Auburn University’s Department of Industrial and Systems Engineering offers a graduate certificate program that includes six courses in occupational safety and ergonomics (OSE) and is delivered online. Auburn’s graduate programs in occupational safety and ergonomics are recognized by the National Institute of Occupational Safety and Health (NIOSH).

EARNING AN ENGINEERING GRADUATE CERTIFICATE ONLINE

At Auburn, earning a graduate degree or graduate certificate through the Auburn Engineering Online Graduate Program is easy and convenient, combining traditional classroom instruction with modern delivery via streaming video to offer educational opportunities beyond campus. Students can pursue a graduate certificate at home or work while continuing fulltime employment. Graduate online students utilize the same lectures, assignments and instructors as their on-campus peers.

Auburn Engineering Online Graduate Program
ing.auburn.edu/online

CERTIFICATE CURRICULUM

The following courses are part of the OSE graduate certificate program, which can be earned by both degree and non-degree seeking students:

**INSY 6016: Safety I (3 semester hours)** Course Coordinator: Rich Sesek, sesek@auburn.edu

What is industrial safety and how can it improve the workplace? Safety is an integral part of engineering and is a core responsibility of all engineers. This class addresses industrial safety concepts with a focus on the Occupational Safety and Health Administration (OSHA) and important safety regulations, risk management, hazard identification and elimination, hazard communication, professional certification, and other applied safety topics intrinsic to facility design and operation. Safety I will help students gain an understanding of common safety hazards and the appropriate control strategies for minimizing those hazards. There are no engineering prerequisites. The course can be taken by anyone with graduate standing.

**INSY 7026: Safety II: System Safety (3 semester hours)** Course Coordinator: Jerry Davis, davisga@auburn.edu

Safety II covers common system safety techniques used to minimize system hazards and threats, including methods commonly used by safety professionals, including preliminary hazard analysis (PHA), fault tree analysis (FTA), and failure modes and effects analysis (FMEA). This class will help students gain an understanding of system safety techniques for accident prevention and quantification of hazards inherent in machines and human/machine systems. The course introduces major principles of system safety engineering and will provide valuable information for those who are designing products or systems; responsible for maintenance or system reliability; or are interested in risk assessment. This class can be taken by anyone with graduate standing. Concurrent enrollment in INSY 6016: Safety I may be allowed with instructor approval.

**INSY 7056: Industrial Hygiene and Environmental Hazards (3 semester hours)** Course Coordinator: Jerry Davis, davisga@auburn.edu

Industrial Hygiene (IH) provides an introduction to fundamental IH concepts with emphasis on the industrial hygiene/safety interface and on the evaluation and control of noise, vibration, radiation, and other chronic workplace stresses. This course focuses on the anticipation, recognition, evaluation, and control of occupational hazards.

**INSY 7066: Ergonomics I: Fundamentals (3 semester hours)** Course Coordinator: Sean Gallagher, seangallagher@auburn.edu

Ergonomics I focuses on the basics associated with industrial ergonomics. This course provides an overview of the body’s systems, discusses human work capacity, identifies common work factors associated with ergonomics, and introduces various ergonomics risk assessment tools used to quantify workplace ergonomics factors. This course would be of practical value to any engineering student, as well as graduate students from disciplines such as health and human performance, exercise science, kinesiology, physical or occupational therapy, occupational health nursing and industrial hygiene. Ergonomics I has no prerequisites and can be taken by graduate students with or without an engineering background.

**INSY 7076: Ergonomics II: Biomechanics (3 semester hours)** Course Coordinator: Sean Gallagher, seangallagher@auburn.edu

Ergonomics II focuses on the structure and function of the human musculoskeletal system. Students learn about the mechanics of various soft tissue injuries, as well as how to evaluate jobs for risk factors that contribute to these injuries. The course features design principles for minimizing...
occupational musculoskeletal stressors and maximizing operator productivity and comfort. Ergonomics studies the interaction between the worker and the workplace. The biomechanics course addresses the factors that impede this interaction and how they impact both job performance and the wellbeing of workers. Ergonomics II demonstrates a number of ergonomic evaluation tools and methods to incorporate ergonomic principles into engineering designs, work methods and finished work products. This class has a prerequisite of Ergonomics I (INSY 7060 or INSY 7066 Ergonomics I) and can be taken by anyone with graduate standing. Concurrent enrollment in INSY 7066 may be allowed with instructor approval.

INSY 7086: Human Factors Engineering (3 semester hours) Course Coordinator: Rich Sesek, sesek@auburn.edu
Human factors engineering considers how people interact with their environment. Consideration of human factors in designing systems can increase productivity and minimize system failures. This course demonstrates how many errors are the result of poorly designed systems. Students will learn design principles for minimizing confusion and maximizing operator comfort and performance. Human factors engineering provides useful information for anyone designing products or systems that will be used by people.

eng.auburn.edu/ose-grad-certificate

HOW TO APPLY
The graduate online program’s application process includes completion of a graduate school application, payment of the application fee and transcript submission. For a step-by-step guide to the application process visit eng.auburn.edu/online/graduate-degrees/how-to-apply

TUITION AND FEES

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<tr>
<th>Application Fee:</th>
<th>$50 Domestic $60 International</th>
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<tbody>
<tr>
<td>Graduation Fee (billed to student during graduation semester)</td>
<td>$20</td>
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<tr>
<td>Engineering Course Fee per semester credit hour (effective fall 2014)</td>
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For more information about billing, financial aid, military tuition assistance, transfer of credit, company payments and enrollment dates, visit eng.auburn.edu/online/graduate-degrees/tuition-fees

NOTABLE
• 51 OSE graduate certificates earned
• 146 students currently enrolled in OSE GC courses
• All OSE faculty professionally certified in ergonomics and/or safety

ABOUT THE DEPARTMENT
Auburn’s Department of Industrial and Systems Engineering is ABET accredited and has been granting degrees since 1932. The program is ranked among the top 25 industrial engineering programs by U.S. News and World Report. The department’s faculty are highly qualified academically and professionally, and includes experts who have attained advanced degrees from respected U.S. universities, as well as considerable industrial and governmental experience.

The department also offers a master’s degree in industrial and systems engineering (MISE) and a dual MISE/MBA degree — a shared program with the College of Business — through the online graduate program, as well as a doctorate, obtained in part online.

Faculty
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