exchangers. 4. Ability to design and analyze a	Homework, project & presentation

<i>Id. Construct arguments based on sound evidence and reasoning to support an opinion or conclusion</i>	ME 2331/L	1. Ability to practice sound engineering design principles 5. Ability to develop detail design models 6. Ability to calculate mechanical advantage and power 10. Ability to work in teams, build prototypes of the design and present	Homework & projects
	ME 3131L	2. Ability to write a technical report 4. Ability to reduce experimental data	Lab reports & projects
	ME 3250/L	1-7. Ability to conduct design analysis, develop models, and design/select components for machinery applications 8. Ability to conduct a team design project	Consultation, progress reports, projects, & oral presentation
	ME 3501L	6. The ability to sensibly select the best material for an engineering application by ranking the performance of different candidate materials with respect to a prioritized list of performance criteria.	Lab reports & activities
	ME 4271	1-4. 1. Ability to use Excel Solver to solve complex problems. 2. Ability to design and analyze a piping network system 3. Ability to design and analyze various heat exchangers. 4. Ability to design and analyze a thermal/fluid experiment.	Homework, project & presentation

<p><i>4b</i>  <i>Demonstrate activities, techniques or behaviors that promote intellectual or cultural growth</i></p>	ME 2331/L	<p>1. Ability to practice sound engineering design principles</p> <p>3. Ability to practice creativity techniques</p> <p>5. Ability to develop detail design models</p> <p>10. Ability to work in teams, build prototypes of the design and present</p>	Homework & projects
	ME 3250/L	<p>1-7. Ability to conduct design analysis, develop models, and design/select components for machinery applications</p> <p>8. Ability to conduct a team design project</p>	Consultation, progress reports, projects, & oral presentation
	ME 4271	<p>1-4. 1. Ability to use Excel Solver to solve complex problems.</p> <p>2. Ability to design and analyze a piping network system</p> <p>3. Ability to design and analyze various heat exchangers.</p> <p>4. Ability to design and analyze a</p>	Homework, project & presentation
		<p>thermal/fluid experiment.</p> <p>6. Ability to function in a multi-disciplinary team.</p>	

# Assessment Mapping SLO/ABET a-k/Courses

Student Outcomes	ABET Criterion a-k	Courses in placed to satisfy the criteria
1	a	all MATH, PHYS and ME required and technical elective courses
2	a	MAT114, MAT115, MAT116, MAT214, MAT215,ME214, ME215,ME218, ME219, ME311, ME312, ME316, ME319,ME340, ME406, ME415, ME435/L,ME 439/L
3	a	MAT224,ME214, ME220L, ME232/A, ME313L, ME330, ME435/L
4	a	All CHM courses, ME214, ME215, ME218, ME311, ME301, ME302, ME315,ME316, ME319
5	b	ME100L,ME220L,ME313L,ME350L,ME418/L,ME427, ME435/L,ME439/L, ME471/472/473,EGR481/482
6	c	ME233/L, ME325, ME406/A, ME418/L, ME427, ME435/L, ME471/472/473,EGR481/482
7	c	ME233/L, ME325, ME418/L, ME427, ME435/L,ME471/472/473,EGR481/482
8	d	ME100L,ME233/L, ME325, ME418/L, ME427, ME435/L,ME471/472/473,EGR481/482
9	e	All ME required and technical elective courses
10	f	EGR402, ME100L,ME233/L, ME325, ME418/L, ME427, ME435/L,ME471/472/473,EGR481/482, Upper Division Technical Electives
11	g	ME100L,ME220L,ME233/L, ME313L,ME325, ME350L,ME406/A, ME418/L, ME427, ME435/L,ME439/L,ME471/472/473,EGR481/482
12	h	ME100L,ME233/L, ME302,ME312, ME325, ME406/A, ME415, ME418/L, ME427, ME435/L,ME471/472/473,EGR481/482, Upper Division Technical Electives
13	i	ME100L,ME233/L, ME302,ME312, ME325, ME406/A, ME415, ME418/L, ME427, ME435/L,ME471/472/473,EGR481/482, Upper Division Technical Electives
14	j	ME100L,ME233/L, ME302,ME312, ME325, ME406/A, ME415, ME418/L, ME427, ME435/L,ME471/472/473,EGR481/482, Upper Division Technical Electives
15	k	EGR402, EGR403,ME100L, ME232/A, ME330, ME340, ME406/A,ME471/472/473,EGR481/482, Upper Division