DEPARTMENT OF ENGINEERING AND TECHNOLOGY

The Department of Engineering and Technology (https://www.una.edu/engineeringtechnology/) offers an Engineering Technology degree that provides a fundamental background in general science as well as a comprehensive background in both traditional and evolving engineering and industrial technologies. Areas of focused study include electrical and mechanical engineering technology, chemical engineering technology, and bio-engineering technology. The program is designed to prepare graduates for positions in emerging technologies, industrial operations, and general management that require a strong knowledge in engineering principles. Emerging technological areas include sustainable energy solutions, advanced fabrication and manufacturing processes, robotics, industrial chemical processes, and next-generation solutions in the medical, agricultural, and environmental fields. Graduates benefit from the combination of an engineering-based theoretical education with a practical "hands-on" development of industry-ready skills and knowledge.

The technical knowledge-base is supplemented with a foundation in project management, finance, safety and ethics to prepare graduates for advancement into management positions or further graduate education.

The program offers three options:

- **Bio-Engineering Technology:** Students develop knowledge and competencies in biochemical- and life science-based systems geared toward the design, development, and manufacture of biologically-inspired products and processes. Fundamental topics in this option include molecular biology, genetics, bioprocess engineering, bioinformatics, and bioreactors. This option will appeal to those who desire a career in high-tech manufacturing of pharmaceuticals, advanced agricultural and food products, alternative energy sources, and environmental remediation solutions.

- **Chemical Engineering Technology:** Students learn to conceive and design processes to produce, transform, and transport materials, chemicals, microorganisms, and energy into useful forms and products. Fundamental topics in this option include materials science, mass and energy balances, fluid mechanics, heat transfer, chemical reactors and separators, and process modeling and simulations. Employment opportunities include traditional manufacturing environments as well as petroleum, agricultural, environmental, and pharmaceutical industries.

- **Electro-Mechanical Engineering Technology:** Students develop knowledge and competencies in the design, operation, and control of modern advanced manufacturing systems and processes with a focus on robotics, automation, instrumentation, and product design. Fundamental topics include computer-aided design and drafting, solid modeling, manufacturing processes, materials science, statics, strength of materials, power transfer technology, electrical circuits/devices, digital electronics, robotics, PLC programming, and automated manufacturing. This option is well suited for students with career interests in automotive, aerospace, electronics, and consumer product manufacturing industries.

Typical industrial entry-level positions for Engineering Technology graduates include Process Engineer, Design Engineer, Development Engineer, Research Engineer, Project Engineer, Quality Engineer, Reliability Engineer, Production Scheduler, Maintenance Engineer, and Applications Engineer.

All options benefit from shared core classes in economics and product design as well as an option-appropriate capstone project course.

The B.S. degree in Engineering Technology is accredited by the Engineering Technology Accreditation Commission of ABET, http://www.abet.org (http://www.abet.org/).

**Majors**

- **BS in Engineering Technology** (https://catalog.una.edu/undergraduate-colleges-programs/arts-sciences/engineering-technology/engineering-technology-bs/)