

# Program Review

## Executive Summary

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### **Automated Manufacturing & Machining**

Majors Reviewed:

- *Manufacturing Engineering Technology (BAF), B.S.*
- *Automated Manufacturing Technology (AF), A.A.S.*
- *Machine Tool Technology (MY), A.A.S.*
- *Machinist General (MG), Certificate*

2014-2017



The Automated Manufacturing & Machining department's goal is to prepare its graduates to meet the critical needs of the manufacturing industry. Graduates are heavily recruited and carry a high standard of job performance as they enter the workforce. Skills attained can be attributed to the wide variety of cutting-edge machining, tooling, and 3-D printing equipment that help provide valuable hands-on learning. Through experience gained on this equipment and extensive lab activities, graduates are quick to become productive employees in their field. Many graduates are promoted to managers and various positions of advanced responsibilities within a year or two of employment.

As a result of this program review, the department has identified the following as areas for review and improvement moving forward.

- The department has depended on its **strong industry ties** to equip laboratory facilities, gain professional experience for students through internship partnerships, and promote the degrees. The department would like to continue to grow these ties to assist in
  - procuring new equipment
  - supporting future grant applications
  - building internship opportunities
  - strengthening the industry advisory committee
  
- While enrollment has seen a slight decrease over the last three years, several opportunities exist to assist with the **recruitment of prospective students**:
  - With the shared curriculum in the new Metal Fabrication Technology (MF) associate degree, there is an opportunity to increase the number of dual degree students in both the Machine Tool Technology (MY) and Automated Manufacturing Technology (AF) programs.
  - Opportunities exist to increase Penn College Now offerings. Currently, only four high schools offer foundational courses MTT118/119 (Mill/Lathe Applications) through Penn College Now. However, faculty members have connections with other high school and career technical teachers, which presents an opportunity to work with the College Transitions office to create additional interest.
  - The Society of Automotive Engineers (SAE) Baja and SWORD (Student Wildcats of Robotic Design), which are actively promoted via social media, have enjoyed increased growth and success. The department plans to highlight these popular co-curricular student organizations as part of the recruitment strategy as well as to promote and encourage advanced learning outside of the classroom.
  
- The foundation of the automated manufacturing and machining majors is the hands-on and industry-based learning students attain through educational experiences in the lab and classroom. The department will **revise and update the curriculum** to strengthen areas such as geometric dimensioning and tolerancing, multi-axis CNC machining, robotics, CAD/CAM and 3D parametric product design, additive manufacturing, and lean manufacturing concepts.
  
- These educational experiences can also be strengthened through continued **cross curriculum development** with programs such as welding, automotive restoration, engineering design, and others. The manufacturing sector continually demands the workforce to be diversified in various skill sets.