

MET 5-YEAR ASSESSMENT REVIEW

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*Mechanical
Engineering
Technology*

WSU MET 5-Year Assessment Review

Program Introduction:

The Mechanical Engineering Technology (MET) program was introduced in the 1962-1963 school year and has been ABET accredited since 1972. Currently 124 credits are required to receive a Bachelor's degree in MET with 52 of those credits to be completed in the MET program itself. The program works closely with the Manufacturing Engineering Technology (MFET) program in the Engineering Technology building. An Associate of Science degree was added to the program in 1998 and can be used as the first two years of the Bachelor's degree.

Twenty-nine MET students are set to graduate this April; this number is slightly higher than the 27 students who graduated in April of last year. Enrollment for spring semester 2015 was 305 students which is slightly lower than the 339 students enrolled in spring 2014. This is due to the International students (primarily the Saudi students) being limited by their government in enrollment for each program.

Mission Statement:

The MET program mission statement includes the following:

“Graduates should be recognized as having mastered both theory and application of the knowledge needed in the discipline as stated by the Society of Mechanical Engineers.”

“Graduates will have the ability to work in different technologies by demonstrating that ability to effectively, creatively, and methodically solve mechanical engineering problems through experimentation, analysis, synthesis, and evaluation of data.

Program Strengths:

The curriculum for the MET program was created to meet the objectives and outcomes required by the ABET accreditation. According to this requirement, the curriculum is sufficient and covers the needed information. The faculty for the MET program is few in numbers but well qualified and both professors have years of experience in different industries ranging from aerospace to roller coaster design and testing.

One of the main strengths of the program is its integration of theory and application. The projects that are completed for Senior Project, Programming, Testing and Failure Analysis, and Measurements and Instrumentations give the students a well-balanced educational background. Faculty experience in the field also allows them to implement tests and projects that simulate real world engineering problems. The applied nature of the program helps students get jobs after graduation with local industries. Additionally, internship opportunities have increased through these industry collaborations which allows students to gain experience while in school.

Another strength of the MET program is the student/teacher relationship. Multiple students reported that the professors are very approachable and care about providing students with a good education. Some students said that they had attended school at other universities and described how much they liked the smaller class feel they get from the WSU MET program. The students like the fact that the professors know their names and are willing to help whenever available. Each faculty member is required to maintain at least 5 office hours per for student assistance. The program also recommends that students meet with their advisor once a year to make sure they are still on track towards graduation.

Program Challenges:

The professors have an extremely large workload and have had for a long time. For more effective student advisement and consultation it would be beneficial to have at least one more full time faculty dedicated to the MET program. Currently, one of the MET professors has been carrying 18 credit hours every semester for several consecutive years. This overload occurs even with some of the MFET professors helping teach a few classes for MET. The student to faculty ratio has increased significantly from the 2010-11 school year when it was 18.71 to the 2013-14 school year when it was 24.07. The number of student majors increased from 192 students in 2010-11 to 245 students in 2013-14. The large number of credit hours taught means there is little time for faculty to participate in scholarly activities and service, which are crucial in successfully preparing to undergo the tenure and promotion process required of all academic teaching faculty at Weber.

The number of courses in the program focused on project management and lean manufacturing are also fairly limited. With industry requiring that students have effective project management skills and significant knowledge of lean manufacturing, courses covering these subjects need to be increased. Increasing the number of faculty by one would provide the opportunity to offer more tech electives in one of the above courses, giving students more confidence in those areas when entering the workforce.

Another challenge is the limited balance allowance for some of the Senior Projects. The small amount allocated limits the amount of work and research that can be done. Some projects reviewed required that half of the money be donated. For example, one project had half of its \$2,000 budget covered by donations.

Program Standard Deficiencies:

The review team found the program to be meeting the standards in all areas, but believe the program could be improved by implementing the recommendations found in the following section.

Review Recommendations:

The number one recommendation for the MET program is to hire at least one more faculty full-time. Having an additional faculty member would reduce the instruction load for the current faculty and provide time for their participation in professional development, service, and scholarship which are crucial for obtaining tenure and promotion. An additional faculty member would also allow more time

for student consultation and advisement and would also open the opportunity to offer a tech elective with an emphasis in project management and/ or lean manufacturing or both.

Another recommendation the review committee suggests it to reach out to more companies to donate money or resources for Senior Projects. Contacting alumni working in industry and local companies to donate money or materials and expertise for Senior Project's is suggested. This contact would also be beneficial in maintaining information on graduates and jobs they have secured.