INSY 7060/6 – Ergonomics (I)

Auburn University
Department of Industrial & Systems Engineering
Fall 2007

Credit: 3 semester credit hours

Faculty: Robert E. Thomas, PhD, PE, CPE, DN 212, 334-844-1420, Fax 4-1381, thomare@auburn.edu

GTA: Rani Muhdi, DN 201A, 4-1415, muhdira@auburn.edu

Text: Kroemer, 3rd *Edition, Engineering Physiology*, John Wiley & Sons, New York, N.Y., 1997 (ISBN: 0-47128-7989)

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

*Guyton and Hall, 10th Edition, *Textbook of Medical Physiology*, W.B. Saunders Co., Philadelphia, 2000.

*Available on reserve at the RBD Library.

Course Website:
ftp://ftp.eng.auburn.edu/pub/Rob_Thomas/INSY7060&7066_Fall07

GTA Office Hours: Announced after class begins.

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:

Midterm Exam	35
Final Exam	35
Project**	25
Homework	5
Total	100

**On campus students will participate in a research project. Off-campus students will prepare a term paper on topic mutually agreed on between student and course faculty.

Tentative Schedule

DATE	TOPIC	READING
AUGUST		
16, 23	Admin & Intro to Occupational Safety and Ergonomics	None
23	Anatomy and Intro to Physiology	None
28	Nervous System	2,3,4K
30	Muscular System	6,7,45GH
SEPTEMBER		
4 Sept	Neuromuscular System Term Research Project (Bobbie Watts) Lab Demo: Nerve Conduction/EMG	3,4K, 15AR
6, 11	Muscle Metabolism and Energy Liberation Discussion of Energy Prediction Software (Dr. Davis)	8K 2AR
13	Cardiovascular System and its Responses to Work	7,8K, 5,17AR 9,10,14,20GH
18	Work-Rest Cycles/AIHA Guidelines	8,10K AIHA Handout
20	Heart Rate Monitoring & Demo (Bobbie Watts)	
25	Anthropometry	1K, 10AR
27	Anthropometry Research (Dr. Karla Simmons)	
OCTOBER		
2, 4	Biomechanics	5K
9	Biomechanics Research (Talley Holman)	
11	Mid Term Exam (All previous & class notes)	
16	Evacuation Modeling Research (Rani Muhdi)	
18, 23	Respiratory System and its Reponses to Work	6AR, 6,7K 37,38,41GH
25	Vo2 Lab Demo (Room 2092 Coliseum) (Dr. Peter Grandjean)	
30	Hand Tool Design/Seating Design	
NOVEMBER		
1	Physiological Response to Temperature	9K, 13 AR
6	Heat Stress Lab Demo (Room 2118) Coliseum (Dr. David Pascoe)	
8	American With Disabilities Act	
13, 15	CTDs/WMSDs/Assessment Techniques	Handouts
22, 24	Thanksgiving Holidays (no class)	
27	CTDs/WMSDs/Assessment Techniques & Practical Application (Dr. Davis)	
29	Human Factors Engineering (Dr. Nathan Dorris)	TBD
DECEMBER		
4	Human Factors Engineering (Rani Muhdi)	TBD
6	Applied Work Physiology (Dr. Rummer)	
8	Final Exam (7-9:30pm)	

AR = Astrand and Rodahl Text
K = Kroemer Text
GH = Guyton and Hall

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 Program for Students with Disabilities should be made, 1244 Haley Center, 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, all assignments must be done by the student whose name is on it!

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.*