The programs in the Institute of Engineering provide strong educational opportunities that will lead directly to professional careers in the industry or to graduate schools for advanced engineering degrees and research.

**Degree Programs:** The Murray State University Institute of Engineering offers 12 outstanding degree programs at the bachelor’s and master’s levels, including ABET-accredited degrees in engineering physics and engineering technology.

**Faculty/Staff:** More than 30 faculty and staff support the work of the MSU Institute of Engineering. Faculty members have advanced degrees in mechanical, electrical, civil, environmental and biosystems engineering as well as physics, telecommunications, industrial design and architecture. Several faculty are registered as professional engineers, a respected credential in engineering.

**Facilities:** The MSU Institute of Engineering is based on the MSU campus in Murray, and is housed primarily in the Blackburn Science Building and the Collins Center for Industry and Technology.

**Partnerships:** The MSU Institute of Engineering partners with graduate schools, regional and national industries, government agencies and engineering professionals to prepare students for careers and advanced studies.

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**ENGINEERING PHYSICS**

**Mechanical Engineering ★**

Students receive fundamental engineering core courses including advanced physics, mechanics, electricity and magnetism, circuits and more.

- Students may take specialized coursework in
  - Thermodynamics
  - Fluid mechanics
  - Heat transfer
  - Mechanics of materials
  - Materials science and more

**Electrical Engineering ★**

Students in this track get the same thorough fundamental engineering education, but emphasize electrical engineering applications in their technical electives.

- Students may do specialized work in
  - Digital signal processing
  - Logic design
  - Power management
  - Electricity and magnetism
  - Linear circuit analysis
  - Analog electronics and more

**Biomedical Engineering ★**

Biomedical engineering track students get the same strong engineering foundation, but also take electives in organic chemistry, physiology, cell biology and fundamentals of biomedical engineering. Students may use this curriculum in a premedical program and work toward taking the MCAT.

**Advanced Physics ★**

All students get a thorough education in engineering fundamentals, but the advanced physics track allows students to pursue more depth in the physical fundamentals of engineering.

- Students may do specialized work in
  - Advanced mechanics
  - Electricity and Magnetism II
  - Laser Physics
  - Optics
  - Astrophysics

★ EAC/ABET accredited
ENGINEERING TECHNOLOGY

Architectural Engineering Technology
Architectural engineering technology students are educated in the process of taking a project from concept, to CAD, to the completed structure. Working together with architects and engineers, they assist in producing drawings and specs for major construction projects.

A bachelor of science degree in architectural engineering technology will provide students with backgrounds in:
- Architectural design
- BIM — Building Information Modeling
- Computer-aided drafting
- Building structures and structural design
- Steel and concrete structures
- Surveying and site planning
- Construction estimating

Civil Engineering Technology
With a degree in civil engineering technology, students will be qualified to begin a career as a project manager, construction project engineer, designer, estimator, material tester, field engineer or surveyor. Civil engineering technology serves the basic needs of society through the planning, design and construction of buildings, highways, bridges, water, and waste distribution and treatment systems.

This program is fully accredited by ABET and provides students with experiences in:
- Surveying
- Scheduling
- Cost estimating
- Transportation planning
- Computer aided design and drawing
- Construction methods and materials
- Structural steel and reinforced concrete design
- Sustainability and environment design construction

Construction Engineering Technology
The construction engineering technology program prepares graduates through a balanced program of mathematics, sciences, business, technical studies and construction practices. The curriculum stresses the application of technical knowledge, construction methods, problem-solving ability and communication skills toward the completion of large-scale construction projects.

This program is fully accredited by ABET and provides students with experiences in:
- Construction
- Estimating
- Project management
- Scheduling
- Surveying
- Building structures
- Construction materials
- Engineering mechanics

Electromechanical Engineering Technology
The electromechanical engineering technology curriculum provides a solid technical base in engineering science fundamentals and provides competency in automation, controls, motion mechanics, solid mechanics, fluid power, electrical systems, electronics and computer integrated systems. In the more advanced classes students will focus on automation and data systems, with design and control, quality and management systems, and industrial/business information technology systems.

Environmental Engineering Technology
The environmental engineering technology program provides a broad background in environment management, pollution assessment and control, and sustainability.

ETAC/ABET accredited

INDUSTRIAL TECHNOLOGY AND DESIGN

Engineering Graphics and Design
The course work is designed to prepare you to work with engineers and architects in designing, constructing and manufacturing the articles required in a technical world. The program places emphasis on the following areas:
- Computer aided design
- 3-D modeling and parametric design
- Architectural layout and design
- Machine drawing and design
- Tooling drawing and design
- Computer aided drafting
- Industrial management
- Rapid prototyping
- Pro engineer
- SolidWorks
- AutoCAD

Interior Design
The interior design program provides students with the ability to identify, research and solve needs of people in residential, institutional and commercial environments in order to enhance quality of life and protect public health, safety and welfare.

Our interior design program will provide students with the fundamentals of:
- Schematic design
- Design analysis

Manufacturing Technology
The manufacturing technology program at Murray State University prepares students for careers in manufacturing industries. The program is designed to help students learn industrial design and develop the manufacturing processes, procedures and equipment that turn design ideas into real products. The areas of study are:
- Metal machining processes
- Computer numerical control (CNC)
- Computer aided design and manufacturing (CAD/CAM)
- Fluid power
- Industrial supervision
- Quality control
- Business management

The students in this program will develop abilities in product design, prototyping and principles of automated manufacturing systems using the machines and tools available in a number of laboratories.

Equal education and employment opportunities M/F/D, AA employer