

OAKLAND UNIVERSITY  
SCHOOL OF HEALTH SCIENCES  
HUMAN MOVEMENT SCIENCE

**EXS 5400: Obesity and Physical Activity (2 credits)**  
**Winter 2018 Semester**

**Instructor:** Myung D. Choi, Ph.D.

**Office Location:** HHB 3169

**Class Time and Room:** Wednesday 6:30-8:17pm, HHB5045

**Office Hours:** Wed. 4:00-6:00pm or by appointment

**Department:** Human Movement Science

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**COURSE DESCRIPTION:** Obesity is a complex disease with myriad contributing factors. This course addresses the causes, prevention, and treatment of obesity, with particular emphasis on the role of physical activity. Metabolism, energy balance, and social, psychological, mechanical, and behavioral issues are discussed.

**TEXT/READINGS (recommended):**

- Obesity: Science to Practice. Gareth Williams and Gema Fruhbeck. Wiley-Blackwell.
- Articles made available, if needed.

**COURSE OBJECTIVES:** At the conclusion of the course the student will have an understanding of the following:

1. The students will become familiar with the general principles and applications of various field and laboratory methods used in evaluating body composition.
2. The students will demonstrate an understanding of the changes occurring in body composition throughout the life-span and in response to physical activity and understand the implications on health status.
3. The students will apply knowledge of demographic considerations (age, gender, ethnicity, etc.) on the prevention and treatment of overweight/obesity.
4. The students will analyze the prevalence of overweight, obesity, and various chronic disease risk factors.
5. The students will address the pathophysiology and risk factor considerations related to obesity, including abdominal obesity.
6. The students will express knowledge of exercise considerations for healthy participants versus participants with obesity and/or chronic disease risk factors (lipids, blood pressure, diabetes, heart disease, etc.).
7. The students will discuss body composition changes that occur with respect to the impact of hormonal and environmental (diet and exercise) factors on these changes.
8. The students will demonstrate an increase in awareness and sensitivity so they, as exercise professionals, can bring an educated perspective to health-related issues such as implications of exercise in the prevention and the control of cardiovascular and metabolic diseases.

**COURSE PROCEDURES:**

These objectives will be met with:

- 1) Lectures
- 2) Selected journal reviews
- 3) Written and/or oral presentations of papers reviewing the literature in a specified area of interest related to obesity and physical activity

**Evaluation** of your work (% of Final Grade) will be as follows:

**Overall Grade**

**Component** (Tentative; may change throughout the semester)

Exam I	30%
Exam II (April 25)	30%
Oral Presentation (April 4 and/or 11)	20%
Paper 1 (due by March 1)	10%
Paper 2 (due by April 11)	10%
<b>Total 100%</b>	

Exams require integration of material covered, rather than simply memorizing and regurgitating. The exams are comprised of multiple choice, T or F, short answers, and/or essay questions (tentative). The final examination will be comprehensive and require thorough integration of primary concepts covered throughout the duration of the course.

**Note:** Individual scores may be posted on Moodle.

**Attendance Policy:**

Attendance will be noted each class period and may impact your final grade. THREE (and more) absences will cause a **10% deduction in the final grade for the course**. FIVE (and more) absences will cause a **20% deduction in the final grade for the course**. If students miss SEVEN (and more) class meetings, they will be asked to drop the course and/or will receive an F grade. Two tardy arrivals and/or leaving class early will count as one absence. You are considered tardy if you arrive ten minutes after class starts. Students who miss no classes will receive an attendance bonus of 5 points on the final exam.

**Make-Up Policy:**

There will be no chance to make-up tests, missed due to an absence. Conflicts of the student's own making will not be acceptable. All assignments are to be turned in on time (i.e., at the **BEGINNING** of the class period in which they are due). Failure to do so will result in deduction of **20% per day** for that particular assignment. University absences will be handled on an individual basis, and should be dealt with **prior** to the date of absence.

**Papers**

Each student will write **two 5-6 page review papers** on a topic related to: "Obesity and Prevention related to Physical Activity". For example, the paper may include information related to:

- (i) how exercise regulates hormones that regulate appetite
- (ii) regulation of energy expenditure by endurance vs. resistance exercise
- (iii) body weight management with nutritional plus exercise interventions

You are required to synthesize information from **at least 6 relevant peer-reviewed original journal articles** (ideally all references should be in the last 5 years) and review articles are NOT considered as an original journal article. Topics should be different between 1<sup>st</sup> and 2<sup>nd</sup> paper. The first paper submission deadline date is March 1. The second paper submission deadline date is April 11.

**Oral Presentation**

Each student/group will be responsible for an oral presentation related to obesity (topic to be approved by the instructor). You are required to synthesize information from **at least 6 relevant original journal articles**, and present the information in an oral presentation that lasts for **20 min**. Further details are provided during the semester.

**Expectations of Students:** Regular class attendance and active participation in class discussions is important. Students are expected to arrive for class on time and refrain from disturbing the flow of the class through conversation or distracting behavior. Students are encouraged to exchange ideas and to integrate personal experiences in class sessions. All communication devices (pagers and cell phones) are to be turned off before entering the classroom.

**Academic Conduct Policy:** Cheating on examinations, plagiarism, falsifying reports/records, and unauthorized collaboration, access, or modifying of computer programs is considered serious breaches of academic conduct. The Oakland University policy on academic conduct will be strictly followed with no exceptions. See catalog under Academic Policies and Procedures.



Tentative Topic Outline (may change without notice)

Date	Topic	Assessments
Week 1	<ul style="list-style-type: none"> <li>• Prevalence of overweight, obesity, and various chronic disease risk factors (lipids, hypertension, metabolic syndrome) across demographics (age, gender, ethnicity)</li> </ul>	
Week 2	<ul style="list-style-type: none"> <li>• Social impact of obesity</li> </ul>	
	<ul style="list-style-type: none"> <li>• Economic aspect of obesity</li> </ul>	
Week 3	<ul style="list-style-type: none"> <li>• Social and psychological Factors in obesity</li> </ul>	
	<ul style="list-style-type: none"> <li>• Genetic influence on obesity</li> </ul>	
Week 4	<ul style="list-style-type: none"> <li>• Body composition assessment: Overview</li> </ul>	
	<ul style="list-style-type: none"> <li>• Obesity and the energy equation</li> </ul>	
	<ul style="list-style-type: none"> <li>• Basic biology of obesity- what do we know?</li> </ul>	
Week 5	<ul style="list-style-type: none"> <li>• Measuring energy intake</li> </ul>	
	<ul style="list-style-type: none"> <li>• Measuring energy Output- Assessing physical activity and Metabolic rate</li> </ul>	
Week 6	<ul style="list-style-type: none"> <li>• Obesity-associated energy metabolism</li> </ul>	
Week 7	<ul style="list-style-type: none"> <li>• <b>Exam 1 (tentative; exact date will be announced in class)</b></li> </ul>	Exam I
Week 8	<ul style="list-style-type: none"> <li>• <b>Spring Break-No class</b></li> </ul>	
Week 9	<ul style="list-style-type: none"> <li>• The role of the endocrine system in obesity</li> </ul>	
	<ul style="list-style-type: none"> <li>• Pathophysiology and risk factor considerations related to obesity and related comorbidities</li> </ul>	
Week 10	<ul style="list-style-type: none"> <li>• Pediatric Obesity</li> </ul>	
	<ul style="list-style-type: none"> <li>• Behavioral treatment of obesity</li> </ul>	
	<ul style="list-style-type: none"> <li>• Management of Obesity and Overweight: Diet</li> </ul>	
Week 11	<ul style="list-style-type: none"> <li>• Exercise considerations for healthy participants versus participants with obesity and/or chronic disease risk factors (lipids, blood pressure, diabetes, etc.)</li> </ul>	
Week 12	<ul style="list-style-type: none"> <li>• Pharmacotherapy considerations for treating obesity and chronic disease risk factors, and the impact on exercise prescription</li> </ul>	
	<ul style="list-style-type: none"> <li>• Surgical considerations for treating obesity and the impact on exercise prescription</li> </ul>	
Week 13	<ul style="list-style-type: none"> <li>• Management of Obesity and Overweight: Exercise</li> </ul>	
	<ul style="list-style-type: none"> <li>• Management of Obesity and Overweight: Diet + Exercise</li> </ul>	
	<ul style="list-style-type: none"> <li>• Management of Obesity and Overweight: Medication + Surgery</li> </ul>	
Week 14	<ul style="list-style-type: none"> <li>• Management of Obesity and Overweight: Overview</li> </ul>	
	<ul style="list-style-type: none"> <li>• Student Presentations and discussion</li> </ul>	
Week 15	<ul style="list-style-type: none"> <li>• Student Presentations and discussion</li> </ul>	
<b>Week 16</b>	<ul style="list-style-type: none"> <li>• Final Exam (April 25, 7:00-10:00pm)</li> </ul>	Final Exam