

## COURSE SYLLABUS: PSYC 734-003: PHYSICAL ERGONOMICS

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Fall 2018, 1:30-4:10 pm Monday  
Classroom: Innovation Hall #333  
Office Hours: 12:30-1:30pm Monday  
Office Location: David King Hall 2063

### **Communications Statement:**

Official Communications via GMU E-mail: Mason uses electronic mail to provide official information to students. Examples include communications from course instructors, notices from the library, notices about academic standing, financial aid information, class materials, assignments, questions, and instructor feedback. Students are responsible for the content of university communication sent to their Mason e-mail account and are required to activate that account and check it regularly.

**Textbook:** Fernandez, JE and Marley, RJ, Applied Occupational Ergonomics: A Textbook, Fourth Edition, SISE Press, 2013 (ISBN-13: 978-1938496486).

**Attendance Policy:** Although I do not grade on attendance, this is a graduate level course and I expect (barring unforeseen circumstances) to see you in class each week.

**University Honor policy:** George Mason University has an Honor Code, which requires all members of this community to maintain the highest standards of academic honesty and integrity. Cheating, plagiarism, lying, and stealing are all prohibited. It is every student's responsibility to familiarize himself or herself with the Honor Code. The Honor Code is available at: <http://oai.gmu.edu/the-mason-honor-code-2/> All violations of the Honor Code will be reported to the Honor Committee

**Technology Usage:** All primary contact in the course will be via email and Blackboard; thus, you are required to check your Mason email account regularly and to keep your mailbox maintained so that messages will not be rejected for being over quota. You may forward GMU emails to other accounts, but emails to the instructor should come only from your GMU account; instructors are not allowed to accept emails from non-GMU accounts. For this course, all assignments must be completed online within Blackboard (see below). You may need to download various free programs (e.g., Adobe Shockwave) to view some of the resources.

**Disabilities:** If you are a student with a disability and you need academic accommodations, please see me and contact the Disability Resource Center (DRC) at 703-993-2474. All academic accommodations must be arranged through that office.

**Exam Make-up Policy:** You may take a test after (or before) the scheduled date only if you (a) receive my permission before the day of the test, or (b) have a valid excuse (note from a doctor, judge, sergeant, etc.). Papers will not be accepted beyond the due date.

**Cancellation Policy:** This course follows GMU cancellation policy for inclement weather, and GMU will send an alert to your GMU email account and/or cell phone if any of their facilities

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are closing for inclement weather. If I need to cancel a class meeting, I will email the class about the cancellation.

**Grading & Evaluation:** Your course grade will be based upon two tests, a project report and presentation, and participation in class discussions. Each of these will contribute the following percentage toward your final grade:

1. Test#1: 30%;
2. Test#2: 30%;
3. Project report and presentation: 30%;
4. Participation + Assignments: 10%

*Grading scale:* I use a grading system as follows: A+=96+, A= 93-96, A-=90-92, B+=87-89, B=83-86, B-=80-82, C=70-79, F=0-69

**Course Objectives:** A systematic design approach to the human-task-environmental system to increase productivity and decrease risk of injury and system failure. The course focuses on identifying ergonomic problems and developing design solutions to address those problems. Topics include anthropometry, work design, manual materials handling, work-related musculoskeletal disorders, and design for unique populations.

### **Project Requirements**

1. Work in a group of twos or threes and select workplace(s).
3. Obtain workplace data: Data on work / workers (such as: workers compensation data, symptom survey, dimension of workstation, anthropometry of workers, workers interviews).
4. Video recording of worker: For at least 20 min per worker, different angles / views.
5. Evaluate information / data: Using checklists, models, etc.
6. Propose solutions / recommendations. Evaluate options.
7. Write report: Format (APA), drawings/photos of before and after, potential cost and savings (ROI).

### **Project Proposal**

1. Title of the project
2. Place where project is taking place
3. Job title
4. Job description
5. 6. Contact person at facility/office
7. Problem(s) as stated by supervisor
8. Problem(s) as stated by employee

**Calendar:**Last day to add course: September 4, 2018Last day to drop course: September 9, 2018Note: The schedule below is tentative, and though I will try to follow it as closely as possible changes may occasionally be necessary.

<b>Date</b>	<b>Chapter</b>	<b>Topic</b>
August 27	1	Introduction
	2	Anatomical Terminology
	3	Anthropometry
September 3		No Class (Labor Day)
September 7 (Friday)		Make-up class (1:00pm) in David King Hall 2073A
September 10		Anthro and Force measurement lab
September 17	4	Biomechanics
September 24	4	Biomechanics
	5	Work Physiology / Identify Project
October 1	5	Work Physiology
		No class possibly (HFES 2018 in Philadelphia)
October 8		No Class (Columbus Day)
October 9 (Tues)		Work-Related Musculoskeletal Disorders
October 15	6	Submit Take-Home Test #1/ Psychophysics (Overview)
	8	Work-Related Musculoskeletal Disorders
October 22	8	Work-Related Musculoskeletal Disorders
October 29	8	Work-Related Musculoskeletal Disorders
	9	Seated and Standing Work
November 5	10	General Workplace Design
November 12	11	Workplace Analysis
		Project Proposal Due
		Video analysis
November 19	11	Workplace Analysis
November 26	11	Workplace Analysis
	12	Work Environment
December 3	13	Unique Populations
	14	Ergonomic Program Development
December 10		No class - Reading Day
December 17		Submit Take-Home Test#2
		Project Presentations