Course Description

Review of the principles and practices of ergonomics as it applies to the industrial environment. Demonstrates how to collect data on users and operators and how to convert the data to good workplace design.

Course Textbook


Course Learning Objectives

Upon completion of this course, students should be able to:

1. Specify and design ergonomically appropriate industrial workstations for the industrial and office work environment.
2. Identify information-centered human factors relating to visual, illumination, controls, displays, and symbols.
3. Compare, contrast, and assess human body-centered ergonomic designs for posture, material handling, repetitive motion factors, heat stress, noise, and vibration.
4. Examine and evaluate organizational or management-centered ergonomic factors for training, skills, and cognitive task analysis.
5. Define the ergonomic factors intrinsic in evaluating accidents, human errors, and safety related incidents.
6. Illustrate and assess the ergonomic factors in computer work station design.
7. Discuss and identify key components of cost-benefit analysis in human factors and ergonomic design.
8. Summarize key components in conducting a human factors or ergonomics related investigation.

Credits

Upon completion of this course, the students will earn three (3) hours of college credit.

Course Structure

1. **Unit Learning Objectives:** Each unit contains Unit Learning Objectives that specify the measurable skills and knowledge students should gain upon completion of the unit.
2. **Unit Lesson:** Each unit contains a Unit Lesson, which discusses lesson material.
3. **Reading Assignments:** Each unit contains Reading Assignments from one or more chapters from the textbook or a publication from the NIOSH. Supplemental Readings are provided in the unit study guides to aid students in their course of study.
4. **Learning Activities (Non-Graded):** These non-graded Learning Activities are provided to aid students in their course of study.
5. **Key Terms:** Key Terms are intended to guide students in their course of study. Students should pay particular attention to Key Terms as they represent important concepts within the unit material and reading.
6. **Discussion Boards:** Discussion Boards are a part of all CSU term courses. Information and specifications regarding these assignments are provided in the Academic Policies listed in the Course Menu bar.
7. **Unit Assessments:** This course contains six Unit Assessments, one to be completed at the end of Units I-III and V-VII. Assessments are composed of multiple-choice questions and written response questions.
8. **Unit Assignments:** Students are required to submit for grading Unit Assignments in Units IV and VIII. Specific information and instructions regarding these assignments are provided below. Grading rubrics are included with the Unit IV and VIII Assignments. Specific information about accessing these rubrics is provided below.
9. **Ask the Professor:** This communication forum provides you with an opportunity to ask your professor general or course content related questions.

10. **Student Break Room:** This communication forum allows for casual conversation with your classmates.

**CSU Online Library**

There is a virtual library with resources, including both journals and ebooks, to support your program and your course at Columbia Southern University. eResources are accessible 24 hours a day/7 days a week from the CSU Online Library gateway page. To access the library, log into myCSU, and then click on CSU Online Library. Resources are organized in the library by title, but if you click on Research Guides, you will find eResources arranged by subject.

The Library Reference service is available 7 days a week; you can reach CSU’s virtual librarians by emailing thevirtuallibrarian@columbiasouthern.edu. These professional librarians will be glad to help you develop your research plan or to assist you in any way in finding relevant, appropriate, and timely information.

Librarian responses may occur within minutes or hours, but it will never take more than 24 hours for a librarian to send a response to the email address you have provided. Replies to reference requests may include customized keyword search strategies, links to videos, research guides, screen captures, attachments, a phone call, live screen sharing, and meeting room appointments, as well as other forms of instruction.

**Unit Assignments**

**Unit IV Project**

Perform a critical review of the following NIOSH Publication:


You must specifically summarize and analyze the following information in the indicated NIOSH publication:

- Engineering and administrative improvements
- Proactive action plan
- The three improvement options mentioned in the publication

However, you may also discuss any other topics you find interesting in publication.

The project must include, at minimum, the following components:

1. Introduction
2. Engineering and Administrative Improvements
3. Proactive Action Plan
4. Improvement Options
5. Summary of your own opinions and comments on what you learned from the publication.

**Instructions**

Your answer to this assignment must be three to five pages, double spaced, and 12 point font (separate title page and reference page are not included in the page length). CSU requires that students use APA style for papers and projects. Therefore, the APA rules for formatting, quoting, paraphrasing, citing, and listing of sources are to be followed. A document titled “APA Guide” is available for you to download in the Learning Resources area of the myCSU Student Portal. It may also be accessed from the Student Resources link on the Course Menu of Blackboard.

For comprehensive information on APA formatting, you are encouraged to visit the Learning Resources tab in the myCSU Student Portal. You may also contact the Success Center for additional assistance by phone at 1.877.875.0533 or by e-mail at teamsucceed@columbiasouthern.edu
Unit VIII Case Study

Select one of the three NIOSH Health Hazard Evaluation Reports listed below, and perform a critical analysis of the report.


Your case study review must include the following headings per APA guidelines:

1. Introduction – Provide a description of the selected case. Describe the issues of the case, and state the purpose for the paper.
2. Methods – State the evaluation criteria used in the NIOSH HHE Report.
3. Results – Present the findings from the Health hazard evaluation.
4. Recommendations – Describe the recommendations for improvements.
5. Discussion – Review relevant literature on the subject. Does research support the recommendations of the case? In addition, are there any other issues of concern?
6. Conclusion – Present your comments on the case. What did you learn in this review? What more would you like to have seen discussed in the report? In general, your own opinions should only be included in this section.

Instructions:

Your answer to this assignment must be four to six pages, double spaced, and 12 point font (separate title page and reference page are not included in the page length). The assignment requires that you use your textbook and at least two other references and readings which pertain to the topic in question. CSU requires that students use APA style for papers and projects. Therefore, the APA rules for formatting, quoting, paraphrasing, citing, and listing of sources are to be followed. A document titled “APA Guide” is available for you to download in the Learning Resources area of the myCSU Student Portal. It may also be accessed from the Student Resources link on the Course Menu of Blackboard.

For comprehensive information on APA formatting and research databases, you are encouraged to visit the Learning Resources tab in the myCSU Student Portal. The Success Center provides APA and writing assistance, and the CSU Librarians can provide research support.

APA Guidelines

CSU requires that students use the APA style for papers and projects. Therefore, the APA rules for formatting, quoting, paraphrasing, citing, and listing of sources are to be followed. A document titled “APA Guide” is available for you to download from the APA Guide link, found in the Learning Resources area of the myCSU Student Portal. It may also be accessed from the Student Resources link on the Course Menu. This document includes examples and sample papers and provides links to The CSU Success Center and the CSU Online Library staff.

Blackboard Grading Rubrics

One or more assignments in this course utilizes a Blackboard Grading Rubric. A rubric is a tool that lists evaluation criteria and can help you organize your efforts to meet the requirements of an assignment. Your professor will use the Blackboard Grading Rubric to assign points and provide feedback for the assignment.

You are encouraged to view the assignment rubric before submitting your work. This will allow you to review the evaluation criteria as you prepare your assignments. You may access the rubric in “My Grades” through the “Tools” button in your course menu. Click the “View Rubric” link to see the evaluation criteria for the assignment. Upon receiving your assignment grade, you may view your grade breakdown and feedback in the rubric.
CSU Grading Rubric for Papers/Projects

The course papers will be graded based on the CSU Grading Rubric for all types of papers, unless otherwise specified within assignment instructions. In addition, all papers will be submitted for electronic evaluation to rule out plagiarism. Course projects will contain project specific grading criteria defined in the project directions. To view the rubric, click the Academic Policies link on the Course Menu, or access it through the CSU Grading Rubric link found in the Learning Resources area of the myCSU Student Portal.

Communication Forums

These are non-graded discussion forums that allow you to communicate with your professor and other students. Participation in these discussion forums is encouraged, but not required. You can access these forums with the buttons in the Course Menu. Instructions for subscribing/unsubscribing to these forums are provided below.

Once you have completed Unit VIII, you MUST unsubscribe from the forum; otherwise, you will continue to receive e-mail updates from the forum. You will not be able to unsubscribe after your course end date.

Click here for instructions on how to subscribe/unsubscribe and post to the Communication Forums.

Ask the Professor

This communication forum provides you with an opportunity to ask your professor general or course content questions. Questions may focus on Blackboard locations of online course components, textbook or course content elaboration, additional guidance on assessment requirements, or general advice from other students.

Questions that are specific in nature, such as inquiries regarding assessment/assignment grades or personal accommodation requests, are NOT to be posted on this forum. If you have questions, comments, or concerns of a non-public nature, please feel free to email your professor. Responses to your post will be addressed or emailed by the professor within 48 hours.

Before posting, please ensure that you have read all relevant course documentation, including the syllabus, assessment/assignment instructions, faculty feedback, and other important information.

Student Break Room

This communication forum allows for casual conversation with your classmates. Communication on this forum should always maintain a standard of appropriateness and respect for your fellow classmates. This forum should NOT be used to share assessment answers.

Grading

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<tr>
<th>Component</th>
<th>Percentage</th>
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<tr>
<td>Discussion Boards (8 @ 2%)</td>
<td>16%</td>
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<tr>
<td>Unit Assessments (6 @ 8%)</td>
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<td>Unit VI Project</td>
<td>12%</td>
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<td>Unit VIII Case Study</td>
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<td><strong>Total</strong></td>
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Course Schedule/Checklist (PLEASE PRINT)

The following pages contain a printable Course Schedule to assist you through this course. By following this schedule, you will be assured that you will complete the course within the time allotted.
## BOS 3701, Industrial Ergonomics
### Course Schedule

By following this schedule, you will be assured that you will complete the course within the time allotted. Please keep this schedule for reference as you progress through your course.

<table>
<thead>
<tr>
<th>Unit</th>
<th>Foundational Ergonomics and Systems of the Human Body</th>
</tr>
</thead>
</table>
| **Review:** | Unit Study Guide  
Learning Activities (Non-Graded): See Study Guide |
| **Read:** | Chapter 1: Foundational Ergonomics  
Chapter 2: Systems of The Human Body  
Supplemental Reading: See Study Guide |
| **Discuss:** | Discussion Board Response: Submit your response to the Discussion Board question by Saturday, Midnight (Central Time) |
| **Submit:** | Assessment by Tuesday, Midnight (Central Time) |

**Notes/Goals:**

<table>
<thead>
<tr>
<th>Unit</th>
<th>Senses of the Human Body and Measurement of Environmental Factors</th>
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</table>
| **Review:** | Unit Study Guide  
Learning Activities (Non-Graded): See Study Guide |
| **Read:** | Chapter 3: Senses of the Human Body and Measurement of Environmental Factors  
Supplemental Reading: See Study Guide |
| **Discuss:** | Discussion Board Response: Submit your response to the Discussion Board question by Saturday, Midnight (Central Time)  
Discussion Board Comment: Comment on another student’s Discussion Board response by Tuesday, Midnight (Central Time) |
| **Submit:** | Assessment by Tuesday, Midnight (Central Time) |

**Notes/Goals:**

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<thead>
<tr>
<th>Unit</th>
<th>Muscular Work, Nervous Control of Movements, and Anthropometry</th>
</tr>
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</table>
| **Review:** | Unit Study Guide  
Learning Activities (Non-Graded): See Study Guide |
| **Read:** | Chapter 4: Muscular Work and Nervous Control of Movements  
Chapter 5: Anthropometry  
Supplemental Reading: See Study Guide |
| **Discuss:** | Discussion Board Response: Submit your response to the Discussion Board question by Saturday, Midnight (Central Time)  
Discussion Board Comment: Comment on another student’s Discussion Board response by Tuesday, Midnight (Central Time) |
| **Submit:** | Assessment by Tuesday, Midnight (Central Time) |

**Notes/Goals:**
### BOS 3701, Industrial Ergonomics Course Schedule

#### Unit IV
**Project**

**Review:**
- Unit Study Guide
- **Learning Activities (Non-Graded):** See Study Guide

**Read:**
- **Supplemental Reading:** See Study Guide for link

**Discuss:**
- **Discussion Board Response:** Submit your response to the Discussion Board question by Saturday, Midnight (Central Time)
- **Discussion Board Comment:** Comment on another student’s Discussion Board response by Tuesday, Midnight (Central Time)

**Submit:**
- Project by Tuesday, Midnight (Central Time)

**Notes/Goals:**

#### Unit V
**Workplace and Hand Tool Design and Work-Related Musculoskeletal Disorders**

**Review:**
- Unit Study Guide
- **Learning Activities (Non-Graded):** See Study Guide

**Read:**
- Chapter 6: Design of Workplaces and Hand Tools
- Chapter 7: Work-Related Musculoskeletal Disorders
- **Supplemental Reading:** See Study Guide for link

**Discuss:**
- **Discussion Board Response:** Submit your response to the Discussion Board question by Saturday, Midnight (Central Time)
- **Discussion Board Comment:** Comment on another student’s Discussion Board response by Tuesday, Midnight (Central Time)

**Submit:**
- Assessment by Tuesday, Midnight (Central Time)

**Notes/Goals:**

#### Unit VI
**Heavy Work and Evaluating Physical Workloads and Lifting**

**Review:**
- Unit Study Guide
- **Learning Activities (Non-Graded):** See Study Guide

**Read:**
- Chapter 8: Heavy Work and Evaluating Physical Workloads and Lifting
- **Supplemental Reading:** See Study Guide for link

**Discuss:**
- **Discussion Board Response:** Submit your response to the Discussion Board question by Saturday, Midnight (Central Time)
- **Discussion Board Comment:** Comment on another student’s Discussion Board response by Tuesday, Midnight (Central Time)

**Submit:**
- Assessment by Tuesday, Midnight (Central Time)

**Notes/Goals:**

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BOS 3701, Industrial Ergonomics

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<thead>
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<th>Unit VII</th>
<th>Information Ergonomics, Controls, Displays, Warning Labels, Instructions, and Product Liability</th>
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<tbody>
<tr>
<td><strong>Review:</strong></td>
<td>□ Unit Study Guide</td>
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<tr>
<td></td>
<td>□ <strong>Learning Activities (Non-Graded):</strong> See Study Guide</td>
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<td><strong>Read:</strong></td>
<td>□ Chapter 9: Information Ergonomics, Controls, and Displays</td>
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<td>□ Chapter 10: Warning Labels, Instructions, and Product Liability</td>
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<th>Case Study</th>
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<tr>
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