
Industrial Engineering Technology

Graduates of the industrial engineering technology (IET) program have found positions in all aspects of manufacturing and service industries. Typically, students work in functional areas such as cost estimation, facilities planning, manufacturing process design, design drafting, supplier quality control, production control, or quality assurance. Many manufacturing plants are continuously being modernized and IET graduates are well prepared to participate in this trend.

The B.S. is designed to provide students with a broad-based education and the opportunity to create a specialized program by following one of the options or by selecting technical courses to fill an individual interest or career plan. The concentrations are:

Manufacturing Engineering Technology – This concentration covers manufacturing and industrial processes in industry. Coursework includes: process planning, cost estimation, machining processes, metal working processes, laser application, CAD/CAM, safety and environment impact and design for manufacturing.

Quality Assurance Technology – In addition to manufacturing core coursework, this concentration offers intensive training in SPC, ISO9000, ISO14000, TQM, quality improvement, concurrent engineering, and reliability for design & production.

Industrial Engineering Technology – This concentration concentrates on the traditional industrial engineering technology courses. Coursework is offered in such areas as engineering economics, plant layout, rapid prototyping, simulation and optimization, manufacturing control, network scheduling, method study, industrial safety, and industrial administration.

Computer-Aided Design/Computer-Aided Manufacturing/Robotics – In this concentration, the use of microcomputers in manufacturing is explored. Coursework includes: integrated and flexible manufacturing systems, group technology, process control, computer-assisted numerical control programming and operation, computer-aided manufacturing.

The B.S. Degree with a major in Industrial Engineering Technology is accredited by the Technology Accreditation Commission of the Accreditation Board for Engineering & Technology.

B.S Degree Requirements

To earn a Bachelor of Science (B.S) degree in industrial engineering technology, a student must complete a minimum of 128 credit hours and fulfill the following requirements:

I. Arts and Sciences – 60 credits

Minimum Credits

A. Liberal Arts – 34 credits

Oral Communications
Written Communications
Upper-Division Writing
Humanities*
Social Sciences*
American History*
Western Civilization*
Non-Western Civilization*
Fine Arts*
Foreign Language*

***Complete coursework in at least five out of the above seven categories**

Arts & Sciences Electives

34 credits

B. Mathematics and Science – 26 credits

Physics with Lab
Basic Science with Lab
Mathematics (including Calculus I/II)
Math & Science Elective
Computer Programming Language

26 credits

II. Technical Courses – 62 credits

A Grade Point Average (GPA) of 2.0 is required in all IET courses taken at SUNYIT. A total of 62 credits is required, of which a minimum of 32 credits must be taken at SUNYIT. The following courses are required:

ITC 101 – Intro to Engineering Technology
or ITC 301 – Professionalism in the Workplace
ITC 162 – Computer-Aided Design
ITC 198 – Industrial Instrumentation
or ITC 398 – Mechanical Measurements
ITC 211 – Manufacturing Processes
ITC 311 – Manufacturing Operations
ITC 327 – Production and Operation Manufacturing
ITC 358 – Plant Layout and Material Handling
ITC 373 – Statistical Quality Control
ITC 462 – Computer-Aided Manufacturing
ITC 475 – Engineering Economics
ITC 483 – Quality Improvement
ITC 320 – Applications Project I
ITC 321 – Applications Project II
Technical Electives

Balance of 62

III. Open Electives

Balance of 128

Students with a minimum of five years of work experience in a related job can waive one application project, i.e., take Application Project II (ITC 321) only, with the prior approval of the student's advisor.

Areas of Concentration†

Students may specialize in one of the following areas. A total of 20 credits must be taken from the following courses:

Manufacturing Engineering Technology - 20 credits

- ITC 411 – Manufacturing Cost Estimation
- ITC 467 – Industrial Safety
& Environmental Impact
- ITC 485 – Concurrent Engineering
& Design for Manufacture
- ITC 488 – Introduction to Ergonomics

Quality Engineering Technology - 20 credits

- ITC 390 – ISO 9000 & Total Quality Assurance
- ITC 391 – ISO 14000 – Auditing & Implementing
- ITC 392 – ISO 9000 & QS 9000 – Audit & Impl
- ITC 486 – Reliability for Design and Production

Industrial Engineering Technology - 20 credits

- ITC 390 – ISO 9000 & Total Quality Assurance
- ITC 411 – Manufacturing Cost Estimation
- ITC 485 – Concurrent Engineering
& Design for Manufacture
- ITC 488 – Intro to Ergonomics

CAD/CAM - 20 credits

- MTC 388 – Fundamentals of Solid Modeling
With Pro/Engineer
- ITC 405 – Solid Modeling/Rapid Prototyping
- ITC 430 – Engineering Dynamics
- ITC 485 – Concurrent Engineering
& Design for Manufacture
- ITC 486 – Reliability for Design and Production

†Students are not required to complete a concentration.

Laboratories

The IET program utilizes various laboratories to provide students with both equipment and software to use. These laboratories provide hands-on exposure. Examples of these labs include:

Computer Numeric Control (CNC), CNC machining center, CNC turret lathe

Computer laboratory with the following software packages:

- AutoCAD
- SolidWorks
- SimuLink
- Production Operations Management
- Quality Improvement (SPSS)
- Computer-Aided Design (CAD) and rapid prototyping
- Machine shop for student projects

Quality Engineering and System Technology Minor

See academic minor section.

