

# Manufacturing

## **Associate of Applied Science in Industrial Technology, Manufacturing Major**

The challenges are numerous in the field of manufacturing as business and industry must remain competitive in a global economy. The manufacturing major integrates production and manufacturing techniques, management strategies, the concept of continuous improvement and employee involvement to enable the graduate to make valuable contributions as part of a company's manufacturing team.

### **Curriculum**

BGSU Firelands offers the associate of applied science manufacturing major which emphasizes three technical areas: manufacturing processes, drafting and design, and industrial management.

Manufacturing courses provide an understanding of a wide variety of processes while allowing focused study on programming and operating computer numerical control machines (CNC) and computer-aided manufacturing (CAM) software or plastics processing equipment. With an advisor, the student is able to select additional courses in the areas of manufacturing processes, automation control or industrial management.

A sequence of drafting and design courses provides practical skills in computer-aided design (CAD) and the technical knowledge to provide specifications for manufactured products.

Quality and industrial management courses apply statistical and management techniques that maximize quality, employee involvement and workplace safety.

### **Special Features**

To facilitate the student's learning experiences, BGSU Firelands has a dedicated manufacturing lab that includes traditional manufacturing equipment; industrial CNC lathe and mill; hydraulic, pneumatic and programmable controller training equipment, a robot and plastics processing equipment. The metrology and materials testing lab includes equipment to make

precision measurements and conduct engineering experiments. A computer lab provides access to the latest CAD software.

### **Career Opportunities**

The associate degree major in manufacturing technology prepares graduates for employment in manufacturing and engineering technology.

Engineering technicians use the principles and theories of science, engineering and mathematics to solve problems in research and development, manufacturing, sales and customer service. Technicians working in engineering labs follow the general directions of engineers. They may prepare and conduct experiments, and calculate or record the results. Some make prototype versions of newly designed equipment.

Graduates of this program are also qualified for positions in manufacturing production jobs such as operating and programming computer-numerical controlled (CNC) lathes and mills. With experience, graduates may hold positions as supervisors.

Students who are interested in pursuing a bachelor's degree in applied quality science, mechanical design technology or technology education are well prepared to transfer to Bowling Green's main campus for a bachelor's degree program or another college or university.

### **Program Requirements**

Students pursuing the associate of applied science degree must complete a minimum of 62 hours. Specific requirements for the degree include:

#### **Communications**

Varieties of Writing  
Speech Communication

#### **General Education Core**

Economics  
Elective

#### **Basic Courses**

Pre-Calculus or College Algebra and Trigonometry  
College Physics I

Management Information Systems or Introduction to Programming

#### **Technical Courses**

Basic Metrology  
Metallic Materials & Processes  
Computer Numerical Control (CNC) Programming & Machining or  
Plastics-Materials and Processes

#### **Drafting and Design**

Design and Engineering Graphics  
Computer-Aided Design (2-D AutoCAD)  
Solid Modeling  
Descriptive Geometry

#### **Industrial Management**

Introduction to Lean Processes/Systems  
Occupational Safety & Hygiene  
Using Statistics  
Quality Assurance

#### **Manufacturing Major**

Three electives allow for focused study in manufacturing processes or systems, automation control or industrial management.

### **For Further Information**

Mr. Peter Henning, Acting Program Director

BGSU Firelands  
One University Drive  
Huron, OH 44839  
419-433-5560 ext. 2-0678  
email: [mphenni@bgsu.edu](mailto:mphenni@bgsu.edu)

Debralee Divers, Director  
Admissions and Financial Aid  
419-433-5560 ext. 2-0629  
Email: [divers@bgsu.edu](mailto:divers@bgsu.edu)

Cheryl L. Chafee, Asst. Director  
Admissions and Financial Aid  
419-433-5560 ext. 2-0683  
Email: [cchafee@bgsu.edu](mailto:cchafee@bgsu.edu)

Web site: [www.firelands.bgsu.edu](http://www.firelands.bgsu.edu)

### **Your University Opportunity**

BGSU Firelands, located in Huron, Ohio, is a regional campus and one of the seven undergraduate colleges of Bowling Green State University. We offer many of the advantages and resources of a major university, but in a smaller, more personal environment.

Generally, students are able to complete at least two years of course-work toward most of the 200-degree programs at BGSU before transferring to the main campus, or to another college or university.

BGSU Firelands offers students a wireless environment campus wide. Kiosks and public-access computers located in most campus buildings provide easy Internet access. In addition, there are several on-campus computer labs with a variety of computers and software programs.

The library, containing more than 30,000 volumes, is computer-linked to the more than 4 million items available through BGSU's libraries to provide excellent research opportunities.

Academic advisors work individually with students to plan their degree programs and small class sizes allow students to have close, personal contact with their professors. Free tutoring is readily available through the Teaching and Learning Center. Scholarships, grants and loans are available to assist students with tuition.

NOTE: Information in this guide is subject to change without notice. To learn more about the official program of study for Manufacturing, please check the undergraduate catalog online at: [www.bgsu.edu/catalog/FIR/FIR38.html#MM](http://www.bgsu.edu/catalog/FIR/FIR38.html#MM)