

Experimental Foods: 709:489 Fall 2014

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Lecture: T/F 9:30am-10:25am 106 HSB

Labs:

- **Monday 2:15-5:15pm**
- **Wednesday 10:55am-1:55pm**
- **Friday 12:30pm-3:30pm**

Office Hours: By Appointment in 212A Davidson Hall

TA's:

Bryn Yeomans: bly8@scarletmail.rutgers.edu

Kyle Sullivan: kas603@scarletmail.rutgers.edu

Suggested Texts:

- Foods: A Scientific Approach by H. Charley & C. Weaver; Prentice Hall
- On Food and Cooking: The Science and Lore of the Kitchen by H. McGee; Scribner
- Additional readings to be posted on Sakai

Lab Manual: Experimental Foods 709:489 Lab Manual by S. Papaspyrou-Rao, M. Cifuentes, U. Sivaprasad

Course Objectives:

- Gain knowledge of the composition of foods and the relation of chemical and physical structure on components to their functional properties
- Gain a more complete knowledge of the scientific principles upon which food preparation and processing are based.
- Become familiar with various methods to study foods, such as chemical, enzymatic, sensory and instrumental measurements.
- Learn how to design and carryout a controlled, scientific experiment.
- Learn how to write a formal research paper and make use of graphics programs.

Course Policies:

1. Attendance of lectures and labs is mandatory. Quizzes may be given.
2. Be prepared for lab. Read lab manual ahead and bring your lab coat (participation pts)
3. No makeup exams or labs without prior approval of instructor and written documentation of excuse.
4. Late assignments not accepted without prior approval and written documentation.
5. Plagiarism of any kind is not tolerated at Rutgers and will result in course failure. Be careful not to copy phrases, sentences, paragraphs from books, journals, or electronic sources.
6. Cheating is not tolerated and will result in a zero for assignments or exams.
7. Be on time to lecture and lab. Please-no cell phones.

Day	Date	Lecture	Readings Before Lecture	Assignment Due	Lab for Week M, W, F
T	9/2	Course Introduction and Lab Basics	Lab Manual Pages 1-21		No lab This week
F	9/5	Research Project Ideas and Diseases			
T	9/9	Sugars	Chapter 8, Sugar PDF	Labs Begin-BRING LAB COAT	Lab #1 #2 Intro: pH, BP, Viscosity
F	9/12	Starches	Chapter 9		
T	9/16	Vegetable Gums		Project statement Due with 2 research articles	#3 Sugars, Maillard, Crystallization
F	9/19	Glycemic Index, Flours	Chapter 9, Flour PDF's	(project statement handed back)	
T	9/23	Flours, Gluten, Celiac continued	Chapter 11, 13, 14		#4 Gelatinization of Starch -Lab report required
F	9/26	Leavening, Breads	Chapter 13, 14	Flow Chart Due in Lecture	
T	9/30	Research Paper			#6,#5 Leavening, Gluten
F	10/3	Sensory Evaluation			
T	10/7	EXAM 1		Food and equipment list due in lab, TA will check.	Project Planning Lab, food and equipment list compilation
F	10/10	Plants		Sensory Ballot Due Today in class.	
T	10/14	Statistics; paper expectations	Review Mean, SD, T Test from Statistics text		#7Plants/Pectin Lab
F	10/17	Protein Functions	Chapter 18		
T	10/21	Milk	Chapter 18, 19		Research Project Labs
F	10/24	Eggs	Chapter 21		
T	10/28	Muscle Foods	Chapter 22-24		#8 Protein Gelation. Lab report required
F	10/31	Enzymes			
T	11/4	Paper Expectations			#9 Protein Concentration and foams
F	11/7	Fats	Chapter 17, 25		
T	11/11	Fats			#10 Fats
F	11/14	EXAM 2			
T	11/18	Fat Substitutes and Cheeses			#11 Emulsions and Fat replacers
F	11/21	Flavors and Seasonings			
T	11/25	NO CLASS-It's Thursday at RU			No Lab this Week
W	11/26	Food Colors	CSPI Report	RESEARCH PAPER DUE!	
T	11/2	Food Additives			
F	12/5	GMO	GMO PDF		
T	12/9	FINAL EXAM			

Grading:

Lecture@25 pts	:25 (attendance, quizzes, participation)
3 exams @100pts	:300
2 Lab reports@50pts	:100
Lab Participation@100pts	:100 (11 labs-Quizzes, participation, discussion, lab coat, experiment accuracy)
Project Assignments@25pts	:25(project statement, flow chart, accurate food/equipment list, sensory ballot)
Research Paper@150pts	:150(conducting the experiment (25), final paper(100), partner grade 25)
<u>Total:</u>	<u>:700 pts</u>