Term Information

Effective Term	Summer 2025
Previous Value	*Summer 2024*

Course Change Information

What change is being proposed? (If more than one, what changes are being proposed?)

Updates to course description, course goals, and course topics; add distance offering

What is the rationale for the proposed change(s)?

Update course description, course goals, and course topics to be current; adding distance offering to reach more students

What are the programmatic implications of the proposed change(s)?

(e.g. program requirements to be added or removed, changes to be made in available resources, effect on other programs that use the course)?

None

Is approval of the requrest contingent upon the approval of other course or curricular program request? No

Is this a request to withdraw the course? No

General Information

Course Bulletin Listing/Subject Area	Food Science & Technology
Fiscal Unit/Academic Org	Food Science & Technology - D1156
College/Academic Group	Food, Agric & Environ Science
Level/Career	Undergraduate
Course Number/Catalog	1200
Course Title	The Science of Cooking
Transcript Abbreviation	Science of Cooking
Course Description	The Science of Cooking covers the scientific method, sanitation, hygiene, and safety in the kitchen and laboratory; food components; weights and measurements; heat and heat transfer; cooking methods; food preservation, and tasting and evaluation of foods. Students taking the online-only version will need access to a kitchen.
Previous Value	*This course covers the scientific method, sanitation, hygiene, and safety in the kitchen and laboratory; weights and measurements; cooking methods; tasting and evaluation; food components; correlations to industrial food processing and preservation; and events, laws, and persons of importance in the development of food science as a discipline.*
Semester Credit Hours/Units	Fixed: 4

Offering Information

Length Of Course	14 Week, 8 Week
Flexibly Scheduled Course	Never
Does any section of this course have a distance education component?	Yes
Is any section of the course offered	100% at a distance Greater or equal to 50% at a distance
Previous Value	*Yes, Greater or equal to 50% at a distance*
Grading Basis	Letter Grade
Repeatable	No
Course Components	Laboratory, Lecture
Grade Roster Component	Lecture
Credit Available by Exam	No

Admission Condition Course	No
Off Campus	Never
Campus of Offering	Columbus, Lima, Mansfield, Marion, Newark, Wooster

Prerequisites and Exclusions

Prerequisites/Corequisites	
Exclusions	
Electronically Enforced	No

Cross-Listings

Cross-Listings

Subject/CIP Code

Subject/CIP Code	01.1001
Subsidy Level	Baccalaureate Course
Intended Rank	Freshman, Sophomore, Junior, Senior

Requirement/Elective Designation

Natural Sciences

Course Details

Course goals or learning objectives/outcomes

- Understand the meaning and importance of using the Scientific Method
- Understand the scientific principles of food preparation in the kitchen
- Develop or improve technical/professional writing and communication skills

Previous Value

- *Understand the meaning and importance of using the Scientific Method*
- *Understand the scientific principles of food preparation in the kitchen*
- *Understand historical aspects of food processing and technology and their connection to the scope of food laws and regulations*

Content Topic List

- The scientific method; Credible sources of information
- Sanitation, hygiene, and safety
- Measurements; Data collection and organization
- Sensory and consumer science
- Nutrition basics
- Heat and heat transfer: conduction, convection, radiation, microwave, induction
- Food components: water, carbohydrates, lipids, protein
- Baking
- Milk and milk products; fermentation
- Industrial food processing, unit operations
- Food preservation
- Flavors, seasonings, spices, herbs

Previous Value

- *The scientific method, credible sources of information*
- *Sanitation, hygiene, and safety*
- *Measurements; Data collection and organization*
- *Sensory and consumer science*
- *Nutrition basics; government agencies and programs; food laws; food packages*
- *Properties of water; heat transfer, heating and cooling*
- *Food components: water, carbohydrates, fats, protein*
- *Meat, poultry, fish; nonmeat protein sources*
- *Baking; Cereals, rice pasta*
- *Milk and milk products; fermentation*
- *Fruits and vegetables*
- *Beverages*
- *Flavors, seasonings, spices, herbs*
- *Industrial food processing, unit operations*
- *Food preservation*

Sought Concurrence No

Attachments

- Distance Approval Cover Sheet FDSCTE 1200D.docx: Distance Approval Cover Sheet

  (Other Supporting Documentation. Owner: Davis,Molly Jane)
- FDSCTE 1200 The Science of Cooking SP25_10.1.docx: hybrid syllabus

  (Syllabus. Owner: Davis,Molly Jane)
- FDSCTE 1200D Science of Cooking SP25_resubmit.pdf: online syllabus

  (Syllabus. Owner: Davis,Molly Jane)
- Sample Lab Materials.pdf: sample lab

  (Other Supporting Documentation. Owner: Davis,Molly Jane)
- Response to GE Committee Letter_resubmit.pdf: response letter

  (Other Supporting Documentation. Owner: Davis,Molly Jane)

Comments

- online syllabus updated per 11/8/24 feedback

  added response letter to panel

  added sample lab materials document

  syllabi updated per email 8/30

  hybrid syllabus updated per email 8/12/2024

  revised per email 8/6/2024 *(by Davis,Molly Jane on 02/26/2025 09:23 AM)*
- Please see Subcommittee feedback email sent 11/8/24. *(by Neff,Jennifer on 11/08/2024 09:02 AM)*
- Revise as per COAA via email message 30 August 2024

  Please submit finalized version of Hybrid syllabus

  Revise as per email message 6 August 2024 *(by Osborne,Jeanne Marie on 08/30/2024 09:31 AM)*

Workflow Information

Status	User(s)	Date/Time	Step
Submitted	Davis,Molly Jane	06/25/2024 03:40 PM	Submitted for Approval
Approved	Rodriguez-Saona,Luis Enrique	06/25/2024 03:42 PM	Unit Approval
Revision Requested	Osborne,Jeanne Marie	08/06/2024 03:51 PM	College Approval
Submitted	Davis,Molly Jane	08/09/2024 03:09 PM	Submitted for Approval
Revision Requested	Osborne,Jeanne Marie	08/12/2024 10:42 AM	Unit Approval
Submitted	Davis,Molly Jane	08/12/2024 11:57 AM	Submitted for Approval
Approved	Simons,Christopher T	08/12/2024 11:59 AM	Unit Approval
Revision Requested	Osborne,Jeanne Marie	08/30/2024 09:31 AM	College Approval
Submitted	Simons,Christopher T	08/30/2024 11:15 AM	Submitted for Approval
Revision Requested	Osborne,Jeanne Marie	08/30/2024 11:18 AM	Unit Approval
Submitted	Davis,Molly Jane	10/01/2024 09:02 AM	Submitted for Approval
Approved	Rodriguez-Saona,Luis Enrique	10/01/2024 09:19 AM	Unit Approval
Approved	Osborne,Jeanne Marie	10/01/2024 10:49 AM	College Approval
Revision Requested	Neff,Jennifer	11/08/2024 09:02 AM	ASCCAO Approval
Submitted	Davis,Molly Jane	02/26/2025 09:35 AM	Submitted for Approval
Approved	Simons,Christopher T	02/26/2025 09:40 AM	Unit Approval
Approved	Osborne,Jeanne Marie	02/26/2025 10:47 AM	College Approval
Pending Approval	Jenkins,Mary Ellen Bigler Hanlin,Deborah Kay Hilty,Michael Neff,Jennifer Vankeerbergen,Bernadette Chantal Steele,Rachel Lea	02/26/2025 10:47 AM	ASCCAO Approval

February 26, 2025

Dear ASC Curriculum Committee,

We thank the Natural and Mathematical Sciences Panel of the ASC Curriculum Committee for reviewing FDSCTE 1200 (4-credit lecture/lab). The panel provided excellent advice and insight about our course for the new GE.

The panel listed several items that they would like us to address (shown in black-colored font below). Below we list the items and the actions (shown in green font) that we took to address these concerns.

Based on the panel's recommendations, we revised the syllabus for FDSCTE 1200 and created an additional document that compiles the documents associated with one of the Kitchen Lab Exercises (Sample Lab Materials). We believe that we have adequately addressed all the committee's concerns listed below in these documents. If the committee has additional concerns or questions, please let us know so we can keep working on these items until the committee is fully satisfied.

Sincerely,

Department of Food Science and Technology

Good morning,

On Thursday, October 24th, the Natural and Mathematical Sciences Subcommittee of the ASC Curriculum Committee reviewed a course change request for Food Science and Technology 1200.

The Subcommittee did not vote on the proposal as they would like the following points addressed:

- There appears to be a lack of interactive components within the proposed DL syllabus, which raises important questions about how true distance learners can effectively participate in the collaborative experiences that the syllabus encourages students to seek with their classmates. To ensure that these students do not face disadvantages and can achieve comparable learning outcomes, the Subcommittee requests that the department apply strategies to *ensure* that student learning will be interactive. We added details and strategies on interactive learning under How This Course Works on page 5 ("Interaction" and "Option to form teams") as well as an "Expectations for Interaction" paragraph to each assignment in Descriptions of Major Course Assignments. These paragraphs detail any interactive components that are expected.

- While the Subcommittee notes that a set of lab topics has been identified, they ask that the department include examples in the syllabus of lab report questions in addition to details regarding lab instructions, assessment criteria, and data collection. We are attaching a compilation of the documents associated with one of the KL exercises (Sample Lab Materials). This compilation details the procedure, PowerPoint presentation, assessment criteria, and data collection methods for the Caramels (Simple Carbohydrates) exercise. Each lab includes a Procedure, Pre-Lab Report (homework), and a Technical Lab Report submitted upon completion of the lab activity. If you have any questions regarding these materials, we will be happy to address them.
- The Subcommittee requests that the grading distribution for the course be reevaluated to reflect a more balanced assessment of both lecture and lab components. They ask that assignments be integrated into the course that measure students' understanding of lecture material, as the syllabus indicates that quizzes and the end of semester project may be the sole methods of assessment in this regard. If there are additional methods for assessing content knowledge, then the Subcommittee asks for an explanation to support the current grading structure. [Syllabus p. 8] We adjusted the grading structure on page 9 for a more even balance between lecture and lab content. The Unit Lecture Quizzes have been weighted more heavily. The lecture material is integral to the lab content, and students will make connections between the lecture material and the lab activities. The Heat Lesson assignment is 100% focused on lecture material. All assignments include a strong emphasis on writing and incorporation of learning derived from the corresponding lecture material.
- The Subcommittee notes that the course structure consists of 2 credit hours of lecture and 2 of lab, which deviates from the typical format of most GEN Natural Science courses, where 3 credit hours are dedicated to lecture and 1 to lab. In the initial approval of this course (in 2022) with hybrid lab, the NMS Subcommittee had approved the 2/2 structure because the in-person lab was deemed by the committee to be made up of "lecture-type" activities. Indeed, as the Department of Food Science and Technology had indicated in a letter to the subcommittee, the in-person lab will consist of two parts:
    - Students will receive detailed instructions and demonstrations of what they will be doing in the upcoming online lab. Since many students may have limited or no cooking skills, there is no substitute for being able to make explanations in person and have the opportunity to ask questions.
    - Students will observe products made in the at-home lab. For example, in the online lab work, there will be variations in formulas, and different students or groups will be assigned to each of the variations (e.g., for bread, one group will be assigned the double yeast formula, another the half yeast formula). These different products will be brought to the in-person lab for observation, evaluation, and sharing of data by all members of the class.

  It is the combination of instruction, demonstration, and the fact that "there is no substitute for being able to make explanations in person and have the opportunity to ask questions"

(see i. above) as well as the "observation, evaluation, and sharing of data by all members of the class" (see 2 above) that prompted the NMS Subcommittee to consider this in-person lab to be the equivalent of a lecture. In the proposed fully asynchronous online version of the lab, it is really not clear how those crucial components will be taught with the same level of pedagogical interaction. The fully online lab also does not seem to provide time to observe products made at home, evaluate, and discuss the data. Given this, the Subcommittee requests clarification from the department on the rationale behind this structure. The fully online lab will include a similar combination of instruction, demonstration, and sharing of data as the current in-person lab, although the format is virtual rather than in person. The Procedure portion of the fully online lab will include embedded photographs detailing the instructions and demonstration videos and will align with the hybrid classroom lab. In the attached Sample Lab Materials document, we included the PowerPoint slides, so the panel can see online lab and procedure material and its equivalency to lecture. The PowerPoint will include video at the time the course is launched; we are currently in the process of filming these videos.

While we agree that the ability to make explanations in person is an advantage of the hybrid course, the instructors feel that students who opt to enroll in a fully online course are prepared to receive feedback and explanation and perform evaluations in a virtual format. Each week, students will receive feedback on their Pre-Lab Reports, which will give them the opportunity to ask questions and receive more explanation as needed. As an integral part of the data collection, students will be required to post photographs and share data online within their Carmen KL groups and will be required to discuss the shared data and observe, evaluate, and discuss each other's products as part of their Technical Lab Reports. Students within KL groups will also be encouraged to reach out to each other with comments and questions. This data sharing and interaction will occur over CarmenCanvas in a virtual setting.

- The Subcommittee asks that a cover letter be submitted that addresses all changes made as a result of their feedback. We addressed all changes made as a result of this feedback in this cover letter.

I will return Food and Science Technology 1200 to the department queue via curriculum.osu.edu in order to address the Subcommittee's requests.

Should you have any questions, please feel free to contact Christopher Hadad (faculty Chair of the NMS Subcommittee, cc'd on this e-mail), or me.

Best,
Jennifer

The Science of Cooking Syllabus

FDSCTE 1200D Spring 2025

Course Information

- **Course times and location:** This course is 100% online. All content will be delivered asynchronously. There are no required sessions when you must be logged in to Carmen at a scheduled time.
    - Weekly lecture content equivalent to 2 hours of lecture will be delivered online via the CarmenCanvas site for the course.
    - Weekly 1-2-hour at-home laboratory sessions ('Preliminary Labs') – Students will study and review instructions and demonstrations of what they will be doing for the Kitchen Laboratory exercises.
    - Weekly at-home Kitchen Laboratory exercises ('Kitchen Labs') that will require approximately 2-3 hours of time will be delivered online via the CarmenCanvas site for the course (see p. 5 of this syllabus for details). Kitchen Labs take place in the student's own kitchen or residence hall kitchen. See Appendix I for information on kitchen availability in the Residence Halls.
- **Credit hours:** 4 credit hours
- **Mode of delivery:** Online

Instructor

- **Name:** Louise A. Campbell, Ph.D.
- **Email:** Campbell.2127@osu.edu. For quickest response, please use the CarmenCanvas within-course Inbox. If you are not enrolled in the course, use Campbell.2127@osu.edu.
- **Phone Number:** I do not have an office phone! Please use the course email to contact me or leave a message for me at the FST main office at 614-292-6281.
- **Office location:** 264C Howlett Hall

- **Office hours:** As needed, may be by appointment in person, or by video conference
- **Preferred means of communication:**

- My preferred method of communication is the CarmenCanvas email communication tool. If you are not yet enrolled in the class and/or do not have access to the CarmenCanvas email communication tool, please reach out to me via email at campbell.2127@osu.edu.
- My class-wide communications will be posted on the Home Page and may be sent through the Announcements tool in CarmenCanvas. Please check your notification preferences (go.osu.edu/canvas-notifications) to be sure you receive these messages.

Course Prerequisites

None.

Course Description

The Science of Cooking covers the scientific method, sanitation, hygiene, and safety in the kitchen and laboratory; food components; weights and measurements; heat and heat transfer; cooking methods; food preservation; and tasting and evaluation of foods. Students taking the online-only version will need access to a kitchen.

Students must have access to a kitchen to complete the laboratory exercises.

Topics

Topics for this course include:

- The scientific method; Credible sources of information
- Sanitation, hygiene, and safety
- Measurements; Data collection and organization
- Sensory and consumer science
- Nutrition basics
- Heat and heat transfer: conduction, convection, radiation, microwave, induction
- Food components: water, carbohydrates, lipids, protein
- Baking
- Milk and milk products; fermentation
- Industrial food processing, unit operations
- Food preservation
- Flavors, seasonings, spices, herbs

Course Goals

Through the course topics and the learning activities of this course, students will:

A. Understand the meaning and importance of using the Scientific Method

B. Understand the scientific principles of food preparation in the kitchen

C. Develop or improve technical/professional writing and communication skills

Course Learning Outcomes

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

- A1 Use the Scientific Method appropriately (make observation; formulate hypothesis; conduct experiment to test hypothesis; collect and analyze data; draw conclusion)
- A2 Demonstrate accurate and appropriate methods of data collection, analysis, and presentation
- A3 Draw appropriate conclusions based on data analysis
- A4 Apply the Scientific Method to evaluation of food products
- B6 Understand the properties of food ingredients and their interactions in food preparation
- B7 Understand modes of heat transfer and their role(s) in different cooking methods
- B8 Recognize similarities between preparation of food in the home and in the factory
- C1 Be proficient in writing technical reports that are clear, accurate, and objective

General Education Expected Learning Outcomes

As part of the Natural Science category of the General Education curriculum, this course is designed to prepare students to be able to do the following:

1. Engage in theoretical and empirical study within the natural sciences, while gaining an appreciation of the modern principles, theories, methods, and modes of inquiry used generally across the natural sciences.
2. Discern the relationship between the theoretical and applied sciences, while appreciating the implications of scientific discoveries and the potential impacts of science and technology.

The GE Learning Objectives that will be assessed in this course include:

1.1 Explain basic facts, principles, theories and methods of modern natural sciences; describe and analyze the process of scientific inquiry.

1.2 Identify how key events in the development of science contribute to the ongoing and changing nature of scientific knowledge and methods.

1.3 Employ the processes of science through exploration, discovery, and collaboration to interact directly with the natural world when feasible, using appropriate tools, models, and analysis of data.

2.1 Analyze the inter-dependence and potential impacts of scientific and technological developments.

2.2 Evaluate social and ethical implications of natural scientific discoveries.

2.3 Critically evaluate and responsibly use information from the natural sciences.

Through this course, students will fulfill these learning outcomes by:

- Examining how the natural sciences apply to food.
- Using the Scientific Method appropriately when participating in laboratory activities.
- Understanding the properties of food components and their interaction in food preparation, including the role of different types of heat transfer used in cooking methods and their effects on those components.
- Recognizing similarities between preparation of food in the home and in the factory.

CORRECTIONS AND REVISIONS

This space will be used to list any revisions or corrections that are made to this Syllabus. If you see something that seems to be an error, or that needs clarification, please let me know!

How This Course Works

Mode of delivery: This course is fully online. There are no required sessions when you must be logged in to Carmen at a scheduled time.

Pace of activities: This course is made up of two main components: lecture and lab. Lecture content will be delivered online in the CarmenCanvas course modules. The lab component is subdivided into Preliminary Lab and Kitchen Lab. The Preliminary Lab consists of protocols, procedures, and other preparatory materials, including assignments that must be submitted in order to properly execute the Kitchen Lab exercises. **Students will need to have access to a kitchen in order to carry out the at-home laboratory work.** Note that all students living in campus residence halls have access to kitchen facilities. See Appendix I.

Interaction: Students are encouraged to work in self-formed teams for each of the at-home Kitchen Lab exercises. 'Teams' are defined as self-formed groups with a maximum of 4 members. Membership in teams may change over the course of the semester. For example, a student may belong to one Team for KL 1, a different Team for KL 2, and to no Team for KL 3. If students choose to work in a team they must work together in person, not virtually, and submit a photo with all Team members at the beginning of the Technical Lab Report. These parameters are intended to encourage the Teams to work cooperatively.

In addition to the self-formed teams, 'KL Groups' will be established within Carmen for the course. Membership in KL Groups remains constant throughout the semester. KL Groups consist of 10 to 15 members who share data on specific lab exercises. Those data will be used by all members of the KL Group to make comparisons in their Technical Lab Reports (TLR). For example, for the caramels exercise, each individual or team will make two products (Control and Variable). One of the aims will be for students to understand the variability that can exist/occur in home or small scale cooking/food production. Sharing data allows students to observe the results of others, compare with their own, and include discussion of those observations in their reports.

Option to form teams: Recognizing that some students may prefer to work with other students in the course, the instructors set up opportunities for students to meet and form teams, if desired.

Open House: An in-person Open House will be held near the beginning of the semester, date, time, and location to be announced. The purpose of this event is to facilitate/provide an opportunity for students in the course to meet and become acquainted with each other, for the purpose of 1) finding study partners and 2) forming teams with whom they can carry out the KL exercises. Benefits of forming teams include 1) a reduction in cost of equipment and ingredients that are needed for the KL exercises; 2) increased opportunities for one-on-one and group collaboration; 3) finding a study buddy for lecture content.

Forming Groups Online: An online option for finding partners will also be made available.

Credit hours and work expectations: FDSCTE 1200D is a **4-credit-hour course** in which students should expect around 6-7 hours per week of time spent on direct instruction and laboratory activities (Lecture content, Preliminary and Kitchen Lab instruction and exercises) in addition to 5-6 hours of homework (reading and assignment preparation, Carmen activities, study, content review) to receive a grade of C average. (https://trustees.osu.edu/bylaws-and-rules/3335-8; scroll to Section 3335-8-24, Credit hours)

Attendance and participation requirements: Research shows regular participation is one of the highest predictors of success. Because this is a fully online (distance education) course, your 'attendance' is your online activity and your participation. Evidence of your participation is confirmed submission of course assignments.

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

  You are expected to log in to the course in CarmenCanvas every week. During most weeks you will probably log in multiple times. If you have a situation that might cause you to miss a week or more of class, please discuss it with the instructor as soon as possible.

Expectations for Interaction: Although this course is 100% online, there is a still a critical collaborative component and there are virtual interaction elements. Many graded elements include an interactive component. The expectations for interaction are detailed for each assignment in the Descriptions of Major Course Assignments.

Course Materials, Fees, and Technologies

Required Materials

- All course text materials, or instructions on how to access them, will be provided in CarmenCanvas.
- You will be expected to purchase ingredients to prepare food items for the Kitchen Laboratory exercises. The cost of ingredients can be reduced if you form a team (maximum of 4 students per team) and share expenses. See Appendix II for a list of the needed ingredients for the Kitchen Laboratory exercises.
- You will need to have access to a kitchen, with a stove (electric, gas, or induction, with a cooktop and oven; a microwave oven will not be sufficient), refrigerator, and sink, and access to cleaning supplies. See Appendix III for a list of the equipment and utensils needed for the Kitchen Laboratory exercises.
- This course does not have a required text. The lecture material and laboratory instructions for each module will be posted in CarmenCanvas.

Recommended/Optional Material

- *Culinary Reactions, The Everyday Chemistry of Cooking*, by Simon Quellen Field (2012, Chicago Review Press, Inc.)
- *I'm Just Here for the Food*, Alton Brown (2002, Stewart, Tabori & Chang)
- *On Food and Cooking, The Science and Lore of the Kitchen,* Harold McGee (2004, Scribner)

Required Equipment

- **Computer:** current Mac (MacOS) or PC (Windows 10) with high-speed internet connection
- **Webcam:** built-in or external webcam, fully installed and tested
- **Microphone:** built-in laptop or tablet mic or external microphone
- **Digital camera** or smartphone with camera
- **Other:** a mobile device (smartphone or tablet) to use for BuckeyePass authentication

If you do not have access to the technology you need to succeed in this class, review options for technology and internet access (go.osu.edu/student-tech-access).

Required Software

Microsoft Office 365: All Ohio State students are now eligible for free Microsoft Office 365. Visit the installing Office 365 (go.osu.edu/office365help) help article for full instructions.

Ability to use Microsoft Excel, Microsoft Word, and Microsoft Power Point are required.

If you are new to Microsoft, the following websites may be helpful:

- For Word, https://support.microsoft.com/en-us/office/word-for-new-users-cace0fd8-eed9-4aa2-b3c6-07d39895886c
- For Excel, https://support.microsoft.com/en-us/office/basic-tasks-in-excel-dc775dd1-fa52-430f-9c3c-d998d1735fca
- For Power Point, https://support.microsoft.com/en-us/office/basic-tasks-for-creating-a-powerpoint-presentation-efbbc1cd-c5f1-4264-b48e-c8a7b0334e36

Please be aware that ONLY documents created in Microsoft applications are permitted for assignment submissions in this course. If you are accustomed to using other software programs, such as Google Docs or Google Sheets, you may wish to review the above links. Also note that working with MS Office on a Mac computer can sometimes be troublesome. The instructor for this course is NOT a Mac user. You are encouraged to reach out to the Help Desk and to fellow students for assistance.

CarmenCanvas Access

You will need to use BuckeyePass (buckeyepass.osu.edu) 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 do each of the following:

- Register multiple devices in case something happens to your primary device. Visit the BuckeyePass - Adding a Device (go.osu.edu/add-device) help article for step-by-step instructions.
- Contact the Help Desk and request a single-use passcode to keep as a backup authentication option. You will need to store this passcode somewhere besides on your phone (you know why, right?). In fact, send me an email telling me (correctly) why, and I'll give you 5 extra credit points. This offer is good until 5:00 pm on the Friday of the second week of the semester.
- Install the Duo Mobile application (go.osu.edu/install-duo) on 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 IT support staff will work out a solution with you.

Technology Skills Needed for This Course

- Zoom, text, audio, and video chat (go.osu.edu/zoom-meetings)
- Ability to take and to insert digital photos into a document
- Use Microsoft Word, Excel, and Power Point effectively
- Recording, editing, and uploading video may be required in certain circumstances

Technology Support

For help with your password, university email, CarmenCanvas, or any other technology issues, questions or requests, contact the IT Service Desk, which offers 24-hour support, seven days a week.

- **Self Service and Chat**: go.osu.edu/it
- **Phone:** 614-688-4357 (HELP)
- **Email:** servicedesk@osu.edu

Grading and Faculty Response

How Your Grade is Calculated (subject to revision)

Assignment or Category	% of total
Lecture-related components:	
Heat Lesson	**22**
Unit Lecture Quizzes	**17**
Lecture and lab-related components:	
Preliminary Lab Reports (Pre-Lab Reports)	**9**
Technical Lab Reports (TLRs)	**27**
Lab-related components:	
Activities	**10**
End of Semester Project	**15**
	100

Descriptions of Major Course Assignments

Heat and Heat Transfer (HHT) Lesson

The Heat Lesson is a 3-part scaffolded assignment. Using provided materials, each student will prepare a 15 minute 'lesson' (Part 1) on Heat and Heat Transfer as if it were to be taught to this class. Each student will also provide a Peer Review (Part 2) of another student's Lesson. Feedback comments will be used to revise the original Lesson (Part 3).

Expectations for interaction: Students are encouraged to form study groups within their self-formed teams or within their KL Groups to enhance their learning of the provided material. One option is to conduct a JIGSAW learning activity, where students each learn a designated portion of the material, and then teach it to the rest of the team or group. A detailed explanation of this learning method will be provided with the HHT Lesson assignment instructions. In addition to KL Group interaction, as part of this assignment, **s**tudents will receive anonymous feedback from a peer reviewer, who is also a member of

the class, on their HHT Lesson. Students will then incorporate this peer feedback for Part 3 of the assignment.

Academic integrity and collaboration: You must complete all three parts of the Heat and Heat Transfer Lesson yourself, using the materials and according to the instructions provided. The HHT Lesson must be written in your own words. Use of direct quotations from source materials must be extremely limited. Materials which are closely paraphrased from source material will be treated as plagiarism. To be very clear, in this course, '**close paraphrasing' for any assignment means text in which the original wording or phrasing has been rearranged, or text in which selected words have been substituted for some of the original wording. Written material with five or more consecutive words that match the source will be considered plagiarism.**

Be aware that use of ChatGPT, Copilot, or of any form of Artificial Intelligence (AI), including translation or language programs or software, is strictly prohibited in this course.

Unit Lecture Quizzes

Unit lecture quizzes will assess knowledge and comprehension of lecture material. Quizzes are timed. You may be using Honorlock for taking these quizzes. See pages 17-18 of the syllabus for more information on Honorlock.

Expectations for interaction: There is no collaboration permitted in Unit Lecture Quizzes.

Academic integrity and collaboration: You must complete the quizzes yourself, without any external help or communication. Tutor assistance or assistance by others (including verbal and written communication), unless you have accommodations which specifically provide for that, is not permitted to complete quizzes. You may refer to your handwritten notes while taking the quizzes. No outside assistance in the form of internet search engines, including Google, Yahoo, Bing, and Baidu, no electronics (including the Apple watch), verbal or written communication with others is permitted during a quiz. How will I know? Unless I choose to use Honorlock, I won't, so remember that this is where YOUR INTEGRITY comes into play.

Reports: Preliminary Lab Reports ('Pre-Lab Reports') and Technical Lab Reports ('TLRs')

Pre-Labs and Lab Reports: Kitchen Lab exercises require advance preparation, including the submission of a Preliminary Lab Report ('Pre-Lab Reports'), data collection and analysis, and submission of a final report ('TLR', Technical Lab Report).

For each Kitchen Laboratory exercise, there will typically be a written **Procedure**, posted in the appropriate module, which should be studied and well understood before you begin the KL exercise. Most/many exercises include other preparatory materials, such as Power Point, photos, videos. The purpose of the Pre-Lab Report is to verify that you have read and that you understand the Lab Procedure, and to provide the opportunity for questions, clarification, and feedback. Pre-Lab Reports must be received by the designated date and time before you begin the KL exercise. A grade of 0 will be assigned to Pre-Lab Reports not received on time. Failure to submit a Pre-Lab Report may mean that you do not receive credit for the Technical Lab Report associated with the KL exercise.

Completion of the KL exercise includes submission of a professionally written Technical Lab Report (TLR), including photos, tables, charts, and graphs where appropriate. In most cases, a template will be provided which must be used as the basis for the TLR. You are encouraged to work in teams and to collaborate with team members on the report (all members of a team will have the same data, for example), however, each student must submit a report written **in their own words**. It is not acceptable to share or to copy question responses. To be clear: it is expected that everyone in a team will have the same photos and the same raw data, but **responses to questions must be written by each individual.**

Expectations for interaction: Students will receive feedback from the Instructor/TAs on their Pre-Lab Reports prior to starting the lab exercise. Students may work individually on the KL exercises; however, they will still be required to share data with and use data from their KL Group in order to compare and observe others' work.

Execution of the KL exercises will not always result in 'perfect' products. Inadequate preparation and lack of focus are only two reasons that can contribute to a poorly executed exercise and results that are different than expected. 'Perfection' is never the purpose or expectation of these exercises, and is not factored into grading. Rather, the emphasis on the exercises, and the weight in the grading of their associated TLRs, is on the accurate documentation and reporting, along with collaboration in sharing data with other KL Group members. Other considerations in grading are evidence of clear and logical thinking, explanation of details, and references to shared data.

Academic integrity and collaboration: Completion of the KL Exercises includes submission of a Preliminary Lab Report; and a professionally written Technical Lab Report, including photos, tables, charts, and graphs where appropriate. In most cases, a template will be provided which must be used as the basis for the TLR. While members of a team are welcome and encouraged to collaborate on the TLR (all members of a group will have the same data, for example), each student must submit a report written in their own words. It is not acceptable to share or to copy question responses. To be clear: it is expected that everyone in a team will have the same photos and the same raw data, but responses to questions must be written by each individual. Reports will be due according to published dates.

Be aware that use of ChatGPT, Copilot, or of any form of Artificial Intelligence (AI), including translation or language programs or software, is strictly prohibited for ALL assignments in this course.

Activities

Two Activities are required for completion of this course. The purpose of the Activities is to give you an opportunity to expand your knowledge of the science of cooking, provide some independence in showing how you can apply your learnings, to continue to develop your professionalism in writing technical reports, and to earn points in a way that is more enjoyable than studying for and taking a test. Activities may be done with groups of up to four (4) partners. Activity partners may be members of your KL Team, your KL Lab Group, or other students in the class. If you are working as part of a group, only one report needs to be submitted. One member of the group is designated as the Reporter; the others are designated as Partners. The Reporter submits the report for the Activity, and each of the Partners submits a copy of the cover page (if submitting as a Word document) or title slide (if submitting as a Power Point). (Everyone must submit something in order to earn a grade).

Expectations for interaction: Students may work individually or in self-selected groups to satisfy this requirement.

Academic integrity and collaboration. The activities may be completed by each student as an individual or as part of a group (up to 4 members). If working in a group, each student must take part in the planning, the preparation and the execution of the Activity and in writing the report. How will I know if you do this? I won't, so this is where YOUR INTEGRITY comes into play. If working in a group, there will be validation requirement(s), for example, one or more photos of all members of the group.

Be aware that use of ChatGPT, Copilot, or of any form of Artificial Intelligence (AI), including translation or language programs or software, is strictly prohibited in this course.

End of Semester Project

The End of Semester Project is a KL exercise in which each student, separately or as part of a team (up to four members) will select an herb or spice, then find or create a food product formula which showcases that herb or spice. Students will submit two reports, one regarding

the final food product containing the herb or spice and a second that will be an infographic that includes information on the history, lore, and cultural aspects; the botany and cultivation; and culinary and non-culinary uses of the herb or spice. More information will be provided in the assignment instructions.

Expectations for interaction: Students may work individually or in teams.

Academic integrity and collaboration: All project work in this course must be completed solely by the members of each team and be the original work of those students.

Be aware that use of ChatGPT, Copilot, or of any form of Artificial Intelligence (AI), including translation or language programs or software, is strictly prohibited in this course.

Late Assignments

All assignments are due at the date and time specified in the assignment. Please take note of due times, as some assignments may be due at times other than 11:59 pm. Also be aware that Carmen marks as LATE any submission received at **exactly** the due time. A grade of 0 will be assigned to Pre-Lab Reports not received before their due date and time. Failure to submit a Pre-Lab Report at all may mean that you do not receive credit for the associated Kitchen Lab exercise.

Some assignments are designated in CarmenCanvas as “Due Plus Two” (Due+2). Submissions for those assignments will be accepted for 2 days (48 hours) after their due date with no late penalty. After that, there will be a late penalty of 10% per day **beginning with the original due date**. To be clear, here is an example. A report is due at 11:59 pm on October 1. If that assignment is designated as “Due+2”, as long as the submission is received **before** 11:59 pm on October 3, there is no late penalty. If the submission is received **at** 11:59 pm on October 3 (which Carmen now recognizes as three days after the due date), there will be a 30% late penalty applied to the final score.

Here's a hint: when submitting, DON’T wait until the last minute. **Carmen marks LATE any assignment that is stamped as ‘received’ at exactly the due time.**

Note the due dates and times, plan ahead to avoid connectivity issues, and allow adequate time to complete each item. Unless there is an unforeseen catastrophe with the system that originates within the University or **unless I specifically request it**, I will not accept any work through email. **It is your responsibility to make sure your assignment is submitted properly and on time.**

Because of its online components, this course is highly dependent on technology. You are responsible for your own tech, which includes your device(s) and your connection.

Instructor 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.

- **Preferred contact method**: Once you are enrolled in the course, please use the **CarmenCanvas email communication tool** to be sure that your email receives priority. I will make every attempt to reply to e-mails within 36–48 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. Please do not expect me to be online on the weekends or holidays.
- Please note that student email in Carmen is prioritized by me over mail in Outlook.
- When sending email, please be as clear and concise as possible. Here is a timesaving tip: Before emailing, please make sure the answer to your question isn't already in the Syllabus, Assignment instructions, or on a Discussion Board.
- When sending email, please begin with an appropriate address. Some teachers are comfortable being addressed by their first name. I am not. Do not begin your greeting with 'Hey . . .' as it lacks professionalism. As I teach multiple sections of at least three different classes, please use the subject line or first paragraph of your email to indicate the course (Science of Cooking Online or '1200D') as I teach both the online an in-person versions of this course (the 'D' stands for 'Distance', by the way).

Grading Scale

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

Other Course Policies

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.

E-Mail Etiquette

Professional relationships should be maintained when using e-mail for a class. Below are 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

- 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 or by Zoom.
- 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.

Written assignments: Your written assignments must be your own original work. In formal assignments, you should follow **APA** style (https://apastyle.apa.org/style-grammar-guidelines/references/examples 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 you will conduct in this course is intended to be a learning experience. You should never feel tempted to make your results or your work look more successful than it was.

Collaboration and informal peer review: The course includes many opportunities for informal 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 to ask ahead of time.

Academic Integrity Policy

See Descriptions of Major Course Assignments for specific guidelines about collaboration and academic integrity in the context of this online class.

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 (studentconduct.osu.edu), 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:

- Committee on Academic Misconduct (go.osu.edu/coam)
- Ten Suggestions for Preserving Academic Integrity (go.osu.edu/ten-suggestions)
- Eight Cardinal Rules of Academic Integrity (go.osu.edu/cardinal-rules)

Be aware that use of ChatGPT, Copilot, or of any form of Artificial Intelligence (AI), including translation or language programs or software, is strictly prohibited in this course.

Copyright for Instructional Materials

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 Accommodations

The university strives to maintain a healthy and accessible environment to support student learning in and out of the classroom. 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. If you are ill and need to miss class, including if you are staying home and away from others while experiencing symptoms of a viral infection or fever, please let me know immediately. In cases where illness

interacts with an underlying medical condition, please consult with Student Life Disability Services to request reasonable accommodations. You can connect with them at **slds@osu.edu**; 614-292-3307; or **slds.osu.edu**.

Counseling and Consultation Services/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'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 24/7 by dialing 988 to reach the Suicide and Crisis Lifeline.

For students in the College of Food, Agricultural, and Environmental Sciences, David Wirt, wirt.9@osu.edu, is the CFAES embedded mental health counselor on the Columbus campus. To contact David, please call 614-292-5766. Students should mention their affiliation with CFAES if interested in speaking directly with David.

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:

- Online reporting form at equity.osu.edu,
- Call 614-247-5838 or TTY 614-688-8605,
- 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.

Diversity Statement

The Ohio State University affirms the importance and value of diversity of people and ideas. We believe in creating equitable research opportunities for all students and to providing programs and curricula that allow our students to understand critical societal challenges from diverse perspectives and aspire to use research to promote sustainable solutions for all. We are committed to maintaining an inclusive community that recognizes and values the inherent worth and dignity of every person; fosters sensitivity, understanding, and mutual respect among all members; and encourages each individual to strive to reach their own potential. The Ohio State University does not discriminate on the basis of age, ancestry, color, disability, gender identity or expression, genetic information, HIV/AIDS status, military status, national origin, race, religion, sex, gender, sexual orientation, pregnancy, protected veteran status, or any other bases under the law, in its activities, academic programs, admission, and employment.

To learn more about diversity, equity, and inclusion and for opportunities to get involved, please visit:

- odi.osu.edu
- odi.osu.edu/racial-justice-resources
- odi.osu.edu/focus-on-racial-justice
- cbsc.osu.edu

In addition, this course adheres to The Principles of Community adopted by the College of Food, Agricultural, and Environmental Sciences. These principles can be found at

cfaesdei.osu.edu/about-us/cfaes-principles-community. For additional information on Diversity, Equity, and Inclusion in CFAES, contact the CFAES Office for Diversity, Equity, and Inclusion (cfaesdei.osu.edu). If you have been a victim of or a witness to harassment or discrimination or a bias incident, you can report it online and anonymously (if you choose) at equity.osu.edu.

Religious Accommodations

Ohio State has had a longstanding practice of making reasonable academic accommodations for students' religious beliefs and practices in accordance with applicable law. In 2023, Ohio State updated its practice to align with new state legislation. Under this new provision, students must be in early communication with their instructors regarding any known accommodation requests for religious beliefs and practices, providing notice of specific dates for which they request alternative accommodations within 14 days after the first instructional day of the course. Instructors in turn shall not question the sincerity of a student's religious or spiritual belief system in reviewing such requests and shall keep requests for accommodations confidential.

With sufficient notice, instructors will provide students with reasonable alternative accommodations with regard to examinations and other academic requirements with respect to students' sincerely held religious beliefs and practices by allowing up to three absences each semester for the student to attend or participate in religious activities. Examples of religious accommodations can include, but are not limited to, rescheduling an exam, altering the time of a student's presentation, allowing make-up assignments to substitute for missed class work, or flexibility in due dates or research responsibilities. If concerns arise about a requested accommodation, instructors are to consult their tenure initiating unit head for assistance.

A student's request for time off shall be provided if the student's sincerely held religious belief or practice severely affects the student's ability to take an exam or meet an academic requirement and the student has notified their instructor, in writing during the first 14 days after the course begins, of the date of each absence. Although students are required to provide notice within the first 14 days after a course begins, instructors are strongly encouraged to work with the student to provide a reasonable accommodation if a request is made outside the notice period. A student may not be penalized for an absence approved under this policy.

If students have questions or disputes related to academic accommodations, they should contact their course instructor, and then their department or college office. For questions or to report discrimination or harassment based on religion, individuals should contact the **Office of Institutional Equity**.

Policy: **Religious Holidays, Holy Days and Observances**

Weather or Other Short-Term Closing

Although Ohio State strives to remain open to ensure continuity of services to students and the public, extreme conditions can warrant the usage of the university's **Weather or Other Short-Term Closing Policy**. Please **visit this webpage** to learn more about preparing for potential closings and planning ahead for inclement weather.

Grievances and Solving Problems

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 3335-8-23. Grievances against graduate, research, and teaching assistants should be submitted first to the supervising instructor, then to the chairperson of the assistant's department.

Honorlock

Honorlock, an online proctoring tool, has replaced Proctorio at Ohio State as of Summer 2024, and may be used during this course. Further information specific to Honorlock is available at this link: https://teaching.resources.osu.edu/toolsets/carmencanvas/guides/getting-started-honorlock-students). For this class, in Spring 2025, if there is a decision to use Honorlock, you will be provided with that information in advance.

Lyft Ride Smart

Lyft Ride at Ohio State offers eligible students discounted rides, inside the university-designated service area, and has expanded service to the Short North area along High Street. Service runs from 7p.m. to 7 a.m. Prices may be impacted by distance, traffic, time of day, special events and prime time surcharges. More information about the service and the Lyft App, and a link to get started using the Lyft Ride Smart services can be found at: ttm.osu.edu/ride-smart.

Artificial Intelligence and Academic Integrity

There has been a significant increase in the popularity and availability of a variety of generative artificial intelligence (AI) tools, including ChatGPT, Sudowrite and others. These tools will help shape the future of work, research and technology — but when used in the wrong way, they can stand in conflict with academic integrity at Ohio State.

All students have important obligations under the Code of Student Conduct to complete all academic and scholarly activities with fairness and honesty. Our professional students also have the responsibility to uphold the professional and ethical standards found in their respective academic honor codes. Specifically, students are not to use "unauthorized assistance in the laboratory, on field work, in scholarship or on a course assignment" unless such assistance has been authorized specifically by the course instructor. In addition, students are not to submit their work without acknowledging any word-for-word use and/or paraphrasing" of writing, ideas or other work that is not your own. These requirements apply to all students — undergraduate, graduate, and professional.

To maintain a culture of integrity and respect, these generative AI tools should not be used in the completion of course assignments unless an instructor for a given course specifically authorizes their use. Some instructors may approve of using generative AI tools in the academic setting for specific goals. However, these tools should be used only with the explicit and clear permission of each individual instructor, and then only in the ways allowed by the instructor.

Be aware that use of ChatGPT, Copilot, or of any form of Artificial Intelligence (AI), including translation or language programs or software, is strictly prohibited in this course.

Course Schedule (subject to revision)

Week	Lecture Topic	Lab
1	Scientific method, Credible information, Peer review process; Food science & technology; Food safety	Introduction; Appropriate lab behavior, Sanitation, Good handling practices, Laboratory and kitchen safety
2	Nutrients, Food labels, Measurement accuracy	Oven Calibration
3	Sensory modalities, Consumer science	Measurements, dry and wet, volume and weight; Data collection and organization
4	Heat and heat transfer	Sensory evaluation protocols
5	Food components: Water, Simple carbohydrates	Carbohydrates, simple: caramels
6	Food components: Complex carbohydrates	Activity 1
7	Food components: Lipids	Lipids: Emulsions, permanent and temporary: mayonnaise and vinaigrettes
8	Food components: Protein	Protein: Hard cooked eggs
9	Baking	Mixing Methods: Biscuits, Muffins, Cookies
10	Break	
11	Baking, continued	Activity 2
12	Dairy: Milk and Milk products	Dairy: Yogurt, Queso
13	Dairy: Cheese	Herb and Spice Projects
14	Food Processing and preservation	

Appendix I. Kitchen Access for Students Living in Residence Halls

Each residence hall or residence hall complex has a kitchen facility with a stovetop, sink, and refrigerator (see Table 1). All kitchen facilities are first-come, first-served. They are often available, especially at off-times (mornings, evenings). Students are encouraged to discuss kitchen availability with their residence hall community.

Table 1. Available Kitchen Facilities in Each Residence Hall

Residence Hall	Kitchen in Building (Y/N)	If N, where can I access a kitchen?
Archer House	Y	
Baker Hall East	Y	
Baker Hall West	N	access to Baker East kitchen
Barrett House	N	access to Nosker House kitchen
Blackburn House	Y	
Bowen House	Y	
Bradley Hall	N	located in Paterson Hall
Busch House	Y	
Canfield Hall	N	access to Mack Hall kitchen
Drackett Tower	Y	
Fechko House	Y	
German House	Y	
Halloran House	N	access to Busch House kitchen
Hanley House	Y	
Haverfield House	N	access to Blackburn House kitchen
Houck House	Y	
Houston House	Y	
Jones Tower	Y	
Lawrence Tower	Y	
Lincoln Tower	Y	
Mack Hall	Y	
Mendoza House	Y	in-room kitchen
Morrill Tower	Y	
Morrison Tower	Y	
Neil Avenue	Y	in-room kitchen
Norton House	N	access to Scott House kitchen
Nosker House	Y	
Park-Stradley Hall	Y	
Paterson Hall	Y	
Pennsylvania Place	Y	
Pomerene House	Y	

Residence Hall	Kitchen in Building (Y/N)	If N, where can I access a kitchen?
Raney House	Y	
Scholars East	Y	
Scholars West	Y	
Scott House	Y	
Siebert Hall	Y	
Smith-Steeb Hall	Y	
Taylor Tower	Y	
The Residence on Tenth	Y	
Torres House	Y	
Veteran's House	Y	
Worthington Building	Y	in-room kitchen

Appendix II. Food Materials Needed for this Course

These are total amounts for all exercises for a single individual working alone, and making all product variations in each exercise. Amounts for each Kitchen Lab exercise will be listed in Carmen.

Item	Weight, grams	Amount (rounded up)
Baking powder	28	3 tablespoons
Baking soda	6	1 teaspoon
Butter, unsalted	618	1.5 pounds
corn syrup, dark	180	¾ cup
corn syrup, light	180	¾ cup
cream, heavy	720	1 quart
Dry mustard	1	1/2 tsp
Eggs		5
Flour, All-purpose	965	1 pounds
Milk	2500	3 quarts
Milk Powder	41	¼ cup
Oil, 90/10 canola/olive blend	220	1 cup
Oil, corn	220	1 cup
Oil, olive	90	1/2 cup
Oil, soybean	220	1 cup
Oil, vegetable	220	1 cup
Paprika		1/2 tsp
Pasta	100	½ cup
Salt	35	4 tablespoons
Shortening	105	½ cup
Sugar, brown	400	1 pound
Sugar, granulated	900	2 pounds
Sugar, powdered	200	1.5 cups

Tap Water		
Vanilla	22	1 ounce
Vinegar, balsamic	30	1 ounce
Vinegar, cider	30	1 ounce
Vinegar, red wine	30	1 ounce
Vinegar, white	30	1 ounce
White pepper		pinch

Appendix III. Equipment and Utensils Needed for this Course

This a complete list for all exercises. Specific equipment needed for each Kitchen Lab exercise will be listed in Carmen.

Equipment and Utensils
Aluminum foil or parchment paper
Baking sheet
Biscuit cutter (a drinking glass may suffice)
Camera or smart phone with capability
Cheesecloth
Containers for measuring ingredients for mise en place
Cutting board
Digital scale
Electric mixer
Flat metal spatula or something with a straight edge
Index cards, Marker
Knife, sharp
Measuring cups for dry ingredients
Measuring cups for liquid ingredients
Measuring spoons
Mixing bowls, small [2-3 qt], medium [4 qt], large [6-8 qt
Oven
Oven mitts
Refrigerator
Rubber bands or 4-8 ounce jelly jars with lids
Rubber scraper(s)
Saucepans, small [2-3 qt], medium [4 qt], large [6-8 qt]
Scoop or large spoon
Spoon, wooden
Strainer
Thermometer, candy

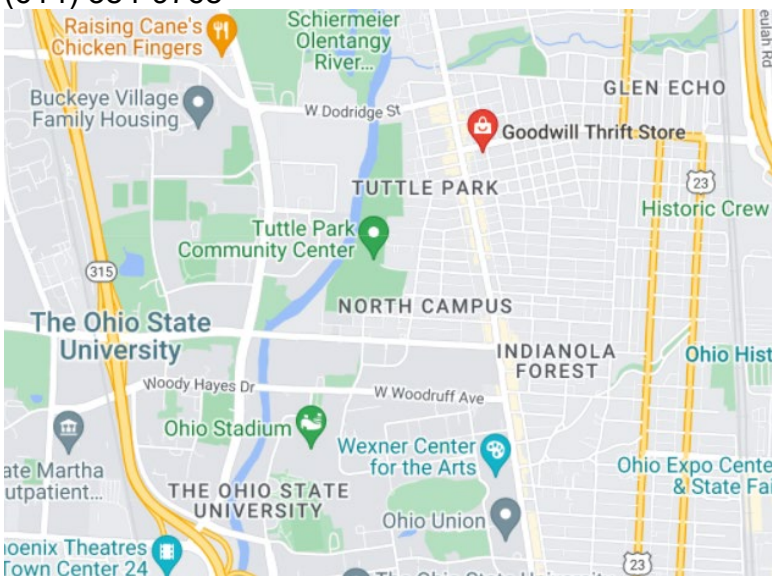
Timer/ smart phone with capability
Tongs
Toothpicks
Towels for cleanup
Whisk
Wire rack

Appendix IV. Local Thrift Stores

Students can purchase used equipment and utensils from a local thrift store at a low cost as available.

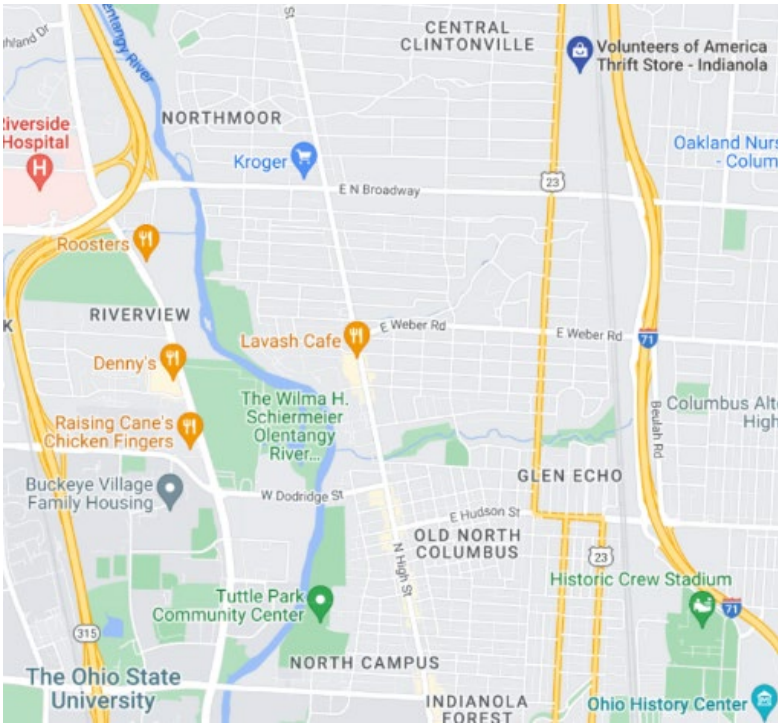
Goodwill Thrift Store
2550 N High Street
(614) 384-9768

Accessible via the COTA 2 E Main/N High bus route



The Volunteers of America
3620 Indianola Ave
(614) 263-9134

Accessible via the COTA 4 Indianola/Lockbourne bus route



The Science of Cooking: Syllabus

FDSCTE 1200 Spring 2025

Course Information

- **Course times and location:**
  - Weekly lecture content equivalent to 2 hours of lecture will be delivered online via the CarmenCanvas site for the course.
  - Weekly 2-hour in-person laboratory sessions (CL) – Days/time TBD. Students will receive instructions/ details/ demonstrations of what they will be doing in the Kitchen Laboratory (KL) session and may share data from their most recent exercises.
  - Weekly Kitchen Laboratory (KL) sessions that will require approximately 3 hours – Days/time TBD. KLs take place in the **Instructional Kitchen** (IK) space (lower level, Room 165, of the Ohio Union). https://ohiounion.osu.edu/whats_inside/building_maps/); https://ohiounion.osu.edu/meetings_events/our_spaces/instructional_kitchen.
  - **Please note that the LOCATIONS of the CL and KL sessions may show as "TBD" on your schedule. For Spring Semester 2025, the CL will be held in [TBD] on [TBD]. KLs take place in the IK of the Ohio Union on [TBD]. Section XXXXX meets from [TBD]. Section XXXXX meets from [TBD].**
  - All students must attend **both** the weekly CL and KL sessions.
- **Credit hours:** 4 credit hours
- **Mode of delivery:** Hybrid

Instructor

- **Name:** Louise A. Campbell, Ph.D.
- **Email:** For quickest response, please use the CarmenCanvas within-course Inbox. If you are not enrolled in the course, use Campbell.2127@osu.edu**.**
- **Phone Number:** I do not have an office phone! Please use the course email to contact me or leave a message for me at the Food Science & Technology (FST) main office at 614-292-6281.
- **Office location:** 264C Howlett Hall
- **Office hours:** As needed, may be in person or via Zoom
- **Preferred means of communication:**

- My preferred method of communication for questions is the CarmenCanvas **email** communication tool. If you are not yet enrolled in the class and/or do not have access to the CarmenCanvas email communication tool, please reach out to me via email at campbell.2127@osu.edu.
- My class-wide communications will be posted on the Home Page and sent through the Announcements tool in CarmenCanvas. Please check your notification preferences (go.osu.edu/canvas-notifications) to be sure you receive these messages.

Course Prerequisites

None.

Course Description

The Science of Cooking covers the scientific method, sanitation, hygiene, and safety in the kitchen and laboratory; food components; weights and measurements; heat and heat transfer; cooking methods; food preservation; and tasting and evaluation of foods.

Topics

Topics for this course include:

- The scientific method; Credible sources of information
- Sanitation, hygiene, and safety
- Measurements; Data collection and organization
- Sensory and consumer science
- Nutrition basics
- Properties of water
- Heat and heat transfer; Cooking methods
- Food components: water, carbohydrates, lipids, protein
- Grains: cereals, rice, pasta
- Milk and milk products; Fermentation
- Industrial food processing, unit operations
- Food preservation
- Flavors, seasonings, spices, herbs

Course Goals

Through the course topics and the learning activities of this course, students will:

A. Understand the meaning and importance of using the Scientific Method

B. Understand the scientific principles of food preparation in the kitchen

Course Learning Outcomes

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

- A1 Use the Scientific Method appropriately (make observation; formulate hypothesis; conduct experiment to test hypothesis; collect and analyze data; draw conclusion)
- A2 Demonstrate accurate and appropriate methods of data collection, analysis, and presentation
- A3 Draw appropriate conclusions based on data analysis
- A4 Be proficient in writing technical reports that are clear, accurate, and objective
- A5 Apply the Scientific Method to evaluation of food products
- B6 Understand the properties of food ingredients and their interactions in food preparation
- B7 Understand different cooking methods
- B8 Recognize similarities between preparation of food in the home and in the factory

General Education Expected Learning Outcomes

As part of the Natural Science category of the General Education curriculum, this course is designed to prepare students to:

1. Engage in theoretical and empirical study within the natural sciences, while gaining an appreciation of the modern principles, theories, methods, and modes of inquiry used generally across the natural sciences.
2. Discern the relationship between the theoretical and applied sciences, while appreciating the implications of scientific discoveries and the potential impacts of science and technology.

The GE Learning Outcomes that will be assessed in this course include the following and successful students will be able to:

1.1 Explain basic facts, principles, theories and methods of modern natural sciences; describe and analyze the process of scientific inquiry.

1.2 Identify how key events in the development of science contribute to the ongoing and changing nature of scientific knowledge and methods.

1.3 Employ the processes of science through exploration, discovery, and collaboration to interact directly with the natural world when feasible, using appropriate tools, models, and analysis of data.

2.1 Analyze the inter-dependence and potential impacts of scientific and technological developments.

2.2 Evaluate social and ethical implications of natural scientific discoveries.

2.3 Critically evaluate and responsibly use information from the natural sciences.

Through this course, students will fulfill these learning outcomes by:

- Examining how the natural sciences apply to food.
- Using the Scientific Method appropriately when participating in laboratory activities.
- Understanding the properties of food components and their interaction in food preparation, including effects of cooking methods on those components.
- Recognizing similarities between preparation of food in the home and in the factory.

CORRECTIONS AND REVISIONS

This space will be used to list any revisions or corrections that are made to this Syllabus. If you see something that seems to be an error, or that needs clarification, please let me know!

How This Course Works

Mode of delivery: This course is hybrid. Lecture will be online; one weekly Classroom Laboratory (CL) session (required attendance) will be in person; room, day, and time noted in the Schedule of Classes. One weekly Kitchen Laboratory (KL) session (required attendance) will be in person; held in the Instructional Kitchen in the Union (Room 165 on the lower level), day(s), and time(s) noted in the Schedule of Classes.

Pace of activities: This course is made up of two components: lecture and lab. Lecture content will be delivered online in the CarmenCanvas course modules. Lab will consist of two parts, **one weekly in-person Classroom Lab session and one weekly Kitchen Lab session**.

Group work and Kitchen Lab exercises: Students will work in groups for each of the Kitchen Lab exercises. Instructions on how to carry out Kitchen Lab exercises will be provided in the modules and will be reviewed during the Classroom Lab sessions. It is the student's responsibility to be prepared for each lab. **Due to the collaborative nature of the Kitchen Lab exercises, and that the ingredients are specific to each exercise, it is not possible to "make up" missed Kitchen Labs.**

Credit hours and work expectations: FDSCTE 1200 is a **4-credit-hour lecture and laboratory course** in which students should expect around 6-7 hours per week of time spent on direct instruction and laboratory activities (lecture content, Classroom and Kitchen Lab instruction and exercises) in addition to 5-6 hours of homework (reading and assignment preparation, Carmen activities, study, content review) to receive a grade of C average.

Attendance and participation requirements: Research shows regular participation is one of the highest predictors of success. With that in mind, I have the following expectations for everyone's participation:

- ***Weekly in-person laboratory sessions*:** Because this is a hybrid (in-person and distance-education course) your attendance is based on your online activity and your CL and KL participation. **Attendance and participation in the Classroom and Kitchen Lab sessions is mandatory.** It is essential that you come prepared to the Classroom Lab sessions, where you will have an opportunity to ask questions about Kitchen Lab assignments, about specific procedures, to evaluate products, and to ask questions about the online course material. You are expected to attend in-person lab sessions, pay attention, and ask questions on any material or instructions that need clarification.
- If you are unable to attend a laboratory session because you are ill or experiencing an emergency, please contact the instructor as soon as possible.
- **Please be aware that the Classroom Lab session is a real class for which you are registered. Attendance is mandatory. The time of the class extends into the early evening. If you have another class that has a scheduled exam time that conflicts with the Classroom Lab session, <u>you must make alternate arrangements for your other class exam.</u>**

- ***Logging in: AT LEAST TWICE PER WEEK***
  You are expected to log in to the course in CarmenCanvas every week. During most weeks you will probably log in multiple times. If you have a situation that might cause you to miss a week or more of class, please discuss it with the instructor as soon as possible.
- ***Office hours*:** If you would like to discuss an assignment, or feel that you need to talk in person rather than by email, please contact me initially by email or after class so that we can schedule a time to meet on campus or by Zoom.
- **Tasting and evaluating foods** is an essential part of the laboratory experience in this course and may be conducted or discussed in the Classroom and Kitchen Labs. Tasting does not mean consuming. You will be trained as to how to perform the evaluations in a consistent and professional manner. *If you have an allergy, cultural/religious restrictions (i.e., Kosher, Halal), dietary concerns (i.e., vegetarian, vegan), or other situation that prevents you from safely participating in product tasting, please contact the instructor regarding an alternate activity.*

Course Materials, Fees, and Technologies

Required Materials

- All course text materials, or instructions on how to access them, will be provided in CarmenCanvas.
- This course does not have a required text. The lecture material and laboratory instructions for each module will be posted in CarmenCanvas.

Recommended/Optional Material

- *Culinary Reactions, The Everyday Chemistry of Cooking*, by Simon Quellen Field (2012, Chicago Review Press, Inc.).
- *I'm Just Here for the Food*, Alton Brown (2002, Stewart, Tabori & Chang).
- *On Food and Cooking, The Science and Lore of the Kitchen,* Harold McGee (2004, Scribner)

Required Equipment

Because of its online components, this course is highly dependent on technology. You are responsible for your own tech, which includes your device(s) and your connection.

- **Computer:** current Mac (MacOS) or PC (Windows 10) with high-speed internet connection.
- **Webcam:** built-in or external webcam, fully installed and tested
- **Microphone:** built-in laptop or tablet mic or external microphone
- **Digital camera** or smartphone with camera as most assignments require photos as part of the data collection process
- **Other:** a mobile device (smartphone or tablet) to use for BuckeyePass authentication

If you do not have access to the technology you need to succeed in this class, review options for technology and internet access (go.osu.edu/student-tech-access).

Required Software

Microsoft Office 365: All Ohio State students are now eligible for free Microsoft Office 365. Visit the installing Office 365 (go.osu.edu/office365help) help article for full instructions.

Ability to use Microsoft Excel, Microsoft Word, and Microsoft Power Point are required.

If you are new to Microsoft, the following websites may be of help:

- For Word, https://support.microsoft.com/en-us/office/word-for-new-users-cace0fd8-eed9-4aa2-b3c6-07d39895886c
- For Excel, https://support.microsoft.com/en-us/office/basic-tasks-in-excel-dc775dd1-fa52-430f-9c3c-d998d1735fca
- For Power Point, https://support.microsoft.com/en-us/office/basic-tasks-for-creating-a-powerpoint-presentation-efbbc1cd-c5f1-4264-b48e-c8a7b0334e36

Please be aware that ONLY documents created in Microsoft applications are permitted for assignment submissions in this course. If you are accustomed to using other software programs, such as Google Docs or Google Sheets, you may wish to review the above links. Also note that working with MS Office on a Mac computer can sometimes be troublesome. The instructor for this course is NOT a Mac user. You are encouraged to reach out to the Help Desk and to fellow students for assistance.

CarmenCanvas Access

You will need to use BuckeyePass (buckeyepass.osu.edu) 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 do each of the following:

- Register multiple devices in case something happens to your primary device. Information can be found at BuckeyePass (buckeyepass.osu.edu).
- Users will only receive one SMS passcode at a time. Using the "Trust Browser" feature on a user's first authentication log in of the day will allow the user to bypass the need for another passcode for 24 hours.

- Install the Duo Mobile application (go.osu.edu/install-duo) on 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 IT support staff will work out a solution with you.

Technology Skills Needed for This Course

- Zoom, text, audio, and video chat (go.osu.edu/zoom-meetings)
- Ability to take and to insert digital photos into a document
- Use Microsoft Word, Excel, and Power Point effectively
- Recording, editing, and uploading video may be required in certain circumstances

Technology Support

For help with your password, university email, CarmenCanvas, or any other technology issues, questions or requests, contact the IT Service Desk, which offers 24-hour support, seven days a week.

- **Self Service and Chat**: go.osu.edu/it
- **Phone:** 614-688-4357 (HELP)
- **Email:** servicedesk@osu.edu

Grading and Faculty Response

How Your Grade is Calculated (subject to revision)

Assignment or Category	% of total
Preliminary Lab Reports (Pre-Labs)	**6**
Technical Lab Reports (TLRs)	**30**
Adherence to Lab Protocols	**12**
Heat Lesson	**20**
Tastings	**10**
Unit Quizzes	**10**
End of Semester Project	**12**
	100

Descriptions of Major Course Assignments

Kitchen Laboratory Exercises: Preliminary Lab Reports ('Pre-Labs') and Technical Lab Reports ('TLRs')

Pre-Labs and Lab Reports: Students will work in groups to execute Kitchen Lab exercises. The KL sessions require advance preparation, which includes each student individually reviewing and understanding the Procedure and submitting a Preliminary Lab Report ('Pre-Lab'). In the KL exercise, students will work in groups to generate and collect data. Once the KL exercise is complete, students may work together or individually to review, discuss, and analyze the data. Each student must complete and submit a Technical Lab Report ('TLR') that is their own individual work. More details are in the following paragraphs.

For each Kitchen Laboratory exercise, there will be a **Procedure**, posted in the appropriate module, which should be studied by each student, and will be reviewed in a CL before the KL in which that Procedure will be executed. The purpose of the Pre-Lab is to verify that you have read and that you understand the Lab Procedure, and to provide the opportunity for questions, clarification, and feedback. Pre-labs must be received by the designated date and time before each KL session. A grade of 0 will be assigned to Pre-Labs not received on time. Failure to submit a Pre-Lab may mean that you are not admitted to the KL session, and you will not be able to complete the assignment associate with the exercise.

Completion of the KL exercise includes submission of a professionally written Technical Lab Report (TLR), including photos, tables, charts, and graphs where appropriate. In most cases, a template will be provided which must be used as the basis for the TLR. While members of a group are welcome and encouraged to collaborate on the report (all members of a group will have the same data, for example), each student must submit a report written in their own words. It is not acceptable to share or to copy question responses. To be clear: it is expected that everyone in a group will have the same photos and the same raw data, but responses to questions must be written by each individual.

Academic integrity and collaboration: Completion of the KL Exercises includes submission of a Preliminary Lab Report; and a professionally written Technical Lab Report, including photos, tables, charts, and graphs where appropriate. In most cases, a template will be provided which must be used as the basis for the TLR. While members of a group are welcome and encouraged to collaborate on the TLR (all members of a group will have the same data, for example), each student must submit a report written in their own words. It is not acceptable to share or to copy question responses. To be clear: it is expected that everyone in a group will have the same photos and the same raw data, but responses to questions must be written by each individual.

Be aware that use of ChatGPT or of any form of Artificial Intelligence (AI), including translation or language programs or software, is strictly prohibited in this course.

Adherence to Lab Protocols

It is important to carefully study the Procedure document prior to lab in order to be prepared for the lab, to work effectively with your team, and to carry out the exercise in the time allotted. Adherence to the Lab Protocols is critical for everyone's safety in the labs. Adherence to safety protocols and the lab procedures will be graded. Points will be deducted if the protocols and procedure are not followed.

Academic integrity and collaboration: You must adhere to lab protocols and procedure to receive points.

Heat and Heat Transfer (HHT) Lesson

The Heat Lesson is a 3-part scaffolded assignment. Using provided materials, each student will prepare a 15 minute 'lesson' (Part 1) on Heat and Heat Transfer as if it were to be taught to this class. Each student will also provide a Peer Review (Part 2) of another student's Lesson. Feedback comments will be used to revise the original Lesson (Part 3).

Academic integrity and collaboration: You must complete all three parts of the Heat and Heat Transfer Lesson yourself, using the materials and according to the instructions provided. The HHT Lesson must be written in your own words. Use of direct quotations from the source material must be extremely limited. Materials which are closely paraphrased from source material will be treated as plagiarism. To be very clear, in this course, '**close paraphrasing' (for any assignment) means text in which the original wording or phrasing has been rearranged, or text in which selected words have been substituted for some of the original wording. Written material with five or more consecutive words that match the source will be considered plagiarism.**

Tastings

A series of tastings will be conducted during the course. The tastings are designed to provide you with a deeper appreciation of various types of foods, as well as to develop your technical writing skills in describing the sensory attributes of those food sets.

Academic integrity and collaboration: You must be present and complete the sensory evaluations using the materials and according to the instructions provided for each Tasting.

Unit Quizzes

Unit quizzes will assess knowledge and comprehension of lecture material. Quizzes are timed. You may be using Honorlock for taking these quizzes. See pages 18-19 of the syllabus for more information on Honorlock.

Academic integrity and collaboration: You must complete the quizzes yourself, without any external help or communication. Tutor assistance or assistance by others (including verbal and written communication), unless you have accommodations which specifically provide for that, is not permitted to complete quizzes. You may refer to your own notes while taking the quizzes. No outside assistance in the form of electronics (including the Apple watch), notes created or generated by someone or something other than yourself, or verbal or written communication with others is permitted during a quiz.

End of Semester Project

The End of Semester Project is a KL exercise in which each student will work as part of a group to select an herb or spice, then find or create a food product formula which showcases that herb or spice. That food product will be prepared, and an oral report on the herb or spice will be presented during the final KL session of the semester. All team members are expected to contribute to the report, however, the presentation may be by one or more members of the team. All team members must be present for your group's presentation.

Academic integrity and collaboration: Group projects 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 this project, but please let me know if you have any questions.

Late Assignments

All assignments are due at the date and time specified in the assignment. Please take note of due times, as some assignments are due at times other than 11:59 pm. Pre-Labs are generally due by 6:00 pm on the Tuesday before their KL session. A grade of 0 will be assigned to Pre-Labs not received on time. Failure to submit a Pre-Lab at all may mean that you are not admitted to the KL session, and you will not be able to complete the assignment associated with the exercise.

Some assignments are designated in CarmenCanvas as "Due Plus Two" (Due+2); those submissions will be accepted for 2 days (48 hours) after their due date with no late penalty. After that, there will be a late penalty of 10% per day beginning with the original due date. To be clear, here is an example. A report is due at 11:59 pm on October 1. If that assignment is designated as "Due+2", as long as the submission is received by 11:59 pm on October 3, there is no late penalty. If the submission is received at 12:00 am on October 4 (three days after the due date), there will be a 30% late penalty applied to the final score.

Here's a hint: when submitting, DON'T wait until 11:59 pm. **Carmen marks LATE any assignment that is stamped as 'received' at exactly the due time.**

Note the due dates and times, plan ahead to avoid connectivity issues, and allow adequate time to complete each item. Unless there is an unforeseen catastrophe with the system that originates within the University or **unless I specifically request it**, I will not accept any work through email. **It is your responsibility to make sure your assignment is submitted properly and on time.**

In the case of illness or emergency, the student must contact the instructor as soon as possible.

Instructor 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.

- **Preferred contact method**: Once you are enrolled in the course, please use the CarmenCanvas email communication tool to be sure that your email receives priority. I

will make every attempt to reply to e-mails within 36–48 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.

- When sending email, please be as clear and concise as possible. Here is a timesaving tip: Before emailing, please make sure the answer to your question isn't already in the Syllabus, Assignment instructions, or on a Discussion Board.

Grading Scale

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

Other Course Policies

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.

E-Mail Etiquette

Professional relationships should be maintained when using e-mail for a class. Below are 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. If you require an immediate response, consider visiting with me in person.

As I teach more than one class, and there are multiple sections of this class, it will speed my response time if you indicate right up front (subject line) that you are in FDSCTE 1200 or mention The Science of Cooking, and mention which Kitchen Laboratory section (day, time) that you are in.

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 or by Zoom.
- 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.

Written assignments: Your written assignments must be your own original work. In formal assignments, you should follow **APA** style (https://apastyle.apa.org/style-grammar-guidelines/references/examples; 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 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 informal 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 to ask ahead of time.

Academic Misconduct/Academic Integrity

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.

Be aware that use of ChatGPT or of any form of Artificial Intelligence (AI), including translation or

language programs or software, is strictly prohibited in this course.

Disability Accommodations

The university strives to maintain a healthy and accessible environment to support student learning in and out of the classroom. 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.
If you are ill and need to miss class, including if you are staying home and away from others while experiencing symptoms of a viral infection or fever, please let me know immediately. In cases where illness interacts with an underlying medical condition, please consult with Student Life Disability Services to request reasonable accommodations. You can connect with them at **slds@osu.edu**; 614-292-3307; or **slds.osu.edu**.

Counseling and Consultation Services/ 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'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 24/7 by dialing 988 to reach the Suicide and Crisis Lifeline.

For students in the College of Food, Agricultural, and Environmental Sciences, David Wirt, wirt.9@osu.edu, is the CFAES embedded mental health counselor on the Columbus campus. To contact David, please call 614-292-5766. Students should mention their affiliation with CFAES if interested in speaking directly with David.

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:

- Online reporting form at equity.osu.edu,
- Call 614-247-5838 or TTY 614-688-8605,
- 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.

Diversity Statement

The Ohio State University affirms the importance and value of diversity of people and ideas. We believe in creating equitable research opportunities for all students and to providing programs and curricula that allow our students to understand critical societal challenges from diverse perspectives and aspire to use research to promote sustainable solutions for all. We are committed to maintaining an inclusive community that recognizes and values the inherent worth and dignity of every person; fosters sensitivity, understanding, and mutual respect among all members; and encourages each individual to strive to reach their own potential. The Ohio State University does not discriminate on the basis of age, ancestry, color, disability, gender identity or expression, genetic information, HIV/AIDS status, military status, national origin, race, religion, sex, gender, sexual orientation, pregnancy, protected veteran status, or any other bases under the law, in its activities, academic programs, admission, and employment.

To learn more about diversity, equity, and inclusion and for opportunities to get involved, please visit:

- odi.osu.edu
- odi.osu.edu/racial-justice-resources
- odi.osu.edu/focus-on-racial-justice
- cbsc.osu.edu

In addition, this course adheres to The Principles of Community adopted by the College of Food, Agricultural, and Environmental Sciences. These principles can be found at cfaesdei.osu.edu/about-us/cfaes-principles-community. For additional information on Diversity, Equity, and Inclusion in CFAES, contact the CFAES Office for Diversity, Equity, and Inclusion (cfaesdei.osu.edu). If you have been a victim of or a witness to harassment or discrimination or a bias incident, you can report it online and anonymously (if you choose) at equity.osu.edu.

Religious Accommodations

Ohio State has had a longstanding practice of making reasonable academic accommodations for students' religious beliefs and practices in accordance with applicable law. In 2023, Ohio State updated its practice to align with new state legislation. Under this new provision, students must be in early communication with their instructors regarding any known accommodation requests for religious beliefs and practices, providing notice of specific dates for which they request alternative accommodations within 14 days after the first instructional day of the course. Instructors in turn shall not question the sincerity of a student's religious or spiritual belief system in reviewing such requests and shall keep requests for accommodations confidential.

With sufficient notice, instructors will provide students with reasonable alternative accommodations with regard to examinations and other academic requirements with respect to students' sincerely held religious beliefs and practices by allowing up to three absences each semester for the student to attend or participate in religious activities. Examples of religious accommodations can include, but are not limited to, rescheduling an exam, altering the time of a student's presentation, allowing make-up assignments to

substitute for missed class work, or flexibility in due dates or research responsibilities. If concerns arise about a requested accommodation, instructors are to consult their tenure initiating unit head for assistance.

A student's request for time off shall be provided if the student's sincerely held religious belief or practice severely affects the student's ability to take an exam or meet an academic requirement and the student has notified their instructor, in writing during the first 14 days after the course begins, of the date of each absence. Although students are required to provide notice within the first 14 days after a course begins, instructors are strongly encouraged to work with the student to provide a reasonable accommodation if a request is made outside the notice period. A student may not be penalized for an absence approved under this policy.

If students have questions or disputes related to academic accommodations, they should contact their course instructor, and then their department or college office. For questions or to report discrimination or harassment based on religion, individuals should contact the **Office of Institutional Equity**.

Policy: **Religious Holidays, Holy Days and Observances**

Weather or Other Short-Term Closing

Although Ohio State strives to remain open to ensure continuity of services to students and the public, extreme conditions can warrant the usage of the university's **Weather or Other Short-Term Closing Policy**. Please **visit this webpage** to learn more about preparing for potential closings and planning ahead for inclement weather.

Grievances and Solving Problems

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 3335-8-23. Grievances against graduate, research, and teaching assistants should be submitted first to the supervising instructor, then to the chairperson of the assistant's department.

Honorlock

Honorlock, an online proctoring tool, will be used during this course. Honorlock offers you flexibility to take your exams at the time and in the location of your choosing during the exam's availability window.

- Technology requirements: Students are required to have a webcam (USB or internal) with a microphone, allow for screen recording, and have a strong and stable internet connection,
- Testing environment: During the course of an exam, Honorlock will record the testing environment, therefore students should select private spaces for the exam session where

disruptions are unlikely and where recording devices can be enabled. Instructions for Honorlock use will be provided.

- Limitations: To use Honorlock you must be **over 18 years of age** or have the Online Course Recording Waiver on file. Additionally, the tool has **limitations in its accessibility** for students reliant upon screen readers and keyboard navigation. Additional information on academic integrity at Ohio State and recommended proctoring options are available.
- Academic integrity and academic misconduct: Please note that while Honorlock settings may flag suspected cheating during exams, these automatic measures do not constitute a determination of academic misconduct. Any suspicion of misconduct will be referred to the Committee on Academic Misconduct and evaluated through a fair and transparent process.
- Students may request an in-person proctoring alternative to Honorlock or other online proctoring tools. The student is expected to contact the instructor as soon as possible to coordinate the accommodation.
- Students will not be permitted to take remotely proctored exams in their homes or residence halls unless they are willing to conduct a room scan. By choosing to take the exam in their home or residence hall, the student is consenting to the room scan of the area in which they take the exam.

Honorlock support is available 24/7/365. If you encounter any issues, you may contact them through live chat on the support page or within the exam itself. Or you can also reach out to carmen@osu.edu or call 614-688-HELP and talk to the Carmen eLearning team.
If you have concerns about using an online proctoring tool for the reasons listed above or in general, please work with your instructor to find an equivalent alternative.

Lyft Ride Smart

Lyft Ride at Ohio State offers eligible students discounted rides, inside the university-designated service area, and has expanded service to the Short North area along High Street. Service runs from 7p.m. to 7 a.m. Prices may be impacted by distance, traffic, time of day, special events and prime time surcharges. More information about the service and the Lyft App, and a link to get started using the Lyft Ride Smart services can be found at: ttm.osu.edu/ride-smart.

Artificial Intelligence and Academic Integrity

There has been a significant increase in the popularity and availability of a variety of generative artificial intelligence (AI) tools, including ChatGPT, Sudowrite and others. These tools will help shape the future of work, research and technology — but when used in the wrong way, they can stand in conflict with academic integrity at Ohio State.

All students have important obligations under the Code of Student Conduct to complete all academic and scholarly activities with fairness and honesty. Our professional students also have the responsibility to uphold the professional and ethical standards found in their respective academic honor codes. Specifically, students are not to use “unauthorized assistance in the laboratory, on field work, in scholarship or on a course assignment” unless such assistance has been authorized specifically by the course instructor. In addition, students are not to submit their

work without acknowledging any word-for-word use and/or paraphrasing" of writing, ideas or other work that is not your own. These requirements apply to all students — undergraduate, graduate, and professional.

To maintain a culture of integrity and respect, these generative AI tools should not be used in the completion of course assignments unless an instructor for a given course specifically authorizes their use. Some instructors may approve of using generative AI tools in the academic setting for specific goals. However, these tools should be used only with the explicit and clear permission of each individual instructor, and then only in the ways allowed by the instructor.

Be aware that use of ChatGPT or of any form of Artificial Intelligence (AI), including translation or language programs or software, is strictly prohibited in this course.

Course Schedule Spring 2025

(subject to revision)

Week	Lecture Topic	Lab
1	Scientific method, Credible information, Peer review process; Food science & technology	Introduction; Appropriate lab behavior, Sanitation, Good handling practices, Laboratory and kitchen safety
2	Nutrients, Food labels, Measurement accuracy	Knife skills; Oven Calibration
3	Sensory modalities, Consumer science	Measurements, dry and wet, volume and weight; Data collection and organization
4	Heat and heat transfer	Observation of water and oil during heating; effect of added ingredients
5	Food components: Water, Food components: Simple carbohydrates	Carbohydrates, simple: nutritive and nonnutritive sweeteners; caramels
6	Food components: Complex carbohydrates	Carbohydrates, complex: Mac and cheese, Asian stir-fry
7	Grains and pasta	Lipids Emulsions, permanent and temporary: mayonnaise and vinaigrettes
8	Food components: Lipids	Spring Break
9	Food components: Protein	Protein, eggs: Souffles
10	Baking	Mixing Methods: Biscuits, Muffins, Cookies
11	Dairy: Milk and Milk products	Baking: Yeast-Leavened Bread
12	Dairy: Cheese	Dairy: Yogurt, Queso
13	Food Processing and preservation	Canning: Jam
14		Herb and Spice Projects

FDSCTE 1200, PROCEDURE
Caramel Formulas: Control and Variant

Background

I am sure you remember the concepts of **controls** and **variables** from grade school and high school science classes. Scientific experiments can have many variables. Broadly speaking, a variable is any factor or condition that exists and can be measured in some way. A control is that same factor or condition that is or can be held constant, and can be used as a benchmark in a comparison.

In this exercise you will make two formulas of caramels. One will be designated as the Control (I also refer to it as 'Plain Jane') and the other as the Variable. In fact, we could designate EITHER formula as the Control and the other as the Variable. Why is that?

When you taste the caramels, you will taste your Control (your benchmark) and make comparisons between it and your Variable. You will also make comparisons between the appearances of YOUR Control and the Controls of the other groups. In this case, your Control stands as the Control, and the 'controls' of the other groups stand as Variables. It is important that you understand how and why we can make this distinction.

Purpose

In this exercise you will

- ✓ Prepare simple candy (caramels) using 2 formulas, a CONTROL and a VARIABLE (I sometimes refer to this as the *Variation*);
- ✓ Observe and note differences in the sensory aspects (appearance, aroma, taste, flavor, texture) of the final products and relate those differences to the ingredients.

Equipment and Utensils

- Digital scale, timer
- Medium saucepans
- Candy thermometers
- Device to record data

- Phone/camera for pictures
- Cutting board, chef's knife

Food Materials

- Heavy cream
- Butter, unsalted
- Granulated sugar
- Brown sugar
- Corn syrup, light
- Corn syrup, dark
- Vanilla

Caramels CONTROL	
Ingredient	grams
sugar, white	240
cream, heavy	240
corn syrup, light	120
unsalted butter	45
Total weight	645

Caramels VARIANT	
Ingredient	grams
sugar, brown	240
cream, heavy	240
corn syrup, dark	120
vanilla	15
unsalted butter	45
Total weight	660

If you are working with a team, start by meeting and determining your game plan.

Remember that you are making 2 products. If you have allowed about 3 hours for this exercise, there is enough time to make first one, then the other. If you have enough equipment, you can make them side by side, but it's recommended that you at least stagger the start of the second product.

Everyone in the team needs to be aware of differences in the making of both products. If you choose to make them side by side, you will need to be cooking YOUR product and paying attention to the other one at the same time. Think about if you really want to do that.

1. Take photographs at any point in the procedure that you think will be useful in describing this exercise. Be sure to start with your mise en place photo(s). You will need additional photos for the TLR.
2. If you are working with a team, be sure to take a photo which includes all of the team members at the start or finish of the exercise. Everyone includes this photo in their TLR.
3. Be sure to take photographs of ALL finished products so that you can make comparisons, and upload them to the appropriate page for your Carmen KL Group.
4. Prepare quarter-size baking sheets or other suitable pan by lining them with parchment paper or foil.
5. Put sugar, cream, and corn syrup (and vanilla for Variant) in a heavy saucepan. (You can measure the corn syrup directly into the pot to minimize waste and to save time.) Set the heat to medium-high and bring to a boil. Cook, stirring, until the mixture reaches 245F (118C). Note that the mixture may get to a certain temperature (it seems to happen at about 220F) and the temperature 'stalls'. This is typical in sugar cookery. Be patient!
6. Stir in the butter and continue cooking until the mixture returns to 245F (118C).
7. Carefully pour the mixture into the prepared sheet or pan, rotating the pan back and forth if necessary to even it out.
8. Allow the caramel to cool and become firm. (If time is short, place in the refrigerator for 10-15 minutes.)

9. Put on a card that identifies:
    - the date your product was made
    - names of Team members
    - and mark whether it is CONTROL or VARIANT.

STOP! Be sure you have photos of ALL products before you start cutting and tasting. **Check the report template to see what photos you will need.**

10. To cut the caramel, use a chef's knife. You should be able to remove the caramel from the pans by pulling on the parchment. Place the caramel on a cutting board for safe cutting.
11. Taste and compare your two products. Note the similarities and differences in appearance, aroma, taste, flavor, and texture in your report.

FDSCTE 1200 Procedure Supplement Simple Carbohydrates: Caramels

Note: these materials are a supplement to the written Procedure. You must read and understand the written Procedure before completing the Preliminary Lab Report and undertaking this exercise.

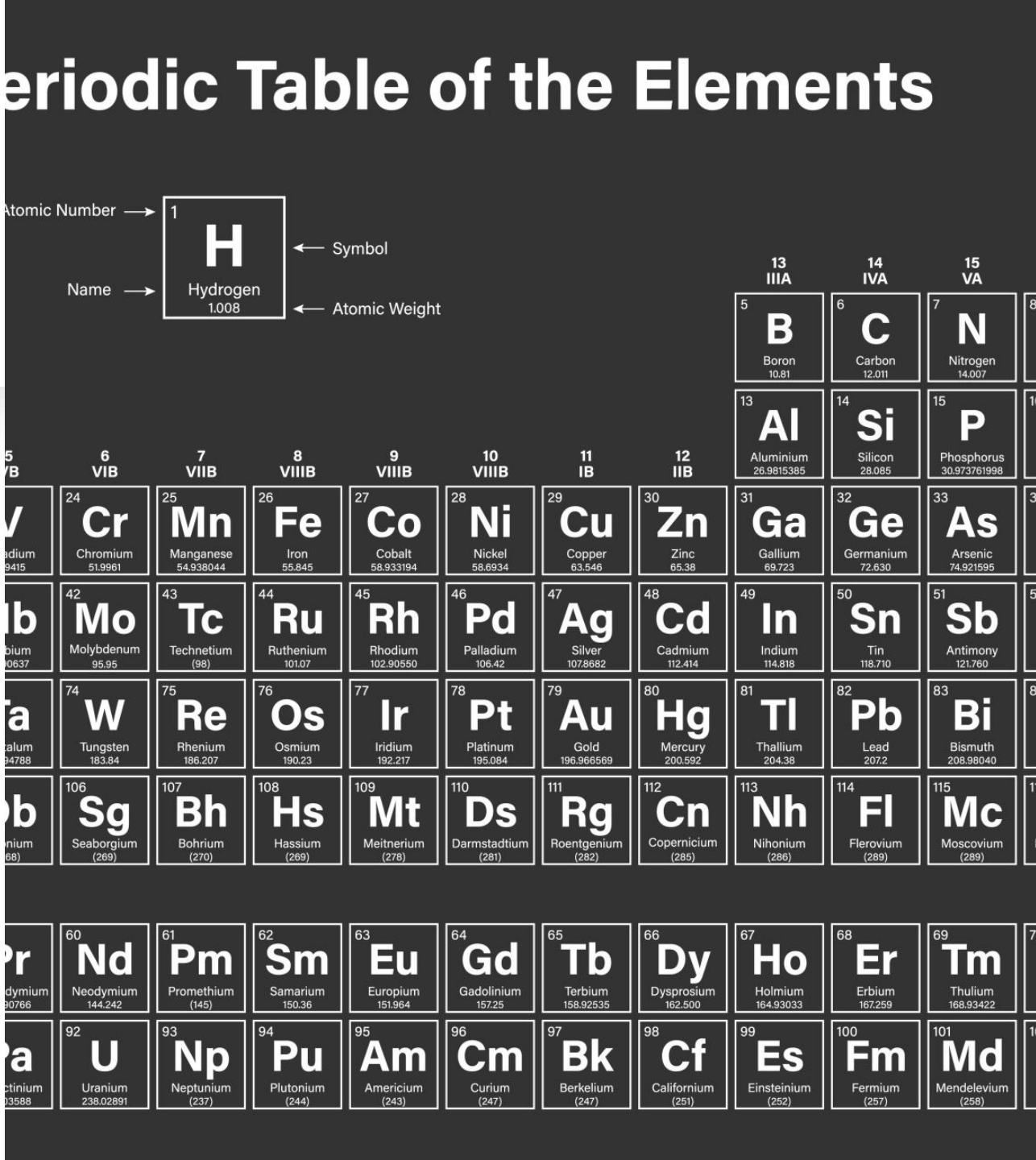

Review of Lecture Content

- **Carbohydrates** are the single most important energy source throughout the world, and, depending on the culture, account for 40-80% of an individual's energy intake.
- The primary role of carbohydrates is to provide energy to all the cells in the body, although most cells can use other forms of energy (i.e., protein, fat, alcohol). Brain cells, however, require energy in the form of **glucose** almost exclusively.

Carbohydrates

May be classified on their degree of **polymerization** (number of **monomers)**

- **Monosaccharides** – one **(1)** sugar unit. Examples are glucose, fructose, and galactose
- **Disaccharides** – two **(2)** sugar units. Examples are sucrose ([table sugar] glucose + fructose), lactose ([milk sugar] glucose + galactose) and maltose (glucose + glucose).
- **Oligosaccharides** – **3 to 10** sugar units and may be produced by the breakdown of polysaccharides. Examples are **raffinose** and **stachyose**. Raffinose is a trisaccharide of galactose-glucose-fructose, while stachyose is a *tetrasaccharide* of galactose-galactose-glucose-fructose.
- **Polysaccharides** – **more than 10** sugar units (may be in the thousands).
- Examples of polysaccharides that can be digested by humans are **starch** from plants and **glycogen** from animal/meat products.
- **Fiber** is a plant polysaccharide that cannot be digested by the human body.



Types of sugars

- **Granulated sugar** is a crystalline form of sucrose.
- **Confectioner's sugar** is pulverized (crushed to a very fine particle size) sucrose blended with cornstarch. The cornstarch prevents caking and helps bind moisture to lower the Aw.
- **Brown sugar** is less refined than white sugar. Brown sugar has flavor due to its impurities.
- **Invert sugar** is a combination of glucose and fructose made by the acid and/or heat degradation of sucrose.
- **Corn Syrup i**s derived (made) by the hydrolysis (breaking bonds with the addition of water) of cornstarch.
- **Molasses** is the brown syrup remaining when sugarcane is boiled to refine the sugar.
- **Sorghum** syrup is made by boiling down the juice of grain sorghum and it varies from light to dark in color.
- **Honey** has a distinctive flavor, influenced by the source of the nectar. Honey is comprised mainly of fructose.

What is Caramelization?

- Caramelization is the chemical reaction (non-enzymatic browning) that occurs at temperatures that are high enough to melt the sugar.
- Two things occur as the temperature increases.
- Color change, from pale gold to brown to black
- Change in taste and flavor of the product.
- The higher the temperature, the darker the ‘candy’, and the darker it got, the less sweet it tasted.

Caramel Formulas: Control and Variant

- In this exercise you will make two formulas of caramels. One will be designated as the Control (also referred to as ‘Plain Jane’) and the other as the Variable. In fact, we could designate EITHER formula as the Control and the other as the Variable. *Why is that?*

- Remember: Scientific experiments can have many variables. Broadly speaking, a variable is any factor or condition that exists and can be measured in some way. A control is that same factor or condition that is or can be held constant and can be used as a benchmark in a comparison.

Purpose

In this exercise you will

- Prepare a simple candy (caramels) using 2 formulas, a CONTROL and a VARIABLE
- Observe and note differences in the sensory aspects (appearance, aroma, taste, flavor, texture) of the final products and relate those differences to the ingredients

Equipment and Utensils

- Digital scale
- Medium saucepan (if you have 2, you can make the 2 formulas side by side)
- Candy thermometer
- Timer
- Device to record data
- Phone/camera for pictures

Food Materials

Ingredients
Heavy cream
Butter, unsalted
Granulated sugar
Brown sugar
Corn syrup, light
Corn syrup, dark
Vanilla

Caramels CONTROL	
Ingredient	grams
sugar, white	240
cream, heavy	240
corn syrup, light	120
unsalted butter	45
Total weight	645

Caramels VARIANT	
Ingredient	grams
sugar, brown	240
cream, heavy	240
corn syrup, dark	120
vanilla	15
unsalted butter	45
Total weight	660

Important

Prepare Quarter-size Baking Sheets By Lining Them With Parchment Paper or Foil

Use Phone/Camera For Pictures

Mise en place

Control

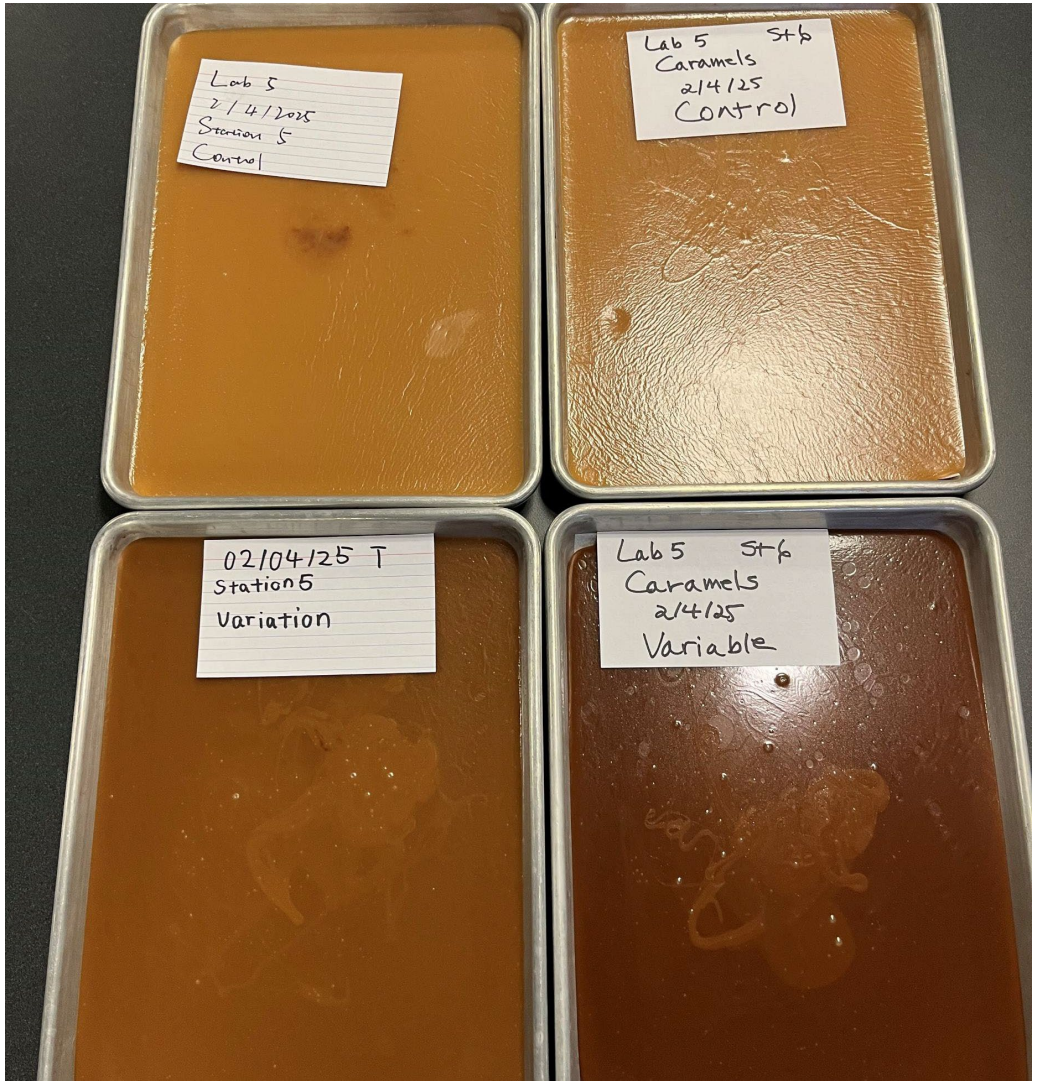
- Put sugar, cream, and corn syrup in a heavy saucepan. Set the heat to medium-high and bring to a boil. Cook, stirring, until the mixture reaches 245F (118C). Note that the mixture may get to a certain temperature (it seems to happen at about 220F) and the temperature ‘stalls’. This is typical in sugar cookery. Be patient!
- Stir in the butter and continue cooking until the mixture returns to 245F (118C).
- Carefully pour the mixture into the pan, rotating the pan back and forth if necessary to even it out
- Allow the caramel to cool and become firm.

Click image for video

Variant

- Put sugar, cream, corn syrup, and vanilla in a heavy saucepan. Set the heat to medium-high and bring to a boil. Cook, stirring, until the mixture reaches 245F (118C).
- Stir in the butter and continue cooking until the mixture returns to 245F (118C).
- Carefully pour the mixture into the prepared pan, rotating the pan back and forth if necessary to even it out
- Allow the caramel to cool and become firm.

Click images
to play videos



Be sure to note any deviations from the Procedure that occur, and include this information in your TLR.

Place an identification card on each product. Mark whether it is CONTROL or VARIANT.
(Note for online, see the written Procedure for the appropriate information that should be on the ID card.)

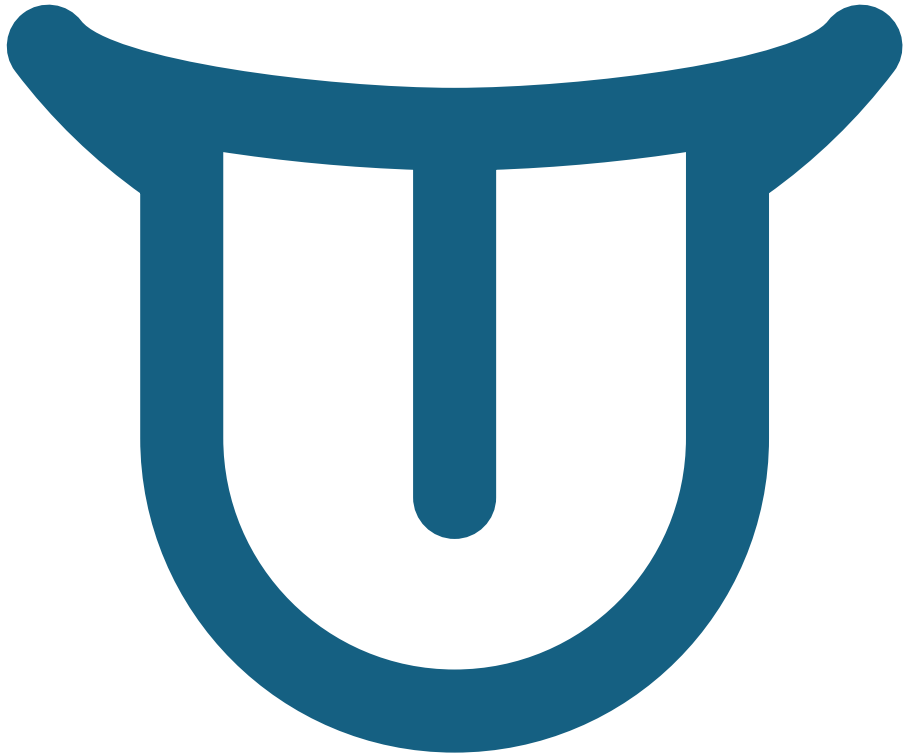
You should be able to remove the caramel from the pans by pulling on the parchment or foil. Place the caramel on a cutting board for safe cutting.

Take photos of your products with their ID cards before cutting and upload them to your Carmen KL Group page for sharing.

Be sure you also have a Team or individual photo for your validation!

Taste and compare your two products.

Note the similarities and differences in appearance, aroma, taste, flavor, and texture in your report.



Enter YourName.# here

Pre-lab must be received before 6:00 pm [day, date] to receive credit

Pre-lab must be received before 11:59 pm [day, date] to earn credit for KL exercise

Pre-Lab: **Caramels**

Please be sure to use this template!

Use the Procedure as your guide, but be careful to use your own words. Your responses should show that you have a basic understanding of what you will be doing in this exercise.

1. In your own words, explain the difference between a control and a variable.
2. How is the variable caramel in this exercise different from the control caramel?
3. What is the difference between a recipe and a formula? Use these references to answer this question.

   https://www.culinex.biz/blog/the-difference-between-a-recipe-and-a-formula

   https://partnerslate.com/learningcenter/convert-food-product-recipe/

   https://www.canr.msu.edu/news/converting-a-kitchen-recipe-to-a-commercial-formula
4. Explain which of the above references you found to be most useful in answering Q3, and why.

Date Exercise Conducted:
Team Members: (put your name.# first, underline it; then the names.#s of others)

FDSCTE 1200D Report Caramel Formulas

This is when I stop putting in all of that up-front information about that your eyes are probably glazing over at this point. All of those 'rules' are still in effect, so please check back to one of the first 4 TLRs if you need to refresh yourself.

Remember the variations involved in these two product sample?

The variations (differences) from the Control included brown sugar instead of white, dark corn syrup instead of light, and the addition of vanilla.

Keep those in mind as you complete this report.

1. Insert your validation photo here.
2. How did you/your team determine the game plan for executing this lab? Explain.
3. Insert your mise en place photo(s) here.
4. Be sure that each of your products has its ID card. Insert the photographs of your two caramels here. Put captions on the photographs in case Dr. Campbell has difficulty reading the ID cards.
5. For each formula, insert photos that you took during the procedure (there should be at least 2 for each formula), and explain the procedure – who did what, any deviations or problems that occurred, and how you resolved them.
6. Refer to the photo of your 2 caramels in Q4. In words, describe IN DETAIL the differences between the **appearances** of YOUR two caramels. Consider color, shininess, and visual texture.
7. Select photos of at least 3 Control and Variant caramels from other members of your Carmen KL Group and insert them here.
8. Describe the differences between the <u>appearances</u> of the **Control** samples for each of the groups, as compared to your Control.
9. Describe the differences between the <u>appearances</u> of the **Variant** samples for each of the groups, as compared to your Variant.
10. What advice would you give to the next group of students making these candies?

Date Exercise Conducted:
Team Members: (put your name.# first, underline it; then the names.#s of others)

11. Taste your samples. Taste the Control first, then the Variant. Record your notes in the table below. Be sure to use the taste descriptors (sweet, sour, salty, bitter, umami) appropriately, and indicate intensities (L, M, H) for each of the attributes that you list.
12. **Bonus question!** How much do you know about your instructor? Take another look at the 3 references for Q3 in the Pre-Lab. Which do you think is my favorite? *(Note: if you cannot figure this out in 10 minutes or less, give it up. This question is based on information in the course that was provided early in the semester, and is still readily available. I'll tell you after the due date has passed.)*

	Control	Variation
Taste		
Flavor		
Texture		

Before you submit:

- ✓ Check that your header is filled out correctly.
- ✓ Check for PROFESSIONALISM in the tone of your writing (objective terms, full sentences, accurate descriptions, stick to the facts). Complete sentences are NOT required/expected in the Descriptors Table, but it should be DETAILED (except for TASTE), coherent, and well organized.
- ✓ Check for Language Mechanics: spelling, capitalization, punctuation, grammar, sentence structure.

FST 1200D Rubric Caramels Technical Lab Report			
Criteria	**Ratings**		**Pts**
Submission received on time? Check for original submission received on time (Due+2); Late penalty of -30% begins at 11:59 pm 2 days after due date	**0 pts** **Full Marks**	**0 pts** **No Marks**	0 pts
Header & Template Header is drafted; must include date of exercise and names.#s of Team Members, if any. Submitter's name must be first and underlined. Report template that was provided must be used, with questions included.	**1 pts** **Full Marks**	**0 pts** **No Marks**	1 pts
Q1, Validation photo Photo of individual or of team members	**1 pts** **Full Marks**	**0 pts** **No Marks**	1 pts
Q2, Game plan Explanation of game plan for exercise	**2 pts** **Full Marks**	**0 pts** **No Marks**	2 pts
Q3, Mise en place photo	**1 pts** **Full Marks**	**0 pts** **No Marks**	1 pts
Q4, Photo of submitter's caramels Must include captions	**0 pts** **Full Marks**	**0 pts** **No Marks**	0 pts
Q5, Procedure photos Photos taken of each product during procedure; explanation; deviation or problems, how resolved	**6 pts** **Full Marks**	**0 pts** **No Marks**	6 pts

Q6, APPEARANCE of Writer's Control and Variable Describe similarities/ differences in Appearance between writer's Control and Variable caramels shown in Q4. If there is no photo in Q4, cannot confirm information in Q6 response.	**4 pts Full Marks**	**0 pts No Marks**	4 pts
Q7, Photos from Carmen KL Group Insert photos from at least 3 other KL Group members that show Controls and Variables made by other members	**0 pts Full Marks**	**0 pts No Marks**	0 pts
Q8, Differences in APPEARANCE for Controls Must compare appearances of each at least 3 other samples individually to the writer's Control. If there is no photo in Q7, cannot confirm information in Q8 response.	**3 pts Full Marks**	**0 pts No Marks**	3 pts
Q9, Differences in APPEARANCE for Variables Must compare appearances of each of at least 3 other samples individually to the writer's Variant. If there is no photo i Q7, cannot confirm information in Q9 response.	**3 pts Full Marks**	**0 pts No Marks**	3 pts
Q10, Advice Advice for next semester students	**1 pts Full Marks**	**0 pts No Marks**	1 pts
Q11, Sensory Evaluation Taste, Flavor, Texture characteristics and intensities for writer's Control and Variant	**6 pts Full Marks**	**0 pts No Marks**	6 pts
Bonus Maximum 2 pts	**0 pts Full Marks**	**0 pts No Marks**	0 pts
Language Mechanics Spelling, capitalization, punctuation, sentence structure, grammar, professional tone	**2 pts Full Marks**	**0 pts No Marks**	2 pts
			Total Points: 30

Distance Approval Cover Sheet

For Permanent DL/DH Approval

Course Number and Title: FDSCTE 1200D, The Science of Cooking

Faculty Preparer Name and Email: Louise Campbell, campbell.2127@osu.edu

Carmen Use

For more on use of Carmen: https://teaching.resources.osu.edu/teaching-topics/carmen-common-sense-best-practices

A Carmen site will be created for the course, including a syllabus and gradebook at minimum. Yes

If no: Enter additional details if you responded no...

Syllabus

Proposed syllabus uses the ODEE distance learning syllabus template (or own college distance learning syllabus template based on ODEE model), includes boilerplate language where required, as well as a clear description of the technical and academic support services offered, and how learners can obtain them. Yes

Syllabus is consistent and is easy to understand from the student perspective. Yes

Syllabus includes a schedule with dates and/or a description of what constitutes the beginning and end of a week or module. Yes

If there are required synchronous sessions, the syllabus clearly states when they will happen and how to access them. NA

Additional comments (optional):
Enter any additional comments about syllabus...

Instructor Presence

For more on instructor presence: https://teaching.resources.osu.edu/teaching-topics/online-instructor-presence

Students should have opportunities for regular and substantive academic interactions with the course instructor. Some ways to achieve this objective:

☒ Regular instructor communications with the class via announcements or weekly check-ins

☒ Instructional content, such as video, audio, or interactive lessons, that is visibly created or mediated by the instructor

☐ Regular participation in class discussion, such as in Carmen discussions or synchronous sessions
No

☒ Regular opportunities for students to receive personal instructor feedback on assignments

Please comment on this dimension of the proposed course (or select/explain methods above):
Instructor communication is in the form of the Home Page, which changes weekly, and serves the same purpose as 'housekeeping' Announcements (weekly lesson and assignments plan, due date reminders, upcoming assignment notices) that would take place in a live lecture class.

Nearly all course content has been created or compiled by the instructor.

Although there are no required synchronous sessions, students are encouraged to form groups to work together on both the lecture content and the laboratory exercises.

Discussion Boards are set up for students to post and respond to questions on topics and activities in the course.

Quizzes are auto-graded, with the advice that students should be able to find or infer correct answers in the course content, but if not, please reach out to the instructor with questions.

All manually graded submissions receive an explanation for any points deducted.

Delivery Well-Suited to DL/DH Environment

Technology questions adapted from the Quality Matters rubric. For information about Ohio State learning technologies: https://teaching.resources.osu.edu/toolsets

The tools used in the course support the learning outcomes and competencies. Yes

Course tools promote learner engagement and active learning. Yes

Technologies required in the course are current and readily obtainable. Yes

Links are provided to privacy policies for all external tools required in the course. Yes

Additional technology comments:
NA

Which components of this course are planned for synchronous delivery and which for asynchronous delivery? (For DH, address what is planned for in-person meetings as well.)
All components of the course are asynchronous

If you believe further explanation would be helpful, please comment on how course activities have been adjusted for distance learning:
NA

Workload Estimation

For more information about calculating online instruction time: ODEE Credit Hour Estimation

Course credit hours align with estimated average weekly time to complete the course successfully. Yes

Course includes direct (equivalent of “in-class”) and indirect (equivalent of “out-of-class)” instruction at a ratio of about 1:2. Yes

Provide a brief outline of a typical course week, categorizing course activities and estimating the approximate time to complete them or participate:
Week 5, Lecture Materials covers Water (Unit 5) and Food Components: Simple Carbohydrates (Unit 6); estimated time to study/learn material is 6 hours. A Kitchen Laboratory exercise related to the behavior of water was conducted in the previous week.

Week 5 also includes a brief quiz on the materials covered in the previous week’s lecture, Heat and Heat Transfer (Unit 4).

Week 5, the Preliminary Lab is preparation for the Kitchen Lab exercise on Caramels (simple carbohydrates). For the Preliminary Lab, students will read, study, and understand Procedure materials and fill out and submit a Preliminary Lab report, 2 hours.

Week 5, For the Kitchen Lab, students will prepare 2 formulas of caramels, a control and a variant, observe and note the differences (Appearance, Aroma, Flavor, Texture) between the two samples, record data, and then compile and submit a Technical Laboratory Report. Carrying out the KL exercise and compiling the report can be accomplished in about 3 hours.,

In the case of course delivery change requests, the course demonstrates comparable rigor in meeting course learning outcomes. Yes

Accessibility

For more information or a further conversation, contact the accessibility coordinator for the College of Arts and Sciences. For tools and training on accessibility: Digital Accessibility Services

Instructor(s) teaching the course will have taken Digital Accessibility training (starting in 2022) and will ensure all course materials and activities meet requirements for diverse learners, including alternate means of accessing course materials when appropriate. Yes

Information is provided about the accessibility of all technologies required in the course. All third-party tools (tools without campus-wide license agreements) have their accessibility statements included. Yes

Description of any anticipated accommodation requests and how they have been/will be addressed.
Typical accommodations requests include the following:

Extended time; this is addressed by manually resetting the time in the timed assignments

Small group settings; this is not necessary as tests are taken online and in the student’s own time and location

Attendance/Deadline Modifications; these are addressed on an individual basis with the student

Access to lecture slides in advance; not necessary as the materials are all in Carmen

Additional comments:
NA

Academic Integrity

For more information: https://go.osu.edu/teaching-resources-academic-integrity

The course syllabus includes online-specific policies about academic integrity, including specific parameters for each major assignment: Yes

Assignments are designed to deter cheating and plagiarism and/or course technologies such as online proctoring or plagiarism check or other strategies are in place to deter cheating: Yes

Additional comments:
NA

Frequent, Varied Assignments/Assessments

For more information: https://teaching.resources.osu.edu/teaching-topics/designing-assessments-student

Student success in online courses is maximized when there are frequent, varied learning activities. Possible approaches:

☒ Opportunities for students to receive course information through a variety of different sources, including indirect sources, such as textbooks and lectures, and direct sources, such as scholarly resources and field observation

☒ Variety of assignment formats to provide students with multiple means of demonstrating learning

☒ Opportunities for students to apply course knowledge and skills to authentic, real-world tasks in assignments

Comment briefly on the frequency and variety of assignment types and assessment approaches used in this course (or select methods above):
Course information is offered in multiple forms. There is 1) Lecture content, which includes text, power points, and videos; and 2) Laboratory exercises, which include preliminary work of reading and preparing for the exercises and weekly hands-on activities. Assessments will be in the form of quizzes, written preliminary reports, written technical reports, one scaffolded assignment, and a final project. Working with a study partner on the lecture content is encouraged. Working as part of a group on the hands-on and laboratory prep assignments is strongly encouraged, but not required.

Community Building

For more information: https://teaching.resources.osu.edu/teaching-topics/student-interaction-online

Students engage more fully in courses when they have an opportunity to interact with their peers and feel they are part of a community of learners. Possible approaches:

☒ Opportunities for students to interact academically with classmates through regular class discussion or group assignments

☒ Opportunities for students to interact socially with classmates, such as through video conference sessions or a course Q&A forum

☐ Attention is paid to other ways to minimize transactional distance (psychological and communicative gaps between students and their peers, instructor, course content, and institution)

Please comment on this dimension of the proposed course (or select methods above):
The 'heart' of this course is the hands-on Kitchen Laboratory exercises. Students are encouraged to form groups of up to 4 and to work together to study and carry out the exercises, collect data, and discuss the results before writing and submitting their reports as individuals. For the Lecture content, students are encouraged to work with one or more study partners. Discussion Boards are available for students to post and respond to general questions about the course, and about specific activities in the course. Some data may be shared on Discussion Boards. There is one scaffolded assignment which requires Peer Review from others in the class.

Transparency and Metacognitive Explanations

For more information: https://teaching.resources.osu.edu/teaching-topics/supporting-student-learning-your

Students have successful, meaningful experiences when they understand how the components of a course connect together, when they have guidance on how to study, and when they are encouraged to take ownership of their learning. Possible approaches:

☒ Instructor explanations about the learning goals and overall design or organization of the course

☒ Context or rationale to explain the purpose and relevance of major tasks and assignments

☒ Guidance or resources for ancillary skills necessary to complete assignments, such as conducting library research or using technology tools

☒ Opportunities for students to take ownership or leadership in their learning, such as by choosing topics of interest for an assignment or leading a group discussion or meeting

☐ Opportunities for students to reflect on their learning process, including their goals, study strategies, and progress

☒ Opportunities for students to provide feedback on the course

Please comment on this dimension of the proposed course (or select methods above):
Learning goals are outlined in the Syllabus, reflected in the course content, and referenced throughout the course. Each unit of Lecture material and each Laboratory exercise states a purpose and one or more goals that are met. Assistance is provided or referenced for Microsoft applications (Word, Excel, Power Point) that are used in the course. Students can find opportunities for leadership in the formation of group or the selection of study partners and in the execution of the final project. Students are routinely encouraged to provide feedback on laboratory exercises.

Additional Considerations

Comment on any other aspects of the online delivery not addressed above:
NA