



SYLLABUS: FDSCTE 5710 FOOD ADITIVES SPRING 2020 (3 CREDITS)

Course overview

Instructor

Instructor: Luis E. Rodriguez-Saona

Department: Food Science and Technology Department

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Phone number: 614-292-3339 (office)

Office Location: Parker FST Building Rm 325

Office hours: "Open-door" policy or hours by appointment. Immediately after class is an excellent time for questions not answered during class. *"If you want to talk with me, I want to talk with you."*

Course Organization

Meeting Times and credits: WeFr 11:30AM - 12:25PM, 2 credits (Rm Parker 118)

Prerequisites/co-requisites/exclusions: 10 cr in the major or permission of instructor, or Grad standing.

Course description

The course will present the principles and discuss utilization of food additives. While the focus of the class is dominated by U.S. regulations and practice, differences in additive usage in other countries will be discussed and emphasized when these differences are significant barriers to international trade. In addition to the technical and legal aspects of food additive usage, there are a host of ethical questions that arise. Students will be challenged to think, discuss these issues and to begin to develop a personal professional code of ethics in order to help prepare themselves for the dilemmas that they will face in the "real world". Students will be expected to utilize resources available to them to supplement the classroom activities. Much of the questioning will involve the use of food product labels and students will be expected to be familiar with common food products.

Course materials

No Required Textbook

- None

Recommended reference materials

- Branen, Davidson, Salminen, Thorngate. 2002. Food Additives, 2nd edition, Marcel Dekker, NY.

Journals:

There are no journals that specifically deal with ingredients, but many "trade" publications have extensive ingredient advertising and business reply cards for obtaining information on ingredients. Review articles can be found in *Critical Reviews in Food Science and Nutrition* and number of trade publications are also online:

Food Product Design (<https://www.wageningenacademic.com/doi/book/10.3920/978-90-8686-173-6>)

Prepared Foods (<https://www.preparedfoods.com/keywords/prepared%20foods%20magazine>)

Food Processing (<https://www.foodprocessing.com>)

Food Navigator (<https://www.foodnavigator.com>)

Food Technology (<https://www.ift.org/news-and-publications/food-technology-magazine>)

A Few Key Web Links

CFSAN <http://www.fda.gov/Food/default.htm>

CFR <http://www.gpo.gov/fdsys/browse/collectionCfr.action?collectionCode=CFR>

FR <https://www.federalregister.gov>

IFT <https://www.ift.org>

JECFA https://www.who.int/foodsafety/areas_work/chemical-risks/jecfa/en/

Internet resources

- Carmen - <https://carmen.osu.edu/> (**Check daily**; all materials will be uploaded here)

Supplemental materials

- Additional readings are drawn from a variety of sources and will be posted on the Carmen course site.

Course technology

For help with your password, university email, Carmen, 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:** 614-688-HELP (4357)
- **Email:** 8help@osu.edu
- **TDD:** 614-688-8743

Required software

- [Microsoft Office 365](#): All Ohio State students are now eligible for free Microsoft Office 365 ProPlus through Microsoft’s Student Advantage program. Full instructions for downloading and installation can be found [at go.osu.edu/office365help](http://go.osu.edu/office365help).

Carmen access

You will need to use [BuckeyePass](#) multi-factor authentication to access your courses in Carmen. To ensure that you are able to connect to Carmen at all times, it is recommended that you take the following steps:

- Register multiple devices in case something happens to your primary device. Visit the [BuckeyePass - Adding a Device](#) help article for step-by-step instructions.
- Request passcodes to keep as a backup authentication option. When you see the Duo login screen on your computer, click “Enter a Passcode” and then click the “Text me new codes” button that appears. This will text you ten passcodes good for 365 days that can each be used once.
- Download the [Duo Mobile application](#) to all of your registered devices for the ability to generate one-time codes in the event that you lose cell, data, or Wi-Fi service.

If none of these options will meet the needs of your situation, you can contact the IT Service Desk at 614-688-4357 (HELP) and the IT support staff will work out a solution with you.

Course objectives and learning goals

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

Objective 1: Assign functions to most, if not all, of the ingredients at the ingredient label of a food product

Objective 2: Discuss alternative ingredient choices for food products based on consumer driving demands.

Objective 3: Determine the regulatory status of food ingredients and discuss the methods used for evaluating the safety of food additives.

Objective 4: Discuss the likely changes in ingredients if a product were processed in a different manner.

Objective 5: Discuss the contributions and the limitations of food additives in our food supply.

By integrating class lectures, discussion activities, readings, assignments and class activities, students will achieve the full learning experience.

Evaluation Criteria

Category	%
Midterm Exams (2)	60%
Final Exam	30%

Participation & Class Presentation	10%
Total	100%

Grading scale

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

Course schedule (tentative)

Topic	Assignments
Introduction and Overview	
Regulations	
Food Additive Risks and Toxicity Testing for Additives	
Antimicrobial Agents	http://www.foodproductdesign.com/articles/2005/06/food-product-design-applications--june-2005--to.aspx http://www.foodproductdesign.com/articles/1999/04/ingredients-to-raise-the-microbial-bar.aspx
Antioxidants and Sequestrants	http://www.foodproductdesign.com/articles/2007/09/antioxidants-scratching-the-surface-in-functional.aspx
Looking at Labels	
Sweeteners: Sugars and Corn Syrups	http://www.foodproductdesign.com/articles/2001/02/food-product-design-february-2001--sweetners-for.aspx http://www.foodproductdesign.com/articles/2005/05/carbohydrate-sweeteners.aspx
High Intensity Sweeteners	http://www.foodproductdesign.com/articles/2008/08/low-cal-sweet-tooth-satisfaction.aspx http://www.foodproductdesign.com/articles/2009/07/stevias-second-chance.aspx
Polyhydric Alcohols (Polyols)	http://www.foodproductdesign.com/articles/2007/10/polyols-beyond-sweet-taste.aspx http://www.foodproductdesign.com/articles/2007/05/polyols-benefits-beyond-sweet-taste-part-1.aspx
Looking at Labels	
First Examination	TBA
Starches	Understanding Starch Functionality http://www.foodproductdesign.com/articles/1996/01/understanding-starch-functionality.aspx#
	Modified Starches

	http://www.foodproductdesign.com/articles/2000/09/starch-stabilizer-----solutions.aspx
Gums	http://www.foodproductdesign.com/articles/1999/12/special-effects-with-gums.aspx https://www.naturalproductsinsider.com/articles/2007/10/stabilizers-naturally.aspx
Looking at Labels	
Fats and Fat Replacers	http://www.foodproductdesign.com/articles/2000/06/fats-and-oils-2000--challenges-and-opportunities.aspx http://www.foodproductdesign.com/articles/2003/03/dropping-----calories-maintaining-taste-and.aspx http://www.foodproductdesign.com/articles/2006/08/fats-to-feel-good-about.aspx
Surface Active Agents (Emulsifiers)	http://www.foodproductdesign.com/articles/1998/07/prolonging-bakery-product-life.aspx https://www.naturalproductsinsider.com/articles/1995/10/emulsifier-applications.aspx#top https://www.rikenvitamin.com/foodingredients/emulsifier/function.html http://www.eufic.org/article/en/food-safety-quality/food-additives/artid/emulsifiers-food/
Looking at Labels	
Second Examination	TBA
Proteins	http://www.foodproductdesign.com/articles/2006/06/the-power-of-protein.aspx http://www.foodproductdesign.com/articles/2001/06/putting-proteins-to-work.aspx
Acidulants	
Phosphates	http://www.naturalproductsinsider.com/articles/2006/06/figuring-out-phosphates.aspx
Color Additives	http://www.foodproductdesign.com/articles/2006/08/maintaining-color-stability.aspx http://www.foodproductdesign.com/articles/2008/08/natural-colors-a-shade-more-healthy.aspx
Comprehensive Final	Wed Apr 22 @ 12:00pm-1:45pm

COURSE POLICIES

Attendance

Attendance is encouraged and will be tracked electronically in Canvas through roll calls at the beginning of each class period throughout the semester.

Everyone's expected to participate if you wish to succeed in the course. Participation will be assessed by coming to class prepared, participating in class discussions either by asking or answering questions, bringing labels/products to class, completing class assignments and participation on the group label presentation.

Make sure you are logging into the course in Carmen. If you have a situation that might cause you to miss an entire week of class, discuss it with me *as soon as possible*.

Make-up Work

If you miss an examination for a documented medical attention for an illness, a death in the family, participation in a documented University sanctioned event, or any other valid excuse, you need to coordinate with the instructor. Excuses for missing an exam must be presented to the instructors prior to the exam when at all possible. Students who will be participating in University sanctioned events must provide the instructor with a copy of the scheduled events and the classes that will be missed. This documentation must be signed by the coach/supervisor and given to the instructor two weeks prior to the event.

Communication

Faculty feedback and response time

I am providing the following list to give you an idea of my intended availability throughout the course. (Remember that you can call **614-688-HELP** at any time if you have a technical problem.)

- **Grading and feedback:** You can generally expect exam feedback within **14 days**.
- **Email:** I will reply to emails within **24 hours on days when class is in session at the university**. This is the best way to reach me.

Discussion and Communication Guidelines

The following are my expectations for how we should communicate as a class. Above all, please remember to be respectful and thoughtful.

- **Writing style:** You should write using good grammar, spelling, and punctuation.
- **Tone and civility:** Let's maintain a supportive learning community where everyone feels safe and where people can disagree amicably.

Late Assignments

To receive full credit, work must be turned-in on time and in condition to be evaluated. Late assignments will incur a deduction of 10% of the total point value for each 24-hour period that they are late (including weekends). Late assignments can be turned in for up to 7 days (including weekends) after they are due with the penalty described above. After that students will receive a 0 for the assignment. Excuses for missed or late assignments – even valid ones – will not be accepted more than 7 days after the assignment due date.

University Policies

Academic Integrity/ Misconduct

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.

Copyright Disclaimer

The materials used in connection with this course may be subject to copyright protection and are only for the use of students officially enrolled in the course for the educational purposes associated with the course. Copyright law must be considered before copying, retaining, or disseminating materials outside of the course.

Statement on Title IX

All students and employees at Ohio State have the right to work and learn in an environment free from harassment and discrimination based on sex or gender, and the university can arrange interim measures, provide support resources, and explain investigation options, including referral to confidential resources.

If you or someone you know has been harassed or discriminated against based on your sex or gender, including sexual harassment, sexual assault, relationship violence, stalking, or sexual exploitation, you may find information about your rights and options at titleix.osu.edu or by contacting the Ohio State Title IX Coordinator, Kellie Brennan, at titleix@osu.edu. Title IX is part of the Office of Institutional Equity (OIE) at Ohio State, which responds to all bias-motivated incidents of harassment and discrimination, such as race, religion, national origin and disability. For more information on OIE, visit equity.osu.edu or email equity@osu.edu.

Your Mental Health

As a student you may experience a range of issues that can cause barriers to learning, such as strained relationships, increased anxiety, alcohol/drug problems, feeling down, difficulty concentrating and/or lack of motivation. These mental health concerns or stressful events may lead to diminished academic performance or reduce a student's

ability to participate in daily activities. The Ohio State University offers services to assist you with addressing these and other concerns you may be experiencing. If you or someone you know are suffering from any of the aforementioned conditions, you can learn more about the broad range of confidential mental health services available on campus via the Office of Student Life Counseling and Consultation Services (CCS) by visiting ccs.osu.edu or calling (614) 292- 5766. CCS is located on the 4th Floor of the Younkin Success Center and 10th Floor of Lincoln Tower. You can reach an on-call counselor when CCS is closed at (614) 292-5766 and 24 hour emergency help is also available through the 24/7 National Prevention Hotline at 1-(800)-273-TALKor at suicidepreventionlifeline.org

Diversity

The Ohio State University affirms the importance and value of diversity in the student body. Our programs and curricula reflect our multicultural society and global economy and seek to provide opportunities for students to learn more about persons who are different from them. We are committed to maintaining a community that recognizes and values the inherent worth and dignity of every person; fosters sensitivity, understanding, and mutual respect among each member of our community; and encourages each individual to strive to reach his or her own potential. Discrimination against any individual based upon protected status, which is defined as age, color, disability, gender identity or expression, national origin, race, religion, sex, sexual orientation, or veteran status, is prohibited.

Accessibility accommodations for students with disabilities

The University strives to make all learning experiences as accessible as possible. If you anticipate or experience academic barriers based on your disability (including mental health, chronic or temporary medical conditions), please let me know immediately so that we can privately discuss options. To establish reasonable accommodations, I may request that you register with Student Life Disability Services. After registration, make arrangements with me as soon as possible to discuss your accommodations so that they may be implemented in a timely fashion. SLDS contact information: slds@osu.edu; 614-292-3307; slds.osu.edu; 098 Baker Hall, 113 W. 12th Avenue.

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, contact your

instructor privately as soon as possible to discuss your specific needs. Discussions are confidential.

In addition to contacting the instructor, 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.

Go to <http://ods.osu.edu> for more information.