

# BCBT 100 – The Science of Cooking

Fall 2016, TuTh 10:30-11:45am (SL104)

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## Office hours:

{Office hours subject to change, check web page}

## Required Material:

Harold McGee *On Food and Cooking: The Science and Lore of the Kitchen*  
New York, NY: Scribner, 1997. ISBN: 9780684800011.

## BCBT 100 – The Science of Cooking (3cr)

This course will look at cooking from a scientific perspective to understand the food we eat and enjoy. Cooking may be the oldest and most widespread application of science. Students will use principles of biochemistry with some chemistry and biology to analyze food and investigate how cooking works. Students will also do several edible experiments and look at the science behind how it all works. Each week a different food will be explored. Topics include, but are not limited to, what makes a good experiment, death by chocolate, cheese making, the joys of hot sauce and salsa food biochemistry, the science of spice, and what is taste? This course includes a lab component. Students are expected to conduct three food experiments independent of class time. Learn to be a better cook by understanding food at the molecular level. MnTC Goal 3.

## Course Student Learning Objectives:

Liberal Arts and Sciences Curriculum Goal 03 – Natural Science

1. Demonstrate understanding of scientific theories.
2. Formulate and test hypotheses by performing laboratory, simulation, or field experiments in at least two of the natural science disciplines. One of these experimental components should develop, in greater depth, students' laboratory experience in the collection of data, its statistical and graphical analysis, and an appreciation of its sources of error and uncertainty.
3. Evaluate societal issues from a natural science perspective, ask questions about the evidence presented, and make informed judgments about science-related topics and policies.

## Class Blog:

[scienceofcooking100.blogspot.com/](http://scienceofcooking100.blogspot.com/)

A class blog is being used for BCBT 100.

- All class announcements will be posted to the class blog
- Any questions that I receive via email will be answered to the blog and only to the blog.
- The blog permits anonymous comments. If you have questions about a day in class or a problem that is posted, you may respond/comment without your identity being revealed.

## Grading:

Grades will be based upon weekly quizzes, in-class points, D2L discussion participation, 5 lab experiments/observations, and 3 exams (150pts each).

Quizzes	100pts
In-class points	10 x 5pts = 50pts
D2L Discussions	5 x 10pts = 50pts
Labs	5 x 25pts = 125pts
Exams	3 x 150pts = 450pts
<u>Total Points</u>	<u>775pts</u>

Tentative grade assignments are: A = 90.00-100%, B = 80.00-89.99%, C = 70.00-79.99%, D = 60.00-69.99%. These cutoffs *may* be lowered at the instructors' discretion, but they will not be raised.

- The material on the quizzes and exams will be based upon class material, reading assignments and other online materials. Lab activities and assignments are a required part of the course. If at least 4 of the 5 assigned lab activities are not completed, your grade for the course will be "F" regardless of other assignments.
- Attendance is expected and there will be a sign-in sheet available every class meeting day. In-class points activities will randomly occur throughout the semester and cannot be made up. If you are not in class, you will not receive points.

- There will be 5 required D2L discussion boards that will include both a unique post *and* required responses to others' posts. That's a "discussion"! In addition to the required discussions, there is a discussion board set up for each of the labs to give everyone a place to chat about any questions or problems you might be having. The lab discussion boards are *not required*, they are there to help you. If you don't need help, please consider helping others. You are all part of the BCBT 100 community during this class, please participate.

**Academic Honesty:** Cheating will not be tolerated and will be reported to the Dean of your College, the Vice President for Academic Affairs, the MSUM Judicial Affairs Officer and the Student Conduct Committee for further disciplinary action. For a full description of the MSUM Academic Honesty Policy, please see the Student Handbook. {<http://www.mnstate.edu/sthandbook/POLICY/index.htm>} The penalty for academic dishonesty will be a grade of "F" for the course and will be fully enforced.

**Disability Access:** Minnesota State University Moorhead is committed to providing equitable access to learning opportunities for all students. The Disability Resource Center (DRC) is the campus office that collaborates with students who have disabilities to provide and/or arrange accommodations.

- If you have, or think you may have, a disability (e.g. mental health, attentional, learning, chronic health, sensory or physical) please contact the DRC at (218) 477-4318 (V) or (800)627.3529 (MRS/TTY) to schedule an appointment for an intake.
- Information regarding Disability Services is available at <http://web.mnstate.edu/disability/>

If you are registered with the DRC and have a current Accommodation Letter, please schedule an appointment to visit with me, during my office hours, to discuss implementation of your accommodations."

**Sexual Violence Prevention:** Acts of sexual violence are intolerable. MSUM expects all members of the campus community to act in a manner that does not infringe on the rights of others. We are committed to eliminating all acts of sexual violence.

MSUM faculty and staff are concerned about the well-being and development of our students. We are obligated to share information with the MSUM Title IX Coordinator in certain situations to help ensure that the students' safety and welfare is being addressed, consistent with the requirements of the law. These disclosures include but are not limited to reports of sexual assault, relationship violence, and stalking.

If you have experienced or know someone who has experienced sexual violence, services and resources are available. You may also choose to file a report. For further information, contact Lynn Peterson, Coordinator of Sexual Assault Services at Hendrix Clinic and Counseling Center, 218-477-2211, or Ashley Atteberry, Title IX Coordinator in Owens Hall 208 (218-477-2174; [ashley.atteberry@mnstate.edu](mailto:ashley.atteberry@mnstate.edu)). Additional information is available at: [www.mnstate.edu/titleix](http://www.mnstate.edu/titleix)

**Tentative Class Schedule:** (Check class website and blog for additional information and changes)

<b>Dates:</b>	<b>Topic:</b>	<b>Reading (from McGee unless otherwise noted):</b>
Aug 23	Introduction, How to Experiment	1-5, 811-818
Aug 25	Food Molecules	792-809
Aug 30	No class	
Sep 1	Food Molecules	792-809
Sep 6	Mass of a Candy – Group A, graphing	
Sep 8	Mass of a Candy – Group B, graphing	
Sep 13	Dairy	7-51
Sep 15	Dairy	7-51
Sep 20	Cheese	51-67
Sep 22	Cheese	51-67
Sep 27	Cheese	51-67
Sep 29	<b>Exam 1</b>	
Oct 4	Heat transfer	777-787
Oct 6	Cooking Reactions	777-787
Oct 11	Cooking Reactions	777-787
Oct 13	Eggs	68-117
Oct 18	Eggs	68-117
Oct 20	Plant-based food	243-384
Oct 25	Plant-based food	243-384
Oct 27	Plant-based food	243-384
Nov 1	Preservation	291-299
Nov 3	Herbs and Spices	385-450
Nov 8	Herbs and Spices	385-450
Nov 10	<b>Exam 2</b>	
Nov 15	Taste and Flavor perception	
Nov 17	Chocolate Tasting Lab (REQUIRED)	694-712
Nov 22	Grains, Doughs, and Breads	516-579
Nov 24	<i>No class – Thanksgiving Break</i>	
Nov 29	Grains, Doughs, and Breads	516-579
Dec 1	Bonus topic	
Dec 6	Last Class	
Dec 12	<b>Exam 3 – 11:30am</b>	