

## **Course Syllabus**

### **NFS 3205 Functional Foods: Principles and Technology (3 credits)**

Modality: In-person

Location: Terrill Home Economics Building, Room 207

Time: Tuesday / Thursday 10:05am – 11:20am

## **Instructor information**

Lecturer: Beth (Rice) Bradley, PhD (she / her; referred to as Dr. Bradley)

Office: 228 MLS / Microsoft Teams

e-mail: [Beth.Bradley@uvm.edu](mailto:Beth.Bradley@uvm.edu)

## **Office hours**

Dr. Bradley holds office hours on Monday, Wednesday, and Friday between 8:30am 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.

## **Course overview**

NFS 3205: Functional Foods: Principles and Technology is designed to teach students the science, industry, and politics underlying foods that may confer human health benefits, beyond basic nutrition. The course begins with defining functional foods and differentiating them from other food categories. Students will learn why words matter in marketing and what constitutes a legal claim. The underlying science necessary to make claims will be explored, and students will gain an appreciation for the transdisciplinary teams necessary to bring a functional food to market. The next section of the course allows students to explore several functional foods by delving into the scientific literature, learning about the technologies that exist to allow for the production of safe foods that can be sold at a reasonable cost, and some taste testing! The course will conclude with a series of transdisciplinary case studies presented by groups of students focused on bringing a product to market.

## **Learning objectives**

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

1. Differentiate between functional, medical, and healthy foods
2. Identify relevant FDA structural, functional, and health claims for functional foods
3. Describe some of the biological mechanisms underlying the proposed effects of some popular functional foods on human health
4. Explain the transdisciplinary components necessary to bring functional foods to market

## **Our Common Ground**

### **Attendance**

Lectures will be presented by Dr. Bradley, live, in-person. Students are expected to attend and participate in lecture. It is the responsibility of the student to inform Dr. Bradley regarding any absence or tardiness from class, and to discuss this with her in advance whenever possible. In the event classes are required to move to remote instruction,

lectures will be presented live over MS Teams during regularly scheduled class time. Remote lectures will be recorded and uploaded to MS Teams and the class Brightspace page immediately after class.

**Assignments**

Assignments in NFS 3205 are designed to enhance learning outside the classroom and compliment undergraduate degree requirements. Reading assignments are designed to enhance students’ ability to comprehend the scientific literature.

**Exams**

Exams in NFS 3205 are designed to help reinforce concepts presented during class. There will be four 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, and short answer questions.

**Case Studies**

Case studies in NFS 3205 are designed to help students learn to critically analyze the scientific literature and allow them the opportunity to experience the transdisciplinary nature of working in the food industry.

**Cumulative final exam**

The **cumulative final exam** will be administered on Thursday, December 14, 2023, from 10:30am – 1:15pm in Terrill 207.

**Grading and assessment overview**

Students will be graded on the following assessments:

<b>Assessments</b>	<b>% final grade</b>
<b>Assignments</b>	<b>15</b>
Assignment 1	5
Assignment 2	5
Assignment 3	5
<b>Exams</b>	<b>30</b>
Exam 1	10
Exam 2	10
Exam 3	10
<b>Case Study</b>	<b>35</b>
Functional Food Case Proposal	10
Functional Food Case Study	10
Functional Food Case Review	15
<b>Cumulative final exam</b>	<b>20</b>

**Final Grades**

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

<b>Grading</b>		
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%		

**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.

**Student 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**

<b>Date</b>	<b>Topic</b>	<b>Assigned Reading</b> <i>Complete before class on date assigned</i>	<b>Assignments</b>
Tues. 08/29	Introductions; course syllabus; class expectations		
Thurs. 08/31	Functional food history and definitions		
Tues. 09/05	Introduction to regulatory compliance		
Thurs. 09/07	Making claims		
Tues. 09/12	Scientific support and building an evidence base		
Thurs. 09/14	Case study: false claims	Reading 1 available on Brightspace	Assignment 1: false claims, due over Brightspace prior to class
Tues. 09/19	Exam 1		
Thurs. 09/21	Functional ingredients: prebiotics, probiotics, and postbiotics		
Tues. 09/26	Functional food and ingredient: Oats		Functional food case proposal due over Brightspace by 11:59pm
Thurs. 09/28	Case study: soluble fiber claim	Reading 2 available on Brightspace	Assignment 2: the soluble fiber claim, due over Brightspace prior to class
Tues. 10/03	Functional food: yogurt		
Thurs. 10/05	Oagurt!		
Tues. 10/10	Functional ingredients: polyphenolic compounds		
Thurs. 10/12	Functional food: dark chocolate		
Tues. 10/17	Mushrooms		

Thurs. 10/19	<i>No class, time to study for exam 2</i>		
Tues. 10/24	Exam 2		
Thurs. 10/26	Processing: tomatoes and lycopene		
Tues. 10/31	Processing: cranberries and cranberry juice		
Thurs. 11/02	Food safety considerations: sprouts	Reading 3 available on Brightspace	
Tues. 11/07	<i>No class, time to work on case studies</i>		Functional food case study due over Brightspace by 11:59pm
Thurs. 11/09	Upcycled foods		
Tues. 11/14	Marketing, Science, and Sourcing, oh my!		Assignment 3: food safety reflection
Thurs. 11/16	Exam 3		
Tues. 11/21	<i>No class, Fall Recess</i>		
Thurs. 11/23			
Tues. 11/28	In-class time to work on case reviews		
Thurs. 11/30	Case reviews		Functional food case review due over Brightspace prior to class
Tues. 12/05	Case reviews		
Thurs. 12/07	Case reviews		
Tues. 12/12	<i>No class, finals week.</i>		
Thurs. 12/14	<i>Cumulative final exam 10:30am - 1:15pm Terrill, 207</i>		