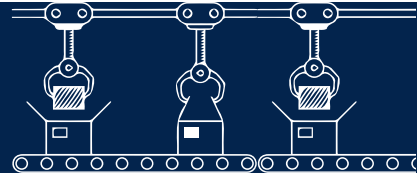


Samuel Ginn College of Engineering

Industrial and Systems Engineering



WHAT IS INDUSTRIAL AND SYSTEMS ENGINEERING?

Industrial and systems engineers design and improve processes to make work safer, faster, easier and more rewarding in service industries, entertainment companies, shipping and logistics businesses, healthcare organizations, and manufacturing. Whether shortening a rollercoaster line, streamlining an operating room, distributing products worldwide or manufacturing superior automobiles, industrial and systems engineers face the challenge and common goal of saving money and increasing efficiency and quality.

By using the right combinations of human and natural resources, fabricated structures, information technologies and manufactured equipment, industrial and systems engineers look at the big picture of what makes organizations work best.

NOTABLE

- 395 undergraduate and 141 graduate students enrolled in fall 2021
- 21 full-time faculty members and 2 lecturers
- The Department of Industrial and Systems Engineering has been granting degrees since 1932
- Tim Cook '82 is CEO of Apple Inc.
- The department offers a certificate in manufacturing systems and certification in Lean Six Sigma. The department also offers 3 graduate certificates.
- Auburn's automotive manufacturing systems laboratory is the only manufacturing lab of its kind in the country, emulating an automotive assembly plant similar to manufacturers such as Toyota and Honda
- The department's Occupational Safety and Ergonomics and Injury Prevention programs are part of the Deep South Center for Occupational Health and Safety, a consortium of programs offering graduate education in occupational health nursing, industrial hygiene and occupational safety and ergonomics
- Sam Ginn '59, namesake of the College of Engineering, is a pioneer in the wireless communications industry and is a retired chairman and CEO of Vodafone AirTouch
- Students can earn a combined master's degree in industrial and systems engineering (MISE) and business administration (MBA) through the department and College of Business
- The Master of Engineering Management degree is the only one of its kind offered in Alabama

RESEARCH, LABORATORIES AND CENTERS

The Department of Industrial and Systems Engineering provides opportunities to perform research in state-of-the-art laboratories through hands-on learning:

- Automotive manufacturing systems lab enhances learning in multiple courses with fully functional work cells; students build lego cars to simulate factory workers and tweak the performance of the work cells as engineers
- Three occupational safety and ergonomics (OSE) labs encourage experiential learning and include the OSE Injury Prevention (IP) laboratory, biomechanics lab and human factors engineering laboratory. They form the Occupational Safety, Ergonomics and Injury Prevention Center.
- Electronics manufacturing lab located in Shelby Center and a larger lab in the Advanced Engineering Research Laboratories building
- Computer teaching lab and open student lab are located on the same floor as the department offices, making them convenient for students, faculty and staff

UNDERGRADUATE CURRICULUM

Bachelor of Industrial and Systems Engineering

The industrial and systems engineering curriculum prepares students for professional practice through case studies, real-world projects and open-ended homework problems that develop students' engineering and design skills. A senior design capstone experience in an industrial or governmental organization brings the curricular education to an experiential close. Students study:

- economic, technical and human performance considerations in design and systems analysis
- engineering economy
- industrial and service systems
- mathematical, physical and social sciences
- operations planning and manufacturing systems
- stochastic and deterministic operations research
- methods and work measurement
- simulation

For information about academic programs and minors, visit www.eng.auburn.edu/programs

SCHOLARSHIPS

The College of Engineering and the Department of Industrial and Systems Engineering provide scholarship opportunities to students at every stage of their academic career. To be eligible for scholarships at Auburn University, all students must apply through AUSOM.

For information about engineering scholarships, visit www.eng.auburn.edu/scholarships

GRADUATE CURRICULUM

Along with the required classes, students choose from a wide variety of elective courses, including Six Sigma, systems engineering, Lean Systems, project management, integer and non-linear programming, simulation, electronics manufacturing, adaptive optimization and human factors engineering. Graduate studies in the department have been consistently ranked in the top 25 programs by U.S. News and World Report.

Master of Science (M.S.) — requires 30 credit hours, up to six of which can be thesis research (INSY 7990), plus a minimum of one hour seminar (INSY 7950); graduate core courses contribute 9 hours; the thesis is supervised by an adviser and committee, and the final defense and examination is administered by this committee

Master of Industrial and Systems Engineering (MISE) — a 30 credit hour, non-thesis program that includes 9 hours of graduate core course work plus a one-semester-hour seminar

Dual MBA/ MISE — students obtain both an MISE degree and an MBA degree from Auburn in less than 2 years; the intervening summer is spent as an industrial intern or on an international experience; students must be admitted to both the MBA and MISE degree programs and may take either the GMAT or GRE exam

Master of Engineering Management (MEM) — The Master of Engineering Management degree allows those who are currently working in an engineering-related field to expand their career potential and earn a degree that will pay dividends toward their future. The degree appeals to individuals working in all engineering fields. Students who complete 30 hours, or 10 courses (7 required), will earn a Master of Engineering Management degree in one of four options: Manufacturing, Occupational Safety and Ergonomics, Product Innovation, or Systems.

Doctor of Philosophy (Ph.D.) — requires a minimum of 60 credit hours including 10 credit hours from the graduate core curriculum; requires a research-based dissertation supervised by an adviser and committee; the proposal and final defense are administered by the committee

TEAMS AND ORGANIZATIONS

Industrial and systems engineering students are encouraged to participate in campus organizations, teams and clubs, gaining experience with teamwork and project management beyond the classroom, including:

- Alpha Pi Mu honor society
- American Society of Safety Engineers (ASSE)
- Human Factors and Ergonomics Society (HFES)
- Institute for Operations Research and the Management Sciences (INFORMS)
- Institute of Industrial Engineers (IIE)
- Institute of Industrial and Systems Engineers (IISE)
- Society of Manufacturing Engineers (SME)

For more information, visit www.eng.auburn.edu/organizations

LIFE AFTER GRADUATION

Industrial and systems engineers develop processes and systems that improve quality and productivity, eliminating excess time, money, materials and energy, and focus on a number of specialized areas, including:

- engineering management
- data modeling, simulation, database design, decision support and supply chain
- occupational safety, ergonomics and human factors
- operations research, statistics and quality control
- production and Lean Systems
- systems design with routing, scheduling, linear programming, simulation and network flows

As companies and corporations across the globe increase their need for effective and efficient operations, their demand for highly skilled industrial and systems engineering professionals grows. According to the Bureau of Labor Standards, there will be a 13 percent increase in the demand for industrial engineers throughout the next 10 years.

Employers of recent Auburn ISE graduates include Toyota, Apple, ExxonMobil, AT&T, Alabama Power, Intel, General Motors, Hyundai, UPS, Delta Airlines, Briggs & Stratton, ChevronTexaco, General Electric, Disney, Xerox, Accenture, Northrup Grumman, Boeing, Frito-Lay, BMW and branches of the United States military.

CONTACT US

JOHN EVANS, Professor and Department Chair
LuAnn Carpenter, Director of Student Program
Assessment and Administration
3301C Shelby Center, Auburn, AL 36849
334.844.1430
simslua@auburn.edu
www.eng.auburn.edu/ise
www.facebook.com/auinsy

Office of Engineering Student Services
1161 Brown-Kopel Center
Auburn, AL 36849
334.844.4310
engineering@auburn.edu
www.eng.auburn.edu/ess

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