



THE OHIO STATE UNIVERSITY

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# FDSCTE 2400: Introduction to Food Processing Spring 2021

Meeting Dates and Location:

In-person lecture: Tuesdays and Thursdays 3:00 – 3:55 (Howlett 164)

One 3 hour lab: Lab sections are 8-11; 11-2; 2-5 on Wednesdays (Parker 136)

Instructor:

Mary Kay Pohlschneider, Ph.D

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Office phone: 614-292-3867

214 B Howlett Hall

Office hours by appointment, in person or by video conference

Lab Coordinators:

**Matt Chrusciel**

Parker Teaching labs

[Chrusciel.3@osu.edu](mailto:Chrusciel.3@osu.edu)

**Gary Wenneker**

Parker Pilot Plant

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**Dr. Lynn Knipe**

Meat Lab

[knipe.1@osu.edu](mailto:knipe.1@osu.edu)

Office: 327 Parker

## Credit Hours:

**Credit hours and work expectations:** This is a **3-credit-hour course**. According to [Ohio State policy](#), students should expect around 2 hours per week of time spent on direct instruction – lectures, and a 3 hour lab in addition to 6 hours of homework (reading and assignment preparation, for example) to receive a grade of (C) average.

**Prerequisites:** This course requires that a student have a foundation in biology and chemistry. To that end, Biology 1101 and Chemistry 1110 or a higher level are required. Taking these courses concurrent is allowed by instructor permission.

**Textbooks/Readings:** No textbook is required for the course

## Optional Readings:

While the textbook is not required, some students find that reading is a good learning method. I highly encourage students to use this textbook as a supplement to the course material. This resource can be downloaded as a PDF for free on campus.

Potter NN, Hotchkiss JH. 1998. Food Science 5<sup>th</sup> Ed. Springer. New York.

<http://link.springer.com/book/10.1007%2F978-1-4615-4985-7>

## Additional Required Materials:



**Students must purchase a lab coat for this course. Ideally it should be thigh length, however, if you already own a waist coat, that is acceptable.**

**Other Fees or Requirements:** none

## Course Description:

This is an introductory class applying chemistry, biology, and engineering to hands-on experience on the production and evaluation of foods. Includes basic food regulations, sanitation, and formulation. The course consists of two lectures and one 3 hour laboratory per week. Attendance and participation is mandatory, though accommodations will be made if you have an objection or allergy to specific foods. **Please make the instructor aware of such needs.** FST 2400 is a “hands on” course with team based projects. **Attendance is required.** Excused absences **require documentation** and include those caused by illness, family death, and official university function. Unexcused absences will not be allowed to be made up resulting in a zero grade for all assignments connected to that day’s work or tests that may have been missed.

## Goals:

- Fundamentals of food processing.
- Factors associated with product attributes, shelf life and product safety
- Unit operations and unit processes
- Familiarization with food processing equipment, component parts and their function
- Manufacture of selected food products: product ingredients, formulation, and evaluation.
- Emphasis will be placed on processing food to make it safe

## Learning Outcomes:

By the end of this course, students should successfully be able to:

1. Understand the formulation and processing of foods and the basic chemistry of the components
2. Understand the government regulatory framework required for manufacture and sale of food in the US
3. Be familiar with processing plant equipment and practices
4. Given a food product:
  - a. Name the unit operations required to make the product
  - b. Describe the processes and/or ingredients needed to make the product safe
  - c. Describe the major quality attributes of the product and the factors that affect them
  - d. Describe several objective measurements of food quality
  - e. Discuss the psychological and physiological basis for appropriate sensory analysis

## Course technology

For help with your password, university e-mail, [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 24x7.

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

## Baseline technical skills

- Basic computer and web-browsing skills
- Navigating Carmen: for questions about specific functionality, see the [Canvas Student Guide](#).

## Technology skills necessary for this specific course

- Navigate and type in Word documents
- Create and edit Excel spreadsheets including the use of formulas
- Create and edit a slide deck

## Required equipment

- Computer access

## 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 is found <https://ocio.osu.edu/kb04733>.

## 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 Schedule:

Instructional Week	Topics and Outcome	
1	Attributes and evaluations	LO 4C and D
2	Unit Operations	LO 4A
3-5	Food Chemistry	LO 1
6-9	Food Preservation	LO 1, and 4B
10-14	Food Safety and Inspection	LO 2 and 4B
Laboratory Week	Topics and Outcome	
1	Introductions, Lab safety	LO 3
2-7	Unit Operations	LO 3 and 4A
8-11	Product Processing and Evaluation	LO 1, 3, 4B, C, D and E
12-14	Group Project Processing, Evaluation and Presentations LO 1, 2, 3, 4A, B, C, D, and E	

### Instructor's policy on late or make work:

Assignments have been created to assess learning. Due to the class schedule it is sometimes hard to get help and complete the assignment before the deadline. To that end, late assignments will be assessed a 25% deduction of the assignment total per day late, however, this is at the instructor's discretion to waive due to the student seeking assistance, or other documentable excuses. EXCEPT pre-labs. If those are not turned in before your lab, **you will not be allowed to participate and will not be eligible to complete the assignments connected with that lab.**

### Evaluation:

- Quizzes and Final:** Tests will be multiple choice and short answer questions. An online option will be available, but a student that chooses that option will be required to take the quiz during class time on a video conference with both video and audio activated. The quizzes will be over lecture material for each section, not cumulative. The final will be cumulative. All test questions will be graded for correctness and accuracy in answering the given question. Partial credit can be awarded on most short answer questions.

- **Pre-Lab summaries:** Prior to each unit operation lab and some of the processing labs students are required to create a submission that demonstrates understanding of the procedure or other documents as directed (such as sensory forms or teamwork assignments). These submissions should answer the questions posed in the assignment, but it is not required that the questions be answered in a linear format. Pictures/flowcharts and other creative methods are encouraged. Pre-labs will be graded on completion.
- **Lab Worksheets:** Each unit operation lab includes a Word document worksheet. Students are expected to fill out the worksheet and submit as a document or pdf. These will be graded on correctness and accuracy in answering the questions and reporting the lab results.
- **Formulation Homework:** This spreadsheet is to help students become more familiar with the use of equations in spreadsheets and understand the difference between recipes and formulas. Students can choose a recipe of their own that contains at least 5 ingredients to use. Spreadsheets will be graded on the use of correct equations in the spreadsheet columns.
- **Executive Summaries:** These summaries will be written about processing and evaluations. They follow the 6-paragraph format of Introduction, test results 1, test results 2, test results 3, sensory results, conclusion. Executive summaries will be graded on completion, and adherence to format direction.
- **Group Project Assignments – unless otherwise noted, only one submission from the group is needed**
  - **Variable:** once a product has been decided the group will submit ideas to use as a variable. Graded on completion
  - **Formulation:** Using the same spreadsheet as the formula homework, each group will create a formula for their product. That information will then be transferred to a second page that accounts for the variable and 3 batches. Will be corrected and groups may be asked to revise, but graded on completion
  - **Planning Worksheet:** This document helps the group walk through the needed ingredients, equipment and processing methods for their product processing and evaluations. Will be corrected and groups may be asked to revise but graded on completion.
  - **SSOP and HACCP plan:** Groups will work together to create a sanitation plan and HACCP plan to ensure safe processing of their products. Students will use the recordkeeping forms created during processing. Will be corrected and groups may be asked to revise, but graded on completion
  - **Report:** This report will follow the Journal of Food Science format and rubric given in the course material. It will be graded on completion and accuracy.
  - **Presentation:** Groups will be required to submit a slide deck presentation using a program of their choice. The presentation should follow the Executive Summary format. Only one presentation per group. Each individual is required to present to the class an equitable portion of the presentation. Grades for presentation will be individual, based on knowledgeable presentation and answering questions as well as participation in asking other groups questions.
  - **Peer Evaluation:** Completed individually, this is a method for groupmates to evaluate each other. An individual's grade will be an average of their group's scores for them. When there are widely disparate scores the instructor will evaluate contributions and award points objectively.

## How your grade is calculated

ASSIGNMENT CATEGORY	POINTS
Quizzes 5 for 75 points each	375
Final	200
Pre-lab summaries                      14 for 5 points each	70
Lab Worksheets                      12 for 15 points each	180
Formulation HW	20
Demo 1 Executive Summary	45
Demo 2 Executive Summary	45
Group Project:	
Variable	10
Formulation	30
Planning Worksheet	75
SSOP and HACCP plan	75
Report	75
Presentation	50
Peer Evaluation	50
<b>CLASS TOTAL</b>	<b>1300</b>

See course schedule for due dates.

**Grading Scale:** The standard grading scale is below. If deviating from the standard grade scale, the grade scale must be complete and span the total possible grades from A to E.

<u>Percentage</u>	<u>Grade</u>	<u>Percentage</u>	<u>Grade</u>
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-	<60	E
77-79.9	C+		

## COURSE POLICIES

### 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:** For assignments, you can generally expect feedback within **7 days**.
- **E-mail:** I will reply to e-mails within **24 hours on school days**.

### Attendance Policy:

Student participation requirements:

- *Lectures:* **TWICE PER WEEK**  
There will be two lectures per week. You have the option to attend the lectures in-person, or you can view those on Canvas. Canvas lectures are pre-recorded and available anytime.
- *In-person labs:* **REQUIRED ONCE PER WEEK**  
Labs are in-person and required for the course. If you have a documentable reason for missing a lab, accommodations will be made. Labs are an integral part of this course and food science education, therefore, missing labs is discouraged.

### 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:*

While there is no need to participate in class discussions as if you were writing a research paper, you should remember to write using good grammar, spelling, and punctuation. Informality (including an occasional emoticon) is fine for non-academic topics.

### Tone and civility:

Let's maintain a supportive learning community where everyone feels safe and where people can disagree amicably. Remember that sarcasm doesn't always come across online.

### Citing your sources:

When we have academic discussions, please cite your sources to back up what you say. (For the textbook or other course materials, list at least the title and page numbers. For online sources, include a link.)

### Backing up your work:

Consider composing your academic posts in a word processor, where you can save your work, and then copying into the Carmen discussion.

### Tardiness:

Habitual tardiness to labs will result in deductions from accompanying assignments. If you are going to be more than 15 minutes late to a lab, please consider coming to one of the other lab sections. Identical labs will be held at 8:00, 11:00 and 2:00 on Wednesdays. While that is acceptable alternative, much of the lab work will be in a group, so if you wish to attend a different lab section regularly please speak to the instructor to make such an arrangement.

### E-Mail Etiquette:

Professional relationships should be maintained when using e-mail for a class. Below I have included guidelines from Bloomsbury's guide on email etiquette that you should follow when drafting your e-mail. I will not respond to e-mails that I consider inappropriate. I will respond to appropriate emails in a timely manner, do not expect an immediate reply. If you require an immediate response consider visiting with me in person.

#### DO

- Include a descriptive statement in the subject line.
- Use proper salutations when beginning an e-mail.
- Be concise in the body of the e-mail, use complete sentences and proper grammar.
- Use an appropriate closure at the end of each e-mail followed by your first and last name.
- If replying to an e-mail, reference the original e-mail and its content.
- Be selective of your choice of words. Emotions are difficult to convey in text and without the benefit of facial expressions your sentiment can be lost in the words you choose to write.

#### DON'T

- Use all capital letters; this conveys a tone of ANGER.
- Use e-mail as a format to criticize other individuals.
- Ask for your grade via e-mail. Grades will not be discussed by e-mail. If you need to discuss a graded item make an appointment to do so in my office.
- E-mail to inquire when grades will be posted. We will work toward submitting grades promptly, however, recognize that grading assignments and exams requires considerable time to ensure uniformity and fairness.
- Send an e-mail out of frustration or anger. Learn to save the e-mail as a draft and review at a later time when emotions are not directing the content.

### Quizzes and exams:

You must complete the midterm and final exams yourself, without any external help or communication. To that end, if an online option is chosen, video and audio must be activated in a Zoom conference and the quiz taken at the appointed time. Weekly quizzes are included as self-checks without points attached.

### Written assignments:

Your written assignments, including discussion posts, should be your own original work. In formal assignments, you should follow Journal of Food Science style to cite the ideas and words of your research sources. You are encouraged to ask a trusted person to proofread your assignments before you turn them in--but no one else should revise or rewrite your work. When the assignment is for the group, all members of the group should be engaged and take part in each assignment.

### Reusing past work:

In general, you are prohibited in university courses from turning in work from a past class to your current class, even if you modify it. If you want to build on past research or revisit a topic you've explored in previous courses, please discuss the situation with me.

### Falsifying research or results:

All research you will conduct in this course is intended to be a learning experience; you should never feel tempted to make your results or your library research look more successful than it was.

### Collaboration and informal peer-review:

The course includes many opportunities for formal collaboration with your classmates. While study groups and peer-review of major written projects is encouraged, remember that comparing answers on a quiz or assignment is not permitted. If you're unsure about a particular situation, please feel free just to ask ahead of time.

### Group projects:

This course includes group projects, which can be stressful for students when it comes to dividing work, taking credit, and receiving grades and feedback. I have attempted to make the guidelines for group work as clear as possible for each activity and assignment, but please let me know if you have any questions.

## UNIVERSITY POLICIES

**Academic Misconduct:** It is the responsibility of the Committee on Academic Misconduct to investigate or establish procedures for the investigation of all reported cases of student academic misconduct. The term "academic misconduct" includes all forms of student academic misconduct wherever committed; illustrated by, but not limited to, cases of plagiarism and dishonest practices in connection with examinations. Instructors shall report all instances of alleged academic misconduct to the committee (Faculty Rule 3335-5-487). For additional information, see the Code of Student Conduct at <http://studentconduct.osu.edu>.

### 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](http://www.northwestern.edu/uacc/8cards.htm))

### 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.

**Intellectual Property** (covered by copyright) includes Course materials (Text, Audio, Video, Multimedia, Sims, Apps, etc.), and Student Generated materials

### Disability Services:

**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](mailto:slds@osu.edu); 614-292-3307; [slds.osu.edu](http://slds.osu.edu); 098 Baker Hall, 113 W. 12<sup>th</sup> Avenue.**

### Creating an environment free from harassment, discrimination, and sexual misconduct:

The Ohio State University is committed to building and maintaining a community to reflect diversity and to improve opportunities for all. All Buckeyes have the right to be free from harassment, discrimination, and sexual misconduct. Ohio State does not discriminate on the basis of age, ancestry, color, disability, ethnicity, gender, gender identity or expression, genetic information, HIV/AIDS status, military status, national origin, pregnancy (childbirth, false pregnancy, termination of pregnancy, or recovery therefrom), race, religion, sex, sexual orientation, or protected veteran status, or any other bases under the law, in its activities, academic programs, admission, and employment. Members of the university community also have the right to be free from all forms of sexual misconduct: sexual harassment, sexual assault, relationship violence, stalking, and sexual exploitation.

To report harassment, discrimination, sexual misconduct, or retaliation and/or seek confidential and non-confidential resources and supportive measures, contact the Office of Institutional Equity:

1. Online reporting form at [equity.osu.edu](http://equity.osu.edu),
2. Call 614-247-5838 or TTY 614-688-8605,
3. Or Email [equity@osu.edu](mailto:equity@osu.edu)

The university is committed to stopping sexual misconduct, preventing its recurrence, eliminating any hostile environment, and remedying its discriminatory effects. All university employees have reporting responsibilities to the Office of Institutional Equity to ensure the university can take appropriate action:

- All university employees, except those exempted by legal privilege of confidentiality or expressly identified as a confidential reporter, have an obligation to report incidents of sexual assault immediately.
- The following employees have an obligation to report all other forms of sexual misconduct as soon as practicable but at most within five workdays of becoming aware of such information: 1. Any human resource professional (HRP); 2. Anyone who supervises faculty, staff, students, or volunteers; 3. Chair/director; and 4. Faculty member.

This course adheres to The Principles of Community adopted by the College of Food, Agricultural, and Environmental Sciences. These principles are located on the Carmen site for this course; and can also be found at <https://go.osu.edu/principlesofcommunity>. For additional information on Diversity, Equity, and Inclusion in CFAES, contact the CFAES Office for Diversity, Equity, and Inclusion (<https://equityandinclusion.cfaes.ohio-state.edu/>). If

you have been a victim of or a witness to a bias incident, you can report it online and anonymously (if you choose) at <https://studentlife.osu.edu/bias/report-a-bias-incident.aspx>.

### 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:6142923307) or [ods@osu.edu](mailto: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.

### Accessibility of course technology

This online course requires use of Carmen (Ohio State's learning management system) and other online communication and multimedia tools. If you need additional services to use these technologies, please request accommodations with your instructor.

- [Carmen \(Canvas\) accessibility](#)
- Streaming audio and video
- Synchronous course tools
- [Definition OSU](#)
- [Overview of Accessibility at OSU](#)
- If you require specific software for the course list or provide a link to the software's accessibility privacy statements
  - [Adobe Connect \(Carmen Connect\) Accessibility](#) [Adobe Privacy Policy](#)
  - [MediaSite Accessibility Statement](#)
  - [Microsoft Office Accessibility](#) [Microsoft Office 365 Privacy](#)
  - [Proctorio Accessibility](#) [Proctorio Privacy](#)
  - [Top Hat Accessibility](#) [Top Hat Privacy](#)

## UNIVERSITY RESOURCES

### Counseling and Consultation Services:

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's Counseling and Consultation Service (CCS) by visiting [ccs.osu.edu](https://ccs.osu.edu) or calling 614-292-5766. CCS is located on the 4th Floor of the Younklin 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 Suicide Prevention Hotline at 1-800-273-TALK or at [suicidepreventionlifeline.org](https://suicidepreventionlifeline.org).

David Wirt, [wirt.9@osu.edu](mailto:wirt.9@osu.edu), is the CFAES embedded mental health counselor. He is available for new consultations and to establish routine care. To schedule with David, please call 614-292-5766. Students should mention their affiliation with CFAES when setting up a phone screening.

### Grievances:

According to University Policies, if you have a problem with this class, you should seek to resolve the grievance concerning a grade or academic practice by speaking first with the instructor or professor. Then, if necessary, take your case to the department chairperson, college dean or associate dean, and to the provost, in that order. Specific procedures are outlined in Faculty Rule 3335-7-23. Grievances against graduate, research, and teaching assistants should be submitted first to the supervising instructor, then to the chairperson of the assistant's department.

### Trigger Warning:

Some contents of this course may involve media that may be triggering to some students due to descriptions of and/or scenes depicting acts of violence, acts of war, or sexual violence and its aftermath. If needed, please take care of yourself while watching/reading this material (leaving classroom to take a water/bathroom break, debriefing with a friend, contacting a Sexual Violence Support Coordinator at 614-292-1111, or 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 this media and that we will create a safe space for each other. Failure to show respect to each other may result in dismissal from the class.

### University Escort Service:

A safe ride is a service provided to university students who would like safe transportation across campus. Any university student, faculty, or staff member may request a safe ride. Hours: 7pm to 3am; phone: 614-292-3322.