

PHYSIOLOGY, NUTRITION & AGING  
GERO 411L  
Fall 2018

**Instructors:**

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**Day/Time:** Tuesday, 4:00-5:50 pm

**Location:** GER 114

**Office Hours:** Tuesdays, 1:45-3:45 pm and by appointment

**Number of Units:** 2

**Required Text:** Nutrition Concepts and Controversies, 14th Edition.

Frances Sizer & Ellie Whitney. Wadsworth Cengage Learning, 2017  
ISBN: 1305627997

**Course Overview:**

This course explores human nutrient needs and the physiological, psychological, and sociological relationships with nutrition. The course is designed to provide gerontology and non-gerontology students with an overview of nutrient requirements and functions of macro (carbohydrates, proteins and fats) and micro (vitamins and minerals) nutrients. Students will gain an understanding of nutrient, digestion, absorption, effects of nutrient deficiencies, nutrient requirements, recognized dietary guidelines and nutrient needs across the lifespan. The course will explore research evidence and controversies specific to the role of diet in chronic diseases (heart disease, cancer, diabetes, obesity). Students will explore changes in nutrient needs that occur with increased age to promote quality of life and healthy aging.

No pre-requisites are required, but an understanding of human biology/physiology and chemistry is *strongly* recommended as this will help the student better understand the concepts and processes that the course content draws from. Students who lack this background may want to consider postponing this course until they have completed such course work. For the student who has a weak or dated exposure to this background material supplementary material is available (contact the instructor for further information, if needed) that can be used concurrently, as-needed, to assist in a fuller understanding.

**Format:** Informal lecture presentations, class discussion and group assignments (in-class). Emphasis on critical thinking and analysis using current research-based knowledge and participatory learning activities that serves as the 'laboratory' portion of

the course.

Objectives: Through the use of lectures, readings, discussion, experiential activities and internet resources the student will:

1. Understand the body's role in nutrition and nutrient metabolism.
2. Identify basic components of what comprises a healthy diet and apply this knowledge to themselves and others.
3. Describe nutrition as it related to chronic diseases such as diabetes, heart disease, stroke and cancer.
4. Recognize physiologic, psychological, social and cultural factors that influence dietary patterns of individuals and groups across the lifespan.
5. Understand the function and sources of primary nutrients (proteins, carbohydrates, lipids, vitamins, minerals, and water) in health and aging.
6. Understand energy balance, body composition, obesity and underweight.
7. Evaluate common food and nutritional misconceptions.
8. Be familiar with current national nutrition guidelines and policies, and be able to apply these to assessing the adequacy and risk of a diet.
9. Conduct a personal dietary analysis and understand and explain the results.

#### Student Learning Goals

*Upon completion of the course, students will be able to:*

1. Evaluate nutrition fads, comparing with facts, by applying scientific evidence.
2. Describe the biological processes of digestion and absorption of nutrients (protein, carbohydrate, fat).
3. Explain the pathway involved in energy metabolism and the results of under-nutrition and over-nutrition or excessive consumption beyond energy needs.
4. Define dietary guidelines and the role of government in their development.
5. Evaluate a personal diet using federal food guidelines and Web-based resources to calculate nutrient intake.
6. Discuss physiologic, psychological, social and cultural factors that influence dietary patterns associated with weight control, causes of obesity and treatments for obesity.
7. Identify foods and food groups that are good sources of specific vitamins and minerals found to be at risk in individuals across the lifespan.

**COURSE EVALUATION & GRADING (500 pts)**

Class Attendance & Participation	50
Diet Record & Nutrient Analysis	75
Older Adult Interview & Nutrition Screening	75
Nutrition Documentary Reflection	20
Current Events (2)	100
In-class Group Discussion Questions (4)	80
Final Exam	100

Final grade is based on standard percentage scores of cumulative points:

A+ = >98%	A = 92-97.9%	A- = 90-91.9%	
B+ = 88 - 89.9%	B = 82-87.9%	B- = 80-81.9%	
C+ = 78 - 79.9%	C = 72-77.9%	C- = 70-71.9%	
D+ = 68-69.9%	D = 62-67%	D- = 60-61.9%	< 60% = FAIL

**Assignments & Activities**

Coupled with classroom lectures, discussion, and course readings are a number of brief activities providing students the opportunity to apply course concepts and information. These activities are required for continued enrollment in the course, and must be turned-in *on time* for credit. Additional written instructions for assignments will be given.

***ASSIGNMENTS ARE DUE AT 11:59 pm ON THE DATE DUE UNLESS OTHERWISE NOTED AND CAN BE SUBMITTED ELECTRONICALLY -BLACKBOARD (in WORD, no PDF) LATE WORK IS NOT ACCEPTED.***

**Class Attendance & Participation**

Students are expected to **attend class** regularly, come **prepared with questions** and to **participate in class discussions**. Assigned readings should be completed *prior* to each class and students are expected to come prepared with questions to be addressed during class. A learning environment that encourages questions, dialogue and respect for other, diverse opinions is expected. **ONGOING.**

**Diet Record & Nutrient Analysis**

Each student will keep a complete diary for 3 days of all food and liquid consumed. This should be an honest and complete inventory, with as accurate and complete as possible description of both *what* is consumed and the *amount*, including all meals and snacks for 3 consecutive 24 hour periods. Each student will use the USDA Website [www.choosemyplate.org](http://www.choosemyplate.org) and go to Super Tracker for dietary analysis. Students will discuss their findings and recommendations for diet changes. An outline and rubric will be distributed and discussed in class. **DUE DATE: 9/11/18, 11:59 pm Blackboard**

**Older Adult Interview & Nutrition Screening**

To understand the multiple factors (physical, mental, psychosocial, disease burden) that can affect the health and quality of life in the elderly population; and, the influence or impact of nutrition. Students will select an older adult 65+ years old to interview and explore their nutrition and overall health. Sample interview questions and rubric will be

distributed and discussed in class. **DUE DATE: 11/6/18, 11:59 pm Blackboard**

### **Current Events** (complete 2 during the semester)

Each student will be asked to sign-up to research and present two current events related to course content. A review of at least two recent (2009-present) peer-reviewed articles must be incorporated into each written summary. Articles must research **human** nutrition only. The 1-2 page paper should provide evidence that supports or contradicts the popular media claim as cited in the current event. An outline and rubric will be distributed and discussed in class. **DUE DATE:** Written one-page summary due the day of presentation (uploaded into Blackboard by 4:00 pm).

### **Quiz - In-class - Group Discussion Questions** (complete 4 during the semester)

Students will work with a partner and will respond to discussion questions requiring reflection on course reading and class content. Groups will write down their response and turn-in as a group for credit through Blackboard. Groups will present their responses to the class for additional discussion as time allows. **Student must be present in class and contribute to formulation of answers to be given credit for the assignment.** One summary sheet per group with participant names is turned-in or uploaded into Blackboard before the end of class. **THROUGHOUT THE SEMESTER**

### **Nutrition Documentary Reflection**

Students will be given a list of 4-5 documentaries and will select one to review. A list of prompts to guide student's written reflection will be given. **DUE DATE: 11/20/18.** Written 1-2 page response (uploaded into Blackboard).

**Final Exam (online) 12/11/18, 4:30p to 6:30p.** The exam will include content covered in class over the entire semester including lectures and readings.

## **Statement on Academic Conduct and Support Systems**

### **Academic Conduct:**

Plagiarism – presenting someone else's ideas as your own, either verbatim or recast in your own words – is a serious academic offense with serious consequences. Please familiarize yourself with the discussion of plagiarism in *SCampus* in Part B, Section 11, "Behavior Violating University Standards" <https://policy.usc.edu/scampus-part-b/>. Other forms of academic dishonesty are equally unacceptable. See additional information in *SCampus* and university policies on scientific misconduct, <http://policy.usc.edu/scientific-misconduct>.

### **Support Systems:**

*Student Counseling Services (SCS) - (213) 740-7711 – 24/7 on call*

Free and confidential mental health treatment for students, including short-term psychotherapy, group counseling, stress fitness workshops, and crisis intervention. <https://engemannshc.usc.edu/counseling/>

*National Suicide Prevention Lifeline - 1-800-273-8255*

Provides free and confidential emotional support to people in suicidal crisis or emotional distress 24 hours a day, 7 days a week. <http://www.suicidepreventionlifeline.org>

*Relationship & Sexual Violence Prevention Services (RSVP) - (213) 740-4900 - 24/7 on call*

Free and confidential therapy services, workshops, and training for situations related to gender-based harm. <https://engemannshc.usc.edu/rsvp/>

*Sexual Assault Resource Center*

For more information about how to get help or help a survivor, rights, reporting options, and additional resources, visit the website: <http://sarc.usc.edu/>

*Office of Equity and Diversity (OED)/Title IX compliance – (213) 740-5086*

Works with faculty, staff, visitors, applicants, and students around issues of protected class. <https://equity.usc.edu/>

*Bias Assessment Response and Support*

Incidents of bias, hate crimes and microaggressions need to be reported allowing for appropriate investigation and response. <https://studentaffairs.usc.edu/bias-assessment-response-support/>

*Student Support & Advocacy – (213) 821-4710*

Assists students and families in resolving complex issues adversely affecting their success as a student EX: personal, financial, and academic. <https://studentaffairs.usc.edu/ssa/>

*Diversity at USC – <https://diversity.usc.edu/>*

Tabs for Events, Programs and Training, Task Force (including representatives for each school), Chronology, Participate, Resources for Students

## COURSE SCHEDULE

DATE	TOPIC	READING & ASSIGNMENTS
Week 1 8/21/18	<ul style="list-style-type: none"> <li>• Introduction - Course Objectives &amp; Overview</li> <li>• Terms &amp; Definitions</li> <li>• Food Choices and Health</li> </ul>	S&W Ch. 1
Week 2 8/28/18	<ul style="list-style-type: none"> <li>• Nutrient Recommendations</li> <li>• Portion Sizes &amp; Food Labels</li> <li>• Diet Recommendations &amp; Digestion</li> <li>• Physiology of Food Intake</li> </ul> <p>Activity: Food Labels</p>	S&W Ch. 2 & 3
Week 3 9/4/18	<ul style="list-style-type: none"> <li>• Energy Balance &amp; Healthy Body Weight</li> <li>• Body Composition</li> <li>• Weight &amp; BMI</li> </ul> <p>Activity: BMI</p>	<p>S&amp;W Ch. 9, pgs. 344-357</p> <p><b>Quiz #1</b></p>
Week 4 9/11/18	<ul style="list-style-type: none"> <li>• Carbohydrates; sources, metabolism, function</li> <li>• Finding carbohydrates in food</li> </ul> <p>Activity: Older Adult Nutrition Assessment Assignment Introduced</p>	<p>S&amp;W Ch. 4, pgs. 114-139; 147-152; 154-159</p> <p><b>DUE: Personal Diet Record &amp; Nutrient Analysis</b></p>

DATE	TOPIC	READING & ASSIGNMENTS
Week 5 9/18/18	<ul style="list-style-type: none"> <li>• Lipids/Fats; sources, metabolism, function</li> <li>• The lipid debate</li> </ul> Activity: Group discussion	S&W Ch. 5  <b>Quiz #2</b>
Week 6 9/25/18	<ul style="list-style-type: none"> <li>• Proteins; sources, metabolism, function</li> <li>• Vegetarian diets</li> </ul> Activity: Current events	S&W Ch. 6  <b>Current Event Presentations ½ of class</b>
Week 7 10/2/18	<ul style="list-style-type: none"> <li>• Vitamins &amp; Minerals; sources, metabolism, function</li> <li>• Supplements, risk and benefits</li> </ul> Activity: Group discussion	S&W Ch. 7  <b>Quiz #3</b>
Week 8 10/9/18	<ul style="list-style-type: none"> <li>• Liquids – Minerals</li> <li>• Nutrition throughout the life span</li> <li>• Nutrient – Drug Interactions</li> </ul> Activity: Current events	S&W Ch. 8 & 14  <b>Current Event Presentations ½ of class</b>
Week 9 10/16/18	<ul style="list-style-type: none"> <li>• Activity: Grocery Store Tour</li> </ul>	<b>Field Trip to Grocery Store</b>
Week 10 10/23/18	<ul style="list-style-type: none"> <li>• Diet and Disease</li> <li>• Immunity</li> <li>• Cardiovascular disease &amp; HTN</li> </ul> Activity: Group discussion	S&W Ch. 11 Only pgs. 428-448; 459-462  <b>Quiz #4</b>
Week 11 10/30/18	<ul style="list-style-type: none"> <li>• Diabetes</li> </ul> Activity: Current Events; Documentaries Review	S&W Ch. 4, pgs. 141-146  <b>Current Event Presentations ½ of class</b>
Week 12 11/6/18	<ul style="list-style-type: none"> <li>• Obesity</li> <li>• Fad Diets</li> <li>• Behavior modification</li> <li>• Eating Disorders</li> </ul> Activity: Current Events	S&W Ch. 9, pgs. 358-388  <b>DUE: Older Adult Interview and Nutrition Screening</b>
Week 13 11/13/18	<ul style="list-style-type: none"> <li>• Nutrients, Physical Activity</li> </ul> Activity: Group discussion Older Adult Interview and Eating Behaviors Observation findings	S&W Ch. 10  <b>Current Event Presentations ½ of class</b>
Week 14 11/20/18	<b>NO CLASS MEETING</b> Documentary review/reflection	<b>DUE: Nutrition Documentary reflection</b>
Week 15 11/27/18	<ul style="list-style-type: none"> <li>• Cancer</li> <li>• Complementary &amp; alternative medicine (CAM)</li> <li>• Genomics</li> </ul> Review for Final Exam	S&W Ch. 11, pgs. 449-458; 464-469
<b>12/11/18 4:30-6:30p</b>	<u>Online Final Exam - Blackboard</u>	<b>Final Exam</b>