

EASTERN ILLINOIS UNIVERSITY  
Department of Kinesiology and Sports Studies

---

KSS 3800.02 Biomechanics of Human Motion  
3 Credit Hours  
Syllabus for Spring 2017  
TR RECR 2710

---

**INSTRUCTOR:** Brianne Breidenbach

**E-MAIL:** [bmbreidenbach@eiu.edu](mailto:bmbreidenbach@eiu.edu)

**OFFICE:** Lntz 2230

**OFFICE HOURS:** Tuesday-Thursday: 1-2pm; Friday 11-12pm or by appointment

**Communication:** It is your responsibility to check your Panthermail and D2L every day. I will be communicating with you via email and delivering assignments and handouts by way of the D2L course webpage. **When contacting me via email, please use my Panthermail email.** In the subject heading include the course title (KSS 3800) and a subject title (e.g., homework question, attendance, request a meeting)

---

## **COURSE DESCRIPTION**

The study of forces and how they affect movement of the human body, particularly during physical activity.

### **Objectives:**

1. Recognize the external forces that act on the body
2. Analyze movement through the use of linear kinematics
3. Analyze the influence of linear kinetic laws on human movement
4. Examine the relationships between mechanical work and energy, and the application to human movement
5. Understand resultant torques and how they contribute to equilibrium in human movement
6. Understand angular kinetics impact on human movement
7. Understand the influence of angular kinematics on human motion

### **TEXTBOOK & Course Materials**

HALL, S.J. Basic Biomechanics (7<sup>th</sup> edition). New York, NY: McGraw-Hill, 2012.

A scientific calculator having sin, cos, & tan functions.

## **Tentative Course Outline & Schedule**

### **Introduction to Biomechanics and Analyzing Human Movement [3 Weeks]**

- Ch 1 – What is Biomechanics?
- Ch 2 – Kinematic Concepts for Analyzing Human Motion
- Ch 10—Linear Kinematics
- Ch 11—Angular Kinematics

### **Biomechanics of the Musculoskeletal System [4 weeks]**

- Ch 3 – Kinetic Concepts for Analyzing Human movement
- Ch 12—Linear Kinetics
- Ch 13—Torque
- Ch 14—Angular Kinetics

### **Biomechanics Upper & Lower Limbs & Spine [2 weeks]**

- Ch 4—Biomechanics of Bone Growth & Development
- Ch 5—Biomechanics of Joint Articulations
- Ch 6—Biomechanics of Skeletal Muscle/Tendons

### **Applying Kinematics, Kinetics, Equilibrium Principles to Human Movement [3 weeks]**

- Ch 7—Biomechanics of the Upper Extremities
- Ch 8—Biomechanics of the Lower Extremities
- Ch 9—Biomechanics of the Spine

## **Evaluation:**

Exams – 70% of final grade

Exam 1 --15%

Exam 2 --15%

Exam 3 --20%

Exam 4 --20%

Final Exam Project—15% of final grade

Assignments/Research Articles/Labs—10% of final grade

Quizzes—5% of final grade

A = 90 – 100%

B = 80 – 89%

C = 70 – 79%

D = 60 – 69%

F = <59%

- Late work is not accepted-please do not ask
- No extra credit is offered in this class.
- All final grades will be rounded up to the next letter grade if it ends in .5 or higher (i.e., 79.5=B, 89.5=A; An 89.45 does not become an 89.5)

## Course Policies

### 1. Attendance

- Attendance is expected and will be taken at each class meeting.
- **More than 5 unexcused absences will result in a full letter grade reduction.**

**Use the 5 allowed absences for emergencies, family illness, personal illness—save them for when you really need them! – On the 6<sup>th</sup> absence your grade will be dropped 1 letter grade**

An excused absence will not count as a missed day. Excused absences are either: (1) EIU sponsored events or (2) a special consideration or event that is pre-approved or medically excused.

- **Exceptions to these rules will be considered on a case-by-case basis**
- **Students are responsible for verifying excused absences and should provide written documentation.**
- It is the student's responsibility to contact the instructor before or immediately following an absence in order to catch up on missed class time/homework (please do not wait until the next class).
- If you are late to class, it is the student's responsibility to make sure attendance was noted
- **Student-athletes** must contact the instructor before missing class due to competition/traveling.
  - All major assignments, quizzes, and/or tests must be completed prior to the missed class
  - It is the student's responsibility to plan accordingly and set a date with the professor prior to the missed class

Missing class is not advised. To prepare students for their chosen professional career, students are expected to attend each scheduled class meeting, be on time, and be prepared for each class session. Patterns of missing class and/or tardiness are both unprofessional and disruptive. If a student is absent and/or tardy, they are responsible for the material covered in the class.

### 2. Conduct and Technology

- Use of cell phones during class time is disrespectful and prohibited.
- If you are caught using your phone during a class period;
  - **1<sup>st</sup> offense I will ask that your phone be put away**
  - **2<sup>nd</sup> offense you will be asked to leave the classroom for that day.**
- Please put headphones/earbuds away (not wrapped around your neck or head)
- Hoods (hooded sweaters/coats) are to be worn down—it would not be acceptable at work so it is not acceptable during class
- It is your responsibility to read each chapter prior to lecture. Success in this class requires regular review of the material outside of scheduled class time.

**Academic integrity**—Students are expected to maintain principles of academic integrity and conduct as de-fined in EIU's Code of Conduct (<http://www.eiu.edu/judicial/studentconductcode.php>). Violations will be reported to the Office of Student Standards.

**Students with disabilities**—If you are a student with a documented disability in need of accommodations to fully participate in this class, please contact the Office of Student Disability Services (OSDS). All accommodations must be approved through OSDS. Please stop by Ninth Street Hall, Room 2006, or call 217-581-6583 to make an appointment.

**The Student Success Center**—Students who are having difficulty achieving their academic goals are encouraged to contact the Student Success Center ([www.eiu.edu/~success](http://www.eiu.edu/~success)) for assistance with time management, text taking, note taking, avoiding procrastination, setting goals, and other skills to support academic achievement. The Student Success Center provides individualized consultations. To make an appointment, call 217-581-6696, or go to 9th Street Hall, Room 1302.

## Spring 2017 Academic Calander

Registration for Spring Begins	Oct 10	Mid-Term	Mar 2
Deadline to clear record with EIU or lose your spring classes.	Dec 22	Second half-term courses deadline to add or drop with no grade*	Mar 2
Term opens	Jan 4	Second half-term courses begin	Mar 3
Late Registration Begins (\$25 late fee)	Jan 9	Deadline to initiate late withdrawal request for fall 2015 semester	Mar 15
First Class Day	Jan 9	Spring Break	Mar 13-17
First-half term courses begin	Jan 9	Deadline to apply or re-apply for graduation	Mar 22
Deadline to add courses	Jan 13	Deadline to remove credit/no credit requests	Mar 31
MLK Birthday observed / no classes	Jan 16	Deadline to withdraw from a course or University with W*	Mar 31
Deadline to submit audit requests 4p.m.	Jan 18	Non-refundable late withdrawal fee begins	Apr 1
First Census Date (Count Day)	Jan 23	Second-half-term courses deadline to withdraw with W*	Apr 7
Deadline to withdraw from University or reduce load / full refund of tuition and fees*	Jan 23	Last Class Day	Apr 28
Deadline to drop hours and not be charged* See drop deadline for individual courses by CRN	Jan 23	Final Examinations	May 1-5
Deadline to request insurance refund (If equal coverage) 4:30 p.m.	Jan 23	Deadline to return books/TRS/no fine 3 p.m.	May 5
Deadline to submit credit/no credit requests 4 p.m.	Jan 23	Commencement	May 6
Deadline to drop a course with no grade*	Jan 23	Grades due 4 p.m.	May 8
W for course withdrawal begins*	Jan 24	Second Census Date (Term Closes)	May 8
Deadline to withdraw from University (all classes) 50% refund tuition & fees except insurance*	Feb 6	Last Day late textbooks will be accepted with payment of late fines. No textbooks will be accepted after this date.	May 12
Lincoln's Birthday Observed/ No Classes	Feb 17	Deadline to complete graduation requirements	May 31
First half-term courses deadline to withdraw with W*	Feb 13		