

# Cover Sheet: Request 12138

FOS4XXX

## Info

Process	Course New Ugrad/Pro
Status	Pending at PV - University Curriculum Committee (UCC)
Submitter	Paul Sarnoski psarnoski@ufl.edu
Created	11/30/2017 11:31:17 AM
Updated	2/23/2018 12:19:54 PM
Description of request	New undergraduate course request.

## Actions

Step	Status	Group	User	Comment	Updated
Department	Approved	CALS - Food Science and Human Nutrition 514915000	Susan Percival		12/14/2017
No document changes					
College	Approved	CALS - College of Agricultural and Life Sciences	Joel H Brendemuhl	Corrections and revisions requested by the CALS CC (1/12/18) have been addressed.	2/23/2018
Flavor Chemistry 2018 Syllabus2.docx					
University Curriculum Committee	Pending	PV - University Curriculum Committee (UCC)			2/23/2018
No document changes					
Statewide Course Numbering System					
No document changes					
Office of the Registrar					
No document changes					
Student Academic Support System					
No document changes					
Catalog					
No document changes					
College Notified					
No document changes					

# Course|New for request 12138

## Info

**Request:** FOS4XXX

**Description of request:** New undergraduate course request.

**Submitter:** Joel H Brendemuhl brendj@ufl.edu

**Created:** 2/23/2018 12:18:06 PM

**Form version:** 2

## Responses

**Recommended Prefix** FOS

**Course Level** 4

**Number** XXX

**Category of Instruction** Advanced

**Lab Code** None

**Course Title** Flavor Chemistry

**Transcript Title** Flavor Chemistry

**Degree Type** Baccalaureate

**Delivery Method(s)** On-Campus

**Co-Listing** No

**Co-Listing Explanation** The course is not planned to be co-listed.

**Effective Term** Fall

**Effective Year** 2018

**Rotating Topic?** No

**Repeatable Credit?** No

**Amount of Credit** 3

**S/U Only?** No

**Contact Type** Regularly Scheduled

**Weekly Contact Hours** 3

**Course Description** Students taking this class will learn how flavor chemicals impact sensory perception of food. We will also discuss flavor compounds used in foods, their production, isolation, analysis, and specific attributes.

**Prerequisites** (CHM2045(C) & CHM2046(C)) & CHM2200(C) or (CHM2210(C) & CHM2211(C))

**Co-requisites** None

**Rationale and Placement in Curriculum** Flavor Chemistry is discipline within the broader fields of Food Chemistry and Food Science. This course is often offered at land grant institutions that offer Food Science as a degree option. Therefore this course should be taught in the Food Science and Human Nutrition department at UF. The course will prepare students to work in the Flavor and Fragrance Industry.

**Course Objectives** LO 1. Differentiate different classes of flavor compounds, their flavors, sources and interactions in foods.

LO 2. Classify different methods of flavor trapping, isolation and application.

LO 3. Communicate different methods of analysis for identification of flavor compounds and compare their applications, advantages and disadvantages.

**Course Textbook(s) and/or Other Assigned Reading** Food Flavour Technology, 2nd Edition. 2010. Andrew Taylor & Robert Linforth Eds., Wiley-Blackwell. ISBN 9781405185431

**Weekly Schedule of Topics** Course Schedule

Week Topic

1 (8/19) Class Introduction. What is Flavor?

2 (8/26) What is Flavor? Flavor Impact Compounds, and Special Considerations During Flavor Creation

3 (9/2) What is Flavor (continued)

4 (9/9) Flavor Analysis – Isolation

5 (9/16) Flavor Analysis – Isolation/Identification  
6 (9/23) Flavor Analysis - Identification  
7 (9/30) The Role of Sensory in Flavor Analysis  
8 (10/7) Sensory (continued)  
Exam 1 (10/3/18 tentative)  
9 (10/14) Flavor Biotechnology (Biocatalysis, Fermentation, Regulatory Aspects)  
10 (10/21) Flavor Biotech (continued)  
11 (10/28) Dairy Flavors  
12 (11/4) Dairy Flavors/Survey of World Cheeses  
13 (11/11) Reaction Flavors  
14 (11/18) Plant Flavors (Fruit and Vegetable Flavor)  
15 (11/25) Plant Flavors (Fruit and Vegetable Flavor) (continued)  
16 (12/2) Flavor Release (if time permits)  
Finals Cumulative Take Home Exam

**Links and Policies** The grading scale is consistent with the university policies on grading that can be found at: <https://catalog.ufl.edu/ugrad/current/regulations/info/grades.aspx>

#### Make up Exam Policy/Late Assignments

Requirements for class attendance and make-up exams, assignments, and other work are consistent with university policies that can be found at:

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#### Online Course Evaluation Process

Student assessment of instruction is an important part of efforts to improve teaching and learning. At the end of the semester, students are expected to provide feedback on the quality of instruction in this course using a standard set of university and college criteria. These evaluations are conducted online at <https://evaluations.ufl.edu>. Evaluations are typically open for students to complete during the last two or three weeks of the semester; students will be notified of the specific times when they are open. Summary results of these assessments are available to students at <https://evaluations.ufl.edu/results>.

#### Academic Honesty

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It is assumed that you will complete all work independently in each course unless the instructor provides explicit permission for you to collaborate on course tasks (e.g. assignments, papers, quizzes, exams). Furthermore, as part of your obligation to uphold the Honor Code, you should report any condition that facilitates academic misconduct to appropriate personnel. It is your individual responsibility to know and comply with all university policies and procedures regarding academic integrity and the Student Honor Code. Violations of the Honor Code at the University of Florida will not be tolerated. Violations will be reported to the Dean of Students Office for consideration of disciplinary action. For more information regarding the Student Honor Code, please see: <http://www.dso.ufl.edu/sccr/process/student-conduct-honor-code>.

#### Software Use:

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#### Campus Helping Resources

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Self-Help Library  
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- Career Resource Center, First Floor JWRU, 392-1601, [www.crc.ufl.edu/](http://www.crc.ufl.edu/)

#### Services for Students with Disabilities

The Disability Resource Center coordinates the needed accommodations of students with disabilities. This includes registering disabilities, recommending academic accommodations within the classroom, accessing special adaptive computer equipment, providing interpretation services and mediating faculty-student disability related issues. Students requesting classroom accommodation must first register with the Dean of Students Office. The Dean of Students Office will provide documentation to the student who must then provide this documentation to the Instructor when requesting accommodation.

0001 Reid Hall, 352-392-8565, [www.dso.ufl.edu/drc/](http://www.dso.ufl.edu/drc/)

#### Student Complaints:

- Residential Course: [https://www.dso.ufl.edu/documents/UF\\_Complaints\\_policy.pdf](https://www.dso.ufl.edu/documents/UF_Complaints_policy.pdf)

#### **Grading Scheme** Exams (2) - 100 pts

Homework/Reports - 200 pts; Reports are due 7 days after conducting the experiment. Four homeworks and five in-class experiments will be conducted over the course of the semester. The homeworks consist of problem solving related to topics covered in class. Reports should include a description of the experiment performed, results, and discussion of the results. See the course schedule for a list of topics.

Final Exam – Cumulative Take Home Exam – 100 pts

Total: 500

#### Grading Scale

90-100% A

70-74.9% C

88-89.9% A-

68-69.9% C-

85-87.9% B+

65-67.9% D+

80-84.9% B

60-64.9% D

78-79.9% B-

58-59.9% D-

75-77.9% C+ Below 58% E

**Instructor(s)** Paul J. Sarnoski

## FOS 4XXX - FLAVOR CHEMISTRY

Credits: 3

Offered Fall Semester of even years.

Class Meeting Times:

Monday Period 6

Wednesday Periods 6 & 7

### **Instructor:**

Paul J. Sarnoski

Food Science and Human Nutrition Building (Rm 349)

Phone: 352-294-3732

EMAIL: [psarnoski@ufl.edu](mailto:psarnoski@ufl.edu)

### **Office Hours**

By appointment

### **Course Description**

Students taking this class will learn how flavor chemicals impact sensory perception of food. We will also discuss flavor compounds used in foods, their production, isolation, analysis, and specific attributes.

### **Learning Objectives**

LO 1. Differentiate different classes of flavor compounds, their flavors, sources and interactions in foods.

LO 2. Classify different methods of flavor trapping, isolation and application.

LO 3. Communicate different methods of analysis for identification of flavor compounds and compare their applications, advantages and disadvantages.

### **Course Prerequisites**

General Chemistry: CHM 2045, CHM 2046 sequence (with labs): Need to meet a minimum C requirement for the courses specified or equivalent courses.

Organic Chemistry: CHM 2200 or CHM 2210, CHM 2211 sequence (with labs): Need to meet a minimum C requirement for the courses specified or equivalent courses.

FOS 4311 (Food Chemistry) and FOS 4321C (Food Analysis) are strongly recommended but not required

### **Course Outcomes**

Students will be able to identify the role of flavor molecules in food, from both a sensory and food quality perspective. This will involve being able to identify the chemical structures of flavor compounds, and how those chemicals are produced from a synthetic or biological perspective. Themes will include the use of analytical chemistry to identify flavor compounds. Impacts of processing, packaging, and storage on flavor quality and stability will be covered.

## Grading Scheme

Exams (2) - 100 pts each

Homework/Reports - 200 pts;

*Reports are due 7 days after conducting the experiment. Four homeworks and five in-class experiments will be conducted over the course of the semester. The homeworks consist of problem solving related to topics covered in class. Reports should include a description of the experiment performed, results, and discussion of the results. See the course schedule for a list of topics.*

Final Exam – Cumulative Take Home Exam – 100 pts

**Total: 500**

## Grading Scale

90-100%	<b>A</b>	70-74.9%	<b>C</b>
88-89.9%	<b>A-</b>	68-69.9%	<b>C-</b>
85-87.9%	<b>B+</b>	65-67.9%	<b>D+</b>
80-84.9%	<b>B</b>	60-64.9%	<b>D</b>
78-79.9%	<b>B-</b>	58-59.9%	<b>D-</b>
75-77.9%	<b>C+</b>	Below 58%	<b>E</b>

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## E-Learning (Canvas)

An E-Learning course site has been developed for this course. Lecture slides, readings, homeworks, report instructions, and due dates are posted there. Make sure to check the course site regularly.

## Required Text

*Food Flavour Technology*, 2<sup>nd</sup> Edition. 2010. Andrew Taylor & Robert Linforth Eds., Wiley-Blackwell. ISBN 9781405185431 (Ebook is available by link through E-learning)

## Recommended Supplemental Reading

*Flavor Chemistry and Technology*, 2<sup>nd</sup> Edition. 2006. Gary Reineccius. CRC Press. ISBN 1566769337

*Fennema's Food Chemistry*, 2007. 4<sup>th</sup> Edition, S. Damodaran, K. Parkin, O. Fennema Eds. CRC Press.

## Attendance and Make-Up Work

This class will not be a strict lecture format. Everyone is expected to contribute to the discussion of the material, conduct experiments, and attend class. We will be performing in-class experimental work (sensory analysis, flavor replication, etc.) on a semi weekly basis.

## Make up Exam Policy/Late Assignments

Requirements for class attendance and make-up exams, assignments, and other work are consistent with university policies that can be found at:

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## Course Schedule

Week	Topic	Readings	Critical Dates
1 (8/19)	Class Introduction. What is Flavor?	Ch. 1 & 2	
2 (8/26)	What is Flavor? Flavor Impact Compounds, and Special Considerations During Flavor Creation	Ch. 1 & 2	
3 (9/2)	What is Flavor (continued) ( <u>No class 9/3</u> )	Ch. 1 & 2	Vanilla Flavored Soymilk Replication Report Due
4 (9/9)	Flavor Analysis – Isolation	Ch. 9	HW 1 Due
5 (9/16)	Flavor Analysis – Isolation/Identification	Ch. 9	
6 (9/23)	Flavor Analysis - Identification	Ch. 9	HW 2 Due
7 (9/30)	The Role of Sensory in Flavor Analysis	Ch. 11	Time-Intensity Analysis; HW 3 Due
8 (10/7)	Sensory (continued)	Ch. 11	<b>Exam 1 (10/3/18 tentative)</b>
9 (10/14)	Flavor Biotechnology (Biocatalysis, Fermentation, Regulatory Aspects)	Ch. 4	
10 (10/21)	Flavor Biotech (continued)	Ch. 4	Fermentation and Flavor Production Report Due
11 (10/28)	Dairy Flavors	Ch. 5	
12 (11/4)	Dairy Flavors/Survey of World Cheeses	Ch. 5	Cheese Descriptive Analysis Report Due
13 (11/11)	Reaction Flavors – ( <u>No class 11/12</u> )	Ch. 3	
14 (11/18)	Plant Flavors (Fruit and Vegetable Flavor) – ( <u>No class 11/23</u> )	Ch. 4 & 5	Make Your Own Aroma Report Due
15 (11/25)	Plant Flavors (Fruit and Vegetable Flavor) (continued)	Ch. 4 & 5	HW 4 Due
16 (12/2)	Flavor Release (if time permits)	Ch. 8	<b>Exam 2 (12/5/18)</b>
Finals	Cumulative Take Home Exam		

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