The University of Akron  
Mechanical Engineering Technology Associate Degree Program  
Student Outcomes  
Approved 5/3/2019

Student outcomes describe what students are expected to know and be able to do by the time of graduation. These relate to the knowledge, skills, and behaviors that students acquire as they progress through the program, including:

Student Outcomes

1) an ability to apply knowledge, techniques, skills and modern tools of mathematics, science, engineering, and technology to solve well-defined engineering problems appropriate to the discipline;

2) an ability to design solutions for well-defined technical problems and assist with the engineering design of systems, components, or processes appropriate to the discipline;

3) an ability to apply written, oral, and graphical communication in well-defined technical and non-technical environments; and an ability to identify and use appropriate technical literature;

4) an ability to conduct standard tests, measurements, and experiments and to analyze and interpret the results;

5) an ability to function effectively as a member of a technical team.

ASME program-specific criteria

a. application of principles of geometric dimensioning and tolerancing;
b. use of computer aided drafting and design software;
c. selection, set-up, and calibration of measurement tools/instrumentation;
d. preparation of laboratory reports and systems documentation associated with development, installation, or maintenance of mechanical components and systems;
e. basic familiarity and use of industry codes, specifications, and standards;
f. use of basic engineering mechanics; and
g. an integrating or capstone experience utilizing skills acquired in the program.
Student outcomes describe what students are expected to know and be able to do by the time of graduation. These relate to the knowledge, skills, and behaviors that students acquire as they progress through the program, including:

Student Outcomes

1) an ability to apply knowledge, techniques, skills and modern tools of mathematics, science, engineering, and technology to solve broadly-defined engineering problems appropriate to the discipline;
2) an ability to design systems, components, or processes meeting specified needs for broadly-defined engineering problems appropriate to the discipline;
3) an ability to apply written, oral, and graphical communication in broadly-defined technical and non-technical environments; and an ability to identify and use appropriate technical literature;
4) an ability to conduct standard tests, measurements, and experiments and to analyze and interpret the results to improve processes;
5) an ability to function effectively as a member as well as a leader on technical teams.

ASME program-specific criteria

a. application of principles of geometric dimensioning and tolerancing;
b. use of computer aided drafting and design software;
c. perform selection, set-up, and calibration of measurement tools/instrumentation;
d. elements of differential and integral calculus;
e. manufacturing processes;
f. material science and selection;
g. solid mechanics (such as statics, dynamics, strength of materials, etc.);
h. mechanical system design;
i. thermal sciences (such as thermodynamics, fluid mechanics, heat transfer, etc.);
j. electrical circuits (ac and dc) and electronic controls;
k. application of industry codes, specifications and standards;
l. technical communications typically used in preparation of engineering proposals, reports, and specifications.

The capstone experience, ideally multidisciplinary in nature, must be project based and include formal design, implementation and test processes.