

## ME 467 / BME 567 Biomechanics of Human Motion: Syllabus

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### **Textbook:**

**None**; optional recommended texts:

S.J. Hall, 2007, Basic Biomechanics, 5<sup>th</sup> edition, McGraw-Hill, Boston, MA.

N. Hamilton, W. Weimar, and K. Luttgens, 2008, Kinesiology: Scientific Basis of Human Motion, 11<sup>th</sup> edition, McGraw-Hill, Boston, MA.

### **Course notes:**

<http://www.ent.ohiou.edu/~bobw>; Teaching; Ohio U Courses; [ME 467 / BME 567 Course Notes](#)

Week	Topic	Notes Chapters	Lab Due	Matlab Due
3/31	Introduction, Engineering Mechanics Overview	1.1-1.3		
4/7	Conventions, Human Skeletal Anatomy	1.4, 2.1	1	
4/14	Human Skeletal Physiology, Human Muscular Anatomy, Human Muscular Physiology	2.2-2.4	2	
4/21	Human Muscular Physiology, Muscle Model, Kinematics	2.4-2.5, 3.1	3	
4/28	Kinematics, Graduate Student Journal Article Presentations	3.1	4	
5/5	Statics	3.2	5	1
5/12	Dynamics	3.3	6	2
5/19	Metrology, Software, Humanoid Robots	4.1-4.3	7	3
5/26	Bipedal Locomotion	4.4	8	
6/2	Journal Article and Graduate Student Project Presentations		9	

## ME 467 / BME 567 Biomechanics of Human Motion: Policy

**Time & Venue:** 9:10-10:00 am M T Th F Stocker 198 4 credit hours

**Prerequisites:** Phys 251

**Description:** Overview of human skeletal and muscular anatomy and physiology. Application of engineering mechanics to the human musculoskeletal system. Kinematics, statics, and dynamics of human motions. Human motion metrology.

**Office Hours:**

8 – 9 a.m.	M T Th F (call first!)	11 a.m. – noon M T Th
1:30-3 p.m.	M	and by appointment

**Weekly Quizzes:** A quiz will be given every Friday, covering the week’s material. The low quiz grade will be dropped, only if the last quiz is taken. Quizzes are closed notes (closed book if you have one).

**Lab Experiments:** A weekly lab experiment report is due each week on Tuesday (see schedule). The labs are to be done outside of class with a partner. A memo must be the first page of each report.

**Matlab Assignments:** Only three Matlab assignments are due, on Thursdays according to the schedule shown. A memo must be the first page of each assignment. No late assignments will be accepted.

**Journal Article Presentation(s):** Each individual must read a current journal article on biomechanics of human motion and give an oral presentation to the class. Graduate students must do two.

**Graduate Students:** As required by Ohio University, graduate students must complete extra work in a dual-listed course. 1. An additional journal paper presentation (see above) at midterm; and 2. A quarter-long term project must be completed by each individual graduate student. You must define your own biomechanics project (from your interests if possible).

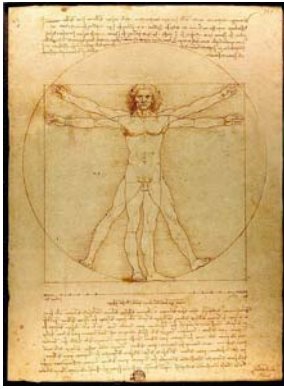
**Memo:** The first page of each lab report, Matlab assignment, and journal article report must be a one-page memo giving the highlights, methods, bottom line results, and a short discussion. Reference may be given to ensuing sections of your report. Assume that I am your boss and you are communicating the results of your recent work to me through this memo. Your reports will not be graded without a memo!

**Attendance:** Attendance is required. Poor attendance *will* affect your grade.

**Grading:** Each weekly quiz and lab report are equally weighted. The single low grade will be dropped from each category (*You cannot use this rule unless you take the last quiz and turn in the last lab report*). You cannot drop any of the three Matlab assignments, journal article presentation(s), or term project (for grad students). The overall grade weighting and letter grade mapping are given below:

<b>Undergrad</b>	Quizzes 40%	Labs 40%	Matlab 15%	Journal 5%	
<b>Grad</b>	Quizzes 30%	Labs 30%	Matlab 10%	Journals 5%	Project 25%

93.3-100	90-93.3	86.7-90	83.3-86.7	80-83.3	76.7-80	73.3-76.7	70-73.3	66.7-70	63.3-66.7	60-63.3	< 60
A	A-	B+	B	B-	C+	C	C-	D+	D	D-	F



## **OHIO UNIVERSITY**

Russ College of Engineering & Technology  
Biomedical Engineering Program

**DATE:** April 1, 2008  
**TO:** Dr. Bob  
**FROM:** Humans in Motion  
**SUBJECT:** Lab Experiment #1 Results

Dr. Bob,

The purpose of this memo is to present the basic experimental results for Lab #1. The assignment was (*briefly summarize here*).

Some sample results are given here: (*give results; not always appropriate or possible here*). My sketches and equation derivations appear on p. 2 (*if appropriate*). For a complete set of results, following the suggested Lab #1 report format, please see pp. 3-7. The discussion follows on page 8.

(*Summary of roadblocks, issues, or learning here, if appropriate*).

If you have any questions on my work, please contact me.

Sincerely,

Humans in Motion  
thing1@ohio.edu  
thing2@ohio.edu