

COURSE SYLLABUS

Spring Semester - 2015

Food Science

ANFS 305-010 (3 cr)

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Class meeting times: MWF 11:15 AM - 12:05 PM in 130 Sharp Lab
Office hours: Please email for an office appointment.

Textbook: *Foods – Experimental Perspectives* by Margaret McWilliams, Seventh edition, Pearson Prentice Hall, 2011.

Course summary: The principles of food processing will be introduced in combination with food functionality and overview of popular aspects of the technology involving foods and beverages. Topics to be discussed will include fundamental elements of food production and manufacturing, food process unit operations, food preservation, packaging, distribution, and safety, and will also involve aspects of the history, culture, chemistry, engineering and microbiology of foods. Current controversies (such as foods derived from recombinant DNA technology) and popular products will also be reviewed related to food science fundamentals, some of which encompass aspects of human nutrition. From completion of the course, the student should have gained a better appreciation of the American food system, and how its products are processed, handled, and managed globally. This should be reflected in an awareness of the problems that affect the security of our food supply.

There are no prerequisites for this class.

Grading:

The final course grade will be calculated from total points as follows:

Hourly exams (2)	200 points
Final exam	100 points
Activities/Participation	20 points

Letter grades based on point averages from 320 points:

90% = A	69 - 75% = C
88 - 89% = A-	66 - 68% = C-
86 - 87% = B+	64 - 65% = D+
80 - 85% = B	55 - 63% = D
78 - 79% = B-	51 - 54% = D-
76 - 77% = C+	

Examinations:

There will be three written exams during the semester and a cumulative written final exam on Wednesday, 27 May from 10:30 AM to 12:30 PM in 130 Sharp Lab. All examinations will consist of multiple-choice and true-false questions answered on computer-scan sheets with No. 2 pencils. You are responsible for all materials presented and discussed in class. The lowest of the three hourly exam grades will be dropped for calculation of your final grade in the course. If you miss an exam during the semester, that missed exam will count as your lowest exam. Makeup exams will not be given unless two exams are missed for reasons documented from your dean's office (illness, personal tragedy, or university business). Students who miss their second exam must contact me within 24 hours of the scheduled exam to receive permission to take a makeup exam. Makeup exams will consist of five 20-point essay-type questions. The final exam is cumulative and mandatory consisting of 100 questions. All students must take the final exam to receive a grade in the course.

Participation (i>clicker):

We will use i>clicker. Your participation in class activities using your i>clicker will count towards your final grade for 20 points (see grading). Bring your clicker to every class (also a spare set of batteries may come in handy). In-class activities will rarely if ever be announced in advance and will not take place in every class. Clickers will be used to review for approaching exams, engage students in course information, encourage class discussions, gauge students' understanding of course material, and survey class opinion.

Regular attendance is strongly encouraged. If you miss class and do not have a letter from your college dean, you do not get credit for that day's clicker session whether it be illness,

personal emergency, forgotten or inoperable clicker, leaving class early or arriving late, weddings, funerals, field trips, job interviews, UD athletic and music commitments, motor vehicle issues (e.g., flat tires), court appearances, and so forth. Also, it is your responsibility to obtain class notes from a fellow student if you miss class; however, ANFS 305 is again scheduled for UD Course Capture, an automatic classroom capture system. This system allows you to view lecture PowerPoints (which are also available on the class's Sakai website) and listen to the audio of past lectures and discussions, and presumably view any video clips that were presented in lecture. The UD Course Capture website link is <http://ats.udel.edu/udcapture>. So if you miss class, there are ample opportunities to obtain the materials if you wish.

Clicker points. Clicker-point assessment towards class grade is based on percentage of earned points. Clicker activities are not scheduled in advance making it uncertain how many questions and sessions will be conducted over the course of the semester. All opinion-type survey responses will count one clicker point, but clicker questions similar to exam questions will earn two points for a correct answer and one point for an incorrect answer. A student receives the full twenty points for clicker participation in the calculation of the course grade by attaining 60% of the total clicker points possible over the semester. For example, if there are only sixty clicker questions given in fifteen sessions (i.e., classes), there are 120 maximum points possible; 60% of 120 points is 72 points. So a student needs to total 72 points in order to receive the full twenty points for clicker participation in the course. If a student has less than 72 points, the twenty points will be pro-rated downward based on the percentage from the 72-point benchmark. Looking at it another way based on missed sessions, in the past the average number of questions was usually around four questions per session. So if a student misses three clicker sessions and gets only half of the questions right for the remainder of the sessions, the student would still total 72 clicker points and receive the full twenty points for clicker participation.

Now being sold on-campus is the i>clicker 2. I was told the older i>clicker will work just as well as the new i>clicker 2, so you need not purchase the newer version of i>clicker if you own the older version.

i>clicker FAQs: [taken from the UD ATS website]

How much does an i>clicker cost? An i>clicker costs about \$40 new/\$30 used at the UD Bookstore on Main Street, but students can purchase new or used i>clickers from any vendor they choose. You can check [UD Classifieds](#) for student-to-student sales. The University Bookstore will buy back i>clickers for \$20. [Please note that quoted prices are now two- to three-years-old.]

I have two classes using clickers. Can I use the same one? Yes, you can use your clicker in multiple classes.

How do I register my clicker? You can register when you login to view the online course material. One registration relates that clicker to you in every course where the instructor is using Sakai.

I have a roommate with a clicker and now I don't know which one is mine. How can I tell? Check the device ID number on the label on the back of the clicker. Login and see which device is yours. You can

register both IDs as long as you and your roommate aren't in the same class. Consider marking your clicker with a permanent marker or a sticker to tell them apart.

Can I share my clicker? Yes, roommates/friends can share a clicker **IF** they aren't in the same class where clickers are used.

What if I lose my clicker? Buy or borrow another clicker. You can register another clicker yourself. Otherwise I can add your alternate clicker's device ID to my i>grader gradebook.

I can't make it to class on a day we're using clickers. Can I give it to my friend and have them vote for me? No. The University of Delaware's Code of Conduct specifically addresses this situation in section C. Cheating, articles v and vi.

How do I join a session? Just power on your clicker (you'll see a blue light) and participate. There's no need to search for a channel and join a session. If your instructor chooses to broadcast on a different frequency they'll display the channel and you can follow the directions printed on the back side of your clicker to change the frequency. When the i>clicker is powered off the device defaults back to the standard frequency of AA.

What if I change my mind? You can recast your vote after a clicker question as long as the poll is still open. Once the poll is closed, no changes will be accepted.

What batteries should I use? Three standard triple-A batteries are expected to last for 300 hours of polling. Energizers are recommended because their slightly larger size fits more snugly in the battery compartment. It's recommended to replace all three batteries when necessary. A key or other small object can be inserted in the slot on the back of the clicker to pop open the access panel.

What if my clicker stops working? If fresh batteries don't solve your problem, take defective clickers to the UD Bookstore and ask to exchange it.

What if my clicker gets turned on in my backpack? The clicker will turn itself off automatically after 5 minutes if it doesn't detect an active polling session. Once a session is in progress, the clicker will stay on for 90 minutes after the last response unless manually turned off by pressing the power button.

I accidentally hit the power button during class and turned off the clicker. Will this mess up my answers? As long as the clicker is on when you vote (look for a green light) your answer will register. Because the device ID is linked to your responses in that class it doesn't matter if the remote is powered off between answers.

Please note that for this class there will be **no extra credit work** accepted towards the class grade.

Academic honesty:

Academic dishonesty in any form will not be tolerated and will be dealt with severely. Please become familiar with the University's policy on Academic Honesty and Dishonesty found in the *Official Student Handbook*. Students should bring their ID card to all exams. I reserve the right to check identification at exams.

Suggestions:

1. Be attentive and courteous. Talking distracts the lecturer as well as your fellow classmates.
2. Attend all lectures.
3. Be on time. Announcements (*i.e.*, changes in schedule or reading assignments) will be made at the beginning of class.
4. Get extra help if and when needed. Don't wait until it's too late. Questions are welcomed in and out of class or via email, or make an appointment by email to see me in my office (017 Townsend Hall). For example, do not wait until the morning of an exam to email for help; that never works well for anyone.
5. Be prepared. Read assignments before class.
6. If you do not know anyone in class, make it a point to introduce yourself in order to know a few of your fellow students. Students interacting with each other on course material is an important factor in the learning process. Also, if you want to know what was covered in a previous lecture you may have missed, you'll have someone you feel comfortable to ask.

ANFS 305 on Sakai:

All class PowerPoint slides can be found on <http://www.udel.edu/sakai> as PowerPoint files, including guest lectures. I will continue to upgrade the material, often tweaking it the night before. Please keep in mind that exam material is based on any material discussed in class, and the posted lecture may not contain all the material covered in class. Fresh news items will sometimes be inserted as late additions to class.

ANFS 305 TENTATIVE LECTURE SCHEDULE - Spring 2015

<u>DATE</u>	<u>TOPIC</u>	<u>Supporting textbook readings (pages)</u>
Feb. 9 M	Introduction: Consumers, foods & the food industry	1-7
Feb. 11 W	Consumer trends, organic foods	7-9, 13-14
Feb. 13 F	Sensory science	45-65
Feb. 16 M	Measurement of quality factors	69-87
Feb. 18 W	Measurement of quality factors (continued)	
Feb. 20 F	Unit operations	
Feb. 23 M	Food preservation	483, 509-519
Feb. 25 W	Colligative properties, energy transfer & food mixtures	93-123
Feb. 27 F	Thermal processing	491-495 (canning)
Mar. 2 M	Thermal processing (cont'd)	
Mar. 4 W	Microwaving & ohmic heating	106-112
Mar. 6 F	Nonthermal processing methods	105-106
Mar. 9 M	No class (view prepared Course Capture lecture instead)	
Mar. 11 W	Exam 1	
Mar. 13 F	Low-temperature storage	485-490; 500-503
Mar. 16 M	Food dehydration	495-500
Mar. 18 W	Food dehydration (cont'd)	503-506
Mar. 20 F	Food packaging	
Mar. 23 M	Foods derived from rDNA technology	9-13
Mar. 25 W	Simple sugars	129-157
Mar. 27 F	Nonnutritive sweeteners	157-166
Mar. 30 – Apr. 3	<i>SPRING BREAK</i>	
Apr. 6 M	Starch	171-191
Apr. 8 W	Bread technology	429-434
Apr. 10 F	Exam 2	
Apr. 13 M	Grains, flours and leavening systems; beer-making	423-429, 46
Apr. 15 W	Fruits & vegetables	195-206
Apr. 17 F	Dr. Kali Knierl: Safety of minimally processed fruits & vegetables	
Apr. 20 M	Fruits & vegetables (continued)	206-230
Apr. 22 W	Coffee & cocoa products	439-441
Apr. 24 F	Fats & oils	237-276
Apr. 27 M	Fats & oils (continued)	
Apr. 29 W	Margarines and spreads	
May 1 F	Dairy products	295-307, 313-322
May 4 M	Cheese and ice cream	307-313, 14
May 6 W	Eggs	363-387
May 8 F	Exam 3	
May 11 M	Meat and poultry	325-359
May 13 W	Seafood	
May 15 F	Food safety	457-477
May 18 M	Food safety (continued)	
May 27 W	COMPREHENSIVE FINAL EXAM in 130 Sharp Lab (10:30 AM – 12:30 PM)	

The objectives of ANFS 305 are aligned in concept to contribute and integrate according to the ten learning goals of UD undergraduate education, which are as follows:

General Education at UD - Ten goals of undergraduate education

1. Attain effective skills in oral and written communication, quantitative reasoning, and the use of information technology
2. Learn to think critically to solve problems.
3. Be able to work and learn both independently and collaboratively.
4. Engage questions of ethics and recognize responsibilities to self, community, and society at large.
5. Understand the diverse ways of thinking that underlie the search for knowledge in the arts, humanities, sciences and social sciences.
6. Develop the intellectual curiosity, confidence, and engagement that will lead to lifelong learning.
7. Develop the ability to integrate academic knowledge with experiences that extend the boundaries of the classroom.
8. Expand understanding and appreciation of human creativity and diverse forms of aesthetic and intellectual expression.
9. Understand the foundations of U.S. society including the significance of its cultural diversity.
10. Develop an international perspective in order to live and work effectively in an increasingly global society.