

**San José State University**  
**Department of Kinesiology**  
**KIN 158: Biomechanics Fall 2017**

**Course and Contact Information**

<b>Instructor:</b>	Robyn York
<b>Office Location:</b>	Virtual
<b>Email:</b>	ryork@fullerton.edu
<b>Office Hours:</b>	Tu/Th 2:15-3:00pm, Friday 10:00-10:45am, or by appointment
<b>Class Days/Time:</b>	Lecture: Tu/Th 8:00-8:50 am Lab: Tu 12:00-1:50pm or 2:00-3:50pm or Th 12:00-1:50pm or 2:00-3:50pm
<b>Classroom:</b>	YUH 124 (Lecture); SPXC 234 (Lab)
<b>Prerequisites:</b>	KIN 070; BIOL 065 with a grade of 'C-' or better; approved GE Math Concept Course. Open only to declared KIN majors/minors, or instructor consent.

**Course Format**

**Technology Intensive Course**

While this course will be facilitated in a face-to-face format, the lecture instructor will not be present on campus at any time during the semester. Lectures will be video streamed live via zoom meeting in the lecture hall. All correspondence with the lecture instructor will take place via email or zoom. It is important for students to have reliable internet access when attempting to interact with the instructor. Lab sections will be facilitated by an on campus instructor in the biomechanics lab. See [University Policy F13-2](http://www.sjsu.edu/senate/docs/F13-2) at <http://www.sjsu.edu/senate/docs/F13-2> for more details.

**Faculty Web Page and MYSJSU Messaging**

Course materials such as syllabus, handouts, notes, assignment instructions, etc. can be found on [Canvas Learning Management System course login website](#) at <http://sjsu.instructure.com>. You are responsible for regularly checking Canvas and/or your campus email to learn of any updates.

**Course Description**

Biomechanics is the study of Biomechanical principles and the use of these principles in performing and/or teaching effective and efficient human movement

**Kinesiology Undergraduate Major Program Learning Objectives (KIN PLOs)**

At the end of a Bachelor of Science degree program in the Department of Kinesiology, students should expect:

1. Students will be able to explain, identify, and/or demonstrate the theoretical and/or scientific principles that can be used to address issues or problems in the sub-disciplines in kinesiology.
2. Students will be able to effectively communicate in writing (clear, concise and coherent) on topics in kinesiology.
3. Students will be able to effectively communicate through an oral presentation (clear, concise and

coherent) on topics in kinesiology.

4. Students will be able to utilize their experiences across a variety of health related and skill-based activities to inform their scholarship and practice in the sub disciplines in kinesiology.
5. Students will be able to identify and analyze social justice and equity issues related to kinesiology for diverse populations.

### **Course Learning Outcomes (CLO) (Required)**

Upon successful completion of this course, students will be able to:

1. Describe human movement using qualitative kinematic terminology
2. Explain human movement through an understanding of biomechanical principles
3. Understand the anatomy of the human body associated with creating human movement
4. Learn the muscles/muscle groups responsible for creating specific human movements
5. Understand human movement injury mechanisms

### **Required Texts/Readings (Required)**

#### **Textbook**

York, R. & Barr M.L. (2017). Fundamentals of Human Movement Mechanics, Great River Learning.\*\*

\*\* Please note instructions will be provided in Canvas to register for access to the interactive e-book required for this course.

#### **Other Readings**

Articles and other handouts may be required throughout the duration of the course, and will be posted on Canvas.

#### **Other technology requirements / equipment / material**

It is highly recommended that you sign up for zoom meeting by downloading the zoom meeting client through MYSJSU to enhance any office hours you would like to hold with the instructor.

### **Course Requirements and Assignments (Required)**

#### **Unit Exams: (3 exams)**

Each written exam will include objective and subjective questions. Student knowledge and understanding may be assessed with true/false, matching, and multiple choice questions. Exams may include material from the lectures, worksheets, laboratory assignments, handouts, or class discussions.

#### **Analysis Project:**

More information will be given regarding this project within the first two weeks of class.

#### **Lab Assignments:**

Each week will consist of laboratory assignments which will be assigned and completed in the lab section you are registered for. You will be expected to work in groups to complete the assignment, and only one lab assignment containing all group members' names will be required to be handed in. Lab assignments will be due by the end of the lab period in which they are assigned. Lab assignments may NOT be made up if you miss class.

### Worksheets/Interactive E-Book Activities/Quizzes:

Occasionally in class you will be provided with either a worksheet that supplants the lecture material covered, instructions for an interactive lesson that is to be completed in the e-book, or a quiz based on previously covered material. Students may work together on the worksheets; only 1 worksheet per group is turned in. Interactive e-book activities and quizzes must be completed on your own to receive credit. Worksheets and quizzes will not be allowed to be turned in if you are absent that day.

Further information on campus-wide policies can be found here:

- University Syllabus Policy S16-9 at <http://www.sjsu.edu/senate/docs/S16-9.pdf>
- Office of Graduate and Undergraduate Programs' Syllabus Information web page at <http://www.sjsu.edu/gup/syllabusinfo/>

Success in this course is based on the expectation that students will spend, for each unit of credit, a minimum of 45 hours over the length of the course (normally 3 hours per unit per week with 1 of the hours used for lecture) for instruction or preparation/studying or course related activities including but not limited to internships, abs, clinical practica. Other course structures will have equivalent workload expectations as described in the syllabus.

### Final Evaluation

The final evaluation for this course will consist of a culminating project. More information will be given within the first 3 weeks of class.

### Grading Information

Exams (3)	300 pts (30%)
Culminating Project	200 pts (20%)
Laboratory Assignments	400 pts (40%)
Interactive e-book Activities	50 pts (5%)
Worksheets/Quizzes	<u>50 pts (5%)</u>
<b>Total:</b>	<b>1000 pts</b>

### Determination of Grades

The grade you earn in this class will be based on your total percentage at the end of the course. A "plus/minus" grade option will be employed in this course. The Department of Kinesiology requires core classes to be passed with a grade of 73% or above. Grades will be assigned as follows:

- A = 93.0 – 100% (930-1000 pts)
- A- = 90.0 – 92.9 % (900-929.9 pts)
- B+ = 87.0 – 89.9 % (870-899.9 pts)
- B = 83.0 – 86.9 % (830-869.9 pts)
- B- = 80.0 – 82.9 % (800-829.9 pts)
- C+ = 77.0 – 79.9% (770-799.9 pts)
- C = 73.0-76.9 % (730-769.9 pts)
- C- = 70.0 – 72.9% (700-729.9 pts)
- D+ = 67.0 – 69.9 % (670-699.9 pts)
- D = 63.0-66.9 % (630-669.9 pts)
- D- = 60.0 – 62.9 % (600-629.9 pts)
- F ≤ 59.9% (<599.9 pts)

The instructor reserves the right to adjust the scale, as each group of students is different. You will be apprised of your status as the course progresses. The grades for each assignment, quiz, or exam will be posted on Canvas in a timely manner. Please be aware that the final grade shown in Canvas may not be completely true of your final grade in the course – it may be higher or lower depending on whether extra credit was offered and earned. Please note: grades are NOT rounded up to the next whole percentage at the end of the semester. If you earned 799.9 points, you will receive a C+.

### **Extra Credit**

On occasion, randomly in class, extra credit may be offered in the form of extra labs, quizzes, etc. Attendance during the class in which they are handed out is required. NO advanced warning will be provided so attendance at all classes is encouraged.

### **Make-up Policy**

Only under unique circumstances will a student be allowed to make up an exam. You must notify the instructor in ADVANCE if you are unable to take a scheduled exam. Late assignments will only be accepted as follows: If you have a legitimate excuse for absence, make-up assignments may be turned in *no more than* 1 week past the due date/time for *half* credit. You may turn in late assignments *no more than* 2 times during the semester. Exams must be made up before you can attend the next regular class session. Makeup exams will be deducted points at a rate of 10% per day until the exam is taken. For example, if you miss an exam and take it 3 days late, the maximum score you can receive on the exam is a 70% (3 days late x 10%/day deduction = 30% deduction from the overall score).

### **Classroom Protocol**

All KIN 158 students should attend class regularly, arrive on time, and actively participate in each class session. Each student is allowed 2 excused absences for the semester. This means, worksheets, labs, or other in-class activities (apart from extra credit) may be made up (if you are absent) a total of twice during the semester, and *half* credit will be given. Otherwise, you may not turn those in for credit.

Cell phones and other electronic devices may only be used in the classroom for activities related to the course. Please silence your ringer and keep your phone in your backpack unless we are using a specific app, etc. to inform or enhance learning.

### **University Policies**

Per University Policy S16-9, university-wide policy information relevant to all courses, such as academic integrity, accommodations, etc. will be available on Office of Graduate and Undergraduate Programs' [Syllabus Information web page](http://www.sjsu.edu/gup/syllabusinfo/) at <http://www.sjsu.edu/gup/syllabusinfo/>

## KIN 158 / Biomechanics, Fall 2017, Course Schedule

### Course Schedule

Week	Date	Lecture Topic	Lab
1	8/22	N/A	No Lab this week
1	8/24	Introduction (1)	
2	8/29	Anatomy (2)	Lab 1a – Icebreakers
2	8/31	Anatomy	
3	9/5	Fundamental Concepts & Principles (3)	Lab 1b – Anatomy
3	9/7	Newton's Laws	
4	9/12	Forces, Classification of Forces (4)	Lab 2 – Newton's Laws
4	9/14	Trigonometry Review (5)	
5	9/19	Addition, Composition, Resolution of Forces (6)	Lab 3 – Trigonometry & Math
5	9/21	Linear Kinematics (7)	
6	9/26	Linear Kinematics	Lab 4 – Linear Kinematics
6	9/28	Exam Review	
<b>7</b>	<b>10/3</b>	<b>Exam 1</b>	<b>No Lab this week</b>
7	10/5	Linear Kinetics (8)	
8	10/10	Impulse and Momentum	Lab 5 – Projectile Motion
8	10/12	Work, Energy, Power (9)	
9	10/17	COG, Equilibrium, Stability (10)	Lab 6 – Work Energy Power
9	10/19	Lever Systems, Torque (11)	
10	10/24	Torque	Lab 7 – Equilibrium/Stability
10	10/26	Exam Review	
<b>11</b>	<b>10/31</b>	<b>Exam 2</b>	<b>No Lab this week</b>
11	11/2	Angular Kinematics (12)	
12	11/7	Angular Kinetics (13)	Lab 8 – Torque
12	11/9	Centripetal Force, Fluid Mechanics (14)	
13	11/14	Fluid Mechanics	Lab 9 – Angular Kinematics
13	11/16	Exam Review	

<b>Week</b>	<b>Date</b>	<b>Lecture Topic</b>	<b>Lab</b>
<b>14</b>	<b>11/21</b>	<b>Exam 3</b>	<b>No Lab this week</b>
14	11/23	Thanksgiving – No Class Thursday	
15	11/28	Culminating Project	Culminating Project *
15	11/30	Culminating Project	
16	12/5	Culminating Project	Culminating Project *
16	12/7	Culminating Project Due in Lab this week	
Final Exam	12/15 (Friday)	7:15-9:30am	