Course Syllabus
NFS 3243: Advanced Nutrition
Modality: In-person
Location: Rowell 118
Time: Monday, Wednesday, Friday from 10:50am – 11:40am

Instructor information
Lecturer: Beth (Rice) Bradley, PhD (she / her; referred to as Dr. Bradley)
Office: 228 Marsh Life Sciences / Microsoft Teams
e-mail: Beth.Bradley@uvm.edu

Office hours
Dr. Bradley holds daily office hours in the mornings between 8:30 and 10:00am and in the afternoons between noon and 2:30pm. Office hours with Dr. Bradley are by appointment only and will be held in-person or on Microsoft Teams. Please e-mail Dr. Bradley to schedule an appointment. Dr. Bradley keeps her MS Outlook calendar up-to-date and available times should be visible to students. MS Outlook is available for free for students to use through UVM Enterprise Technology Services.

Course overview
NFS 3243: Advanced Nutrition is designed to provide students with a thorough understanding of human metabolism. The course begins with a review of cellular biology and the digestive tract, basic components necessary for metabolic processes. Then, the digestion, absorption, and metabolism of carbohydrates, lipids, and proteins will be discussed. The integration and regulation of metabolism, which explains how food is converted into useful energy, and its effects on energy expenditure, body composition, and human health will be explored. The final section of the course focuses on synthesizing knowledge of nutrition science to investigate the role of diet in human health. Upon the completion of NFS 3243 students will be able to describe how food is converted into energy, search for and utilize peer-reviewed 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 in humans.
2. Explain the integration and regulation of metabolism and energy expenditure in humans.
3. Explain the physiology underlying popular trends in nutrition.
4. Utilize peer-reviewed scientific research articles to write a literature review.

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

Assignments	**35%**
In-class exams	**35%**
Review article	**15%**
Presentation	**05%**
Cumulative final exam	**10%**

Assignments
Assignments are designed to help reinforce concepts presented during class and aid students in preparing for exams.

In-class exams
There will be in-class exams administered during the semester. Students will be tested on assigned readings and content that was presented during class lecture. Exams will consist of multiple choice, true / false, fill-in-the-blank, matching, short answer, and essay questions. Students will be permitted to bring one 8.5" x 11" self-prepared reference sheet to use during the exam. Students will be expected to hand in their reference sheet with their exam. Reference sheets will be returned to students during the semester.

Review article
The review article is an opportunity for students to learn how to find, read, interpret, 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 knowledge gained from writing the scientific review article with a larger audience. Presentations will be held during class time and will be open to the public.

Cumulative final exam
The **cumulative final exam** will be administered on Monday, May 06, 2024, from 10:30am – 1:15pm in Rowell 118. Similarly to the in-class exams, students will be permitted to bring one 8.5" x 11" self-prepared reference sheet to use during the final exam. Students will be expected to hand in their reference sheet with their final exam. Final exams and final reference sheets will not be returned to students.

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%		

Attendance
Students are expected to attend and participate in class. If a student must miss class, it is the student's responsibility to read through relevant materials provided on the class Brightspace page.

Recommended software
iClicker Student App (free with UVM e-mail)
Students acquire the iClicker Student App by downloading it through the app store on a phone or logging into the iClicker site on a laptop. When students enter their UVM email (i.e. netid@uvm.edu) while logging in, the system will recognize them as being associated with the UVM license.

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.

UVM Student Resources
Office of International Education

Center for Health and Wellbeing Counseling and Psychiatry Services

The Mosaic Center for Students of Color

Prism Center

Course Schedule

	Day, Date	Topic	Assigned Reading	Assignment Due on Brightspace by 11:59pm
Unit 1: Cellular Energy and The Digestive Tract	W, Jan 17	Introduction	Course syllabus	
	F, Jan 19	The cell	Textbook: Chapter 1	
	M, Jan 22	Cellular energy	Textbook: Chapter 1	
	W, Jan 24	The Digestive Tract	Textbook: Chapter 2	
	F, Jan 26	Regulation of Digestion	Textbook: Chapter 2	Assignment #1: Digestion of a meal
	M, Jan 29	The Gut Microbiome	Journal article: Gut microbiota in human metabolic health and disease	
	W, Jan 31	**Catch-up and review**		
	F, Feb 02	**EXAM 1**		
Unit 2: Carbohydrates	M, Feb 05	Finding peer-reviewed research articles at UVM Guest lecturer: Christie Silkotch, UVM Librarian		
	W, Feb 07	How to write a research article		Assignment #2: Find a peer-reviewed research article
	F, Feb 09	Carbohydrate digestion	Textbook: Chapter 3	Assignment #3: Literature review topic and search terms
	M, Feb 12	Carbohydrate absorption	Textbook: Chapter 3	
	W, Feb 14	Carbohydrate storage	Textbook: Chapter 3	
	F, Feb 16	Dietary fiber	Textbook: Chapter 4 Journal article: Acute metabolic responses to high fructose corn syrup ingestion in adolescents with overweight/obesity and diabetes	Assignment #4: References for lit. review
	M, Feb 19	**No Class - President's Day Holiday**		
	W, Feb 21	Carbohydrate metabolism	Textbook: Chapter 3	
	F, Feb 23	Carbohydrate metabolism	Textbook: Chapter 3	Assignment #5: Translate a peer-reviewed research article
	M, Feb 26	Diabetes	Textbook: Chapter 4	
	W, Feb 28	**Catch-up and review**		
	F, Mar 01	**EXAM 2**		

Commented [BR1]: Take 2 lectures next time

Unit 3: Lipids	M, Mar 04	Lipid digestion and absorption	Textbook: Chapter 5	
	W, Mar 06	Lipid transport and storage	Textbook: Chapter 5	
	F, Mar 08	Lipid metabolism	Textbook: Chapter 5	Assignment #6: Annotated References
	M, Mar 11 – F Mar 15	**No Class – Spring Recess**		
	M, Mar 18	Cardiovascular disease	Textbook: Chapter 5	
	W, Mar 20	Alcohol metabolism	Textbook: Chapter 5	
	F, Mar 22	Fatty Liver Disease	Journal article: Past, present and future perspectives in nonalcoholic fatty liver disease	Assignment #7: Diet quality
	M, Mar 25	**Catch-up and review**		
	W, Mar 27	**EXAM 3**		
Unit 4: Protein and Amino Acids	F, Mar 29	Protein digestion and absorption	Textbook: Chapter 6	
	M, Apr 01	Amino Acid Catabolism	Textbook: Chapter 6	
	W, Apr 03	Protein Turnover and Quality	Textbook: Chapter 7	
	F, Apr 05	Protein Needs	Textbook: Chapter 7	Assignment #8: First draft of literature review
	M, Apr 08	**No class - Solar Eclipse**		
	W, Apr 10	Integration and Regulation of Metabolism		Assignment #9: Peer-review of literature review
	F, Apr 12	Healthy Aging		
	M, Apr 15	**Catch-up and review**		
	W, Apr 17	**EXAM 4**		
Unit 5: Nutrition Translation	F, Apr 19	Nutrition Translation		Assignment #10: Literature Review
	M, Apr 22	Presentations		
	W, Apr 24	Presentations		
	F, Apr 26	Presentations		
	M, Apr 29	Presentations		
	W, May 01	Presentations		
	F, May 03	Presentations		
	M, May 6	**CUMULATIVE FINAL EXAM 10:15am – 1:15pm Rowell 110**		