INDUSTRIAL ENGINEERING TECHNOLOGY (IENG), BACHELOR OF SCIENCE

At Dunwoody College of Technology, the Industrial Engineering Technology program provides a bachelor's completion degree option with the skills and theoretical knowledge needed to advance graduates into engineering and management positions in their respective industries.

Graduates from this program will be prepared to take on new roles such as: industrial engineer, manufacturing engineer, quality engineer, and process engineer.

Students learn how to apply engineering principles to the work environment, how to work collaboratively in a team environment, and how to use tools and data to anticipate and solve issues in the engineering process. Coursework includes study in manufacturing processes and industrial automation, work methods and design, quality and lean, management, and ethics and social responsibility.

Curriculum is project-based so that theoretical engineering principles are reinforced and experienced through hands-on creation and problem-solving.

Arts & Sciences courses help students understand the core mathematical and scientific principles, which are the foundation of engineering theory and provide students with the communication and critical thinking skills required to succeed in the profession.

The program also incorporates a senior capstone project in its final semester that gives students the chance to demonstrate real-world industrial engineering experience.

Credential Earned: BS
Length of Program: 2 years (4 semesters)
Classes Offered: Evening
Available Starts: Fall Semester; Spring Semester
Accreditation: Engineering Technology Accreditation Commission (ETAC) of ABET

Program Outcomes

- ETAC 1: An ability to apply knowledge, techniques, skills and modern tools of mathematics, science, engineering, and technology to solve broadly-defined engineering problems appropriate to the discipline.
- ETAC 2: An ability to design systems, components, or processes meeting specified needs for broadly-defined engineering problems appropriate to the discipline.
- ETAC 3: An ability to apply written, oral, and graphical communication in broadly-defined technical and non-technical environments; and an ability to identify and use appropriate technical literature.
- ETAC 4: An ability to conduct standard tests, measurements, and experiments and to analyze and interpret the results to improve processes.
- ETAC 5: An ability to function effectively as a member, as well as a leader, on technical teams.

Degree Requirements

Admitted students to Industrial Engineering Technology (IENG) can transfer up to 45 technical and 9 Arts & Sciences credits. A transfer evaluation is required. Not all credits may transfer into the degree program.

Code	Title	Credits
Transfer Credits		**54**
General Requirements		
COMM3000	Professional Communication	2
ECON1000	Introduction to Micro & Macro Economics	3
MATH1700	Pre Calculus	3
MATH1810	Calculus I	3
MATH1820	Calculus II	3
MATH2250	Statistics	3
PHIL1000	Introduction to Logic	2
PHYS1800	Physics I with Lab	4
WRIT2010	Technical Writing	3
WRIT4020	Capstone Technical Writing	2
Technical Requirements		
ENGR1110	Introduction to Engineering	3
ENGR1210	Introduction to Programming	3
IENG3115	Statistical Quality Control	2
ENGR3110	Project Management	3
ENGR3120	Engineering Economics	2
ENGR4110	Engineering Ethics & Safety	2
IENG3150	Manufacturing Processes I with Lab	3
IENG3160	Quality & Lean Systems	3
IENG4111	Ergonomics & Work Measurement	3
IENG4116	Supply Chain Management	3
IENG4126	Production Planning	3
IENG4296	Senior Capstone	3
Upper Division Electives		6
Total Credits		**121**

Courses

Descriptions

ENGR1110 | Introduction to Engineering | Lecture (3 Credits)
Explore major topics in Engineering. Provides a pathway to success in the School of Engineering programs, including time management, industry software, study skills, teamwork skills, internship availability and career opportunities. This course must be taken at Dunwoody for the Industrial Engineering Technology Degree.

ENGR1210 | Introduction to Programming | Lecture/Laboratory (3 Credits)
Examine and implement computational problem-solving strategies using computer languages to solve engineering problems. Develop algorithms and translate solutions into computer programs. Distinguish differences in programming languages and software tools with applicability to different types of problem solutions. Apply modular design and clear documentation for efficient problem solving.

ENGR3110 | Project Management | Lecture/Laboratory (3 Credits)
Examine the methods and tools used for effective management of engineering projects. Topics include the analytical methods used to budget, schedule, and control projects, as well as risk management, team leadership, and communication.

ENGR3120 | Engineering Economics | Lecture (2 Credits)
Economic analysis of engineering decisions under uncertainty. Concepts include time value of money, cash flow estimation, rate of return analysis, net present value estimation, and asset evaluation. Applications include comparing different project alternatives accounting for heterogeneity in cost, revenue, taxation, depreciation, inflation, and risk.

ENGR4110 | Engineering Ethics & Safety | Lecture (2 Credits)
Interpret the connection between personal morality, the role of engineers and engineering in society, and relationship to one's employer. Case studies involving conflicts within these roles are reviewed and evaluated. Interpret safety and accident information to develop a basic understanding of needed safety protocols in a variety of engineering environments.

IENG3115 | Statistical Quality Control | Lecture (2 Credits)
Apply statistical methods to study the quality of products and services, determining how to reduce the time required to produce the product and ensure the quality of the product. Topics include probability and statistics, control charts, acceptance criteria and sampling, and case studies.
Prerequisite(s): IENG1120 Or ENGR1110

IENG3150 | Manufacturing Processes I with Lab | Lecture/Laboratory (3 Credits)
Examine and apply various manufacturing processes and materials used in product development and manufacturing. Each process is covered from a technical perspective, with an emphasis placed on how multiple processes can be linked together. Several manufacturing processes, such as computer aided design, machining, welding, and electronics are used to design a product.

IENG3160 | Quality & Lean Systems | Lecture/Laboratory (3 Credits)
Investigate the history and evolution of lean systems and current day applications to manufacturing, service, and business. Apply fundamental lean philosophies and tools to manufacturing, service, and business. Explore the role of culture transformation and change management techniques in the application of lean tools, total quality management, and international standards.
Prerequisite(s): MATH1700

IENG4111 | Ergonomics & Work Measurement | Lecture (3 Credits)
Introduction to ergonomics as applied to the human-machine interface, as well as the fundamental concepts behind work design, with emphasis on measuring work and analyzing work methods. Topics include methods engineering and analysis, time and motion studies, and workplace design considering physical and cognitive ergonomic principles.
Prerequisite(s): IENG1120 Or ENGR1110

IENG4116 | Supply Chain Management | Lecture (3 Credits)
Explain the fundamentals of supply chain management. Topics include the supply chain network, system integration, supply chain strategies, challenges in managing the supply chain, and strategy alignment.

IENG4126 | Production Planning | Lecture (3 Credits)
Utilize aspects of management to maximize productivity in a factory or service environment. Topics include sales & operations planning, inventory and capacity management, material requirements planning, and the theory of constraints.
Prerequisite(s): MATH1810

IENG4296 | Senior Capstone | Capstone (3 Credits)
Demonstrate overall content knowledge of the program outcomes through a major project. Conduct a final presentation of the project and explain how it applies to the engineering program outcomes.

Policies

School of Engineering Policies

General Applicability

While college faculty will provide you with information and advice, it is your responsibility to understand and comply with all policies and to complete satisfactorily all degree requirements within the allotted time frame. This includes the responsibility to track your completion of major, university and campus requirements, as well to comply with residence, minimum progress and scholarship requirements.

For details, you should refer to the college's **academic policies**.

Please note that you are subject to current policies and regulations, regardless of your admission date.

Admission to Dunwoody School of Engineering

Your admission into the Dunwoody School of Engineering is also an admission into the engineering program you have selected. Your completion of this degree requires your compliance with stated degree requirements and academic good standing.

Applicability of Academic Plan

Normally the Academic Plan that you will follow is the plan year that you have entered under. However with program evolution we reserve the right to move you to a newer academic plan resulting from an evolution of the program. This change will not delay your graduation or cost you more than your original plan if you remain in academic good standing and take courses when offered.

In the event that you do not maintain continuous enrollment, your academic plan may be changed to your new admission date.

In the event of part time enrollment, academic plans will be valid for only 6 years.

School of Engineering Student Success Monitoring

The School of Engineering strives to motivate and empower students to complete courses of study leading to degrees in Electrical, Mechanical, Software Engineering and Industrial Engineering Technology. The program of study in each of these disciplines is cumulative in nature, that is, content is intended to build upon content learned in earlier semesters.

Student academic progress must consider the level to which students have successfully mastered earlier concepts in determining if a student is making adequate progress in their chosen field of study.

Students will be determined to be making adequate progress toward degree completion if they are following the recommended program of study and are achieving grades of C or better in all of their courses each semester.

A student who is following the recommended program of study who receives a grade of less than a C in any technical or School of Engineering course will be required to meet their Academic Coordinator to review their study skills and to develop a plan for enhanced Academic Achievement for the next semester. This grade of less than C may result

in an adjustment of the next semester schedule to support needed prerequisites or remedial measures.

Any student who is following the recommended program of study who receives two or more grades of C or lower in technical or School of Engineering courses will be required to meet with their Academic Coordinator and the School of Engineering Dean to determine appropriate next steps.

Any student who is not following the program of study defined by the Academic Plan will be required to meet with the Academic Coordinator each semester to ensure that they are registered for the appropriate courses.