

# MASTER OF SCIENCE IN INDUSTRIAL ENGINEERING



TEXAS TECH UNIVERSITY

Department of Industrial, Manufacturing,  
& Systems Engineering

**ONLINE OR ON CAMPUS**

## PROGRAM OVERVIEW



Industrial engineers use the information and techniques from physical, mathematical, biological, behavioral, and engineering sciences to plan, control, design, and manage complex organizations and systems. Students learn to function in teams, communicate effectively, design and conduct experiments, and utilize current engineering tools. Students gain an understanding of their professional and ethical responsibilities as they examine contemporary issues and the impact of engineering solutions in the global workplace. Most importantly, students learn to learn so they can continue to update their industrial engineering skills throughout their careers.

## CORE CURRICULUM

### Operation Research:

- ☐ IE 5311 Optimization I
- ☐ IE 5318 Principles of Operations Research

### Systems and Engineering Management:

- ☐ IE 5320 Systems Theory

### Manufacturing:

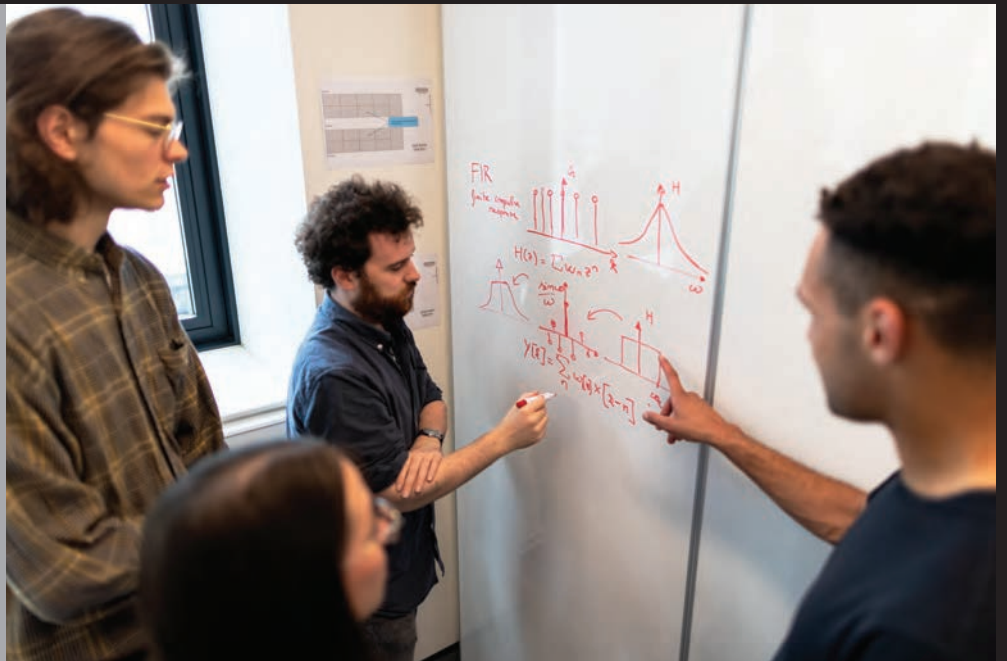
- ☐ IE 5351 Advanced Manufacturing Processes
- ☐ IE 5352 Advanced Manufacturing Systems
- ☐ IE 5355 Computer-Aided Manufacturing
- ☐ IE 5356 Biomedical Design and Manufacturing

### Statistics:

- ☐ IE 5344 Statistical Data Analysis
- ☐ IE 5342 Design of Experiments

### Human Factors/Ergonomics:

- ☐ IE 5306 Safety Engineering
- ☐ IE 5301 Human Factors and Ergonomics



## IEs CAN WORK ANYWHERE!

TTU IMSE graduates are highly sought after by top companies due to our quality curriculum. They secure above-average salaries, meeting the high demand for industrial engineers. Our Engineering Opportunities Center supports them in finding internships and career placements.



amazon

FedEx

SAMSUNG



accenture



## ADVANCED STUDY AND RESEARCH:

The college has a rich history of internationally recognized research coupled with advanced research programs. Our faculty members are committed to research and pride themselves on cultivating future research and future engineers who will impact society by contributing to new scientific discoveries. Industrial engineers gain knowledge and experience in applied optimization, data analytics, engineering management, transportation, supply chain and logistics, healthcare delivery, medical decision-making, economic and cost analysis, ergonomics, and safety. They also build on that knowledge to integrate decision support systems. The department is also developing research and coursework in the emerging areas of advanced and additive manufacturing utilizing a systems approach.

## AVERAGE SALARY IN TEXAS

**\$145,661**

SOURCE:  
salary.com

## POTENTIAL INDUSTRIES

- \*Aerospace
- \*Operations
- \*Defense
- \*Manufacturing
- \*Safety & Ergonomics
- \*Healthcare
- \*Quality Control
- \*Engineering Management

## RELATED CAREERS

- Industrial Engineer
- Supply Chain Manager
- Operations Manager
- Process Improvement Engineer
- Quality Engineer
- Ergonomics Engineers
- Project Manager
- Data Analyst



TEXAS TECH UNIVERSITY

## Department of Industrial, Manufacturing, & Systems Engineering

The Department of Industrial, Manufacturing, & Systems Engineering at Texas Tech University is respected and ranked nationally. The department offers a variety of Engineering courses and activities while maintaining small class sizes. Professors know their students by name and are genuinely interested in preparing them for a successful engineering career. The department began offering the Master of Science degree in 1961, and the doctorate degree in 1965. The department enrolls over 200 undergraduate, 160 graduate students and has conferred more than 1,600 B.S., 1,000 M.S., and 200 Ph.D. degrees.



**APPLY  
HERE**



**HOW TO APPLY:** Detailed information concerning admission and online application is available at: [www.depts.ttu.edu/gradschool/admissions/](http://www.depts.ttu.edu/gradschool/admissions/)

### Application Deadlines:

Interested students can apply at [www.applytexas.org](http://www.applytexas.org) up to 14 days before the semester for scholarship consideration. Please submit your applications by:

#### Fall Semester:

March 1 (Domestic)

January 15 (International)

#### Spring Semester:

October 1 (Domestic)

June 15 (International)

### Required Documents:

- \* Official Transcripts
- \* 1 Letters of Recommendation
- \* GRE Scores (Optional)
- \* TOEFL or IELTS Scores (International Students Only)

### TEXAS TECH UNIVERSITY:

Texas Tech University, founded in 1923, is the largest institution within the Texas Tech University System. Its sprawling 1,839-acre campus in Lubbock is the nation's second-largest, accommodating 40,542 students in Fall 2021. Remarkably, it's the only campus in Texas to house a major university, law school, and medical school. Offering a diverse range of academic programs, Texas Tech provides 150 undergraduate, 100 master's, and 50 doctoral degrees. It proudly holds the "Highest Research Activity" designation in the Carnegie Classification of Institutions of Higher Learning.

From Here, It's Possible™



### CONTACT US

RM 232 | 905 Canton Ave.  
Box 43061 | Lubbock,  
Texas 79409-3061  
O 806.742.3543  
Grad.Imse@ttu.edu



### PROGRAM FEATURES:

The curriculum provides students with an opportunity to apply their knowledge in engineering, mathematical, & science to design systems and solve engineering problems. To help students to meet self-defined goals, the program provides two optional degree plans:

### ERGONOMICS & HUMAN FACTORS

Students learn to design work environments that are safe, efficient, and comfortable for workers in order to optimize interactions between humans and machines.

### DATA SCIENCE

Students learn concepts such as calculus, linear algebra, probability, and statistics in order to solve problems and make data-driven decisions.

### MANUFACTURING & PRODUCTION

Students will aim to retain knowledge in design, analysis, and optimization of the manufacturing systems, including facility layout, production planning, quality control, process improvement, and manufacturing principles.

### OPERATIONS RESEARCH/LOGISTICS

Students study topics like demand forecasting, procurement, distribution, inventory control, and supply chain network design to coordinate and optimize the flow of goods, services, and information.

### SYSTEMS ENGINEERING

Systems engineering is an interdisciplinary field of engineering and engineering management that focuses on how to design, integrate, and manage complex systems over their life cycles.

### ENGINEERING SCIENCES

Courses in fundamental engineering sciences, such as physics and materials science, help students understand the principles behind engineering systems and their behavior.

### RESEARCH OPPORTUNITIES

You will participate in research projects to gain vital skills and boost your knowledge for your career and potential graduate studies. We prioritize collaborative efforts between students and professors on innovative research, focusing on your interests and our key areas. Working closely with expert faculty, you'll tackle real-world challenges and contribute to advancing knowledge.

### Financial Aid:

Financial aid will be provided dependent on the qualifications. Merit scholarships, which are based on academic performance, will be awarded by the Graduate School and the Department. Detailed information about financial aid is available at:

[www.depts.ttu.edu/gradschool/funding/](http://www.depts.ttu.edu/gradschool/funding/)

[www.depts.ttu.edu/imse/graduate/graduate\\_scholarships\\_imse](http://www.depts.ttu.edu/imse/graduate/graduate_scholarships_imse)