

**NFS 243: Advanced Nutrition
Course Syllabus****Monday, Wednesday, Friday: 10:50 – 11:40am, Microsoft Teams****Instructor information**

Lecturer: Beth Rice Bradley, PhD (Dr. Bradley)

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Teaching Assistant: Bridget Clark

Office: MLS 122

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Office hours with Dr. Bradley will be held on Microsoft Teams and are by appointment only. Please e-mail Dr. Bradley to schedule an appointment.

Office hours with Bridget will be held on Microsoft Teams on Monday's from 1 – 2:30pm or by appointment.

Course overview

NFS 243: Advanced Nutrition is designed to provide students with a thorough understanding of human metabolism. The course begins with a review of cellular physiology and the digestive system, basic components necessary for metabolic processes. The metabolism of carbohydrates, lipids, and protein, which explains how food is converted into useful energy, will be explored. The integration and regulation of metabolism and its effects on energy expenditure and body composition will be discussed. The final section of the course focuses on synthesizing knowledge of nutrition science to understand the role of diet in human health. Upon the completion of NFS 243 students will be able to describe how food is converted into energy, interpret scientific research articles, and explain the science underlying popular and controversial topics in nutrition.

Learning objectives

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

1. Describe the processes of digestion, absorption, and metabolism
2. Explain the integration and regulation of metabolism and energy expenditure
3. Explain the physiology underlying popular trends in nutrition
4. Interpret scientific research articles
5. Write a scientific review article

Required course materials

- Students are required to purchase the textbook, *Advanced Nutrition and Human Metabolism* 7th edition, by Gropper and Smith
ISBN: 9781305627857

Grading and assignment overview

Students will be graded on assignments, exams, a review article, presentation, and a cumulative final exam. Final grades will be determined based on the following:

Assignments	20%
In-class exams	30%
Review article	30%
Presentation	10%
Cumulative final exam	10%

Assignments

Assignments are designed to help enforce concepts presented during class and give students an opportunity to earn points toward their final grade throughout the semester.

In-class exams

There will be three exams administered over Blackboard throughout the semester. Exams will consist of multiple choice, true / false, fill-in-the-blank, matching, short answer, and essay questions. Students will be tested on content that was presented during class lecture.

Review article

The review article is an opportunity for students to learn how to read, translate and share peer-reviewed scientific research. Students will research a topic of their choice and organize findings into a peer-reviewed scientific review article. Writing the review article exposes students to nutrition research, translation and outreach similar to what would be performed by nutrition scientists working in industry, academia and government.

Presentation

The presentation is an opportunity for students to share the in-depth knowledge gained from writing the scientific review article with a larger audience. Presentations will be open to the public. The Department of Nutrition and Food Sciences will be invited to attend (virtually).

Cumulative final exam

The **cumulative final exam** will be administered over Blackboard during the final exam period dictated by the University calendar (date to be announced).

Journal club

Journal club will be held periodically throughout the semester during regularly scheduled class time. Journal club is a group discussion similar to a book club in which articles published in peer-reviewed scientific journals will be explored. Journal club will be a time for the class to discuss and critique peer-reviewed research.

Final Grades

The following will be used to assign final grades for the semester.

Grading		
A+: ≥98.0%	A: 93.0 - 97.9%	A-: 90.0 - 92.9%
B+: 88.0 - 89.9%	B: 83.0 - 87.9%	B-: 80.0 - 82.9%
C+: 78.0 - 79.9%	C: 73.0 - 77.9%	C-: 70.0 - 72.9%
D+: 68.0 - 69.9%	D: 63.0 - 67.9%	D-: 60.0 - 62.9%
F: < 60.0%		

Lecture

Lectures will be presented by Dr. Bradley, live, using Microsoft Teams. Students are expected to attend and participate in lecture. All lectures will be recorded and uploaded to Teams immediately after class.

Student accessibility services

In keeping with University policy, any student with a documented disability interested in utilizing ADA accommodations should contact Student Accessibility Services (SAS), the office of Disability Services on campus for students. SAS works with students and faculty in an interactive process to explore reasonable and appropriate accommodations, which are communicated to faculty in an accommodation letter. All students are strongly recommended to discuss with their faculty the accommodations they plan to use in each course. Faculty who receive Letters of Accommodation with Disability Related Flexible accommodations will need to fill out the Disability Related Flexibility Agreement. Any questions from faculty or students on the agreement should be directed to the SAS specialist who is indicated on the letter.

Students rights and responsibilities

UVM student rights and responsibilities can be found [here](#).

Course Schedule

	Date	Topics	Reading	Assignment Due	
Unit 1	M, Feb. 01	Introduction	Course syllabus		
	W, Feb. 03	The cell and cellular energy	Gropper and Smith: Chapter 1		
	F, Feb. 05	Finding peer-reviewed research articles at UVM Guest lecturer: Christie Silkotch, UVM Librarian	Bhattacharya, 2017. Indian J Plast Surg. 50(3): 302-305.		
	M, Feb. 08	Digestion	Gropper and Smith: Chapter 2		
	W, Feb. 10	Digestion	Gropper and Smith: Chapter 2		
	F, Feb. 12	Digestion	Gropper and Smith: Chapter 2	#1: Find a peer-reviewed research article	
	M, Feb. 15	Catch up and review			
	W, Feb. 17	EXAM 1			
Unit 2	F, Feb. 19	Journal club	Stanhope. 2016. <i>Crit Rev Clin Lab Sci.</i> 53(1): 52-67.		
	M, Feb. 22	Carbohydrate digestion, absorption and storage	Gropper and Smith: Chapter 3		
	W, Feb. 24	Carbohydrate metabolism	Gropper and Smith: Chapter 3		
	F, Feb. 26	Diabetes			
	M, March 01	How to write a research article			
	W, March 03	Dietary fiber	Gropper and Smith: Chapter 4		
	F, March 05	Lipid digestion, absorption, transport and storage	Gropper and Smith: Chapter 5	#2: Translate a peer-reviewed research article	
	M, March 08	Lipid metabolism	Gropper and Smith: Chapter 5		
	W, March 10	Cardiovascular Disease			
	F, March 12	Journal club	Bowen et al. 2018 <i>Curr Athero Rep.</i> 20(8).	#3: Submit outline of research review article	
	M, March 15	Catch up and review			
W, March 17	EXAM 2				
Unit 3	F, March 19	Journal club	Lonnie et al. 2018. <i>Nutrients.</i> 10(3): 360.		
	M, March 22	Protein digestion and absorption	Gropper and Smith: Chapter 6		
	W, March 24	NO CLASS: reading / respite day			
	F, March 26	Protein synthesis	Gropper and Smith: Chapter 6		
	M, March 29	Protein and disease	Gropper and Smith: Chapter 6		
	W, March 31	Integration and regulation of metabolism	Gropper and Smith: Chapter 7		
	F, April 02	Integration and regulation of metabolism	Gropper and Smith: Chapter 7		
	M, April 05	High Intensity Interval Training	Gropper and Smith: Chapters 7 and 8	#4: Submit draft of research review article	
	W, April 07	Energy balance	Gropper and Smith: Chapter 8		
	F, April 09	Journal club	Warren et al. 2017. <i>Nutr Res Rev.</i> 30, 272 – 283.	#5 Submit peer-review of research review article	
	M, April 12	Catch up and review			
W, April 14	EXAM 3				
Unit 4	F, April 16	Nutrition translation			
	M, April 19	In-class presentations		#6 Submit research review article and presentation	
	W, April 21	In-class presentations			
	F, April 23	In-class presentations			
	M, April 26	In-class presentations			
	W, April 28	In-class presentations			
	F, April 30	In-class presentations			
	M, May 03	In-class presentations			
	W, May 05	In-class presentations			
	F, May 07	In-class presentations			
	M, May 10	In-class presentations			
	W, May 12	Reading Day			
	F, May 14				
M, May 17					