Course Description

Presents a comprehensive study of ergonomics and ergonomic principles with particular attention given to ergonomic development in the workplace. Design and evaluation of ergonomic systems and ergonomic program design and development are given special attention.

Course Textbook


Course Learning Outcomes

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

1. Evaluate the regulatory environment with respect to workplace ergonomics in America.
2. Relate human biology to workplace ergonomics.
3. Explain the importance of considering human variability in workplace design decisions.
4. Describe common work-related musculoskeletal disorders.
5. Assess common workplace stressors.
6. Apply contemporary methods of conducting workplace evaluation to ergonomic related hazards.
7. Evaluate common controls for mitigating ergonomic related hazards.
8. Apply the safety and health management systems approach to workplace ergonomics.

Credits

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

Course Structure

1. **Study Guide**: Each unit contains a Study Guide that provides students with the learning outcomes, unit lesson, required reading assignments, and supplemental resources.
2. **Learning Outcomes**: Each unit contains Learning Outcomes that specify the measurable skills and knowledge students should gain upon completion of the unit.
3. **Unit Lesson**: Each unit contains a Unit Lesson, which discusses lesson material.
4. **Reading Assignments**: Each unit contains Reading Assignments from one or more chapters from the textbook.
5. **Suggested Reading**: Suggested Readings are listed in the Unit VIII study guide. Students are encouraged to read the resources listed if the opportunity arises, but they will not be tested on their knowledge of the Suggested Readings.
6. **Unit Assessments**: This course contains one Unit Assessment, to be completed at the end of Unit V. The assessment is composed of written-response questions.
7. **Unit Assignments**: Students are required to submit for grading Unit Assignments in Units I-IV and Units VI-VIII. Specific information and instructions regarding these assignments are provided below. Grading rubrics are included with each assignment. Specific information about accessing these rubrics is provided below.
8. **Ask the Professor:** This communication forum provides you with an opportunity to ask your professor general or course content related questions.
9. **Student Break Room:** This communication forum allows for casual conversation with your classmates.

**CSU Online Library**

The CSU Online Library is available to support your courses and programs. The online library includes databases, journals, e-books, and research guides. These resources are always accessible and can be reached through the library webpage. To access the library, log into the myCSU Student Portal, and click on “CSU Online Library.” You can also access the CSU Online Library from the “My Library” button on the course menu for each course in Blackboard.

The CSU Online Library offers several reference services. E-mail (library@columbiasouthern.edu) and telephone (1.877.268.8046) assistance is available Monday – Thursday from 8 am to 5 pm and Friday from 8 am to 3 pm. The library’s chat reference service, *Ask a Librarian*, is available 24/7; look for the chat box on the online library page.

Librarians can help you develop your research plan or assist you in finding relevant, appropriate, and timely information. Reference requests can include customized keyword search strategies, links to articles, database help, and other services.

**Unit Assignments**

**Unit I Assignment**

This assignment involves reading two separate scenarios and then completing an ergonomics observation report (EOR) for each scenario. Click [here](#) to access the scenarios along with the corresponding EORs. The purpose of this assignment is for you to begin using the process of observing workers and their work environments, while specifically relating the human body to ergonomics. Although this assignment does not require preparing a formal piece of writing, you are expected to use your own words to answer the questions. Complete the EORs, save your work, and submit the file for grading.

Information about accessing the Blackboard Grading Rubric for this assignment is provided below.

**Unit II Assignment**

This assignment involves reading two scenarios and then answering each question that follows the scenarios. Insert your responses just below each question, save all of your work, and then submit it in Blackboard for grading. Click [here](#) to access the template for this assignment.

Information about accessing the Blackboard Grading Rubric for this assignment is provided below.

**Unit III Assignment**

This assignment involves reading two scenarios and then answering each question that follows the scenarios. Insert your responses just below each question, save all of your work, and then submit it in Blackboard for grading. Click [here](#) to access the template for this assignment.

Information about accessing the Blackboard Grading Rubric for this assignment is provided below.

**Unit IV Assignment**

This assignment involves completing a series of four exercises, and the purpose is for you to practice utilizing these processes toward evaluating common controls for mitigating ergonomic related hazards. Click [here](#) to access the template for this assignment.

Information about accessing the Blackboard Grading Rubric for this assignment is provided below.
Unit VI PowerPoint Presentation

This assignment provides you with an opportunity to select an alert system, research it, and evaluate its quality and usability from an ergonomics perspective. First, identify an alert system. It can be an everyday system, or it can be one used at your workplace. Second, research the details of the alert system by using at least one resource in the CSU Online Library. You can include credible resources from the Internet, but be sure to include at least one from the CSU Online Library. Third, after effectively collecting all of the information about the system, evaluate its quality and usability from an ergonomics perspective. Prepare a 10-slide PowerPoint presentation with your results, and the presentation should include each of the following:

- Briefly describe the alert system and the setting.
- Briefly explain the purpose of the system.
- Briefly explain what triggers the alarm.
- Briefly explain how the employee should respond once the alarm triggers.
- Briefly explain how human variability impacts the design of displays and controls.
- Provide your analysis of quality.
- Provide your analysis of usability.
- *(Not required)* If you feel the system could be improved, explain how.

Include a title slide and references slide; however, they do not count toward the total slide count. Use APA Style for all in-text and reference citations. Save all of your work, and submit it in Blackboard for grading.

Information about accessing the Blackboard Grading Rubric for this assignment is provided below.

Unit VII Assignment

This assignment involves completing a series of four exercises, and the purpose is for you to practice assessing workplace stressors, evaluating the regulatory environment, and evaluating controls within a workplace. Click here to access the template for this assignment.

Information about accessing the Blackboard Grading Rubric for this assignment is provided below.

Unit VIII Scholarly Activity

This assignment involves completing two exercises, and the purpose is for you to apply the safety and health management systems approach to workplace ergonomics. Click here to access the template for this assignment.

Information about accessing the Blackboard Grading Rubric for this assignment is provided below.

APA Guidelines

The application of the APA writing style shall be practical, functional, and appropriate to each academic level, with the primary purpose being the documentation (citation) of sources. CSU requires that students use APA style for certain papers and projects. Students should always carefully read and follow assignment directions and review the associated grading rubric when available. Students can find CSU's Citation Guide by clicking here. This document includes examples and sample papers and provides information on how to contact the CSU Success Center.

Grading Rubrics

This course utilizes analytic grading rubrics as tools for your professor in assigning grades for all learning activities. Each rubric serves as a guide that communicates the expectations of the learning activity and describes the criteria for each level of achievement. In addition, a rubric is a reference tool that lists evaluation criteria and can help you organize your efforts to meet the requirements of that learning activity. It is imperative for you to familiarize yourself with these rubrics because these are the primary tools your professor uses for assessing learning activities.

Rubric categories include: (1) Assessment (Written Response) and (2) Assignment. However, it is possible that not all of the listed rubric types will be used in a single course (e.g., some courses may not have Assessments).
The Assessment (Written Response) rubric can be found embedded in a link within the directions for each Unit Assessment. However, these rubrics will only be used when written-response questions appear within the Assessment.

Each Assignment type (e.g., article critique, case study, research paper) will have its own rubric. The Assignment rubrics are built into Blackboard, allowing students to review them prior to beginning the Assignment and again once the Assignment has been scored. This rubric can be accessed via the Assignment link located within the unit where it is to be submitted. Students may also access the rubric through the course menu by selecting “Tools” and then “My Grades.”

Again, it is vitally important for you to become familiar with these rubrics because their application to your Assessments and Assignments is the method by which your instructor assigns all grades.

**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**

<table>
<thead>
<tr>
<th>Assignment</th>
<th>Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>Assignments (5 @ 13%)</td>
<td>65%</td>
</tr>
<tr>
<td>Unit V Assessment</td>
<td>11%</td>
</tr>
<tr>
<td>Unit VI PowerPoint Presentation</td>
<td>13%</td>
</tr>
<tr>
<td>Unit VIII Scholarly Activity</td>
<td>11%</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>100%</td>
</tr>
</tbody>
</table>

**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.
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### Unit I  
**Relating Ergonomics to Human Biology**

<table>
<thead>
<tr>
<th>Review:</th>
<th>Unit Study Guide</th>
</tr>
</thead>
<tbody>
<tr>
<td>Read:</td>
<td>Chapter 1: Guided tour of ergonomic design</td>
</tr>
<tr>
<td></td>
<td>Chapter 2: Human system</td>
</tr>
<tr>
<td>Submit:</td>
<td>Assignment</td>
</tr>
</tbody>
</table>

**Notes/Goals:**

### Unit II  
**Assessing the Design of a Work Space**

<table>
<thead>
<tr>
<th>Review:</th>
<th>Unit Study Guide</th>
</tr>
</thead>
<tbody>
<tr>
<td>Read:</td>
<td>Chapter 3: Design of work areas, tools, and equipment</td>
</tr>
<tr>
<td></td>
<td>Chapter 4: Assessment and design of the physical environment</td>
</tr>
<tr>
<td>Submit:</td>
<td>Assignment</td>
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</tbody>
</table>

**Notes/Goals:**

### Unit III  
**Modeling Methods and Sampling Methods**

<table>
<thead>
<tr>
<th>Review:</th>
<th>Unit Study Guide</th>
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</thead>
<tbody>
<tr>
<td>Read:</td>
<td>Chapter 5: Work measurement and analysis</td>
</tr>
<tr>
<td></td>
<td>Chapter 6: Modeling physical human performance</td>
</tr>
<tr>
<td></td>
<td>Chapter 7: Sampling methods in industrial ergonomics</td>
</tr>
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<td>Submit:</td>
<td>Assignment</td>
</tr>
</tbody>
</table>

**Notes/Goals:**

### Unit IV  
**Task Analysis and Simulations**

<table>
<thead>
<tr>
<th>Review:</th>
<th>Unit Study Guide</th>
</tr>
</thead>
<tbody>
<tr>
<td>Read:</td>
<td>Chapter 8: Macro-ergonomics: Task analysis and process mapping</td>
</tr>
<tr>
<td></td>
<td>Chapter 9: Computer simulation of processes and tasks</td>
</tr>
<tr>
<td>Submit:</td>
<td>Assignment</td>
</tr>
</tbody>
</table>

**Notes/Goals:**
### Unit V: Modeling and Controls

**Review:**
- Unit Study Guide

**Read:**
- Chapter 10: Modeling and evaluation of cognitive tasks
- Chapter 11: Control tasks and systems

**Submit:**
- Assessment

Notes/Goals:

### Unit VI: Designing Controls and Evaluating Quality and Usability

**Review:**
- Unit Study Guide

**Read:**
- Chapter 12: Design of displays and controls
- Chapter 13: Ergonomics of product quality and usability

**Submit:**
- PowerPoint Presentation

Notes/Goals:

### Unit VII: Interview, Quality Control, and Maintenance

**Review:**
- Unit Study Guide

**Read:**
- Chapter 14: Questionnaires and interviews
- Chapter 15: Quality control and inspection
- Chapter 16: System reliability and maintenance

**Submit:**
- Assignment

Notes/Goals:

### Unit VIII: Occupational Safety and Health Management

**Review:**
- Unit Study Guide

**Read:**
- Chapter 17: Occupational safety and health management
- **Suggested Reading:** See Study Guide

**Submit:**
- Scholarly Activity

Notes/Goals: