"You Are What You Eat: A Course in Food Chemistry"

First Year Seminar Syllabus –Fall 2020

Room: DCB 140, outside at DCB if possible.

Time: Friday 10 am - 1:50 pm, two groups where Group 1 will usually meet 10-11:50, and Group 2 will meet 12-1:50. See Calendar for weekly details. Groups are listed on Canvas

Dr. Michelle Knowles
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Office: https://udenver.zoom.us/my/michelleknowles
Office Hours: Very flexible. Email to set up a meeting.

Classroom policies:

- Wear a mask that covers your nose and mouth at all times.
- Wash or sterilize your hands upon entering the class
- Do NOT move chairs
- Do NOT eat anything. Even if we make food that appears edible. You can take it elsewhere. I will bring containers you can take if needed.
- We will take a break each hour. Please drink water from your own water bottle outdoors.

Introduction and Learning Outcomes:

During this course we will be part of an intellectual community and learn through critical thought and scientific reasoning. One goal of this course is to *learn how to approach complex problems* – ones you do not know the answers to, where the answers may not be clear, and ones you will need to research. We will use writing to communicate our point of view and back up our conclusions with scientific evidence. In the process, you will also learn about the chemistry and molecules in our food. A second goal of our class is to build community. We will have two days devoted to activities beyond the classroom.

Online Materials: You are responsible for materials posted on Canvas. This includes links to videos, lectures, worksheets, rubrics, and this syllabus. Everything must be turned in online through Canvas. I recommend putting the Canvas app on your phone if possible.

Reading Materials:

- ✓ The Science of Good Cooking by The Editors of America's Test Kitchen and Guy Crosby Ph.D ($25 at Amazon)
- ✓ Additional online materials and journal articles will be provided for many topics and posted on Canvas.

Grade Evaluation is based on:

EVERYTHING is turned in on Canvas!

- **Short Papers (20%):** Kitchen Chemistry "Lab" Reports. Due to COVID, the experiments will be performed as a demonstration rather than in groups. Before each lab, work with your group to: read the lab and background material, describe the chemistry, then an experiment and the predicted results. There's a worksheet for each pre-lab, and one pre-lab is due per group of 2-3 students. Afterwards, an individual paper is due for labs 1-3 (See below for details), a group presentation is due for lab 4.

  Lab #1: The Scientific Process: Spaghetti breaking and cooking
  Lab #2: Emulsions: Nacho cheese
  Lab #3: Cheese making and Protein Denaturation
  Lab #4: Virtual: Researching a Kitchen Myth. If you want to use your dorm resources to test something, this is OK. Think: microwave, visual demos, etc. I can lend out thermometers and other items from class.

  After each lab: a short paper will be written with the focus of explaining the science behind the experiments. We focus on concision, cohesion and references in these papers as well as understanding the science. These are a MAXIMUM of one page single spaced, size 12 font, Times New Roman, 1" margins. Small, appropriate figures you create are encouraged! References can be on a separate sheet of paper and do not count towards the one page. The lowest grade is dropped.
- **Worksheets and Prelabs (25%):** They will be posted on Canvas. These cover writing, scientific concepts and experimental planning. Most worksheets I will explain and start in class, then you can finish them and submit them by midnight on the day of class. This is done to reduce our face time during the pandemic and to use our face time in a more valuable way. I will be available for questions.
- **Research Term Paper (30%):** Choose a topic of your interest on food/nutrition/farming that can be addressed from researching the science. 10 pages double spaced, Times New Roman, size 12 font, 1" margins. References do not count as part of the 10 pages. You need at least 10 scientific references. **A 5 page draft with 5 scientific references is due. This will be graded!** There are additional worksheets that pertain to the research paper that are part of this overall grade. See Canvas > Assignments.
- **Presentations (25%):** There are two presentations to be recorded as a Kaltura videos and posted on Canvas. These do not have to be a power point, lecture-style talk. Please discuss ideas with me and clear any external videos with me in advance.
  - **Presentation #1:** The kitchen myth *group* presentation. This is an 8 minute video on the myth your group researched, the science behind it and whether or not the myth is true (conclude based on scientific logical reasoning)
  - **Presentation #2:** The presentation will cover the same topic as your research paper and it is an individual presentation. You need to convey the science and ideas that your paper discusses, but you do not need to cover your entire paper. 6-8 minutes.

Class time: We will not do anything on paper, therefore you need a laptop each week to complete in-class worksheets.
Lectures: Lectures will be varied from in class to short online video lectures.
Absence/Late Policy: Do not come to class sick; contact me if you will miss class for any reason. If work is turned in late, 10% will be deducted for each day the work is late unless you have emailed me in advance. All lectures can be made up by watching a recording, meeting with me, or by getting notes from another student in your group.

Letter	A	A-	B+	B	B-	C+	C	C-	D+	D	D-	F
Percent	93.0-100	90.0-92.9	88.0-89.9	83.0-87.9	80.0-82.9	77.0-79.9	70.0-76.9	65.0-69.9	62.0-64.9	57.0-61.9	55.0-56.9	Below 55

Academic Integrity: In this course and all other courses at DU, you are expected to abide by the Honor Code. Any form of dishonesty will be taken seriously and there will be no tolerance for plagiarism.

> *Students agree that by taking this course all required papers may be subject to submission for textual similarity review to Turnitin.com for the detection of plagiarism. All submitted papers will be included as source documents in the Turnitin.com reference database solely for the purpose of detecting plagiarism of such papers.*

FSEM Assessment Activities:

1. Explanation: Students will demonstrate their ability to explain the issue/hypothesis and the science with 3 short papers on demonstrations performed. (Weeks 1-6)
2. Evidence: Students will complete one worksheet on references and also use scientific evidence in their research paper and the presentation on their research paper (Week 8, 10)
3. Influence of context and assumptions: Students will research a controversial topic in food science or health. Conclusions will be made based on a review of scientific literature (Week 7-10)
4. Communication: Students will present two talks that include research and presentation of complex, scientific evidence (Weeks 6 and 10).