

USC Dornsife
College of Letters,
Arts and Sciences

HBIO409 – Metabolic Diseases (4 units)

Fall 2016

Lecture: T/Th 2:00-3:20 p.m.

Location: VKC 151

Instructor: Gioia Polidori Francisco, PhD

Office: AHF 253

Office Hours: Tue/Thu 3:30-5:30 pm

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Course Description

Examination of the etiology, prevention and treatments of metabolic disorders such as diabetes mellitus, insulin resistance, metabolic syndrome and obesity as major threats to public health. *Prerequisite:* BISC 220L (Duplicates credit in former EXSC 409).

Learning Objectives

- To develop a deeper comprehension of the central and cross-disciplinary concepts of human biology, which include, but are not limited to bioenergetics, physiological homeostasis, and metabolic dysfunction.
- To place biological, nutritional and physiopathological knowledge into an applicable and ethical context, especially how biology, physiology and nutrition can contribute to the resolution of sociocultural issues.
- To provide sufficient depth of knowledge for entry-level employment in a wide variety of fields or for graduate study in the health professions or other biology-related disciplines.

Required Readings:

All required readings are available for free on the University library website as follows:

1. Harrison's Principles of Internal Medicine. Dennis Kasper, Anthony Fauci, Stephen Hauser, Dan Longo, J. Larry Jameson, Joseph Loscalzo, McGraw-Hill, 2015
<https://library.usc.edu/uhtbin/cgisirsi/x/0/0/5?searchdata1=4811982%7BCKEY%7D>
2. Metabolic basis of obesity, editor: Ahima Rexford S, Springer, 2011
<https://library.usc.edu/uhtbin/cgisirsi/x/0/0/5?searchdata1=3362933%7BCKEY%7D>
3. The Metabolic Syndrome, 2nd edition, Christopher D Byrne and Sarah H Wild, Wiley, 2011.
<https://libproxy.usc.edu/login?url=http://site.ebrary.com/lib/uscisd/Doc?id=10484908>

Description and Assessment of Assignments

- Class material will be evaluated via quizzes, project and exams.

Additional Policies

- The grading scale is based on the traditional scale as follows:

	A (≥93%)	A- (≥90%)
B+ (≥87%)	B (≥83%)	B- (≥80%)
C+ (≥77%)	C (≥73%)	C- (≥70%)
D+ (≥67%)	D (≥63%)	D- (≥60%)
F (≤59.9%)		

- Quizzes will be given during lectures and will be based on the material discussed.
- A midterm exam can be taken after the specified date **ONLY** if the student has a **documented** medical excuse.
- Exams will not be given a letter grade. Only the final grade will be given a letter grade.
- A request to take a make-up exam must be accompanied by evidence of necessity (ie: letter from a doctor) and must be made before the date of the scheduled exam. Make-up exams will be different from the scheduled exam and may be proctored by personnel who do not have extensive knowledge in the area being tested.
- Lecture slides will be posted on blackboard, however, please do not rely entirely on slides, these are meant as a starting point for note-taking.
- The project will focus on novel strategies to prevent/control obesity. It will be based on 4 scientific articles and will entail the development of a novel strategy to combat obesity.

Grading Breakdown

Assignment	Points	% of Grade
Midterm 1	250	25
Midterm 2	250	25
Project	200	20
Final Exam	250	25
Quizzes	50	5
TOTAL	1000	100
JEP (Extra Credit)	25	2.5

Tentative Lecture Schedule

Date	Lecture Topic	Harrison's	Ahima	Byrne
Aug 23	Intro & Macromolecules			
Aug 25	Adipose Tissue	77	3	
Aug 30	Adipokines		4	
Sep 1	Obesity	77		
Sep 6	Immune system and Inflammation	314		
Sep 8	Inflammation and adipose dysfunction		9	
Sep 13	Diabetes	344		
Sep 15	Insulin Resistance		10	
Sep 20	Complications of Diabetes		10	
Sep 22	Revision			
Sep 27	Midterm I			
Sep 29	Liver Disease I		12	15
Oct 4	Liver Disease II		12	15
Oct 6	Lipoproteins and dyslipidemia	356		
Oct 11	Cardiovascular System	224		
Oct 13	Atherosclerosis	241		14
Oct 18	Hypertension	298		
Oct 20	Heart Disease	293		
Oct 25	Revision			13
Oct 27	Midterm II			
Nov 1	Project Check-in			
Nov 3	Clinical Nutrition I	73-74		
Nov 8	Clinical Nutrition II	73-74		
Nov 10	Neural control of feeding		5	
Nov 15	Circadian Rhythms and Metabolism		13	
Nov 17	Metabolic syndrome and CR Fitness			1,10
Nov 22	Childhood Obesity		5	
Nov 24	Thanksgiving			
Nov 29	Prevention Plans			
Dec 1	Revision			
Dec 3-6	Study Days			
TBD	FINAL EXAM			

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 Section 11, *Behavior Violating University Standards* <https://scampus.usc.edu/1100-behavior-violating-university-standards-and-appropriate-sanctions/>. 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/>.

Discrimination, sexual assault, and harassment are not tolerated by the university. You are encouraged to report any incidents to the *Office of Equity and Diversity* <http://equity.usc.edu/> or to the *Department of Public Safety* <http://capsnet.usc.edu/departments/departments-public-safety/online-forms/contact-us>. This is important for the safety whole USC community. Another member of the university community – such as a friend, classmate, advisor, or faculty member – can help initiate the report, or can initiate the report on behalf of another person. *The Center for Women and Men* <http://www.usc.edu/student-affairs/cwm/> provides 24/7 confidential support, and the sexual assault resource center webpage sarc@usc.edu describes reporting options and other resources.

Support Systems

A number of USC’s schools provide support for students who need help with scholarly writing. Check with your advisor or program staff to find out more. Students whose primary language is not English should check with the *American Language Institute* <http://dornsife.usc.edu/ali>, which sponsors courses and workshops specifically for international graduate students. *The Office of Disability Services and Programs* http://sait.usc.edu/academicsupport/centerprograms/dsp/home_index.html provides certification for students with disabilities and helps arrange the relevant accommodations. If an officially declared emergency makes travel to campus infeasible, *USC Emergency Information* <http://emergency.usc.edu/> will provide safety and other updates, including ways in which instruction will be continued by means of blackboard, teleconferencing, and other technology.