



INDUSTRIAL ENGINEERING

INDUSTRIAL ENGINEERING OVERVIEW

The Institute of Industrial & Systems Engineers defines industrial engineering as a branch of engineering that deals with the optimization of complex processes, systems or organizations. While some engineers design “things,” industrial engineers are often responsible for designing processes, or for analyzing and improving existing processes. Industrial engineers make things better in any industry—from automobile manufacturing and aerospace, to healthcare, forestry, finance, leisure and education. An industrial engineer works to identify and eliminate waste and unnecessary costs, as well as to improve the safety of the worker. Many of our students are awarded a Six Sigma Green Belt certification (an industry-recognized quality control program that utilizes process-improvement techniques) by achieving a minimum grade of B in our statistics courses.

Industrial engineers work across a number of specialties, including operations research, systems, manufacturing, production, management science, safety or ergonomics. Other specialized pursuits may include the following.

- Data Analytics
- Robotics and Computer-Integrated Manufacturing
- Supply Chain Management
- Management Engineering in Healthcare
- Quality and Process Engineering
- Systems Engineering
- Production and Inventory Control
- Human Productivity
- Organization Administration
- Environment Protection/Industrial Safety
- Automatic Controls and Automation
- Consulting
- Engineering Software Management
- Technical Sales and Marketing
- Project Management

EMPLOYERS THAT HAVE HIRED LOUISIANA TECH INDUSTRIAL ENGINEERING STUDENTS

- Lockheed Martin
- Proctor & Gamble
- CenturyLink
- Amazon.com
- Fujitsu Network Communications
- Georgia Pacific
- Entergy Corp.
- Folgers Coffee
- Wal-Mart
- United States Postal Service
- The Boeing Company
- Benteler
- Schlumberger
- Ryder
- Campbell Soup Company
- Baxter Healthcare



Courses

Engineering:

Engineering Problem Solving I-III, Statics & Mechanics of Materials, Electrical Engineering & Circuits I, Thermodynamics

Industrial Engineering:

Engineering Economics, Industrial Cost Analysis, Computer-Aided Engineering, Engineering Statistics I & II, Operations Research I & II, Work Design, Design of Experiments, Robotics & Automation, Industrial Ergonomics, Manufacturing Facilities Planning, Project Management, Capstone Senior Design I-III, Simulation, Manufacturing Systems Management

Materials and Manufacturing:

Engineering Materials, Manufacturing Processes

Mathematics:

Calculus I-IV, Differential Equations, Linear Algebra

Science:

Physics for Engineering and Science I & II, General Chemistry, Fundamentals of Biology I



Opportunities and Activities

Outside of classes, industrial engineering students have many opportunities to socialize around common interests, serve as representatives for their fellow students, broaden their horizons and network across disciplines. These opportunities include student-run organizations, special interest clubs, special projects, competitions and honor societies.

- **Design Projects with Local Industries**
- **Institute of Industrial and Systems Engineers (IISE)** – including travel to conferences
- **Plant Tours to View Industrial Engineering in Practice**
- **Six Sigma Green Belt and Six Sigma Black Belt Certifications**
- **Grand Challenge Scholars Program**
- **Alpha Pi Mu (Industrial Engineering Honor Society)**
- **Tau Beta Pi (Engineering Honor Society)**
- **Engineering and Science Association (ESA)**
- **Society of Women Engineers (SWE)**
- **Eco-marathon Competitions**
- **Student Government Association (SGA)**
- **Intramural Sports**

Alumni Testimonials

"The Louisiana Tech Industrial Engineering program was instrumental in guiding me to the successful career that I now have today. Their well thought out curriculum not only taught me the principles of process optimization, but also helped me develop the skills to properly manage and execute a project. In my current role as a Business Process Manager, I am constantly utilizing content from my IE coursework. I believe the program prepared me well to excel in the workforce."

- **Taylor Fritz**, '12, Business Process Manager, Schlumberger

"Louisiana Tech has, unquestionably, impacted my daily work life. At Tech, I learned many skills that I currently use at my job. There are several times that I see myself using tools that I remember working on in some classes. The Industrial Engineering Program also has a great selection of classes. The staff has always been very supportive and show they care and want their students to succeed. I also had the opportunity to earn my Six Sigma Black Belt Certification that, in my opinion, made a huge difference in the hiring process. It definitely helped me stand out against other candidates. Overall, the Louisiana Tech Industrial Engineering program has had such a great influence in my life and I am very proud to be a bulldog!!!"

- **Manoela Chiacchio**, '17, Industrial Engineer, Hydro-Sapa Extrusions

For more information:

Dr. Jun-Ing Ker, Industrial Engineering Program Chair
email: ker@latech.edu
(318) 257-2963
Louisiana Tech University
P.O. Box 10348
Ruston, LA 71272

