

**INSY 7060/INSY 7060-D01
Introduction to Ergonomics**

Auburn University
Department of Industrial & Systems Engineering
Fall 2021

Credit/Class time/Location: 3 semester credit hours, Tue-Thurs 11:00 am-12:15 pm, Shelby 1122

Faculty: Sean Gallagher, PhD, CPE, Shelby Center 3323C, szg0036@auburn.edu ,
Office hours: 2-3 pm T-Th

Support Faculty: Robert E. Thomas, PhD, PE, CPE, Shelby Center 3301G, 334-844-1420, thomare@auburn.edu.

GTA: Yuting Ma, yzm0025@auburn.edu, Shelby 3323

Primary Text: Kroemer, 5th Edition, *Engineering Physiology*, Springer, New York, N.Y., 2010 (ISBN: 978-3-030-40627-1)

Other Helpful Texts

*Astrand Per-Olof and K. Rodahl, 4th Edition, *Textbook of Work Physiology-4th: Physiological Bases of Exercise*, Human Kinetics, Champaign, IL, 2004

*Guyton and Hall, 13th Edition, *Textbook of Medical Physiology*, Elsevier Inc., 2015

*Chaffin, Anderson and Martin, *Occupational Biomechanics*, John Wiley & Sons, New York, N.Y., 2006

Course Website: Auburn University CANVAS

Course Description: Overview of the human body systems and evaluation of the physiological response of the human body to occupational activities with emphasis on task design.

Course Objectives: To develop the student's ability to evaluate and appropriately accommodate the physiological response to the worker in task design and employee selection/placement.

Evaluation of Student Performance:

Exam I	25
Exam II	25
Final Exam	30
Project (Lit Review)	20
Total	100

Tentative Schedule

Date	Topics	Reading
August 17-19, 2021	Admin, Introduction to Ergonomics, Anatomy	None
August 24-26, 2021	Intro to Physiology, Nervous System	Ch. 1-3
Aug. 31-Sept. 2, 2021	Muscular system, Neuromuscular system	Ch. 2, 3
September 7-9, 2021	Muscle metabolism, Energy Liberation	Ch. 7
September 14-16, 2021	Cardiovascular System and its Responses to Work, Heart Rate	Ch. 5,6,8
September 21-23, 2021	Work-Rest Cycles, EXAM 1	Ch. 10
September 28-30, 2021	Physiological Response to Temperature Stress, Respiratory System	Ch. 5,6,9
October 5, 2021	Anthropometry, FALL BREAK	Ch. 11
October 12-14, 2021	Musculoskeletal Disorders, Fatigue Failure, LIT REVIEW ASSIGNED	
October 19-21, 2021	Biomechanics	
October 26-28, 2021	Ergonomics Assessments, Low Back Risk Assessment Tools	
November 2-4, 2021	EXAM 2, Upper extremity assessment tools	
November 9-11, 2021	Shoulder Risk Assessment, Ergonomic Design Process,	
November 16-18, 2021	Workstation Design, Seating Design, Hand tool design, LIT REVIEW DUE	
November 22-26, 2021	THANKSGIVING BREAK	
Nov. 30- Dec. 2, 2021	Disability and Accessibility, Human Error Prevention, Review	
Friday, December 10, 2021	FINAL EXAM 12:00-2:30 pm	

Schedule subject to change based on topic coverage and unforeseen events.

Students who need accommodations are asked to arrange a meeting during the first week of classes, or as soon as possible if accommodations are needed immediately. Bring a copy of the Accommodation Memo to the meeting. If the student does not have the necessary paperwork, an appointment with the AU Office of Accessibility should be made, 1228 Haley Center, Phone: 334-844-2096.

Academic Honesty: ALL PORTIONS OF THE AUBURN UNIVERSITY STUDENT ACADEMIC HONESTY CODE (TITLE X11) FOUND IN THE TIGER CUB WILL APPLY TO THIS CLASS. All academic honesty violations or alleged violations of the SGA Code of Laws will be reported to the Office of the Provost, which will then refer the case to the Academic Honesty Committee.

Violations include, but are not limited to:

Cheating on an examination, such as copying from another's paper, using unauthorized notes, calculators, etc., or giving or receiving unauthorized aid, such as

trading examinations, whispering answers, passing notes, or using electronic devices to transmit or receive information.

Plagiarism. This is using someone else's work without giving credit. It is, for example, using ideas, phrases, papers, laboratory reports, computer programs, data - copied directly or paraphrased - that you did not arrive at on your own. Sources include published works such as book, movies, Websites, and unpublished works such as other students' papers or material from a research service. In brief, representing someone else's work as your own is academically dishonest. *The risk of plagiarism can be avoided in written work by clearly indicating, either in footnotes or in the paper itself, the source of any major or unique idea or wording that you did not arrive at on your own. Sources must be given regardless of whether the material is quoted directly or paraphrased.*

Unauthorized collaboration. This is working with or receiving help from others on graded assignments without the specific approval of the instructor. *If in doubt, seek permission from the instructor before working with others.* Students are encouraged to learn from one another: Form study groups, discuss assignments, BUT each assignment must be individual work unless specifically stated and turned in as a group assignment.

- Copying another student's assignment and putting your name on it is plagiarism.
- You are encouraged to talk to one another about your assignments; however, the student whose name is on it must do all assignments!

Multiple submission. This means using the same work to fulfill the academic requirements in more than one course. *Prior permission of the instructors is essential.*