Lecture: Tuesday and Thursday 2:00 – 3:20pm  
Location: ZHS 159

Instructor: Grayson Jaggers, PhD  
Office: ZHS 256  
Office Hours: TBD  
Email: jaggers@usc.edu

Course Description and Learning Objectives

Food is something we all have some sort of a connection with. Whether you see it as a tool for artistic expression, or simply as fuel for your body, food is derived from the living world around us. BISC 115Lxg will relate concepts from the biological sciences in an applicable context by using the food we eat to provide students with an understanding of molecular biology, biochemistry, microbiology, and nutrition.

Along with lectures, students will attend weekly lab meetings. The goal of our lab meetings is to further illustrate concepts learned in lecture, and doing so in a hands-on environment. In addition to this, the labs will introduce students to experimental design and emphasize critical thinking skills. Students will work together to carry out experiments, where they will be required to analyze and thoughtfully summarize their results.

Students from a variety of majors will leave this course having learned how the food they eat relates to the biological world. In addition to this, they will have an improved ability to think critically, analyze, and utilize information in order to solve problems in their everyday life. This course seeks to promote further interest in the biological sciences, as well as foster an appetite for cooking, and exploring the culinary world.

I. Suggested Reading


II. Description and Assessment of Assignments

Exams will be based upon concepts discussed in lectures. Any information presented outside of lecture will not be tested upon, unless specifically stated.

Some lab sections will have homework assigned to them, and will always be due one week after they are assigned. Lab participation points are based upon a student’s punctuality, contribution to group work, and end-of-lab cleaning.

**Exam Dates**

Midterm 1: Thursday, February 13th  
Midterm 2: Thursday, March 26th  
Final Exam: Thursday, May 7, 2-4pm

III. Grading Breakdown

Three exams, and your six lab meetings will determine your course grade. Each exam will be worth 100 points. The laboratory sections will make up the remaining 100 points. There will be eight homework assignments (40 points), and twelve lab meetings that have participation points associated with them (60 points).

<table>
<thead>
<tr>
<th>Assignment</th>
<th>Points</th>
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<tbody>
<tr>
<td>Midterm 1: 100 points</td>
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<td>Midterm 2: 100 points</td>
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<tr>
<td>Final Exam: 100 points</td>
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<tr>
<td>Homework (8 x 5 points): 40</td>
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<tr>
<td>Classwork (12 x 5 points): 60 points</td>
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**Class Total:** 400 points

A range: 90% and Up  
B range: 80-89%  
C range: 70-79%  
D range: 55-69%  
F: 54% and Below
**Attendance:** Laboratory and exam attendance is mandatory, and there are no make-up test or assignments. The only exceptions to this policy are for those who have a medical emergency (stuffy noses don’t count), in which case proper documentation will be required. Also, if you are a member of a university club or athletic team, and you know in advance that you cannot attend a specific meeting, please let me know as soon as possible.

**Food Consumption and Lab:** Due to the fact that our laboratory spaces are shared with other courses, consumption of any food items will not be allowed. In the event that we conduct any of our labs in a food-safe environment, this policy may be revised. Any violation of this policy will result in loss of lab participation points for that given lab meeting.

**IV. Tentative Lecture and Lab Schedules**

<table>
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<tr>
<th>Week of -</th>
<th>Lecture Topic</th>
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| Jan 13    | Course Introduction  
Four Basic Food Molecules, Fundamentals of Nutrition |
| Jan 20    | Micronutrients |
| Jan 27    | Food and Health |
| Feb 3     | Bioactive Non-Nutrients and Nutrition Research  
Biology of Taste |
| Feb 10    | Midterm 1 Review, Midterm 1 Exam |
| Feb 17    | Molecular Basis of Flavor and Aroma  
Fundamentals of Genes and Gene Expression |
| Feb 24    | History of the Domestication of Wheat and Corn |
| Mar 2     | What are GMO Foods? |
| Mar 9     | Biology of Fruits and Veggies  
Chocolate |
| Mar 15-22 | **Spring Break** |
| Mar 23    | Midterm 2 Review, Midterm 2 Exam |
| Mar 30    | Biology of Animal Tissue |
| Apr 6     | Microorganisms and Their Role in Food Production |
| Apr 13    | Food Spoilage  
Antioxidants |
| Apr 20    | Properties of Milk and Eggs in Food |
| **Apr 27** | Using Biochemistry and Other Physical Properties of Ingredients to Make Foods Delicious  
Final Exam Review |
V. Support Systems

A number of USC's schools provide support for students who need help with scholarly writing. Check with your advisor or program staff to find out more. Students whose primary language is not English should check with the American Language Institute (http://dornsife.usc.edu/ali), which sponsors courses and workshops specifically for international graduate students. The Office of Disability Services and Programs (http://sait.usc.edu/academicsupport/centerprograms/dsp/home_index.html) provides certification for students with disabilities and helps arrange the relevant accommodations. If an officially declared emergency makes travel to campus infeasible, USC Emergency Information (http://emergency.usc.edu/) will provide safety and other updates, including ways in which instruction will be continued by means of blackboard, teleconferencing, and other technology.

VI. Academic Conduct

Plagiarism – presenting someone else’s ideas as your own, either verbatim or recast in your own words – is a serious academic offense with serious consequences. Please familiarize yourself with the discussion of plagiarism in SCampus in Section 11, Behavior Violating University Standards (https://scampus.usc.edu/1100-behavior-violating-university-standards-and-appropriate-sanctions/). Other forms of academic dishonesty are equally unacceptable. See additional information in SCampus and university policies on scientific misconduct, (http://policy.usc.edu/scientific- misconduct/).
VII. Academic Integrity Violations

Students who violate University standards of academic integrity are subject to disciplinary sanctions, including failure in the course and suspension from the University. Since dishonesty in any form harms the individual, other students and the University, academic integrity policies will be strictly enforced.

VIII. Disruptive and Threatening Behavior

Discrimination, sexual assault, and harassment are not tolerated by the university. You are encouraged to report any incidents to the Office of Equity and Diversity (http://equity.usc.edu/) or to the Department of Public Safety (http://capsnet.usc.edu/department/department-public-safety/online-forms/contact-us). This is important for the safety whole USC community. Another member of the university community – such as a friend, classmate, advisor, or faculty member – can help initiate the report, or can initiate the report on behalf of another person. The Center for Women and Men (http://www.usc.edu/student-affairs/cwm/) provides 24/7 confidential support, and the sexual assault resource center webpage sarc@usc.edu describes reporting options and other resources.