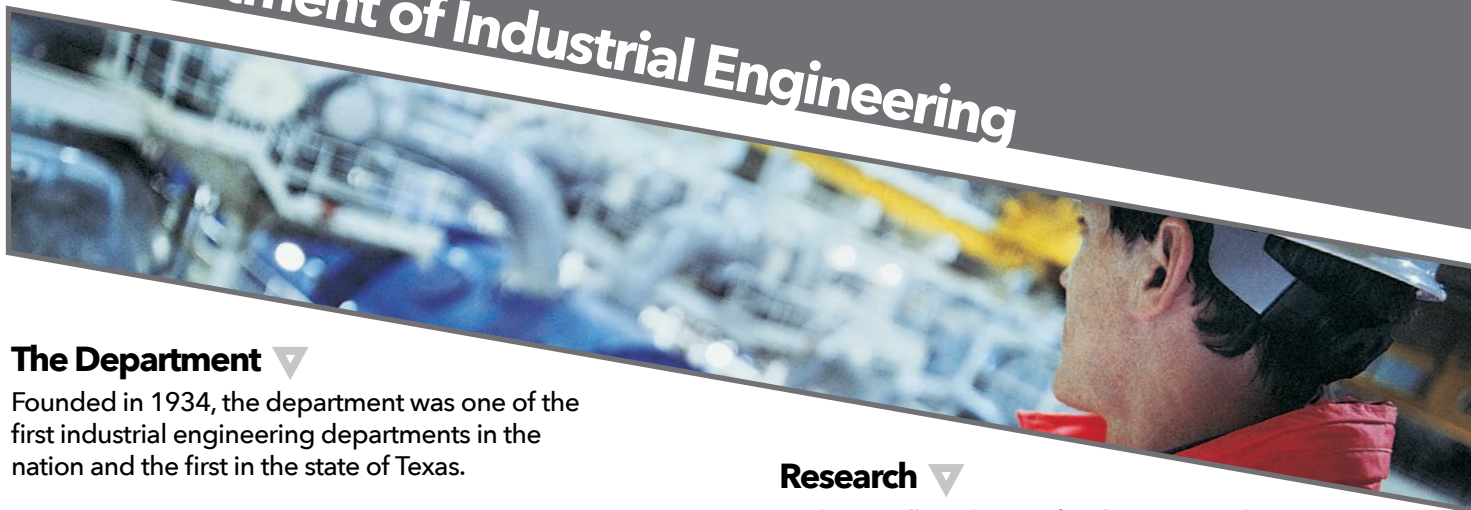


Department of Industrial Engineering



The Department ▼

Founded in 1934, the department was one of the first industrial engineering departments in the nation and the first in the state of Texas.

Red Raider industrial engineers gain experience in the traditional industrial engineering application areas of **applied optimization, engineering management, supply chain and logistics, transportation, biofuels, and ergonomics and human factors**, but build on that knowledge to integrate **decision support systems and skills** that are gained through course projects, senior projects, and the department's unique entrepreneurship certificate. The department is also developing research and coursework in emerging areas of **advanced and additive manufacturing integrated utilizing a systems approach**.

Graduates occupy **leadership positions** in academia, government and the military, and many are CEOs and presidents of large organizations.



Graduate programs are consistently **ranked among the top programs** in the nation, and the Systems and Engineering Management programs offer highly ranked Master of Science and Ph.D. **degrees by distance**.

By the Numbers ▼

Enrollments (Fall 2014):

Undergraduate.....	85
Estimated Qualifying Foundational Students.....	37
Master's.....	59
Doctoral.....	84

Faculty Members:..... 12

Endowed Chairs, Professors, and Fellows:..... 4

2015 U.S. News and World Report Rankings
Best Online Graduate Programs 20
(M.S.SY.E.M. and Ph.D. SY.E.M.)

Research ▼

With a small student-to-faculty ratio, students gain research experience in cutting edge, faculty-developed technologies in the following research areas:

- **Engineering Management:** Systems theory, decision theory, industrial cost analysis, advanced engineering economics, performance improvement in organizations, project management, and productivity management.
- **Ergonomics and Human Factors Engineering:** Occupational biomechanics, work physiology, industrial ergonomics, environmental hygiene, cognitive engineering, human performance, human computer interaction, and occupational safety.
- **Manufacturing and Quality Assurance:** Manufacturing engineering and design, additive manufacturing, computer integrated manufacturing/CAD/CAM, process analysis and economics, automated manufacturing and process planning, programmable control systems.
- **Operations Research:** Simulation modeling, scheduling and sequencing, just-in-time production systems, inventory and production control, linear and nonlinear programming, network analysis, artificial intelligence and expert system.
- **Statistics and Quality Assurance:** Design of experiments, statistical data analysis, reliability and maintainability, on-line and off-line quality assurance, and total quality assurance.


Areas of Study ▼

- Bachelor of Science in Industrial Engineering
- Graduate Certificate in Cybersecurity for Critical Infrastructure
- Master of Science in Industrial Engineering
- Master of Science in Systems and Engineering Management
- Doctor of Philosophy in Industrial Engineering
- Doctor of Philosophy in Systems and Engineering Management

Contacts ▼

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College of Engineering

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Department of Industrial Engineering

Faculty Research Specializations ▼

Dr. Mario Beruvides, P.E.

AT&T Professor

Management of Technology, Engineering Management, Engineering Economics, Measurement, Production and Quality Systems Engineering and Dynamics



Dr. Patrick Patterson, P.E., C.P.E.

Professor

Biomechanics, Physical Ergonomics, Cognitive Ergonomics, Computational Intelligence, Human-Computer Interaction, Rehabilitation Engineering

Dr. Weilong Cong

Assistant Professor

Rotary ultrasonic machining of high performance materials, Renewable energy manufacturing, Traditional and nontraditional machining processes in semiconductor manufacturing, Additive manufacturing of metal and composite materials



Dr. James Smith, P.E., C.P.E.

Professor

Occupational Ergonomics Including Work Physiology, Biomechanics, Workplace Design, Manual Materials Handling, Anthropometry, Human Strength Assessment

Dr. Jennifer Cross

Associate Professor

Lean Manufacturing, Teams, Performance Measurement, Product Development, Design and Management of Engineering, Service and Healthcare Operations



Dr. Milton Smith, P.E.

Professor

Production Scheduling and Control Including Sequencing and Scheduling Algorithms, Simulation Modeling of Manufacturing Systems, Design and Evaluation of Production Systems, Impact Testing of Materials Including Hail and Explosive Propelled Objects

Dr. Ismael Regis de Farias Jr.

Associate Professor

Operations Research, Optimization, Mixed-Integer Programming



Dr. Joseph Urban

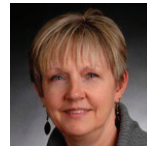
Professor

Software Engineering, Executable Specification Languages, Prototyping Software Systems, Web Based Software Tools, Engineering Education, Computer Languages, Data Engineering, Distributed Computing

Dr. Simon Hsiang, P.E., C.P.E.

Professor

Human Factors/Ergonomics, Cognitive Engineering, Occupational Biomechanics, Virtual Reality, Modeling and System Design, Data Mining, System Identification, Human Safety and Reliability



Dr. Susan Urban

Professor

Distributed Data Management and Integration, Complex Event Processing, Integration of Event and Stream Processing, Distributed Rule and Transaction Processing, Active/Reactive Behavior in Distributed, Data-Centric Applications, Object-Oriented Data Modeling

Dr. Timothy Matis

Associate Professor

Operations Research, Stochastic Processes, Queueing Theory, Ad-hoc Communication Networks, Conceptual Learning Theories and Virtual Learning Environments



Dr. Hong-Chao Zhang, P.E.

Interim Department Chair and E.L. Derr Professor

Advanced Manufacturing - particularly focused on Sustainable Manufacturing, Additive manufacturing, Remanufacturing, Resource Efficiency Manufacturing, Environmentally Conscious Manufacturing, Life-Cycle Assessment (LCA), Shape-Memory Materials for Automation and Disassembly, Energy Modeling of Manufacturing Processes, CIM, CAD/CAM, CAPP

Open Faculty Positions

Manufacturing and Systems
Industrial Engineering

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