

Year 5-6



Professional Engineering License

Industrial engineers who have worked under a licensed engineer for four years qualify to take the PE exam to obtain their license. The average salary increase for those with a PE license is 5%. Students must obtain engineering degrees from an ABET accredited institution to be eligible for professional licensure.



Master's of Science in Industrial Engineering

Year 6: Students choose electives either from their chosen concentration. Students also work to complete either their Master's project or Master's thesis.

Year 5: During the first year, students take core courses. They can also choose an operations research concentration within which they choose from a selection of concentration courses.

Operations Research Core Courses

Queueing Systems
Decision Analysis
Linear Programming
Dynamic Programming
Stochastic Processes
Decision Analysis
Programming Optimizations Methods

Concentration Courses

Production and Inventory Control
Facility Planning
Material Handling Systems
Scheduling
Plant Flow Systems
Financial Engineering
Fundamentals of Supply Chain Management

Year 3-4



Bachelor's Degree in Industrial Engineering

Year 4: Students take senior-level courses and fulfill internship and field-work requirements. Programs not requiring an internship recommended engaging a career exploration counselor to find an internship.

Year 3: Students take specialized courses such as graphic communication tools, introductory programming, quantitative/qualitative research, methods, planning and processing.

GE Courses

General Chemistry
Social Sciences Synthesis
Humanities & Synthesis
Calculus 2 / 3
Differential Equations

Industrial Engineering Courses

Engineering Economics
Engineering Statistics
Operations Research
Ergonomics
Data Processing
Human Systems Interaction

Elective Courses

Production and Inventory Control
Decision Analysis
Facility Planning
Queueing Systems
Human Error and System Failure
Manufacturing Operations
Total Quality Engineering

Year 1-2



Associate Degree / Pursuing Bachelor's Degree

Year 2: Students should continue to complete their GE courses and begin taking lower-division requirement courses. Pre-requisite courses provide students with a basic understanding of theoretical and practical skills.

Year 1: Students are required to take general education courses, but it is also recommended they work to fulfill their degree prerequisite requirements.

GE Courses

Analytical Reading, Expository Writing
Critical Thinking
Oral Communication
Psychology
Economics
Political Science
Sociology

Industrial Engineering-Related Courses

Intro to Industrial Processes Simulations
Industrial Systems Analysis
Basic Circuit Analysis
Industrial Safety Procedures

Lower-Division / Major Prerequisites

Algebra II
Pre-Calculus / Calculus I
Intro to Computer Programming
Intro to MATLAB/Simulink

Year 0



High School Diploma

Transportation-related career academies.