

Flavor Chemistry (FDSCTE 7670)

Department	Food Science & Technology
Course Title	Flavor Chemistry
Credit	G – 2
Semester	Spring
Course Level	Graduate
Contact hours	4 lecture hours per week
Instructor	Devin Peterson

Course description:

This course will be offered as a 7-week graduate-level course in the second session of Spring semester. It will provide the students with an understanding of the chemical stimuli involved in flavor perception, analytical approaches to characterize flavor stimuli, mechanisms of flavor formation, flavor-ingredient interactions, mechanisms of flavor release and industrial methods of flavor production.

Starting year: Spring 2017

Learning objectives and outcomes:

- Understand mechanisms of flavor perception
- Be familiar with analytical methods of flavor analysis
- Understand non-enzymatic mechanisms of flavor formation
- Explain metabolic routes leading to flavor formation in plants
- Recognize off-flavor defects in foods and strategies of identification.
- Describe manufacturing procedures used to produce the common food flavoring materials
- Understand mechanisms of flavor release
- Be familiar with analytical methods of policing flavor adulteration

Course Syllabus:

Week 1:

- Introduction to the flavor industry
- Flavor Definitions and Perception

Week 2

- Instrumental Analysis of Flavor

Week 3

- Non-enzymatic methods of flavor formation
- Lipid Oxidation methods of flavor formation

Week 4

- Enzymatic methods of flavor formation.
- Objectionable flavor in foods and methods of detection

Week 5

- Mechanism of flavor-food interactions
- Flavor release on flavor perception

Week 6

- Flavoring Materials
- Monitoring Adulteration of Flavors

Week 7

- Presentations of group projects

References:

Text: Flavor Chemistry and Technology, 2006. G. Reineccius. Taylor and Francis, Boca Raton, FL

Grading:

Midterm	30%
Paper Review	20%
Final	50%

GRADING SCALE:

A	A-	B+	B	B-	C+	C	C-
94-100	90-93	88-92	83-87	78-82	73-77	68-72	60-67

* The two exams will cover lectures and the numerical scale given here will be the guideline for assigning final grades in this course.

Paper Review: Each group will select a paper from the literature (published after 2010) to review and present to the class; articles must be approved by the instructor. You will give a critically review a selected manuscript in the flavor area. Each group will turn in a summary of the paper review and the PowerPoint presentation deck.

The following points should be covered:

1. Review these three sections (Introduction, M&M, Results and Discussion)
 - a. Describe research goals
 - b. Literature cited
 - c. Methods used
 - d. Results and significant contributions

Suggested Points of Discussion:

- Did they adequately discuss the literature (current references?)
- Did they use a good experimental design to meet the objectives? If not what should they have done.
- How did they report their results? Would there be a better way? Can others use their data?
- Did they have an adequate discussion of the importance of the results, i.e. is there anything important to learn from the study that they said or that you have found

Academic Misconduct:

No form of academic misconduct will be tolerated. Academic honesty requires that each student complete all assignments and related work on an independent basis. All suspected cases will be handled according to OSU procedures via the Committee on Academic Misconduct. The term "academic misconduct" includes all forms of student academic misconduct wherever committed; illustrated by, but not limited to, cases of plagiarism and dishonest practices in connection with examinations. Instructors shall report all instances of alleged academic misconduct to the committee (Faculty Rule 3335-5-487).

For additional information, see the Code of Student Conduct (http://studentaffairs.osu.edu/info_for_students/csc.asp)

Students with disabilities:

Any student who may need an accommodation based on the impact of a disability should contact the course instructor to discuss specific needs. The Office for Disability Services assists faculty in verifying the need for accommodations and developing accommodation strategies. If you have not done so, you are encouraged to contact the Office for Disability Services at 614-292-3307 in room 150 Pomerene Hall to register your disability.