Institutional Effectiveness Report
2018-19

Program: Mechanical Engineering BS

College and Department: College of Engineering – Mechanical Engineering

Contact: Mohan Rao

Mission: The Mechanical Engineering (ME) Department, within a regional and global context, will prepare its students for productive career in a competitive, dynamic, technologically-based society; will advance the knowledge of mechanical engineering principles and applications; and will serve the public.

VISION: The Mechanical Engineering Department at Tennessee Tech aspires to be recognized globally for outstanding education and research, leading to well-qualified engineers who are adaptive professionals, inquisitive, entrepreneurial and successful in engineering practice, research, and public service.

The B.S. in Mechanical Engineering (BSME) at Tennessee Tech is a traditional, on-campus lecture/laboratory program with on-ground course delivery offered almost exclusively during the day. There currently are no distance learning courses offered by the Mechanical Engineering Department. A co-op program is available through the Tennessee Tech Center for Career Development as an optional (but very popular) choice.

Program Goals:

1. Our graduates excel in diverse career paths using their engineering knowledge and professional skills to address complex problems and make positive impacts on

2. Our graduates serve their profession and the public as ethical team members and leaders with awareness of modern issues, commitment to inclusive collaboration, and effective communication.

3. Our graduates practice adaptive learning, expanding and enhancing their knowledge, creativity, and skills through professional development, continuing education, and/or earning advanced

Student Learning Outcomes:

It is expected that by the time of graduation, the Tech's ME students will have….

1. an ability to identify, formulate, and solve complex engineering problems by applying principles of engineering, science, and mathematics

2. an ability to apply engineering design to produce solutions that meet specified needs with consideration of public health, safety, and welfare, as well as global, cultural, social, environmental, and economic factors

3. an ability to communicate effectively with a range of audiences

4. an ability to recognize ethical and professional responsibilities in engineering situations and make informed judgments, which must consider the impact of engineering solutions in global, economic, environmental, and societal contexts

5. an ability to function effectively on a team w

7. *Senior Exit Interview Oral Focus Groups (supporting source of evidence)* The Senior Exit Interview Oral Focus Groups (SEIOFG) process consists of an open discussion forum of graduating seniors with the ME chair and associate chair. The interview serves as a valuable source of suggestions for

SO 2. An ability to apply engineering design to produce solutions that meet specified needs with consideration of public health, safety, and welfare, as well as global, cultural, social, environmental, and economic factors.

Assessment Instrument	2014-15	2015-16	2016-17	2017-18	2018-19
Alumni Survey		2.7	2.7	3.0	2.8
External Evaluation of Senior Design Projects				3.3	2.8
Instructional Outcome – Faculty Assessment				3.5	3.1
Instructional Outcome – Student Survey	2.8	2.6	2.8	2.9	2.7
Senior Exit Interview Written Survey		3.5	3.5	3.7	2.9
Overall Level of Attainment	2.8	2.9	3.0	3.3	2.9

SO3. An ability to communicate effectively with a range of audience.

Assessment Instrument	2014-15	2015-16	2016-17	2017-18	2018-19
Alumni Survey	2.2	2.8	3.1	2.9	3.1
Co-op Employer Survey	3.2	2.4	2.9	3.0	3.0
External Evaluation of Senior Design Projects				3.3	2.6
Grades in Communication Courses (Writing and Speech)	3.6	3.6	3.6	3.6	
Instructional Outcome – Faculty Assessment				3.4	3.1
Instructional Outcome – Student Survey	3.0	3.0	2.9	3.0	2.9
Senior Exit Interview Written Survey		3.5	3.4	3.6	2.9
Overall Level of Attainment	3.0	3.1	3.2	3.3	2.9

SO4. An ability to recognize ethical and professional responsibilities in engineering situations and make informed judgments, which must consider the impact of engineering solutions in global, economic, environmental, and societal contexts.

Assessment Instrument	2014-15	2015-16	2016-17	2017-18	2018-19
Alumni Survey	2.5	2.8	3.1	2.7	3.3
Co-op Employer Survey	3.2	2.5	2.9	3.0	3.1
External Evaluation of Senior Design Projects				3.3	2.7
Grades in General Education Courses		3.0	3.0	3.0	
Instructional Outcome – Faculty Assessment				3.3	2.8
Instructional Outcome – Student Survey	2.6	2.2	2.9	2.8	2.7
Senior Exit Interview Written Survey		3.9	3.6	2.9	3.0
Overall Level of Attainment	2.8	2.9	3.1	3.0	2.9

SO5. An ability to function effectively on a team whose members together provide leadership, create a collaborative and inclusive environment, establish goals, plan tasks, and meet objectives.

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SO7. An ability to acquire and apply new knowledge as needed, using appropriate learning strategies.

Assessment Instrument	2014-15	2015-16	2016-17	2017-18	2018-19
Alumni Survey	2.7	3.0	3.4	3.1	3.4
Co-op Employer Survey	3.3	3.0	3.1	3.2	3.2
External Evaluation of Senior Design Projects				3.4	2.7
Instructional Outcome – Faculty Assessment				3.3	2.7

Instructional Outcome –