

WHAT IS INDUSTRIAL ENGINEERING?

Industrial engineers (IEs) are responsible for designing integrated systems of people, machines, material, energy, and information. An industrial engineer may be responsible for the quality of automobiles coming off the end of a manufacturing line, the scheduling of a hospital's emergency room, or even designing a better cockpit to improve the performance of a fighter pilot.

Industrial engineers figure out how 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 resources. This is why more and more companies are hiring industrial engineers and then promoting them into management positions.



Most importantly, an industrial engineer is responsible for improving the overall effectiveness of an organization. To do this IEs utilize the latest advances in:

- Computers and Simulation
- Robotics and Automation
- Materials Handling
- Logistics and Distribution
- Management Information Systems
- Advanced Manufacturing Processes
- Quality Control
- Facilities Layout and Location
- Artificial Intelligence
- Production and Inventory Control
- Ergonomics and Human Factors
- Operations Research
- Reliability and Maintainability
- Engineering Economic Analysis
- Scheduling
- Transportation Systems

WHY BECOME AN INDUSTRIAL ENGINEER?

According to the Jobs Rated Almanac, industrial engineering ranks in the top 10% of careers based on overall salary, satisfaction, opportunities, work environment, and job demands. If that is not enough to convince you, consider the following:

- Every type of organization - particularly those in the manufacturing, service, healthcare, and logistics and distribution industries - depend upon industrial engineers to design and operate their systems. As a result, the current demand for IEs is extremely strong and consistent.
- Employment of IEs is expected to grow about as fast as the average for all occupations, reflecting industrial growth, more complex business operations, and greater use of automation in factories and offices.
- Because of their abilities to improve operations and reduce costs, IEs enjoy a high level of job security, especially during lean economic times.
- IEs have an "inside track" to obtain management positions because they generally work directly with management as part of their day-to-day activities.

- IE is the only engineering discipline that directly considers people as key elements of the systems they design. As a result, IE is truly a "people oriented" profession.
- IEs improve the quality of life for everyone, by working to make higher quality goods and services that are less expensive, more readily available, and better designed to meet customer needs.

The National Association of Colleges and Employers reported that 2008-09 industrial engineering graduates with a bachelor's degree received annual starting salary offers averaging \$58,358. Offers to those with a master's degree averaged \$68,318.



INDUSTRIAL ENGINEERING AT J.B. SPEED SCHOOL

U of L's J. B. Speed School of Engineering offers the only Industrial Engineering program in Kentucky. Most students enter with the objective of pursuing the unique five-year accredited Master of Engineering Degree.

As a freshman, you will develop a solid foundation in engineering principles along with a background in the arts, humanities, and social sciences. After a few semesters, you will begin taking industrial engineering coursework and gain a close-up look at some of the hottest topics in industry today.

Our philosophy is that you must learn by doing it, not just reading about it. As a result you will have access to some of the finest facilities in the country, including labs for Logistics and Distribution, Factory Automation, and Industrial Ergonomics. You will work with robots, conveyors, machining equipment, and some of the latest in computer simulation technology to design actual systems.

You will get an even better view of the profession as you enter the Cooperative Education Program, working

full-time in industry for three semesters. This will enable you to gain experience as an engineer and learn about interviewing, professional conduct and communication. Many students find that the salary they earn is sufficient to offset tuition costs at U of L.

Outside class and co-op, you will have an opportunity to interact with faculty in an informal setting. Our student chapter of the Institute of Industrial Engineers is very active, organizing plant trips, speakers, picnics and parties.

Our faculty and staff work hard to provide students with the highest quality educational experience that will prepare them for a productive career in our exciting field.



DEPARTMENT HIGHLIGHTS

- Two faculty recipients of the University of Louisville Distinguished Teaching Award
- One faculty recipient of the University of Louisville Distinguished Research Award
- Two endowed chairs, one in logistics and one in computer-aided engineering
- Two recognized distinguished alumni
- Four fellows of the Institute of Industrial Engineers
- 80% of faculty are registered Professional Engineers
- The Dean of Engineering is a member and former chairman of the IE department
- Students have won national student design competitions as well as regional technical paper competitions.

For Additional Information:

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