



THE OHIO STATE UNIVERSITY

SYLLABUS: FDSCTE 2200, THE SCIENCE OF FOOD SPRING 2019

Instructor

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If you send email to me via osu.edu, you **MUST** write '2200D' in the subject line.

Office hours: By appointment only (office 110A Parker Food Science Building)

Course Description

Food and nutrition in modern health; principles involved in digestion, metabolism, and the contribution of food to disease processes, including food poisoning and the roles of science, biotechnology, and processing in meeting health and food needs.

Course Learning Outcomes

By the end of this course, students should successfully:

1. Know the names and functions of essential nutrients for humans as well as foods that are major contributors of these nutrients in their diets;
2. Know the factors important for microbial growth, the foodborne etiological agents that present public health hazard, and the positive role of microorganisms in food;
3. Be aware of the relationships between diet and disease and the controversies surrounding these relationships;
4. Be able to evaluate information/ media reports on food and nutrition critically and identify misinformation.

This course also satisfies a **General Education (GE) natural science** requirement as a second course in the biological science sequence and, as such, has the following learning objectives:

1. Students understand basic facts, principles, theories, and methods of modern science.
2. Students understand key events in the development of science and recognize that science is an evolving body of knowledge.
3. Students describe the interdependence of scientific and technological developments.
4. Students recognize social and philosophical implications of scientific discoveries and understand the potential of science and technology to address problems of the contemporary world.

Textbook and Course Materials

There is no required purchase of a textbook for this course. There will be a number of resource materials, either on Canvas, or which may be downloaded for no cost. Students are not required to be on campus at any time.

Course Technology

For help with your password, university e-mail, Canvas, or any other technology issues, questions, or requests, contact the OSU IT Service Desk. Standard support hours are available at <https://ocio.osu.edu/help/hours>, and support for urgent issues is available 24/7.

- **Self-Service and Chat support:** <http://ocio.osu.edu/selfservice>
- **Phone & TDD:** 614-688-HELP (4357); 614-688-8743
- **Email:** 8help@osu.edu

Baseline technical skills and necessary equipment for this online course

- Basic computer and web-browsing skills
- Navigating CarmenCanvas (note: this will generally be referred to as “Canvas”)
- Familiarity with Microsoft Word, Microsoft Excel, Adobe Reader, or equivalent
- Computer: current Mac (OS X) or PC (Windows 7+) with high-speed internet connection

Computer Requirements: Mac (OS X) or PC (Windows 7+) with high-speed internet connection. Please make sure that you have broadband Internet connectivity, or at least a reliable dialup. Make sure that your computer is updated and that you have plenty of battery life BEFORE you begin assignments, especially tests. Additionally, please make sure that your computer is capable of running the following: YouTube videos (Adobe Flash Player or an HTML5 compatible browser like Chrome or Internet Explorer) and .pdf files (Adobe Acrobat Reader). It is your responsibility to make sure your computer meets these requirements. **Computer problems are never a valid excuse for missing an assignment!**

Other Requirements: It is expected that you have basic computer and web browsing skills, and familiarity with Microsoft Word and Excel, Adobe Reader, and YouTube. The ability to smoothly use Canvas is an absolute necessity for this class. If you have questions, CALL THE HELP DESK. The folks there are extremely helpful and are also they are just very nice people. You are paying for this service as part of your tuition, so please make use of it!

Some activities require the use of a digital camera in order to take photos. The digital camera that comes standard on many cell phones/ smart phones is more than sufficient. If you do not have a cell phone, smart phone or digital camera, please let me know, so we can discuss options. All photos that you take must include a **validation**. An acceptable validation would be to include a piece of paper/ note card with your name on it in the photo. Other information may also be required, depending on the assignment.

Academic Integrity Policy

Policies for this online course

- **Quizzes and Exams:** You must complete the quizzes and exams yourself, without any external help or communication. This means NO web-surfing as a means of answering quiz and exam questions.
- **Written assignments:** Your written assignments must be your own original work. Essay questions must be written in your own words, not copied and pasted from the internet.
- **Falsifying research or results:** All data you collect and interpret in this course are intended to be part of a learning experience; you should never feel tempted to make your results look more 'successful' than they are.

Ohio State's academic integrity policy

Academic integrity is essential to maintaining an environment that fosters excellence in teaching, research, and other educational and scholarly activities. Thus, The Ohio State University and the Committee on Academic Misconduct (COAM) expect that all students have read and understand the University's *Code of Student Conduct*, and that all students will complete all academic and scholarly assignments with fairness and honesty. Students must recognize that failure to follow the rules and guidelines established in the University's *Code of Student Conduct* and this syllabus may constitute Academic Misconduct.

The Ohio State University's *Code of Student Conduct* (Section 3335-23-04) defines academic misconduct as: "Any activity that tends to compromise the academic integrity of the University, or subvert the educational process." Examples of academic misconduct include (but are not limited to) plagiarism, collusion (unauthorized collaboration), copying the work of another student, and possession of unauthorized materials during an examination. Ignorance of the University's *Code of Student Conduct* is never considered an "excuse" for academic misconduct, so I recommend that you review the *Code of Student Conduct* and, specifically, the sections dealing with academic misconduct.

If I suspect that a student has committed academic misconduct in this course, I am obligated by University Rules to report my suspicions to the Committee on Academic Misconduct. If COAM determines that you have violated the University's *Code of Student Conduct* (i.e., committed academic misconduct), the sanctions for the misconduct could include a failing grade in this course and suspension or dismissal from the University.

If you have any questions about the above policy or what constitutes academic misconduct in this course, please contact me.

Other sources of information on academic misconduct (integrity) to which you can refer include:

- The Committee on Academic Misconduct web pages ([COAM Home](#))
- *Ten Suggestions for Preserving Academic Integrity* ([Ten Suggestions](#))
- *Eight Cardinal Rules of Academic Integrity* (www.northwestern.edu/uacc/8cards.htm)

Accessibility Accommodations for Students with Disabilities

Trigger Warning

Some contents of this course may involve media that may be triggering to some students due to descriptions of eating disorders and their aftermath. If needed, please take care of yourself while watching/reading this material (debriefing with a friend, contacting Counseling and Consultation Services at 614-292-5766, and contacting the instructor if needed). Expectations are that we all will be respectful of our classmates while consuming these media. Failure to show respect to each other may result in dismissal from the class.

Requesting accommodations

If you would like to request academic accommodations based on the impact of a disability qualified under the Americans with Disabilities Act and Section 504 of the Rehabilitation Act of 1973, please contact the Student Life Disability Services at [614-292-3307](tel:614-292-3307) or ods@osu.edu to register for services and/or to coordinate any accommodations you might need in your courses at The Ohio State University. Please contact me ASAP, once you have a letter from ODS, as I will have to adjust your test taking time manually. Go to <http://ods.osu.edu> for more information.

Submitting Your Assignments

Access to exams, quizzes, and assignments will **NOT** be granted after the due dates unless you have a valid documentable excuse, such as a medical emergency. Due dates are not just when the items are due, but are also the time after which access to the item closes. This means that **there is no option to turn in late assignments.**

For writing assignments, such as the Diet Analysis Project and the Supermarket Survey, plan ahead to avoid connectivity issues, and allow adequate time to complete each item. Do not wait until the last minute, or even the last half hour, to finish and upload your work!

Once you have submitted your work, I recommend that you do 2 things: 1) take a screen shot of the (successful) submission data, and keep this in a folder, and 2) open the submitted document and check that it looks 'right'. There have been one or two occasions where documents have 'somehow' been corrupted during transmission.

Grading Scale

93–100: A	73–76.9: C
90–92.9: A-	70–72.9: C-
87–89.9: B+	67–69.9: D+
83–86.9: B	60–66.9: D
80–82.9: B-	Below 60: E
77–79.9: C+	

Tests in This Course

Tests include **Quizzes**, **Exams**, and some **Assignments** (e.g., the Syllabus Review is referred to as an Assignment).

Quizzes. There will be at least 12 Unit Quizzes. Each will cover course material presented as a unit (e.g., Macronutrients, Food Microbiology). You will have 2 attempts to take each quiz. Questions that are presented are randomly selected from a large question bank, so you may see different questions on each attempt. This allows you to use the quizzes as a sort of study guide for the exams. Quizzes will **generally** be due on Fridays.

Each quiz is worth 10 points. The 10 highest quiz scores will be counted toward your grade; others will be dropped.

As of this writing, I expect that all quiz questions will be objective, that is, multiple choice, multiple answers, matching, true/ false, and fill in the blank. You should be able to see feedback within 24 hours of taking the quiz (sometimes right away). You may wish to view results of a first attempt before taking a quiz a second time.

Exams. There will be a total of 6 exams. Five of the exams are 'Section' Exams, and will test you on the material most recently covered. You will have only 1 attempt to take any of the exams. The sixth exam is a cumulative final, and will be comprised of questions from the 5 Section Exams. As with the quizzes, there is a large Question Bank, and questions will be selected from it at random, so there may be questions on the Final Exam that you have not seen on the previous Section Exams.

Exams will include objective questions as described under Quizzes, and may also include short answer/ essay questions. The short answer/ essay questions must be graded by our team of human graders. We hope to be able to turn exams around and have results back to you within two weeks of the due date.

Exams will **generally** be due on Mondays.

Each Exam is worth 40 points. The 5 highest Exam scores will be counted toward your grade. If you have done well enough on the first 5 exams, you may skip the final!

Assignments. For the Syllabus and Diet Analysis Project Reviews, you will have 2 attempts, and these will be scored similarly to Unit Quizzes. The 'Who Am I' and the Course Feedback assignments are designed to help me understand who are the students in the class and to help the university, the college, and the department get a handle on what's good and what's not for this course, respectively. There are no wrong answers, and your responses are anonymous. The system records your responses and awards you 10 points for responding to those assignments. For the Current Events assignment, you will be given a series of articles to read on current events that relate to our subject material; this is followed with a quiz.

Independent Science Project (Diet Analysis) Overview:

The Diet Analysis Project for this GE Natural Science course is an independent 'field' exercise involving data collection and recording (Photo Journal), consumption log and analysis (Spreadsheet), and interpretation (Reflection). Detailed instructions will be posted in Canvas.

No judgement will be made by myself or any of the graders regarding the entries in your project. Part of the purpose of this project is for you to have the experience of generating your OWN data set, analyzing it, and for YOU to then make your own judgements.

- Part 1. Data Collection and Photo Journal. For 3 consecutive 24-hour periods, you will document everything you consume. That includes foods, beverages, and dietary supplements (e.g., vitamins, protein powder, protein bars, energy drinks). You will use a camera or a phone with a camera to take pictures of **everything** you eat and drink. With each item or meal, before you eat, you **MUST** include a small piece of paper with your name and date and then take a picture. **You must plan ahead for this!**
- You will compile all these images, in chronological order by day and time, into a Photo Journal (a Word document - Part 1). If you do not have a phone with a camera capable of taking pictures, contact me.
- Part 2. Consumption Log and Analysis (the Spreadsheet). Using nutrient concentrations from USDA database, OSU dining, food labels, and/ or restaurant websites, you will calculate the nutrient data for the items you consumed and enter that data into the template provided. If the data are entered correctly, the program will calculate your 3-day totals and daily averages for each nutrient of interest. You will need these values for Part 3. This is your **Three-Day Consumption Log and Analysis**.
- Part 3. Data Interpretation (Reflection). You will refer to your Consumption Log (Part 2) and to a table of RDAs and ULs provided, to respond to a series of questions asking you to assess your nutritional status during the 3-day sampling period. This is your **Reflection**.

Alternative project assignment

If you are or have been under the care of a healthcare professional for a condition that makes undertaking the project described inappropriate, contact me for an alternative.

Diet Analysis Grading and Feedback

Because the Diet Analysis Project is so large, specialized training is required for our team of graders. It generally takes **4-6 weeks** for us to complete this.

Supermarket Survey (SMS)

The Supermarket Survey is a combination field and research study that is a required project for this course. You will go to a grocery, supermarket, or convenience food store to collect data, and will then write a report, based on a series of questions.

For this project, you may work alone, or in a student group, with a maximum of 4 members per group. Details will be posted.

E-mail – Canvas Inbox

- Always use the course email (Inbox, on the left side of the Canvas Home page) and not personal email. I will make every attempt to reply to e-mails **within** 24 hours on school days. If you do not receive a reply within 3 school days, please re-send your email – I’m human, and it is possible that an email will be overlooked. I am generally not online weekends/ holidays.
- Do not leave comments on (within) assignments, I may not see them and will not respond. Instead, send an email.
- On the subject line, **begin with “2200D”** and then a **meaningful subject heading**. Keep your message as brief as possible.

Student Participation Requirements

Because this is a distance-education course, your ‘attendance’ is based on your online activity and participation.

Logging in: **AT LEAST TWICE PER WEEK**

- Be sure you are logging in to the course in Canvas each week, including weeks with holidays or weeks with minimal online course activity. The only likely exception is the week of Spring Break (March 11-15, 2019). During most weeks you will probably log in many times. If you have a situation (such as Jury or Military duty) that might cause you to miss an entire week of class, discuss it with me *as soon as possible*.

Office hours:

- My office hours are flexible and by appointment. There may be some open house-type Help sessions which will occur prior to the final due date of the Diet Analysis Project.

Recommended Approach to Learning

To prepare for quizzes and exams, I encourage you to study the course material as if you were to take it “closed book”, i.e., from memory. While there is an open book policy, the quizzes and exam are timed. Therefore, you will likely score higher the fewer questions you need to “research” before responding.

Communication Guidelines

Please remember to be respectful and thoughtful in your writing, whether it is on a discussion post, an email, or a written assignment. Remember that words on the screen do not include facial expressions or tone of voice. Before you click that SEND button, re-read what you have written and be sure that you are clear, concise, and courteous.

- **Writing style:** Use good grammar, sentence structure, spelling, and punctuation in your writing.
- **Written reports (Reflection and Supermarket Survey)** will be graded, in part, for grammar, sentence structure, punctuation, and spelling. If English is not your first language, consider this an opportunity to expand your English vocabulary and to hone (improve, refine, sharpen) your English writing skills.

If English is your first language, you should be reasonably adept at this already. However, there is no substitute for proofreading. Spellchecking programs will not know the difference between ‘from’ and ‘form’, for example. If you are uncertain about the specific meaning of a word in an assignment, or a word that you want to use, LOOK UP THE DEFINITION.

Graded Items	Points	Total	% of Grade
Assignments (5)		70	14
A1: Who Am I? Survey	10		
A2: Syllabus Review	10		
A3: Diet Analysis Project Introduction Review	10		
A4: Current Events	30		
A5: Anonymous End of Course Survey	10		
Quizzes (≥12, keep 10 highest scores)		100	20
Each quiz is worth 10 points; 2 attempts per quiz			
Exams (6; keep 5 highest scores)		200	40
One attempt per exam			
Diet Analysis Project		100	20
Part 1 Food Photo Journal	15		
Part 2 Consumption Log and Analysis (Spreadsheet)	30		
Part 3 Interpretation (Reflection)	55		
Supermarket Survey		30	6
Total Possible Points		500	100

Course schedule - topics covered

UNIT 1. BIOLOGY AND CHEMISTRY REVIEW

- 1.1 Biology
- 1.2 Chemistry
- 1.3 Cell Structure and Function

UNIT 2. TO EAT OR NOT TO EAT

- 2.1 Satiety and Energy Homeostasis
- 2.2 Factors That Affect Eating -Sensory Perception, Other Food Choice Factors
- 2.3 How Much Should We Eat? -Dietary Reference Intakes (DRIs) and AMDR's
- 2.4 What Happens To The Food We Eat? –Digestion and Energy

UNIT 3. MACRONUTRIENTS

- 3.1 Macronutrients: Carbohydrates
- 3.2 Sweeteners 101
- 3.3 Macronutrients: Proteins and Amino Acids
- 3.4 Macronutrients: Fat

UNIT 4. MICRONUTRIENTS AND CURRENT RECOMMENDATIONS

- 4.1 Micronutrients: Fat Soluble Vitamins
- 4.2 Micronutrients: Water Soluble vitamins
- 4.3 Micronutrients: Minerals
- 4.4 Current Dietary Guidelines

UNIT 5. FOOD LABELS, MICRONUTRIENT FORTIFICATION AND DIETARY SUPPLEMENTS

- 5.1 Food Label – Nutrition Facts
- 5.2 Claims on Food Labels
- 5.3 Micronutrient Fortification and Fortified Foods
- 5.4 Dietary Supplements

UNIT 6. EATING-RELATED CONDITIONS

- 6.1 Weight loss
- 6.2 Eating Disorders
- 6.3 Allergies, Intolerances & Sensitivities

UNIT 7. FOOD MICROBIOLOGY AND FOODBORNE ILLNESS

- 7.1 Microbial Growth Factors
- 7.2 Etiologic Agents and Foodborne Diseases: Infections and Intoxications
- 7.3 Susceptible Populations and Health Consequences
- 7.4 Safe Food Handling

UNIT 8. FOOD INDUSTRY

- 8.1 Food Industry Overview
- 8.2 Unit Operations in Food Industry

UNIT 9. FOOD TECHNOLOGIES

- 9.1 Food Processing: Preservation of Food by Physical Technologies
- 9.2 Emerging Food Processing Technologies
- 9.3 Food Fermentation: Biochemical Preservation of Food
- 9.4 Food Additives: Chemical Preservation & Other Technical Effects

UNIT 10. FOOD BIOTECHNOLOGY AND ROLE OF FOOD IN DISEASE

- 10.1 Plant Biotechnology: Genetic Engineering of Food Crops
- 10.2 Diet and Disease
- 10.3 Bioactive components in Food & Disease Prevention

UNIT 11. CHOCOLATE SCIENCE

- 11.1 Chocolate History, Identity and Nutrition
- 11.2 Chocolate ingredients
- 11.3 Chocolate manufacturing

UNIT 12. SCIENCE OF ALCOHOL

- 12.1 Making Beer
- 12.2 Making Wine
- 12.3 Intoxication

Week	Dates	Topics, Assignments and Deadlines
1	1/7 – 1/13	Unit 1 (Bio/Chem review), Assignment 1 (Who Am I), Quiz 1
2	1/14 – 1/20	Unit 2 (Eating, Digestion), Assignment 2 (Syllabus Review), Quiz 2
3	1/21 – 1/27	Unit 3 (Macronutrients), Quiz 3, Assignment 3 (Project Intro Quiz)
4	1/28 – 2/3	Unit 4 (Micronutrients), Exam 1 (on Units 2 & 3), Quiz 4
5	2/4 – 2/10	Unit 5 (Labels, Fortification), Photo Journal DUE, Quiz 5
6	2/11 – 2/17	Unit 6 (Weight, Disorders), Exam 2 (on Units 4 & 5), Quiz 6
7	2/18 – 2/24	Diet Analysis Project DUE
8	2/25 – 3/3	Unit 7 (Micro, Food Safety), Quiz 7
9	3/04 - 3/10	Unit 8 (Food Industry), Exam 3 (on Units 6 & 7), Quiz 8
10	3/11 – 3/17	Spring Break
11	3/18 – 3/24	Unit 9 (Food Tech), Quiz 9, SMS
12	3/25 – 3/31	Unit 10 (Biotech), Quiz 10,
13	4/1 – 4/7	Unit 11 (Chocolate), Exam 4 (on Units 8, 9 & 10), Quiz 11
14	4/8 – 4/14	Assignment 4 (Current Events); Unit 12 (Alcohol), Quiz 12
15	4/15 – 4/21	Exam 5 (on Units 11 & 12)
16	4/22- 4/28	Exam 6 (Cumulative), Assignment 5 (Anonymous end of course evaluation)