

ENGINEERING TECHNOLOGY AAS

The Engineering Technology Program offers Associate degrees preparing students for a broad range of industries. Using the latest equipment and technology, students can choose from a range of emphasis areas including Civil, GIS, Mechanical, or a mix of all three in our Traditional program. Skills are introduced and developed for surveying, mapping, drone operation (Civil & GIS options), solid modeling with 3-D printing, CNC machining (Mechanical option), geographical information systems, image processing (GIS option), or structural and architectural concepts (Traditional option).

Engineering Technology faculty maintain close contact with industry leaders tracking the latest advancements and technologies as well as providing opportunities for students. Field trips to manufacturing and construction sites in addition to ample opportunities for hands-on training through real-world and service learning projects are woven through the curriculum. Internship opportunities with industry partners can also be combined with academic credit to complete the degree. The Engineering Technology program combines laboratory experience with general education to provide a well-rounded, career-ready experience.

Entrance requirements for degree seeking students in the Engineering Technology program include:

- ALEKS score of 30 or higher in Math (Algebra), Writing Placement Exam score of 2 or higher, or equivalent college placement exam scores.
- Enrollment priority will be given to students on the basis of student's enrollment date.

Upon completion of the Engineering Technology A.A.S. degree, the student will possess technical skills in chosen areas that may include:

General knowledge:

- Combine general education with laboratory experience and "hands-on" learning
- Be prepared for the time commitment and professionalism of a workplace setting
- Enhancement of professional communication skills
- Oral and written communication skills required in an engineering office.
- Basic math, including areas of algebra, geometry and trigonometry, physics and problem-solving skills
- Enter the engineering field with technical knowledge and skills in various specialized fields (Mechanical, Civil, Surveying, Architectural, GIS)
- Explore a variety of careers associated with Engineering Technology
- Enter into a co-operative professional/technical internship with local employers upon approval from the program advisor
- Obtain entry-level skills and experience in computers and computer terminology as it relates to engineering documentation
- Able to identify and use drafting instruments; letter, using common practices; draft and dimension geometric figures; define and draft orthographic & isometric projections
- Able to develop auxiliary views; determine points of intersection; pattern development, and working drawings
- Skilled in the use of Computer Aided Drafting Design software to create various drawing types
- Have a broad understanding of processes used to produce marketable goods
- Knowledge of geospatial technologies as it relates to GIS, GPS and geospatial data and imagery

Traditional Emphasis:

- Knowledge of fundamental architectural and structural drafting methods and organization
- Use of the American Institute of Architects Architectural Graphic Standards
- Understand civil technology including civil drafting, basic surveying, and mapping procedures
- Understanding of creation and use of 3-D primitives, surface modeling, basic solids modeling, shading techniques, and the use of rendering and animation software

Mechanical Emphasis:

- Understanding of creation and use of 3-D primitives, surface modeling, basic solids modeling, shading techniques, and the use of rendering and animation software
- Skilled in the use of SolidWorks parametric (3D) design software
- Knowledge of the elementary principles of Computer Aided Design and Computer Aided Machining
- Understanding Application and Interpretation of GD&T per ASME Y14.5-2018 symbols, tolerances, positions, and feature controls
- Project Management including presentation, scheduling, control, and review to adhere to ISO 9000 standards
- Proficient in Multi Part assemblies including motion simulation and technical manufacturing.

Civil Emphasis:

- Understand civil technology including civil drafting, basic surveying, and mapping procedures
- Perform basic civil design functions such as surface and contour creation, grading and drainage plans, alignment layout, profiles, pipe networks and detail drawings
- Knowledge of fundamental surveying concepts and practices; topographic surveying and mapping; boundary surveys; construction surveying
- Knowledge of earthwork and volumes; global positioning systems and geographic information systems
- Understand basic drone operation and image processing, surveying with drones and drone to map software

Geographic Information Systems Emphasis:

- Understand civil technology including civil drafting, basic surveying, and mapping procedures
- Perform basic civil design functions such as surface and contour creation, grading and drainage plans, alignment layout, profiles, pipe networks and detail drawings using current CAD and GIS technology
- Knowledge of fundamental surveying concepts and practices; topographic surveying and mapping; boundary surveys; construction surveying
- Knowledge of earthwork and volumes; global positioning systems and geographic information systems
- Understand basic drone operation and image processing, surveying with drones and drone to map software
- Knowledge of remote sensing as related to drone surveying practices
- Skilled in the use of industry-standard GIS software, applications, and mobile data collection

Graduates from Engineering Technology programs go on to obtain careers in a variety of fields:

- Civil Engineering Technician
- Electro-Mechanical Engineering Technician
- Industrial Engineering Technician
- Mechanical Engineering Technician
- Geographical Informational Systems Technician
- Architectural Drafting Technician
- Mechanical Drafter
- Surveying Technician
- Senior Drafter/Designer
- Civil Drafter
- Mechanical Drafter
- Mechanical Designer/Machinists