

# INDUSTRIAL ENGINEERING TECHNOLOGY (IENG)

---

## **IENG1910 | Engineering Topics I | Directed Study (1 Credit)**

Engineering Topics I focuses on topics in engineering selected by faculty assigned to the course.

## **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):** MATH2250

## **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.

## **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.

## **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.

## **IENG4211 | Simulation Modeling | Lecture (3 Credits)**

Utilize simulation to create, analyze, and evaluate realistic models of real-world environments. Topics include Monte Carlo simulation, queuing theory, selecting input distributions, animation in simulation, and evaluating simulation output.

## **IENG4250 | Industrial Automation with Lab | Lecture/Laboratory (3 Credits)**

Investigate and apply several automated processes used in manufacturing, service, and business processes. Topics include automated work systems, safety, and design of systems.

## **IENG4260 | Engineering Entrepreneurship | Lecture (3 Credits)**

Explain the concept of transforming your ideas from a prototype into a business including customer need, design, launching, and sustaining a business. Topics include strategic thinking, business relationships, dealing with competition, and marketing.

## **IENG4270 | Manufacturing Processes II with Lab | Lecture/Laboratory (3 Credits)**

Use CAD/CAM software to create part geometries, tooling design, tool path, machining parameters and post processes NC code. Design and create parts using other common manufacturing processes. Emphasis on the principles of design for each process. Processes include sheet metal forming, casting, welding, plastic fabrication, injection molding, and sheet metal forming.

## **IENG4295 | Senior Capstone | Practicum (4 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.

**Prerequisite(s):** WRIT4020

## **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.

**Prerequisite(s):** WRIT4020