What Is Industrial Engineering?

Industrial engineering (IE) is about choices. Other engineering disciplines apply skills to very specific areas. IE gives you the opportunity to work in a variety of businesses. The most distinctive aspect of industrial engineering is the flexibility that it offers. Whether it’s shortening a rollercoaster line, streamlining an operating room, distributing products worldwide, or manufacturing superior automobiles, all share the common goal of saving money and increasing efficiencies.

As companies adopt management philosophies of continuous productivity and quality improvement to survive in the increasingly competitive world market, the need for industrial engineers is growing. Why? Industrial engineers are the only engineering professionals trained as productivity and quality improvement specialists.

Industrial engineers figure out ways to do things better. They engineer processes and systems that improve quality and productivity. They work to eliminate waste of time, money, materials, energy, and other commodities. Most important of all, IE’s save companies money. This is why more and more companies are hiring industrial engineers and then promoting them into management positions.

Many people are misled by the term “industrial engineer.” The “industrial” does not mean just manufacturing. It encompasses service industries as well. It has long been known that industrial engineers have the technical training to make improvements in a manufacturing setting. Now it is becoming increasingly recognized that these same techniques can be used to evaluate and improve productivity and quality in service industries.

What Do Industrial Engineers Do?

Industrial engineers figure out ways to do things better. They engineer processes and systems that improve quality and productivity. IE’s make significant contributions to their employers by saving money while making the workplace better for fellow workers. In addition to manufacturing, industrial engineers apply their skills in a variety of settings.
Here are a few examples:

- As a management engineer in a hospital, an IE may help doctors and nurses make the best use of their time in treating patients.
- As an ergonomist in a television manufacturing plant, an IE may change the tools workers use to assemble televisions to reduce the risk of repetitive stress injuries.
- As an operations analyst for an airline, an IE may design a bar coding system for identifying and transporting passengers luggage to ensure that it does not get lost.
- As a quality engineer for a public gas and electric company, an IE may improve customer satisfaction by designing a process to schedule service calls around the availability of the customer.

Manufacturing firms and service industries hire a significant number of IE’s. Today, more and more businesses hire IE’s in areas like sales and marketing, finance, information systems, and personnel. Other industries employing IE’s are hospitals, airlines, banks, railroads, and social services.

Industrial engineering has provided a systematic approach to streamline and improve productivity and efficiency in the business world.

- IE’s provide leaner, more efficient, and more profitable business practices while increasing customer service and quality.
- IE’s make the work environment safer, faster, easier, and more rewarding.
- They provide a method by which businesses can analyze their processes and try to make improvements to them. Staying focused on optimization - doing more with less - which helps to reduce waste in society.
- IE’s help reduce costs associated with new technologies, thus allowing more of the population to better their lives by being able to afford these advances.

**Where Do Industrial Engineers Work?**

Manufacturing firms and service industries hire a significant number of IE’s. Today, more and more businesses hire IE’s in areas like sales and marketing, finance, information systems, and personnel. Other industries employing IE’s are hospitals, airlines, banks, railroads, and social services.
Here are a few examples:

- Amazon.com, Chief Engineer
- American Greetings Corp., Vice President of Manufacturing
- Amway Corp., Manager of Distribution Engineering
- Andersen Consulting, LLP, Senior Manager, Capacity Modeling and Simulation
- Anheuser-Busch Co., Manager of Corporate Financial Planning
- Bausch & Lomb, Industrial Engineer
- Boston Globe, Vice President of Production
- Bristol-Myers Squibb Co., Director of Strategic Planning
- Campbell Soup Co. Ltd., Project Manager
- Cessna Aircraft Co., Quality Engineer
- Chick-Fil-A, Systems Engineer
- Clairol Inc., Director of Worldwide Operations
- Coca-Cola Enterprises Inc., Director of Planning & Logistics
- Covenant Health, Director of Management Engineering
- Deere & Company, Manager of Industrial Engineering
- Duracell, Sourcing Systems Manager
- E & J Gallo Winery, Logistics Engineer
- Eastman Kodak, Director of Business Planning
- FedEx, Manager of Process Engineering
- Frito-Lay, Group Manager-Supply Chain
- Hewlett-Packard, Facilities Planning Engineer
- Intel Corp., Corporate Ergonomic Program Manager
- Medical Center of Central Georgia, Assistant Director, Management Engineering
- Mercedes-Benz - US Int'l Inc., Controller
- Reebok International Ltd., Director of Engineering
- The Gap Inc., Director of Operations and Engineering
- The Home Depot, Chief System Engineer
- The Sherwin-Williams Co., Manager of Process Improvement
- UPS, Ergonomics Program Director
- Wal-Mart Stores Inc., Logistics Planning Manager
- Walt Disney World, Manager of Procurement Services
- Waukesha Health System, Coordinator of Performance Improvement
- Xerox Corp., Plant Manager
Senior Engineering Project

The Senior Engineering Project is the capstone experience for all industrial engineering undergraduates. Students enrolled in this course work cooperatively with a company on a project which is overseen by members of the faculty. The results are documented in a final written report, and the companies may implement the recommendations proposed by the students.

We lead the field with project team success, often winning more than 40% of national awards, and the program was used to set National Accreditation Standards for all Senior Engineering Project Management Courses.

Some of the most recent sponsors of this endeavor include:

- Blistex, Inc.
- Eaton Corporation
- General Electric Appliances
- McDonnel Douglas Aerospace
- MCI Telecommunications
- Cummins Engine Co., Inc.
- RevereWare Corporation
- C&C Manufacturing, Inc.
- Norgren
- Illinois Tool Works, Inc.
- The Testor Corporation

Why Choose Industrial Engineering?

Industrial engineering is a versatile and diverse discipline concerned with the design, analysis, and optimization of systems at both the process and enterprise level. But even that broad-based statement doesn’t do justice to the range of problem-solving skills that an industrial engineering education will provide. It’s a way of thinking, examining, and analyzing. It’s a way of finding the best solution to a situation. Industrial engineers can go anywhere. Be anything. The possibilities are limitless.