Student Activities

Being in Industrial and Systems Engineering is a demanding major, but it is not all work. Our students are involved in many different activities across campus. Some of these are ISE related, and others are not.

Some of the ISE related activities are:

- **Institute of Industrial Engineers** – IIE is our professional organization, and it gives our students a chance to interact with other students in the department, and other universities. It also gives students a chance to network with companies, and attend informational sessions about issues such as resume writing, finding internships, and interviewing skills. It also helps to bridge the gap between younger students and older students.

- **Alpha Pi Mu** – This is the Industrial and Systems Engineering honor society. It is open to outstanding juniors, seniors, and graduate students. This society also allows students excellent networking opportunities, as well as a chance to get to know more students within the department.

Some of the other activities our students are involved with are:

- Intramural sports
- Society of Women Engineers
- Lady Mini Baha
- Formula Car Team
- Varsity Sports
- Solar Decathlon – Solar House
- Sororities
- Auburn University Marching Band
- Fraternities
- Auburn University Cheerleaders
- ROTC
- Honor Societies
- Volunteer Work
- AU Singers

Scholarship Information

The Industrial and Systems Engineering department offers many scholarships to its students. Many of the awards are for students already in our program with, on average, a 3.50 GPA or higher. Once awarded, a student must keep a cumulative GPA of 3.00, and remain in the Industrial and Systems Engineering department.

Although many of the awards are for upperclassmen, there is one granted to incoming freshmen:

- **The Comer Scholarship** is awarded for four years, and is valued at tuition. Consideration is given to Alabama residents and is based on financial need, academic record, and a commitment to Industrial and Systems Engineering.

Another award that may be granted to an incoming freshman is the Donald J. Parke award. This award is granted ONLY to Florida residents.

Job Opportunities

Auburn Engineers have an outstanding reputation, and the Industrial and Systems Engineering department is highly recruited. Many of our alumni have gone on to become top executives in major companies, and when they visit Auburn, they are very interested in our graduates.

Some of the companies recently hiring Auburn Industrial and Systems Engineers are:

- Accenture
- Alabama Power
- BellSouth
- Boeing
- Daimler Chrysler
- East Alabama Medical Clinic
- Government Civilian Services
- Neptune
- Shaw Industries
- U.S. Navy
- U.S. Army

Contact Information

Alice E. Smith, Ph.D., P.E.
Philpott-WestPoint Stevens Professor and Chair
Department of Industrial and Systems Engineering
207 Dunstan Hall
Auburn University, AL 36849-5346 USA
334-844-1400
334-844-1361 (fax)
aesmith@eng.auburn.edu

Visit Our Website:
www.eng.auburn.edu/department/ie/

Other Resources

Financial Aid Office
www.auburn.edu/finaid/

Admissions
www.auburn.edu/student_info/student_affairs/admissions/

Scholarship Office
www.auburn.edu/scholarship
What is Industrial and Systems Engineering?

Industrial and Systems Engineering (ISE) is a broad engineering discipline that applies creative problem solving approaches to situations involving people, materials, machines, equipment, and facilities.

Industrial Engineers look at the “big picture” of what makes organizations work best. They do this by using the right combinations of human and natural resources, fabricated structures, information technologies, and manufactured equipment.

ISE focuses on the analysis, design, operation and control of systems of people, materials, equipment, energy, and information.

While still being concerned with traditional aspects, such as manufacturing and logistics, ISE is evolving to include electronic, digital, computer and internet systems technology.

What does an Industrial Engineer do?

- Model and analyze the operation of manufacturing, logistics, and business systems.
- Design and manage facilities, management systems, and facility operations.
- Devise new ways to improve the working environment through ergonomic principles.
- Evaluate reliability and quality performance.
- Improve systems for distributions of goods and services, and enhance maintenance systems, and allocation of resources.

Areas of ISE

Production and Manufacturing

Combines the design and operations of manufacturing systems. Creates models to design, analyze, operate, and control manufacturing systems. This includes demand forecasting, production method determination, material control, inventory, control, and job/machine scheduling.

Ergonomics and Safety

Uses principles of occupational safety engineering and ergonomics in the evaluation and design of occupational work areas and processes, which include human operators. Occupational safety engineering and management also include environmental concerns.

Engineering Management

Combines aspects of financial engineering, and manufacturing cost analysis. There is an emphasis on design economics, and cost estimation techniques with applications to various manufacturing and service operations including e-commerce.

Operations Research and Statistics

Optimizes routing, scheduling or assigning and analyzes system output including quality. Uses formulation, solution, interpretation, and implementation of mathematical models including linear programming, simulation and network flows. Statistics include data analysis, design of experiments and quality control.

Electronics and Process Manufacturing

This area investigates the latest in electronics, design and its impact on high volume manufacturing processes. Topics investigated are advanced electronics packaging, component reliability, electrical and thermal performance, process capability, process control, design for manufacturability, and systems analysis. Lean manufacturing is a course that is dedicated to understanding these processes.

Information Technologies

As internet technologies continue to grow, the service and manufacturing industries will be increasingly dependent on Information Technologies (IT). The IT area of the ISE department investigates data modeling, database design, e-commerce, supply-chain and internet-based tools for operation management.

Benefits of Majoring in ISE at Auburn

The Industrial and Systems Engineering program at Auburn is ABET accredited and has been granting degrees since 1931.

The program is ranked in the top quarter of all industrial engineering programs in the U.S. by the latest Gourman Report and has a continued commitment to excellence.

Auburn Industrial and Systems Engineers are highly recruited by well-known companies, and are offered starting salaries comparable to other engineering disciplines.

Our undergraduate curriculum provides a fundamental education that prepares students for professional practice in ISE and related fields by using:

- Case studies, real-world projects, and open-ended homework problems help to develop the student’s engineering and design abilities as well as thinking skills.
- Students participate in group activities, and exercises, as well as individual written and oral reports.
- Summer intern and co-op programs are available. Students work for companies such as ADIPCO, Southern Nuclear, Sheehan Manufacturing, and Walt Disney World.

At Auburn, the student to faculty ratio remains small enough to allow individualized attention. There are around 130 undergraduate students and 12 faculty members.

The faculty is highly qualified academically and professionally, having advanced degrees from well-respected U.S. universities as well as considerable industrial experience.

The percentage of female students is one of the highest of all engineering disciplines at between 40% and 50%. This creates a more accepting environment where females are among many peers instead of being a small minority.

The U.S. Department of Labor projects a 10 to 20% increase in Industrial Engineering jobs through 2008.

Our ISE Alumni Council is very interested and involved in the activities of the students in the department. They visit Auburn to interact with students twice a year. They give valuable insight to new career opportunities within Industrial and Systems Engineering, and provide excellent networking opportunities.

What are Degree Requirements?

Our program requires strong math skills, a willingness to learn new things, and the determination to succeed, which make it a very rewarding venture. The Bachelors of Industrial and Systems Engineering program is a four-year program. Some students participate in the Cooperative Education Program, which is a five-year program.

Curriculum

**Freshman Year**

- Calculus I       4
- Fund. Of Chem. I  3
- Fund. Of Chem. Lab 1
- Phys. I Lab       1
- English Comp. I   3
- History I         3
- Intro. To Eng.    2
- Eng. Orientation  0

**Sophomore Year**

- Calculus II      4
- Fund. Of Mechanics 3
- Fund. Of Mechs. Lab 3
- Physics II       3
- Physics II Lab   3
- Methods Eng. & Meas. 2
- Differential Equations 3
- Prob. & Statistics I 3
- Prob. & Statistics II 3
- Applied Stat. Lab  1

**Junior Year**

- Social Science I 3
- Object Oriented Prog. 3
- Deterministic OR   3
- Great Books II     3
- Great Books III    3
- Social Science II  3
- Engineering Economics 3

**Senior Year**

- Quality Control   3
- Professional Practice 1
- Fund. Electrical Eng. 3
- Mfg. Systems       3
- Ethics            3
- INSY Elective     3
- ENGR Elective 3
- INSY Elective     3
- INSY Elective     3

OR – Operations Research  Mfg. - Manufacturing
Bolds represent Major Classes