ANFS 102: FOOD FOR THOUGHT

3 credits
Spring 2015

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PLEASE use **ANFS 102** in your subject line
Office: 019 Townsend Hall
Office hours: Wednesday 2:00-3:30 PM and
Thursday 11:00 AM-1:00 PM and by appointment

Class schedule: 12:20 – 1:10 MWF in 130 Smith Hall
Course Website: http://www.udel.edu/sakai

This course will focus on examining how and why the US food system works as it does. This course will provide an overview and an introduction to the fascinating and complex world of food science. We will analyze the components of foods in terms of their chemical make-up and use as functional ingredients. We will tackle contemporary issues facing today's world where we attempt to feed the world in an economical fashion and maintain sustainability while doing so. How do large food production systems, global ingredients, food manufacturers, consumers, food safety, packaging, and organic agriculture all fit into this big picture?

Course Student Learning Outcomes:

- Gain an appreciation for the complexity of the US food production, product development and distribution systems
- Develop a basic knowledge of contemporary issues affecting food production, consumer satisfaction, and food safety
- Develop skills necessary to understand food labels, and associated laws governing food production in the US
- Identify leaders in the food industry including regulatory agencies

Process Student Learning Outcomes:

- Develop critical thinking skills relevant to contemporary issues as opposed to acceptance of all issues (*ANFS Critical Thinking Goal, Gen Ed Goal 2*)
- Learn to organize logical arguments within short assignments (*ANFS Communications Goal, Gen Ed Goals 1 and 6)*

Textbook: *Food Bites: The Science of The Foods We Eat* by R.W. Hartel and A. Hartel, 2008, Copernicus Books, NY, New York.
Other readings will be placed as pdf files under the resources section of the Sakai site.

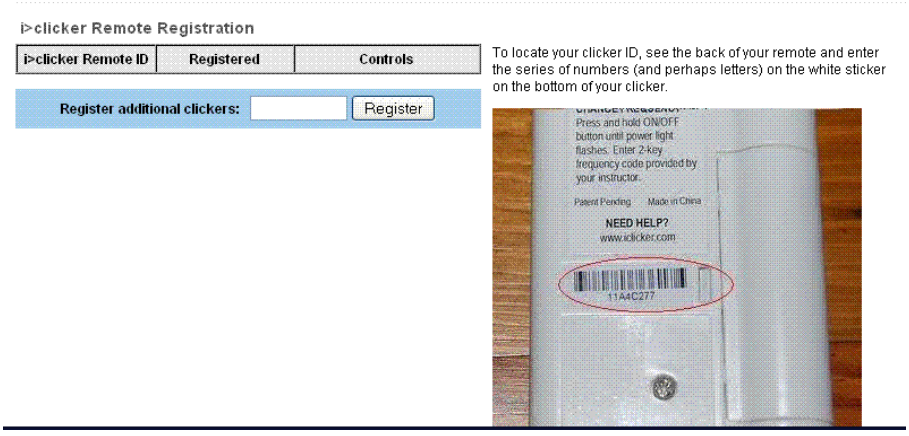
Examinations: There will be four hourly exams during the semester. Examinations will consist of multiple-choice and true-false questions. You are responsible for all readings and materials assigned and discussed in class including material presented by guest lecturers. The lowest grade of the four hourly exams 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 an exam is missed for reasons documented from your dean's office (illness, personal tragedy, or university business). Students who miss a second exam must contact me within 24 hours prior to the scheduled exam to receive permission to take a makeup exam. Any makeup exams will be given on Reading Day and will consist of five 20-point essay-type questions.

Class Participation and Attendance: Regular attendance is expected. You should come to class prepared for learning and have read in advance for each class. i>clickers will be used to engage students during the lectures. Your participation in these class exercises and activities will count towards your class grade. In-class i>clicker activities and lectures are an important part of this course. You are encouraged to become familiar with the University Policy on Class Attendance found in the "Student Guide to University Policies" (http://www.udel.edu/stuguide/13-14/index.html). The content of the guide applies to this course.

i>clickers will be used to promote learning in this class. **Bring your i>clicker** to every class to obtain credit for the activities that use them. For each correct answer you will receive 1-2 points and for an incorrect response you will receive 1 point. You should attend class in order to obtain clicker points. To obtain full credit you must receive 75% of the total clicker points available at the end of the semester. This is not as difficult as you may think. If you do not receive 75% of all available clicker points, your points toward the final grade will be pro-rated. Check Sakai regularly to ensure your i>clicker is working properly and has working batteries. The number of clicker points available for the semester will not be known until the end of the semester. The majority of i>clicker points available on a specific day will be no more than ~12, so on days where there are many questions, the points available will be limited.

For more info about clickers, visit: **http://ats.udel.edu/clickers/faq.php .**
Register your clicker using the link in Sakai. Refer to the illustration below to see the registration interface. One registration will provide information to all your instructors in classes using i>clickers and Sakai this semester. You can register multiple clickers if you're concerned about picking up your roommate's or if you lose your clicker mid-semester.



Assignments: Four specific assignments (i.e. one during each section) will be given over the course of the semester; food insecurity, product development and food regulations are examples of topic areas. Information will be provided in class and online at least one week in advance of the due date. Assignments will be turned in online. Late assignments will lose one point per day that the assignment is late. Additional assignments or extra credit may also be given at the discretion of the professor to foster learning and student engagement.

Assignment 1 announced Friday February 20 and due Monday March 2
Assignment 2 announced Friday March 13 and due Monday March 23
Assignment 3 announced Monday April 6 and due Wednesday April 15
Assignment 4 announced Monday April 27 and due Wednesday May 13

Quizzes: Online quizzes will be given at the beginning of the semester to ensure that students understand the syllabus (8 pts) and practice quizzes will be available before exams (12 pts available).

Twitter: A link to Dr. Kniel's course twitter feed will be used to keep current with issues related to class. Tweets can be circulated for the class using #ANFS102. Current twitter feed will be discussed at the beginning of class. Students are encouraged to read twitter postings for class and to share their own postings. Twitter posts can count towards missing clicker/participation points as necessary.

Academic Honesty: Academic dishonesty in any form will not be tolerated. Students are encouraged to become familiar with the University's Policy on Academic honesty found in the Student Guide to University Policies (http://www.udel.edu/physics/educ341/academic_honesty.htm). The content of the guide applies to this course. Responsible computing guidelines can be found at http://www.udel.edu/ExecVP/polprod/1-14.html.

Code of Conduct: Guidelines for appropriate conduct can be found at http://www.udel.edu/stuguide/05-06/code.html. Electronic devices should be **turned off and not accessed during class**, including cellular phones. Students are encouraged to arrive at class on time as announcements will be given at the beginning of class.
As a member of this class you are asked to be respectful of the professor and your classmates and follow these guidelines for appropriate conduct during class.

Support Services: The instructor is willing to give help if and when needed. Questions are welcomed in and out of class or via email. Dr. Kniel will try to respond to emails in a timely manner within 24-48 hours. Email responses on Saturdays and Sundays may take longer for a response. Be sure to use ANFS 102 in the subject line to reduce the risk of your email getting lost. Do not wait until the morning of an exam to seek help. Other support can be found at:

Academic Enrichment Center: http://www.aec.udel.edu/
Writing Center: http://www.english.udel.edu/wc/resource/news.html
Library: http://www.lib.udel.edu/
Computing Sites: http://www.udel.edu/sites/

Course Website on Sakai: The lecture material will be posted on the Sakai class website. In general this information will be posted just prior to the lecture. Please be patient if class material is not posted in advance. Selected readings will be available on the website as pdf files and will be announced in advance in class. All assignments will be submitted online using this website and these activities will be discussed in class in advance of the assignment deadlines.

UD Capture. Course recordings are available via the link on the course website homepage (Sakai) from the UD Course Capture system used in class.

Grading: The final course grade will be calculated from total points as follows, with your lowest hourly exam grade dropped:

Hourly exams (3 of 4)	300 points
i>clicker	40 points
Assignments (4)	80 points
Quizzes	20 points

Grade scale: Straight arithmetic average with 100-93 an A, 92-90 an A-, 89-88 a B+, 87-83 a B, 82-80 a B-, 79-78 a C+, 77-73 a C, etc. Letter grades will be based on 440 points.

Food For Thought Course Calendar

The lecture schedule is tentative. Topics may be omitted or added. Changes will be announced in class. Visuals including PowerPoint lectures and videos will be shown in class. Homework assignments will be announced in class and online. Look for announcements online.

DATE	**TOPIC**	**TEXTBOOK READINGS** (Additional readings may be announced in class & online)
Feb 9 M	Welcome *Today's Food Culture*	
Feb 11 W	A look back at the history of foods to 2015	Chapters 1, 2, 4, 5, 25, 53, 54
Feb 13 F	Food Trends and Influences	*Red Velvet Cake* pdf
Feb 16 M	Food demand and Animal agricultural	Chapters 10, 21, 22, 23, 32, 37, 44
Feb 18 W	Agricultural Biotechnology: a tool in the toolbox	*Consumer Perceptions* (IFIC pdf)
Feb 20 F	Organic Agriculture Basics and Trends	*http://www.ams.usda.gov/AMSv1.0/NOPOrganicStandards*
Feb 23 M	Dairy production using rBST	Guest: Dr. Tanya Gressley
Feb 25 W	*A Place at the Table*	
Feb 27 F	*A Place at the Table*	
Mar 2 M	Food Insecurity, Food Waste & Food Deserts	*Applications and Perceptions of Date Labeling of Food* pdf
Mar 4 W	**EXAM I**	
Mar 6 F	Historical perspective of the US Food Regulatory System - FSMA	Chapters 33, 46, 49
Mar 9 M	Food Safety Sanitation, Recalls and Audits	Chapters 8, 9, 11
Mar 11 W	HACCP Risk Analysis and Risk Communication	Chapter 50
Mar 13 F	Leading Microbiological Concerns Inactivation Mechanisms	Chapter 7, 51
Mar 16 M	Epidemiology of foodborne illness outbreak investigation- produce safety case study	
Mar 18 W	Revisiting Impact of Food Insecurity	Guest: Ms. Carmella Johnson
Mar 20 F	Food Defense & Food Security Agroterrorism	pdf reading
Mar 23 M	Leading Chemical Concerns and Food Allergens	Chapter 29

Mar 25 W	**EXAM II**	
Mar 27 F	A Food Chemistry Primer	*Food Chemistry Primer* pdf
Mar 30- Apr 3	**Spring Break**	*Have fun and be safe*
Apr 6 M	Water: 1 of the 4 Basic Food Molecules	Chapters 6, 18, 19, 20, 34, 35, 36, 56
Apr 8 W	Carbohydrates: 1 of the 4 Basic Food Molecules	Chapters 28, 30, 31, 57
Apr 10 F	Fat, Oils, and Lipids: 1 of the 4 Basic Food Molecules	Chapters 16, 45
Apr 13 M	Proteins: 1 of the 4 Basic Food Molecules Don't forget about Enzymes	Chapters 13, 39
Apr 15 W	Functional Ingredients Molecular Gastronomy	Chapters 31, 32, 38
Apr 17 F	Labeling	
Apr 20 M	**EXAM III**	
Apr 22 W	Earth Day Sustainability in Food Production Vertical Farming	Chapter 16
Apr 24 F	Aquaculture, Fish and Shellfish	
Apr 27 M	Entomophagy: A future basic food source?	
Apr 29 W	Edible Plants and Their Use	Chapters 40, 41, 42, 43
May 1 F	Fermentation and Distilled Beverages	Chapters 47, 48
May 4 M	Milk and Dairy Products	Chapters 11, 12, 14, 15
May 6 W	Chocolate	Chapters 3, 17, 58, 59, 60
May 8 F	Pet Food Development	pdf reading
May 11 M	Local *Ingredients*	Video
May 13 W	Caffeine and Beverage Development	Guest: Dr. Dallas Hoover
May 15 F	Food Packaging Basics	Chapters 24, 25, 26, 27
May 18 M	Global Supply Chain Issues Wrap-Up	Chapters 52, 55
TBA Exam Week	**EXAM IV**	