


Biology of Obesity and Weight Loss (3 credits)

BIOL 423

Scheduled Meeting Times						
Type	Time	Days	Where	Date Range	Schedule Type	Instructors
Class	4:30 pm - 6:35 pm	MTWR	ON LINE	May 17, 2021 - Jun 19, 2021	Lecture	Anna V Baranova (P) 

Instructor(s): Ancha Baranova abaranov@gmu.edu; phone 571-334-1145

ZOOM LINK FOR EVERY DAY

<https://us02web.zoom.us/j/88392268132?pwd=R2tOdk4waUMrMmdtVk9MRIM0Q2pldz09>

Meeting Identifier: 883 9226 8132

Access code: 364683

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+1 301 715 8592 (Washington DC)

+1 312 626 6799 (Chicago)

+1 669 900 9128 (San Jose)

+1 253 215 8782 (Tacoma)

+1 346 248 7799 (Houston)

Textbook:

Textbook of Obesity (2012) by John Wiley and Sons, LT. Editors: Sharon R. Akabas, Sally Ann Lederman, Barabar J. Moore

Course Prerequisite(s):

BIOLOGY 213 completed, or co-enrolled within the same semester, or permission of instructor

Course Description:

This course covers causes and consequences of obesity and weight loss. A variety of molecular concepts will be introduced across the class. Supportive materials presented in this class will be in form of bargraphs, correlation curves, immunohistochemically stained slides and molecular signaling maps; the ability to understand these means of scientific data presentation is one of the learning outcome of this class. Another important learning outcome is the development of critical thinking skill that will be evaluated by 3 one-page mini-essays comparative discussing evaluating 3-4 metabolic compounds presented at each presentation day.

Course Learning Outcomes:

- Understand causes and consequences of obesity and weight loss.
- Understand general epidemiology and pathology of co-morbid conditions associated with obesity and how obesity aids in progression of these conditions.
- Understand relative contributions of genetic and environmental factors influencing weight gain and weight loss.
- Understand limitation of the diets and the bariatric surgery
- Understand mechanism of the weight loss caused by anti-obesity medications.
- Understand obesity as systemic pro-inflammatory condition
- Be abreast of the recent trends in obesity research,
- Understand information presented as the bargraphs, correlation curves, immunohistochemically stained slides and molecular signaling maps;
- Improve critical thinking skill

Course Schedule

Week	Activity
May 23rd Monday	INTRODUCTORY DISCUSSION. SYLLABUS. TYPES OF EXAMS.
May 24th, Tuesday	Nutrigenomics / Nutri-science part 1
May 25th, Wednesday	Nutrigenomics / Nutri-science part 2
May 26th, Thursday	Epidemiology of obesity. Obesity as chronic disease associated with an increase in morbidity and mortality.
May 30th Monday	MEMORIAL DAY (ENJOY!)
May 31, Tuesday	Co-morbid conditions associated with obesity: non-alcoholic fatty liver disease, polycystic ovary disease, sleep apnea, arthritis, depression and cancer. Part 1 -- AUDIO FILE UPLOADED. To play each slide, click on a small grey audio button in a middle of the slide. Important: IF your audiofiles do not play at all try this: http://www.codecguide.com/download_k-lite_codec_pack_standard.htm
June 1st, Wednesday	Co-morbid conditions associated with obesity: non-alcoholic fatty liver disease, polycystic ovary disease, sleep apnea, arthritis, depression and cancer. Part 2 -- AUDIO FILE UPLOADED http://www.codecguide.com/download_k-lite_codec_pack_standard.htm
June 2nd, Thursday	EXAM 1 (4:30 pm – midnight).
June 6th Monday	Genetic influences on obesity, including twin and adoption studies, monogenic rodent models of obesity Genetic syndromes that include obesity as part of the phenotype. Leptin deficiency and leptin resistance. Genetic polymorphisms associated with obesity.
June 7th Tuesday	The biology of the weight loss and weight gain. Why diets often fail. Part 1 -- AUDIO FILE UPLOADED. To play each slide, click on a small grey audio button in a middle of the slide. http://www.codecguide.com/download_k-lite_codec_pack_standard.htm

Week	Activity
June 8th Wednesday	The bariatric surgery and its consequences. Anti-obesity medications. Anorexia/Cachexia. Part 2 -- AUDIO FILE UPLOADED http://www.codecguide.com/download_k-lite_codec_pack_standard.htm
June 9th Thursday	Obesity as systemic pro-inflammatory condition. pro- and anti-inflammatory molecules produced by adipose. Brown adipose
June 13th Monday	EXAM 2 (4:30 pm – midnight).
June 14th, Tuesday	Anti-inflammatory melanin biosynthesis: a hypothesis
June 15th, Wednesday	Recent trends in obesity research and nutrigenetics.
June 16th, Thursday	LOOK AT THE PICTURE AND INTERPRET IT EXAM (4:30 pm – midnight).
June 20th, Monday	NUTRACEUTICAL presentations by graduate students
June 21th, Tuesday	NUTRACEUTICAL presentations by graduate students
June 22nd, Wednesday	NUTRACEUTICAL presentations by graduate students
June 23rd, Thursday	FINAL EXAM - comprehensive

Grade components (*UNDERGRADUATE*)

Component	% grade
Exam 1 (mult choice)	15%
Exam 2 (mult choice)	15%
“Look-at-the-picture and explain it” exam (short answers)	15%
FINAL EXAM (short answers + mult choice)	40%
Graduate Presentation QUIZ	15%
	100%

Grading scale:

98- 100% A+
 90 < X < 98 A
 86 < X < 90 A-
 80 < X < 86 B+
 75 < X < 80 B
 75 < X < 77 B-
 70 < X < 75 C+
 65 < X < 70 C
 60 < X < 65 C-
 50 < X < 60 D
 < 60 F

Grades will not be rounded up. Therefore, if you receive a grade of 74.99, your grade will be C+, not a B-.

This class does not allow any extra credit.

EXAMS POLICY:

- THERE ARE ABSOLUTELY NO MAKE-UP EXAMS!
- All EXAMS will be given on Blackboard
Exams are open book, open lecture and timed
- **EACH EXAM will be given at 4:30 pm and collected at MIDNIGHT same day**
- You can use any source you want, but you must work individually

On-time Expectations:

- Let your instructor know of your needs and constraints as early as possible **prior** to the assignment due dates.
- Notify your instructor during the first week of the semester regarding course schedule conflicts due to military obligations and/or religious observances.
- **Any notifications beyond the first week of classes or after the exam/quiz due date has passed may not be approved and grade of zero will be entered.**

LATE POLICY: PLEASE READ CAREFULLY!

- Students should make every effort to submit/complete assignments on time.
- ***Any assignment that is not turned in on time, without prior arrangements with the instructor, will result in a zero grade for this assignment***
- Any arrangements to extend a deadline for an assignment must be made prior to the deadline.
- No extension will be granted after the deadline.
- Each student is allowed maximum of two (2) extensions per semester. Other requests may not be granted and grade of zero will be entered
- Any assignment/assessment that has not been completed by the end of the semester will receive a grade of zero.

Required Equipment –Since this is an online course and all assessments are complete through the computer, you need to have a computer with a **reliable** internet connection.

Plagiarism:

Plagiarism is the presentation of someone else's ideas or work as one's own. Students must give credit for any information that is not either the result of original research or common knowledge. If a student borrows ideas or information from another author, he/she must acknowledge the author in the body of the text and on the reference page. Students found plagiarizing are subject to the penalties outlined in the Policies and Procedures section of the University Catalog, which will result in a hearing by the Honor Code Committee and may include a failing grade for the work in question or for the entire course. The

following website provides helpful information concerning plagiarism for both students and faculty:
<http://oai.gmu.edu/honor-code/>

Honor Code:

- George Mason University has an Honor Code, which requires all members of this community to maintain the highest standards of academic honesty and integrity. Cheating, plagiarism, lying, and stealing are all prohibited
- All violations of the Honor Code will be reported to the Honor Committee.
- See <http://oai.gmu.edu/honor-code/> for more detailed information.

Ethics:

Ethical behavior in the classroom is required of every student. The course will identify ethical policies and practices relevant to course topics.

Diversity:

Learning to work with and value diversity is essential in every class. Students are expected to exhibit an appreciation for multinational and gender diversity in the classroom.

Civility:

As a diverse community of learners, students must strive to work together in a setting of civility, tolerance, and respect for each other and for the instructor. Rules of classroom behavior (which apply to online as well as onsite courses) include but are not limited to the following:

- Conflicting opinions among members of a class are to be respected and responded to in a professional manner.
- Side conversations or other distracting behaviors including cell phone use or non-class online access are not to be engaged in during lectures, class discussions or presentations
- There are to be no offensive comments, language or gestures

Students not complying will be asked to cease immediately or leave the class session.

Students with Disabilities:

If you are a student with a disability and you need academic accommodations, please see me and contact the Office of Disability Resources at 703.993.2474. All academic accommodations must be arranged through that office.