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### Course Description

Scientific principles underlying food preparation and processing; principles of experimental methodology as applied to food science. NTR 1120, NTR 1121, CHM 1410 and CHM 1415

### Course Objectives

Upon completion of this course, students working in a team environment and using current information technologies will

- Apply food science principles to functions of ingredients in various food systems.
- Utilize basic food preparation knowledge and techniques to modify and evaluate recipes.
- Interpret current research and basic statistics.
- Evaluate various food systems using both sensory and objective methods.
- Report findings in a technical, scientific format.

### Class Policies

- If you are a student with a **documented disability** in need of accommodations to fully participate in this class, please contact the Office of Student Disability Services (OSDS). Accommodations for confirmed and diagnosed *food allergies* will require documentation from this office. All accommodations must be approved through OSDS. Please stop by Ninth Street Hall, Room 2006, or call 217-581-6583 to make an appointment.
- Students who are having difficulty achieving their academic goals are encouraged to contact the **Student Success Center** ([www.eiu.edu/~success](http://www.eiu.edu/~success)) for assistance with time management, test taking, note taking, avoiding procrastination, setting goals, and other skills to support academic achievement. The Student Success Center provides individualized consultations. To make an appointment, call 217-581-6696 or go to 9<sup>th</sup> Street Hall, Room 1302.
- Students are expected to maintain principles of **academic integrity and conduct** as defined in EIU's Code of Conduct (<http://www.eiu.edu/judicial/studentconductcode.php>). Violations will be reported to the Office of Student Standards.
- If you need **technical support assistance** with D2L, call D2L Support toll free at 1-877-325-7778. Support is available 24 hours a day, seven days a week. Email and Chat options are also available on the "My Home" page after logging in to D2L. Other D2L resources including a D2L Orientation course for students are available on the same page. For technical questions regarding other software, hardware, network issues, EIU NetID/password, or Panthermail, contact the ITS Helpdesk at 217-581-4357 during regular business hours or submit a help ticket at <https://techsupport.eiu.edu/>. If you have a question regarding course content, contact your instructor.
- Students who would like to **record the lectures**, either visual or audio, must seek permission from the instructor before recording can take place.
- Exams** and **pre-assessments** will not be made up. If you must miss an exam or pre-assessment, you must notify the instructor within 24 hours BEFORE class time and follow up with appropriate written documentation. If excused from an exam or pre-assessment, the point value of the exam/pre-assessment will be added to the next scheduled exam/pre-assessment. If unexcused (reason for absence is not excused or the procedures were not followed), no credit will be allowed.
- Assignments are due at the beginning of class time on the date listed on the tentative schedule. **Late assignments** include any assignment, REGARDLESS OF THE REASON, turned in after class or the due date. Ten percent will be deducted per day late, and 5% will be deducted if received on the due date but after class is over. No assignments will be accepted after one week late.
- Per University Policy, **attendance** is expected at all class sessions. When an absence does occur, the student is responsible for the material covered during the absence. When possible, the student should notify the instructor in advance of an anticipated absence. As this is a laboratory class, your attendance on lab days is crucial for a passing grade as well as mastery of the content. Laboratory experiences **will not** be made up regardless of the reason. If a laboratory experience must be missed for an **excused**

reason, a maximum of half the lab points may be made up through out-of-class activities. A maximum of 3 labs may be missed.

9. **Tardiness** is not an acceptable behavior. If you are more than 15 minutes late on lab days, you will not earn any points for that lab experience, i.e. no lab report submitted.
10. **Cell phone usage** (e.g. talking, texting, Internet usage) is not allowed in this class, both in lecture and in lab. The cell phone is to be turned off (not on vibrate) and not visible (e.g. keep it in your bookbag). If the professor witnesses cell phone usage, then, you will be marked as absent and will be asked to leave class. If there is a special circumstance in which you need to have the phone on, you need to discuss this with the professor prior to the start of class. This act of respect is valid during lab times as well.

### Class Textbook

McWilliams, M. 2017. *Foods: Experimental Perspectives*. 8<sup>th</sup> ed. New York, NY: Prentice Hall.

### Required Laboratory Attire

- ✓ Clean, white lab coat, available in the MLK Union Bookstore or online
- ✓ Approved hair restraint (if a hat is worn, then, you will need to have **ALL** hair in the hat), available at Walmart or online
- ✓ Safe shoes (It is very important that you do not wear open-toes or backless shoes, no flip-flops!)

### Course Expectations

I expect you to attend class regularly, bring your text daily, read the identified readings before class, not have your cell phone out, and to be actively involved during class time. I want you learn about food and how manipulating the ingredients affects the final product as well as to make connections between food and nutrition. My overarching goal this semester is you become more confident in your abilities to plan, implement, and document research, especially food science experiments.

### Grading Scale

90-100% A      80-89% B      70-79% C      60-69% D      59% and below F

### Course Evaluation

Activity	Possible Points	Your points
Research Article Critiques (3 @ 10 pts each)	30	
Examinations (3 @ 60 pts each)	180	
Pre-assessments (6 @ 10 pts each)	60	
Formal lab report (individual)	50	
Lab experiences (13 labs @ 15 pts each)	195	
Visual Recipe Development by unit	45	
Poster presentation	50	
<b>Total points</b>	600	

## Tentative Schedule

Week	Topic	Readings
1	Today's Food Scene	Chapter 1
	Food Experimentation: The Research Process	Chapter 19
2	Food Experimentation: Research Reporting	
	Food Experimentation: Sensory and Objective Evaluation IRB Discussion (EIU Handout)	Chapters 20 and 21
3	<i>NO CLASS!</i>	
	<i>Food Evaluation: Objective Evaluation</i> <b>*Research Article Critique 1 due in D2L</b>	Laboratory Procedures
4	Physical Aspects of Foods <b>*Pre-assessment 1 due in D2L</b>	Chapters 2 and 3
	<i>Physical Aspects of Food: Frozen desserts</i> <b>*Research Article Critique 2 due in D2L</b>	Laboratory Procedures
5	<b>Examination 1 (in class)</b>	Chapters 1-3, 19-21, IRB + labs
	<i>Dimensions of Baking: Chocolate Chip Cookies (baking sheets)</i>	Laboratory Procedures
6	Ingredient Functions in Baked Products <b>*Pre-assessment 2 due in D2L</b>	Chapter 14
	<i>Dimensions of Baking: Muffins (gluten development)</i>	Laboratory Procedures
7	Carbohydrates: Simple sugars <b>*Pre-assessment 3 due in D2L</b>	Chapters 4 and 5
	<i>Carbohydrates: Simple sugars</i>	Laboratory Procedures
8	Carbohydrates: Complex <b>*Pre-assessment 4 due in D2L</b>	Chapter 6
	<i>Carbohydrates: Complex CHO</i> <b>*Research Article Critique 3 due in D2L</b>	Laboratory Procedures
9	Carbohydrates: Vegetables and Fruits (Fiber)	Chapter 7
	<i>Dimensions of Baking: Shortened Cakes (sugar)</i>	Laboratory Procedures
10	<b>Examination 2 (in class)</b>	Chapters 4-7, 14 + labs
	<i>Food Science in Action: Field trip to Siemer Milling in Teutopolis</i>	
11	Lipids <b>*Pre-assessment 5 due in D2L</b>	Chapters 8 and 9
	<i>Dimensions of Baking: Pastry (types of fat)</i> <b>*Initial Draft of Major Lab Report due IN CLASS</b>	Laboratory Procedures
12	Overview of Protein and Milk <b>*Pre-assessment 6 due in D2L</b>	Chapters 10 and 11
	<i>Dimensions of Baking: Brownies (fat replacers)</i>	Laboratory Procedures
13	Meat and Egg Protein	Chapters 12 and 13
	<i>Dimensions of Baking: Scones (gluten-free)</i>	Laboratory Procedures

	<b>*Final draft of Major Lab Report due</b>	
14	<i>Protein: Milk and Eggs Laboratory</i>	Laboratory Procedures
	<i>Protein: Meats Laboratory</i>	Laboratory Procedures
15	Food Science in Action: Flesor's Candy Kitchen	
	Poster Presentation and Visual Recipe Premiere	
	<b>Examination 3 (in class)</b>	Chapters 11-16 + labs