

# Exercise Sciences 362

## Fall Semester 2011

Section 3: 201 SFH on M W F at 10:00 am - 10:50 am,  
Section 4: 249L SFH on M W F at 11:00 am - 11:50 am

**Instructor:** Sarah Ridge

**Office:** 116B [RB](#)

**Office Hours:** M W 1pm-3pm  
T 1:30pm - 2:30pm  
or by appointment

**Office Phone:** 801-422-1365

**Email:** [sarah\\_ridge@byu.edu](mailto:sarah_ridge@byu.edu)

### Texts & Materials

Required	Vendor	Price (new)	Price (used)
 Biomechanics of Sport and Exercise - 2E (2nd edition) By Peter McGinnis ISBN: 0736051015 Human Kinetics (2004-11-01)	Amazon	<a href="#">\$67.18</a>	<a href="#">\$48.95</a>

Optional	Vendor	Price (new)	Price (used)
Scientific calculator Your calculator does not have to be a graphing calculator, but must have sin, cos, and tan functions on it. It will be most beneficial to you to bring these to class every day, especially during the first 2 sections of the course. Since cell phone use is not allowed during class, you may not use a calculator application on your phone as your calculator.			

### Description

Students will demonstrate how to apply physical laws to human performance. Included physical laws deal with: Linear and angular motion, projectile motion, forces, impulse and momentum, and fluid mechanics.

### Prerequisites

Math 110 or equivalent; Recommended Physics 105 or 121

### Attendance Expectations

Classroom attendance is not required, but you are responsible for all material covered in class, including information given about any changes in due dates for assignments. If you are absent on the day of an in-class assignment, you must work with someone else to get the required information.

### Participation Policy

Participation in classroom discussions, performing practice problems, and lab activities will aid your participation grade. Consistent lateness, leaving class early, talking to other students, and/or texting/using your cell phone during class will count against your participation grade.

### Grading Policies

Every effort will be made to return graded assignments within 2 class periods of their due date.

Assignments will be handed back in class. If you miss the day the assignment is handed back, you may pick your assignment up from my office.

Answers are posted to quizzes and problem sets on Blackboard immediately following their due date and time.

**Late work:** All assignments will be due at the start of class on the stated date. Any work that is handed in late (including in the middle or at the end of class) will receive 50% of the earned grade. Any late work will be due by the last day of class.

There will be no extra credit assignments available during this course.

## Learning Outcomes

- **Physical Laws and Human Performance**  
Demonstrate application of physical laws to human performance.
- **Kinematics of Human Motion**  
Calculate kinematics of human motion.
- **Projectile Motion Equations**  
Show comprehension of projectile motion equations.
- **Changes of Motion**  
Determine changes of motion due to forces.
- **Fluids Generating Force**  
Demonstrate understanding of how fluids generate force.

## Grading Scale

<b>A</b>	93-100	<b>B-</b>	80-82	<b>D+</b>	68-69
<b>A-</b>	90-92	<b>C+</b>	78-79	<b>D</b>	63-67
<b>B+</b>	88-89	<b>C</b>	73-77	<b>D-</b>	60-62
<b>B</b>	83-87	<b>C-</b>	70-72	<b>E</b>	59 and lower

## Assignment Descriptions

### *Exams:*

Two midterm exams and one final exam will be given. The final exam will be given during finals week. All exams will be given in the testing center. Each exam will concentrate on recent material, but is comprehensive as many topics discussed build on each other.

Be sure to check the hours of the testing center and budget time for your exams. If you are not able to take an exam during the days it is offered in the Testing Center, you must provide me with a doctor's note. If you do not take the exam in the Testing Center and do not have appropriate documentation excusing you, you may be permitted to take it late, but will only get 50% credit.

### *Homework:*

There will be two graded assignments given during the term. These will be based on in-class assignments. If you miss class on the day the homework is described, you must work with someone else in class or come to my office hours to get help. Homework will be due at the beginning of the class period on the date stated. Late assignments should still be submitted, but will receive half-credit.

Unless otherwise stated for specific assignments, homework will not be accepted via email, so be sure to leave enough time to print any necessary documents.

Homework assignments should be done individually, though you can use your textbook, TA, and/or professor for help.

There will also be two journal article reading assignments given during the semester. Though you will not be graded specifically on your knowledge of the articles, your participation in the classroom discussion following the readings will count towards your participation grade.

### *Quizzes:*

A quiz will be taken on Blackboard following the completion of most chapters. Quizzes will be available until the start of class on the due date. If you miss taking the quiz while it's available on Blackboard, you can find a pdf of the quiz on Blackboard, print out the provided answer sheet (also on Blackboard) and hand it in. Late quizzes will receive 50% of the earned grade.

If you have a problem viewing Blackboard quizzes, try another internet browser.

You may use any available resources (textbook, TA, professor, other students) to assist you with taking quizzes. You will only have one attempt to complete the quiz, but there are no time limits. You are able to start the quiz and complete it at another time.

#### *Term Project:*

A term project will be required. You will receive credit for completing a partial review of scientific literature. A description of this project will be posted on Blackboard. The purpose of this project is three-fold: 1) teach you how to access and critically evaluate the current scientific literature regarding a variety of topics, 2) improve your general reading and writing skills, and 3) help you learn more regarding the biomechanics of a topic of your choice.

#### *Motion Analysis Presentation:*

Towards the end of the semester, groups of 4 students will perform a biomechanical analysis of a movement of their choosing. Most of the work for this project will be done during class time.

These analyses will be presented in class. Each presentation will include a video of the movement, along with suggestions for improving performance and training for the skill. These suggestions should be based on the biomechanical principles discussed during the semester. A written summary of the presentation will be handed in.

### **Point Breakdown**

<b>Assignments</b>	<b>Percent</b>
Exams (12% each)	36
Homework	10
Quizzes	24
Motion Analysis Presentation	10
Term Project	15
Participation	5
<b>Total Percent</b>	<b>100</b>

### **Librarian Information**

Name: Betsy Hopkins  
Office: 2322 [HBL](#)  
Phone Number: 422-6777  
Email: [betsy\\_hopkins@byu.edu](mailto:betsy_hopkins@byu.edu)

### **E-reserve Information**

<http://www.lib.byu.edu/reserve.html>

### **BYU Honor Code**

In keeping with the principles of the BYU Honor Code, students are expected to be honest in all of their academic work. Academic honesty means, most fundamentally, that any work you present as your own must in fact be your own work and not that of another. Violations of this principle may result in a failing grade in the course and additional disciplinary action by the university. Students are also expected to adhere to the Dress and Grooming Standards. Adherence demonstrates respect for yourself and others and ensures an effective learning and working environment. It is the university's expectation, and my own expectation in class, that each student will abide by all Honor Code standards. Please call the Honor Code Office at 422-2847 if you have questions about those standards.

### **Preventing Sexual Discrimination and Harassment**

Title IX of the Education Amendments of 1972 prohibits sex discrimination against any participant in an educational program or activity that receives federal funds. The act is intended to eliminate sex discrimination in education. Title IX covers discrimination in programs, admissions, activities, and student-

to-student sexual harassment. BYU's policy against sexual harassment extends not only to employees of the university, but to students as well. If you encounter unlawful sexual harassment or gender-based discrimination, please talk to your professor; contact the Equal Employment Office at 422-5895 or 367-5689 (24-hours); or contact the Honor Code Office at 422-2847.

## Students with Disabilities

Brigham Young University is committed to providing a working and learning atmosphere that reasonably accommodates qualified persons with disabilities. If you have any disability which may impair your ability to complete this course successfully, please contact the Services for Students with Disabilities Office (422-2767). Reasonable academic accommodations are reviewed for all students who have qualified, documented disabilities. Services are coordinated with the student and instructor by the SSD Office. If you need assistance or if you feel you have been unlawfully discriminated against on the basis of disability, you may seek resolution through established grievance policy and procedures by contacting the Equal Employment Office at 422-5895, D-285 ASB.

## Academic Honesty Policy

The first injunction of the BYU Honor Code is the call to be honest. Students come to the university not only to improve their minds, gain knowledge, and develop skills that will assist them in their life's work, but also to build character. President David O. McKay taught that 'character is the highest aim of education' (The Aims of a BYU Education, p. 6). It is the purpose of the BYU Academic Honesty Policy to assist in fulfilling that aim. BYU students should seek to be totally honest in their dealings with others. They should complete their own work and be evaluated based upon that work. They should avoid academic dishonesty and misconduct in all its forms, including but not limited to plagiarism, fabrication or falsification, cheating, and other academic misconduct.

## Plagiarism Policy

Writing submitted for credit at BYU must consist of the student's own ideas presented in sentences and paragraphs of his or her own construction. The work of other writers or speakers may be included when appropriate (as in a research paper or book review), but such material must support the student's own work (not substitute for it) and must be clearly identified by appropriate introduction and punctuation and by footnoting or other standard referencing.

## Right to Change Course and Syllabus

Please note that the calendar is provided as a general guideline for when we will be covering certain topics in this class. I reserve the right to change due dates, dates of in-class activities, and assignments based on how quickly we cover material and the interests and needs of the class. I will make every effort to ensure that you know about any changes as soon as possible. Ultimately, however, it is your responsibility to be aware of assignment due dates, etc.

## Cell Phone Policy

Students are not allowed to use cell phones in classes in the Department of Exercise Sciences. Please turn them off as you enter the classroom and keep them stored out of sight in your backpack, purse, or pocket.

## TA Information

**Name:** Tyler Standifird  
**Email:** tstandifird@gmail.com  
**Location:** 116 RB  
**Hours:** W 9:00am - 11:00am  
or by appointment

**Name:** Jeffrey Hawks  
**Email:** jeffreyhawks@gmail.com  
**Location:** 116RB  
**Hours:** TBA

## Course Schedule

Date	Topics	Assignments
M - Aug 29	Introduction	-

W - Aug 31	Introduction & Chapter 1: Forces	-
F - Sep 2	Chapter 1: Forces	-
M - Sep 5	Labor Day	No class
W - Sep 7	Chapter 1: Forces	-
F - Sep 9	Chapter 2: Linear Kinematics	-
M - Sep 12	In class assignment - Stride Length	Chapter 1 quiz due
W - Sep 14	Chapter 2: Projectile Motion	-
F - Sep 16	Chapter 2: Projectile Motion	Stride Length assignment due
M - Sep 19	Chapter 3: Linear Kinetics	-
W - Sep 21	Chapter 3: Linear Kinetics	Chapter 2 quiz due
F - Sep 23	Chapter 3: Linear Kinetics	-
M - Sep 26	Force Plate demo	-
T - Sep 27	-	Midterm 1 available in Testing Center
W - Sep 28	Review for Midterm	Midterm 1 available in Testing Center Chapter 3 quiz due
Th - Sep 29	-	Midterm 1 available in Testing Center
F - Sep 30	Midterm - No Class	Midterm 1 available in Testing Center
M - Oct 3	Chapter 4: Work, Power, Energy	-
W - Oct 5	Go over Midterm Chapter 4: Work, Power, Energy	-
F - Oct 7	Chapter 5: Torques and Moments of Force	-
M - Oct 10	Chapter 5: Torques and Moments of Force	Chapter 4 quiz due Groups and topics for final project
W - Oct 12	Chapter 5: Torques and Moments of Force	-
F - Oct 14	Chapter 5: Torque and Moments of Force - Center of Gravity	-
M - Oct 17	Chapter 6: Angular Kinematics	-
W - Oct 19	Chapter 6: Angular Kinematics - Movement Description	Chapter 5 quiz due
F - Oct 21	Chapter 6: Movement Description Chapter 7: Angular Kinetics	-
M - Oct 24	Chapter 7: Angular Kinetics	-
W - Oct 26	Chapter 7: Angular Kinetics Chapter 8: Fluid Mechanics	Chapter 6 quiz due
F - Oct 28	Chapter 8: Fluid Mechanics	-
M - Oct 31	Chapter 8: Fluid Mechanics	Chapter 7 quiz due
W - Nov 2	Review for Midterm	Midterm 2 available in Testing Center
Th - Nov 3	-	Midterm 2 available in Testing Center
F - Nov 4	Midterm 2 - No Class	Midterm 2 available in Testing Center

## Chapter 8 quiz due

Sa - Nov 5	-	Midterm 2 available in Testing Center
M - Nov 7	Chapter 16: Technology in Biomechanics	-
W - Nov 9	Video Day	-
F - Nov 11	EMG lab - (meet in Biomechanics Lab in Richards Building)	-
M - Nov 14	Article Critique (in class)	Read BMT article
W - Nov 16	Chapter 13: Analysis to Improve Technique	-
F - Nov 18	Chapter 13: Analysis to Improve Technique	-
M - Nov 21	Chapter 14: Analysis to Improve Training	EMG lab due
T - Nov 22	Chapter 14: Analysis to Improve Training	-
W - Nov 23	Thanksgiving Break	No class
F - Nov 25	Thanksgiving Break	No class
M - Nov 28	Present Motion Analysis Assignments	-
W - Nov 30	Present Motion Analysis Assignments	-
F - Dec 2	Present Motion Analysis Assignments	-
M - Dec 5	Chapter 15: Analysis to Understand Injury Development	-
W - Dec 7	Chapter 15: Analysis to Understand Injury Development Final Exam review	Final Projects due
Th - Dec 8	Exam Preparation Day	No class
F - Dec 9	Exam Preparation Day	No class