

FOOD SCIENCE 5500 – Measurement of Food Perception and Liking

SEMESTER: Fall 2017
TIME: Lecture: Monday and Wednesday 1:50-2:45
Lab: Wednesday 3:00-4:50
LOCATION: Lecture: 114 Parker Food Science Building
Lab: 136 Parker Food Science Building

INSTRUCTOR: Christopher T. Simons
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REQUIREMENTS Completed a Data Analysis course (Comldr 3537, AEDE 2005, AnSci 2260, HCS 2260, ENR 2000, Stat 1450; see FST degree requirements for more information). Proficiency in basic statistics and Excel (including data analysis and graphics) is highly recommended.

TEXTBOOKS: Lawless & Heymann. Sensory Evaluation of Food: Principles and Practices. Springer, 2010 (2ND Ed)
ISBN 978-1-4419-6487-8
e-Copy available through OSU library at
<http://ebooks.ohiolink.edu/xtf-ebc/view?docId=tei/sv/9781441964885/9781441964885.xml&query=&brand=default>

O'Mahony, M. Sensory Evaluation of Foods: Statistical Methods and Procedures. Marcel Dekker, Inc., 1986.
ISBN: 0-8247-7337-3

Course Description: This course explores the principles and procedures for accurately assessing the sensory and hedonic properties of foods and consumer products. Appropriate test design, statistical analyses and data interpretation will be discussed and the physiological and psychological principles impacting sensory judgments will be explored. Weekly laboratory classes focus on test design and execution, sample presentation, data recording, data analysis, interpretation of results, and report writing. Lecture 2 hours, laboratory 3 hours per week.

Goals of this course: Upon completion of this course, students should be

- 1) familiar with the methods used in the discrimination, descriptive analysis and consumer hedonic testing of food and consumer products.
- 2) able to formulate test objectives and recommend appropriate test methodology to address those objectives.
- 3) aware of and able to apply appropriate statistical analyses to sensory data.
- 4) able to draw conclusions and make recommendations about product characteristics.
- 5) cognizant of the physiological and psychological principles underlying sensory testing.
- 6) able to communicate findings effectively in both scientific and industrial settings.

Requirements: There are three tests (two midterms and a final) and twelve labs (9 are graded). You are required to turn in nine graded lab reports (described below). Lab write-ups are due the following week at the beginning of the next lab period. Late lab reports will be docked 10% per day from your given score and will not be accepted if more than 1 week late. Please do not send work by email or email attachments.

Labs

Attendance in the lab is mandatory as much of the learning for this course occurs through application of key concepts. If it is necessary for you to miss a lab, you have to contact me before that lab period. You will still be responsible for a lab report. If you fail to contact me prior to the lab, you will receive a zero on that report. There will be short writeups for most labs due as indicated in the schedule. Some consist of a formal scientific format (as if you were submitting to a journal), while others consist of an industrial report format (an example will be provided). Some just involve graphs, calculations and discussion questions. Specific handouts for each lab detailing the requirements for the write-up will be provided. *Please note—these laboratories require the evaluation and consumption of foods and beverages. If you have any food allergies, ethical issues or religious conflicts with eating certain foods, please let us know immediately and accommodations can be made. It will also be a good idea to remind us prior to each laboratory!*

Group Project

In March/April, a group project of the group's choice will begin. You will be responsible for scheduling lab time to conduct your sensory tests (including ballot development, training (if needed), data acquisition and analysis). A group report will be turned in at the end of the course and a group presentation will be given the last week of class. It is expected that each student will participate in the team's experiments as needed.

Grading

In this class you earn up to 265 points via the following cumulative grading system:

Midterm Exam 1	35	(ca. 13% of final grade)
Midterm Exam 2	35	(ca. 13% of final grade)
Final exam	35	(ca. 13% of final grade)
Lab Reports	90	(ca. 34% of final grade)
Group project presentation	35	(ca. 13% of final grade)
Group project written report	35	(ca. 13% of final grade)

Grading will be based on a curve, but the following scores are guaranteed.

90%	No less than a A-
80%	No less than a B-
70%	No less than a C-
60%	No less than a D-

Academic Misconduct

Academic misconduct is defined in the Code of the Student Conduct and the Rules of the University Faculty. For more information, see the following websites http://studentaffairs.osu.edu/info_for_students/csc.asp & <http://www.acs.ohio-state.edu/offices/oaa/procedures/1.0.html>. Suspected academic misconduct will be referred automatically to the Committee on Academic Misconduct as required by Faculty Rules.

Disability

Any student who feels s/he may need an accommodation based on the impact of a disability should contact me privately to discuss your specific needs. Please contact the Office for Disability Services at 614-292-3307 in room 150 Pomerene Hall to coordinate reasonable accommodations for students with documented disabilities.

Lecture Schedule

Week	Date	Topic	Lectures
1	8/23	Introduction and Overview	0
2	8/28	History of Sensory Evaluation, Use in Product Development; Sensory vs. Psychophysics; IRB-Human Rights	1
	8/30	Sensory Evaluation Best Practices	2

3	9/4	Labor Day	
	9/6	Statistics refresher	3
4	9/11	Food Perception—Vision & Audition	4
	9/13	Food Perception—Taste & Smell	5
5	9/18	Food Perception—Somatosensation (touch, temperature & chemesthesis)	6
	9/20	Difference Testing—Directional & Non-directional	7
6	9/25	Ranking, Difference Testing vs Equivalence Testing	8
	9/27	Signal Detection	9
7	10/2	Threshold	10
	10/4	Midterm 1	
8	10/9	Scales & Ratings	11
	10/11	Context Effects	12
9	10/16	Time Intensity and TDS	13
	10/18	Descriptive Analysis: Uses, Key Steps, Consensus Panels	14
10	10/23	Descriptive Analysis: Spectrum Method & QDA	15
	10/25	Descriptive Analysis: QDA	16
11	10/30	Preference & Acceptance Testing	17
	11/1	JAR testing; Potential Pitfalls of Current Methods	18
12	11/6	Descriptive Analysis: Group Project Preparation	19
	11/8	Project Work	
13	11/13	Sensory Evaluation in Quality Control and Shelf Life Testing	20
	11/15	Midterm	
14	11/20	Project Statistics Overview	21
	11/22	Thanksgiving	
15	11/27	Product Optimization: Drivers of Liking	22
	11/29	Project Work	
16	12/4	Project Presentations	

	12/6	Finals Review	
	12/12 (Thur)	Final: 2:00pm-3:45pm	

Lab Schedule

Unit	Date	Lab Title	Report Due Date
Lab 1	9/6	Statistics Lab	
Lab 2	9/13	Screening Tests and Sensory Acuity	
Lab 3	9/20	Comparison of Discrimination Tests	
Lab 4	9/27	Signal Detection	
Lab 5	10/4	Threshold Determination	
Lab 6	10/11	Comparison of Scales	
Lab 7	10/18	Time Intensity	
Lab 8	10/25	Consensus Profiling	
Lab 9	11/1	Preference & Acceptance	
FP 1	11/8	Final Project: Protocol Development	
FP 2	11/15	Final Project: Data Collection Week	
	11/22	Thanksgiving Break (No Lab)	
FP 3	11/29	Final Project: Work on projects	
		Project presentation and final reports due December 4	