

San José State University
CHHS/Department of Kinesiology
KIN 187-01, 02 Clinical Exercise Physiology
SPRING 2021
(ONLINE COURSE)

Course and Contact Information

Instructor:	Areum Jensen, Ph.D.
Office Location:	SPX 175
Telephone:	(408) 924-8153 (Office)
Email:	areum.jensen@sjsu.edu
Office Hours:	Tuesday and Thursday 12pm-1pm via Zoom, or by appointment (Check Canvas Module for Zoom link)
Class Days/Time:	Section 1. T and Th/10:30am-11:45am Section 2. T and Th/1:30pm-2:45pm
Classroom:	ONLINE (Synchronized)
Prerequisites:	KIN 70 & KIN 155 (or equivalent courses) with grades of C- or better. (Note: GE Math, Introductory Chemistry, and Human Physiology are prerequisites for KIN 155)

Course Description

Physiological principles applied to the prevention, management, and treatment of chronic health conditions. Focus on the pathophysiology, acute response to exercise, chronic training effects, and development of appropriate conditioning and training programs for chronic conditions.

Course Credit

KIN 187 is a 3-credit course. For each unit of credit, a minimum of 45 hours over the length of the course for instruction or preparation/studying, or course related activities will be expected. The expectation of work for a 3-credit course is 150 minutes of direct faculty instruction and **6 hours of out of class student work each week.**

Program Learning Outcomes (PLOs):

Upon completion of a Bachelor of Science degree program in the Department of Kinesiology students will be able to:

1. 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. Effectively communicate in writing (clear, concise and coherent) on topics in kinesiology.
3. Effectively communicate through an oral presentation (clear, concise and coherent) on topics in kinesiology.
4. 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. Identify and analyze social justice and equity issues related to kinesiology for diverse populations.

Student Learning Outcomes (SLOs):

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

1. Evaluate the capacities and limitations for physical activity in clinical populations, taking into consideration disease processes and methods to assess functional capacity.
2. Identify commonly used medications for specific clinical conditions and their effects on exercise capacity.
3. Apply concepts of exercise physiology (e.g., acute and chronic physiological responses of the neuromuscular, bioenergetic, and cardiorespiratory systems) to the development of comprehensive conditioning programs for individuals with chronic conditions.
4. Develop and modify programs to coincide with the limitations and capacities of individuals with chronic conditions.
5. Sensitively identify and explain other individual differences that should be taken into consideration when designing exercise programs for diverse populations.
6. Identify and explain the effects of muscle fatigue, overtraining, environmental factors, nutrition, and ergogenic aids on exercise programming for individuals with chronic conditions.

Course Content

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

1. Disease processes and management
2. Effects of chronic diseases or special conditions on the acute response to exercise
3. Effects of chronic diseases or special conditions on adaptations to exercise training
4. Interaction of exercise with selected medications
5. Recommendations for exercise testing and exercise programming
6. Factors that may impact exercise programming (e.g., muscle fatigue, environmental factors, nutritional status)
7. Diverse populations will include the following: Children and adolescents, Pregnancy and postpartum, Older individuals
8. Chronic diseases/conditions and disabilities include the following: Obesity, Hypertension, Dyslipidemia, Cardiovascular disease (e.g., coronary artery disease, myocardial infarction, stroke and heart failure), Pulmonary diseases, Diabetes, Cancer, Neurological disorders (e.g., Cerebral Palsy, Autism Spectrum Disorders, and Spinal Cord Injuries), and skeletal and joint disease (e.g., osteoporosis, arthritis, low back pain, etc.).

Required Texts/Readings

1. ACSM's guidelines for exercise testing and prescription. (10th edition, 2017). Philadelphia: Wolters Kluwer/Lippincott Williams & Wilkins.
2. New textbook: Walter R. Thompson, ACSM's Clinical Exercise Physiology. (1st edition, 2019). Philadelphia: Wolters Kluwer/Lippincott Williams & Wilkins.
3. Canvas: Students can access course-related materials including syllabus, lecture notes, announcement, assignments, and research articles, etc. From the SJSU home page you can easily find the Canvas entry page. Announcement will be posted on Canvas and should be checked on a regular basis.
4. Zoom: Live classes are met throughout the semester (see course schedule). All live Zoom sessions will be recorded and posted to the Canvas. During live Zoom sessions, you are required to turn on your camera for a better communication and interaction.

Library Liaison

The KIN library liaison is Adriana Poo (Adriana.poo@sjsu.edu), (408) 808-2019.

Course Requirements and Assignments

1. **Quiz (10%, PLO#1&4, SLO#1-4 & 6):** TEN quizzes (10%) will be given on Canvas (OPEN BOOK). All quizzes will open on the first day of instruction). You are responsible to check the due date and complete all quizzes on time. **There will be NO make-up quiz.**
2. **Participation on Activities and Discussion (10%, PLO#1-4, SLO#1-4):** Several activities on Canvas Modules and during zoom session are assigned (e.g., polls during live Zoom session, Discussion board with Q&A, etc.). Please see Course Schedule and Canvas Modules for individual and group activity deadlines. Active participation with professional and constructive interaction and discussion with peers and professor during the live class (Zoom) will be included in this participation category.
3. **Journal Club (10%, PLO#1-5, SLO#1, 4, 5):** You will discuss your assigned article within a subgroup on Canvas (7%) and write summaries of 4 articles (3%). More detailed information will be given in class and stated on Canvas Module.
4. **Case Study Assignment (20%, PLO#1-5, SLO#1, 4, 5):** This is a group assignment; however, some individual work will be required. Outcome is 1) a group oral presentation (8%) and 2) an individual final report (8%). Two additional sub assignments are 1) individual draft/initiative discussion on Canvas Discussion board (2%) and 2) peer responses on Canvas Discussion board (2%) required to prepare for a group presentation. Please check rubrics on Canvas. More detailed information will be given in class and stated on Canvas Module.
5. **Exams (Total 50%, 15% 1st Midterm, 15% 2nd Midterm, 20% Final, PLO#1&4, SLO#1, 2, 3, 4, 6):** Exam questions will be based on assigned readings, lectures, and class discussions. Exams may include multiple choice, true-false, matching, and short answer (250 words limit) questions and problems on Canvas quiz format. **Exams are NOT OPEN BOOK.** Exams will be given on the dates scheduled. Make-up exams will be permitted ONLY in cases of serious illness or emergencies with proof of document, and requests for make-up exams will be evaluated on an individual basis. The student is responsible for notifying the instructor and arranging a make-up date prior to the exam. The exam must be completed before the next class meeting. Final exam will be scheduled based on University Final Exam Schedule. See <https://www.sjsu.edu/classes/final-exam-schedule/spring-2021.php>

Late assignments

All assignments are due on the scheduled date. Late work may be graded down by points (approximately 20% of assigned points) per day. **One week after the deadline, the submitted assignment will be considered as “no submission”.** **Assignments submitted incorrectly (e.g., link instead of docx) will be considered as “no submission”.**

For example,

Due date: Tuesday 9am

Assignment 4-1: 10 points

Submission date: Thursday 10pm (counts as 3 day late)

Score: 4 points (a total of 6 points deducted, 2 points deducted by each day)

Grades

A plus: 97 to 100%	A: 93 to 96%	A minus: 90 to 92%	
B plus: 87 to 89%	B: 83 to 86%	B minus: 80 to 82%	
C plus: 77 to 79%	C: 73 to 76%	C minus: 70 to 72%	
D plus: 67 to 69%	D: 63 to 66%	D minus: 60 to 62%	F: less than 60%

Note that “All students have the right, within a reasonable time, to know their academic scores, to review their grade-dependent work, and to be provided with explanations for the determination of their course grades.” See University Policy F13-1 at <http://www.sjsu.edu/senate/docs/F13-1.pdf> for more details.

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 the Office of Graduate and Undergraduate Programs' [Syllabus Information web page](http://www.sjsu.edu/gup/syllabusinfo/) at <http://www.sjsu.edu/gup/syllabusinfo/>

Classroom Department

Student responsibility occurs when students take an active role in their learning by recognizing they are accountable for their academic success. Student responsibility is demonstrated when students make choices and take actions which lead them toward their educational goals.

Responsible students take ownership of their actions by exhibiting the following behaviors.

- Demonstrate academic integrity and honesty
- Attend and participate in classes and activities prepared and on time
- Complete the assigned work in a timely manner with attention to quality of work
- Avoid making excuses for their behavior
- Communicate in a careful and respectful manner with professors and peers
- Respect diverse ideas and opinions
- Identify, develop, and implement a plan to achieve their educational goals

See additional Netiquette document on Canvas Module for respectful online communication.

Course Schedule

(This schedule is subject to change with advance notice. The instructor reserves the right to make changes at any time. Students will be promptly notified if any changes occur.)

Week	Date	Topics	Chapters	Assignments
1	1/28 (TH)	<ul style="list-style-type: none"> Introduction & course overview 	Thompson: Chaps. 3 Guide: Chaps. 1-3	Zoom
2	2/2 (T)	<ul style="list-style-type: none"> Clinical Exercise Physiology Epidemiology and Terms Benefits and risks of physical activity (recorded lecture 1) 	Thompson: Chaps. 3, 4 Guide: Chaps. 1-3,5-6	Zoom
	2/4 (TH)	<ul style="list-style-type: none"> Discussion on recorded lecture 1 Health Screening 	Thompson: Chaps. 3, 4 Guide: Chaps. 2-3,5-6	Zoom
3	2/9 (T)	<ul style="list-style-type: none"> Health Screening 	Thompson: Chaps. 3, 4 Guide: Chaps. 2-3,5-6	Zoom Quiz 1. Course information due Canvas 9am Assignment 1. Meet your peers due
	2/11 (TH)	<ul style="list-style-type: none"> Clinical exercise testing/programing (recorded lecture 2) 	Thompson: Chaps. 3, 4 Guide: Chaps. 2-3,5-6	
4	2/16 (T)	<ul style="list-style-type: none"> Health Screening Wrap up: Case study Discussion on recorded lecture 2 	Thompson: Chap 16 Guide: Chap. 10	Zoom Assignment 2-1. Form a study group due
	2/18 (TH)	<ul style="list-style-type: none"> Chronic conditions associated with physical inactivity (HTN, dyslipidemia, obesity, metabolic syndrome) (recorded lecture 3) 		
5	2/23 (T)	<ul style="list-style-type: none"> Discussion on recorded lecture 3 Metabolic disease: Diabetes 	Thompson: Chap 10, 16 Guide: Chap. 10	Zoom Quiz 2. PA, Health Screening etc. due Canvas 9am
	2/25 (TH)	<ul style="list-style-type: none"> Metabolic disease: Diabetes (recorded lecture 4) 	Thompson: Chap 10, 16 Guide: Chap. 10	
6	3/2 (T)	<ul style="list-style-type: none"> Discussion on recorded lecture 4 Catch up Case project discussion 		Zoom Quiz 3. Chronic conditions due Canvas 9am
	3/4 (TH)	<ul style="list-style-type: none"> CV System review (recorded) Cardiovascular Disease: Atrial fibrillation and stroke (recorded lecture 5, 6) 	Thompson: Chaps. 5-8 My Stroke of Insight: Jill Bolte Taylor, Ph.D.	
7	3/9 (T)	<ul style="list-style-type: none"> Discussion on recorded lecture 5,6 Cardiovascular Disease: CAD, MI, CHF 	Thompson: Chaps. 5-8	Zoom Quiz 4. Metabolic disease due Canvas 9am Assignment 2-2. Study guide for midterm exam 1 due 9am
	3/11 (TH)	<ul style="list-style-type: none"> Cardiovascular Disease: CAD, MI, CHF 	Thompson: Chaps. 5-8	Zoom Assignment 5-1. Form a case study group due
8	3/16 (T)	<ul style="list-style-type: none"> Cardiovascular Disease: CAD, MI, CHF Q&A for Midterm exam 1 	Thompson: Chaps. 5-8	Zoom
	3/18 (TH)	Midterm exam 1 (15%, 75 min)	Including Metabolic disease	Zoom

Week	Date	Topics	Chapters	Assignments
9	3/23 (T)	<ul style="list-style-type: none"> Cardiovascular Disease wrap up 		Zoom
	3/25 (TH)	<ul style="list-style-type: none"> Pulmonary Disease: COPD, CRPD (recorded lecture 7) 	Thompson: Chap 9 Guide: Chap. 10	
10	3/30 (T)	Spring Break (NO CLASS)		
	4/1 (TH)	Spring Break (NO CLASS)		
11	4/6 (T)	<ul style="list-style-type: none"> Discussion on recorded lecture 7 Overview of midterm exam: Q & A Case study project discussion 		Zoom Quiz 5. CVD due 9am Assignment 3. Meet your peers II
	4/8 (TH)	<ul style="list-style-type: none"> Cancer (recorded lecture 8) 	Thompson: Chap 13, 14 Guide: Chap. 10	Assignment 5-2. Initial individual case analysis on case project due
12	4/13 (T)	<ul style="list-style-type: none"> Discussion on recorded lecture 8 Neuromuscular condition: Cerebral palsy, 	Thompson: Chap 13, 14 Guide: Chap. 10	Zoom Assignment 5-3. Responses on case project due
	4/15 (TH)	<ul style="list-style-type: none"> Spinal cord injury Children and adolescents (recorded lecture 9, 10) 	Thompson: Chap 12, 2 Guide: Chap. 10, 8 Youth Resistance Training: Updated Position Statement	Assignment 4-1. JC Discussion initial post due
13	4/20 (T)	<ul style="list-style-type: none"> Q&A for Midterm exam 2 Discussion on recorded lecture 9, 10 		Zoom Quiz 6. Pulmonary, cancer, CP due 9am
	4/22 (TH)	Midterm exam 2 (15%, 75 min)	Including (CVD, Pulmonary disease, Cancer)	Zoom
14	4/27 (T)	<ul style="list-style-type: none"> Autism spectrum disorder 		Zoom Assignment 4-2. JC Discussion responses due
	4/29 (TH)	<ul style="list-style-type: none"> Older adults / Osteoporosis /Arthritis (recorded lecture 11) 	Thompson: Chap 2, 9 Guide: Chap. 8, 10	Assignment 5-4. Recorded group case study presentation due
15	5/4 (T)	<ul style="list-style-type: none"> Discussion on recorded lecture 11 Journal club discussion 	Article #1-4	Zoom Quiz 7. SCIs, Children/ASD due 9am
	5/6 (TH)	<ul style="list-style-type: none"> Case project group meeting 		Zoom Quiz 8. Older adults /osteoporosis/ arthritis due 9am Assignment 5-4. Case project peer response due on Canvas
16	5/11 (T)	<ul style="list-style-type: none"> Special topic on COVID-19 (infectious disease and exercise) 	Thompson: Chap 14	Zoom Quiz 9. JC articles due Canvas 9am Assignment 4-3. Individual JC summaries due Canvas 9am
	5/13 (TH)	<ul style="list-style-type: none"> Review for final (Last day of instruction) 		Zoom Assignment 5-5. Individual Final case report due 5/13 Tuesday 9am
FINAL WEEK		Final exam (20%, 135 min) Section 1. 5/19 (W) 9:45am-12pm Section 2. 5/20 (TH) 12:15pm-2:30pm	Cumulative Including JC articles	