# ADDITIVE MANUFACTURING, AREA OF CONCENTRATION IN ENGINEERING TECHNOLOGY (AAS)

Award: Associate of Applied Science Degree No. of credits required: 60 For more information: Contact Business & Applied Technology at bat@harford.edu; or Admissions, 443-412-2109.

### **Program Description**

This program prepares students for employment in advanced manufacturing, including additive manufacturing (3D printing), and a variety of other industries that use technicians or technology specialists to support engineering staff. A strong emphasis is placed on applications, problem solving, critical thinking, and communication skills. Upon graduation, students will be able to use these skills to, organize, and carry out engineering technology projects. Graduates of this program will demonstrate knowledge of CADD, electronics, hydraulics, pneumatics, blueprint reading, and mechanics. Engineering and science courses are important parts of this program.

#### **Program Goals**

Upon successful completion of this program of study students will be able to:

- 1. Apply appropriate communications skills to work independently and collaboratively within an organization to promote the goals and objectives of the work unit.
- 2. Recognize how to facilitate successful completion of technical projects.
- 3. Demonstrate competency in using technical tools, technology, methods, and processes.
- 4. Recognize professional and ethical behavior.
- 5. Apply problem solving skills to technical problems.

## **Employment Information**

Data illustrates a significant demand for well-educated and highlyskilled additive manufacturing workers in Harford County and in the State of Maryland. In 2015 Maryland's 3,680 manufacturing businesses generated \$20.2 billion in gross state product and employed more than 109,000 persons. The state supports numerous 21st century manufacturing industries including defense electronics, aeronautics, systems engineering, medical diagnostics, specialty chemicals, software and aircraft engines. Sixty percent of these manufacturers are advanced, producing a profound multiplier effect on Maryland's economy. Hightechnology manufacturers in Maryland generate almost two additional jobs for each new manufacturing job created.

# **Degree Requirements**

#### **Recommended Course Sequence**

First Semester		Credits
CADD 101	Introduction to CADD	3
CIS 102	Introduction to Information Sciences (GI)	3

Second SemesterENGT 1103D Printing in Additive ManufacturingENGT 108Introduction to ElectronicsENGT 201Materials in ManufacturingENG 101English Composition (GE)MATH 103Trigonometry (GM)CreditsThird SemesterENGT 115Optimizing Print FilesENGT 223Principles of MechanicsENGT 105Electrical Control SystemsBiological/Physical Lab Science Elective (GL) (https:// catalog.harford.edu/general-education/#biological-physical- laboratory-science)PHIL Elective (GH)Technical WritingENGT 225Quality Control & Metrology for Additive ManufacturingPhysical Education ElectiveGB) (https:// catalog.harford.edu/general-education/#behavioral-social- science)Physical Education ElectiveBehavioral/Social Science Elective (GB) (https:// catalog.harford.edu/general-education/#behavioral-social- science)ENGT 230Additive Manufacturing Capstone	laboratory-science PHIL Elective (GH Fourth Semester ENG 209 ENGT 225 Physical Educati Behavioral/Socia catalog.harford.e science)	H) Credits r Technical Writing Quality Control & Metrology for Additive Manufacturing ion Elective al Science Elective (GB) (https:// edu/general-education/#behavioral-social- Additive Manufacturing Capstone	3 16 3 3 1 3 3 3 13
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CMST 105 Interpersonal Communication (GI) (D)		Introduction to Additive Manufacturing	3

#### **General Education Degree Requirements**

Note: The following codes identify courses which satisfy the General Education Degree Requirements:

Behavioral/Social Science (GB) English Composition (GE) Arts/Humanities (GAH) Interdisciplinary and Emerging Issues (GI) Biological/Physical Laboratory Science (GL) Mathematics (GM) Biological/Physical Science (GS) 1