Food Science and Technology 1140: Kitchen Science
Spring 2021

Fully Online Course

Course Format:

Instructor:

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Office phone: 614-292-3867

214 B Howlett Hall

Office hours by appointment, in person or by video conference

Credit Hours:

Pace of online activities: This course is divided into **three modules** that are released at the beginning of the semester. Each section has a deadline to prevent you from waiting until the end of the semester to complete the entire course. However, you are welcome to work ahead as you like. I encourage you to complete the assignments throughout the section rather than waiting to do all of them at the due date.

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

Prerequisites: There are no prerequisite courses needed, though basic biology and chemistry understanding will help.

Textbooks/Readings: All course material will be provided in Canvas

Optional Readings: If you want to read further about the topics in this course these are great books:

Culinary Reactions, The Everyday Chemistry of Cooking by Simon Quellen Field ISBN: 978-1-56976-706-1

On Food and Cooking, The Science and Lore of the Kitchen by Harold McGee ISBN: 978-0-684-80001-1

Additional Required Materials:

You will need to have access to a kitchen and basic utensils. You will be expected to purchase and prepare some food for activities in this course. This is a minimum list, you may choose to use more:

- Oil
- Ground spice like cinnamon or cloves
- 4 eggs

- 3 cups of flour
- 1 packet Kool-aid (though regular unsweetened tea or coffee can be used as an alternative)
- 2 cups plus 3 tablespoons sugar
- 3 tablespoons or 3 packets of 2 other sweeteners
- 1 cup or 2 sticks of butter or margarine
- 1 teaspoon of vanilla
- ½ cup corn starch
- 1 teaspoon salt
- 3 cans of three different foods (selected from the list in "The heat is on" assignment)
- Food/recipe of your choice – enough to cook 3 times.

Equipment and Supplies needed: Again, this is a minimum list, you may choose to use more.

- Access to a sink with soap
- Other cleaning supplies for your workspace
- 3 cups
- Pitcher or other vessel large enough to hold 2 quarts of liquid
- Mixing spoon/spatula
- At least 1 bowl and 2 plates, or 3 medium bowls
- Whisk or fork, but an electric mixer will work easier if possible
- Measuring spoons and cups
- Medium sized cooking pot
- Oven
- Stove top
- Baking pan
- Food thermometer
- Nail and hammer or some other method to puncture cans
- Equipment and utensils needed to prepare and cook food of your choice with 3 methods

Course Description:

This course will introduce you to sanitation rules, basic culinary/baking methods, fundamentals of cooking & the science behind its methodology. I hope to provide you an understanding of common foods & their function in cooking. This class will include activities designed to explain the science behind preparing safe, quality food.

Goals:

Successful students will be able to identify risky situations and foods to prevent food borne illnesses, understand the function of common food components and ingredients, and be able to predict the outcome of ingredient substitutions or various cooking methods.

Learning Outcomes:

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

1. Clean and sanitize food prep surfaces and equipment and handle food in a manner to prevent food borne illnesses.
2. Understand the function of common food ingredients
3. Predict the outcome of simple substitutions of ingredients or preparation methods.

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
- **TDD:** 614-688-8743

Baseline technical skills for online courses

- 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

- Ability to take and insert digital pictures into a document OR
- Recording, editing, and uploading video

Required equipment

- Computer: current Mac (OS X) or PC (Windows 7+) with high-speed internet connection
- Webcam: built-in or external webcam, fully installed and tested; or other digital camera

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, Assignments, Deadlines, Events, Topic Outcome	
1 - 5	Syllabus Quiz – due ASAP to show foundational knowledge of course structure. Must complete to open course material	
	Section 1: Sanitation Pathogens Space and equipment Personal hygiene Food Handling	**So clean you could eat off the..** – identify sanitary and unsanitary food prep conditions **Clean hands = safe hands -** practice personal sanitation **Food Safety Case Studies –** critically evaluate sanitation and food handling practices
6-10	**Section 2: Food Components** Carbohydrates Proteins Fats Chemical reactions and preservation	**How sweet it is** – observe the differences between simple carbohydrates **Who wants to eat an oobleck** - Demonstrate that starches react differently to orders of processing **The incredible edible egg** – demonstrate the functional properties of proteins, acids and lipids found in eggs **Smart Cookies** - critically evaluate the differences in leavening agents and various food components in a food system
11-14	**Section 3: Cooking Methods** Heat Transfer Wet vs dry Oil vs water	The heat is on – Demonstrate that food properties impact the rate of heating Let's get cooking – Plan and create an experiment demonstrating 3 cooking methods, then critically examining the results, the food components and the sanitation necessary to create the safe food.

Instructor's policy on late or make work:

Due dates for assignments will be Wednesdays at 5:00 pm (Columbus time) unless otherwise noted. **ALL** assignments must be submitted through Canvas. Unless there is an unforeseen catastrophe with the system, I will not accept any work through email. **It is your responsibility to make sure your assignment is submitted properly.**

The Canvas system is set to assign a 0 at the deadline for anyone that has not submitted. If you submit your assignment after the deadline there will be a 25% penalty assessed and that will compound for each

subsequent 24 hours late. At 72 hours past the deadline the penalty is 100% so past that point **no late work will be accepted.**

Only emergencies will be considered on an individual basis - hospitalization, or death in the family are good examples. Travel for work or school, and your common cold will not be excused. **Documentation of the emergency will need to be presented for consideration of accepting late work.**

Evaluation:

Syllabus Quiz is simply a tool I use to keep you honest about reading the syllabus. You must score at least a 20/25 or 80% for the course material to open.

So clean you could eat off the... In this assignment you will either take pictures in your own kitchen (or your Res hall) or find them online, then identify and explain how and what needs to be cleaned to ensure a sanitary kitchen. Evaluation will be for completion and a reasonable solution.

Clean hands = safe hands We all know how to wash our hands properly - or do we. This exercise is intended to show that our initial "normal" hand washing is often inadequate. You will use ground spice like cinnamon and oil to "soil" your hands, and then you will wash them. Sometimes repeatedly until they are clean. Evaluated for completion.

Food Safety Case Studies This activity, built as a quiz in Canvas, will give you scenarios in which you will need to determine the pathogen that caused the outbreak, the unsanitary conditions that lead to the outbreak and which food might be the culprit. Each question will be graded for accuracy.

How sweet it is You likely have a favorite sweetener. It might be sugar, or not. You will make 3 glasses of Kool-aid, each with different sweeteners and compare the flavors. Evaluated for completion.

Who wants to eat an oobleck? An oobleck is the name given to a slurry of corn starch and water. You will make and cook this slurry and investigate the properties that make it useful in foods. Evaluated for completion and thoughtfulness of answers.

The incredible edible egg Will investigate the properties of the proteins in egg whites, and the emulsification properties of the egg yolk. You will separate an egg and create a soft meringue with the assistance of an acid and without. The second part of the assignment will be to add the yolks in and make mayonnaise. Evaluated for completion and accurate answers to the follow-up questions.

Smart Cookies Cookies are a pretty straight forward thing to make but changing one ingredient can change the outcome. In this assignment, you will make 2 small batches of cookies, with the variation of one ingredient. Evaluated for completion and accurate answers to the follow-up questions.

The heat is on Many properties of food impact the rate at which they will heat. This experiment will have you use 3 cans of food and heat them in a water bath while you take the temperatures over time. You will graph this data and make some conclusions based on your results. Evaluation will be for completion and thoughtfulness and accuracy of the follow-up questions.

Let's get cooking This assignment is the "final" for the class. This will be a process in scientific method - posing the question, "what will be the differences if this product is cooked in different manners?" You will choose the product, and

the cooking methods, develop hypotheses, and draw conclusions from the results. Evaluation will be for completion and thoughtfulness and accuracy of the follow-up questions.

How your grade is calculated

ASSIGNMENT CATEGORY	POINTS
Syllabus Quiz	25
So clean you could eat off the…	25
Clean hands = Safe hands	50
Food Safety case studies	100
How sweet it is	25
Who wants to eat an oobleck??	50
The incredible edible egg	75
Smart Cookies	100
The heat is on	50
Let's get cooking	200
Total	**700**

See course schedule for due dates.

Grading Scale:

Percentage	Grade	Percentage	Grade
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 **7-14 days**.

- **E-mail:** I will reply to e-mails within **24 hours on school days**.

Attendance Policy:

Because this is a distance-education course, your attendance is based on your online activity and participation. The following is a summary of everyone's expected participation:

- *Logging in:*
Since this course is designed to allow you to go at your own pace, there is not a requirement for you to log in on a regular basis. **There are deadlines throughout** to prevent you from trying to complete the course in the last week, but it is entirely possible to complete the course very early in the semester.

- *Office hours and live sessions*: **OPTIONAL OR FLEXIBLE**
If you would like to discuss an assignment with me, or feel that you need to talk to me in person rather than email, please contact me initially by email so that we can schedule a mutually amenable time to meet on campus or by Zoom.

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.

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.

<u>DON'T</u>

- 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: There are no quizzes or exams in this course.

Written assignments portions:

Your written assignments portions should be your own original work. In assignments, you should follow any standard format style like **MLA** or **APA** 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.

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/activities 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.

Group projects: There are no group projects in this course. However, if you are taking this course with a friend, you are welcome to work together on the activities. You each must submit your own pictures and written work.

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)

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; 614-292-3307; slds.osu.edu; 098 Baker Hall, 113 W. 12th 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,
2. Call 614-247-5838 or TTY 614-688-8605,
3. Or Email 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 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.

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
    - Adobe Connect (Carmen Connect) Accessibility Adobe Privacy Policy
    - MediaSite Accessibility Statement
    - Microsoft Office Accessibility Microsoft Office 365 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 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 Suicide Prevention Hotline at 1-800-273-TALK or at suicidepreventionlifeline.org.

David Wirt, 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:

I do not expect that the material in this course would be disturbing – is it food safety, food components and cooking methods. However, if you encounter an issue, please take care of yourself while watching/reading this material (take a 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 me if needed).

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.

Off Campus Field Experiences

You do not need to be on campus for this course, nor is it required that you leave campus for this course. However, you may choose to go somewhere to complete the actions required of the assignments.