Texas A&M University
Departmental Request for a New Course
Undergraduate • Graduate • Professional

Submit original form and attach a course syllabus.

1. This request is submitted by the Department of Nutrition and Food Science

2. Course prefix, number and complete title of course: FSTC 687 - Sensory Evaluation of Foods

3. Catalog Course description (not to exceed 50 words): Application of sensory and science principles and practices to food systems including an understanding of discriminative, descriptive, and consumer sensory techniques.

4. Prerequisite(s): CHEM 222 or 228

Cross-listed with: ANSC 687

5. Is this a variable credit course? ☒ Yes ☐ No If yes, from _______ to _______

6. Is this a repeatable course? ☐ Yes ☒ No If yes, this course may be taken _______ times.

Will this course be repeated within the same semester? ☐ Yes ☒ No

7. Has this course been taught as a 489/689? ☒ Yes ☐ No If yes, how many times? _______

Indicate the number of students enrolled for each academic period it was taught. 05A - 8; 07A - 4

8. This course will be:
   a. required for students enrolled in the following degree program(s) (e.g., B.A. in history)
   b. an elective for students enrolled in the following degree program(s) (e.g., M.S., Ph.D. in geography)

   M.S., Ph.D. in Animal Science, Dairy Science

9. If other departments are teaching or are responsible for related subject matter, the course must be coordinated with these departments. Attach approval letters.

10. Prefix Course # Title (excluding punctuation)
    F  S  T  C  6  8  7  S  E  N  S  O  R  Y  E  V  A  L  O  F  F  O  D  S
    Lect. Lab SCH CIP and Fund Code Admin. Unit Acad. Year FICE Code
    0  2  0  2  0  3  0  1  0  9  0  1  0  0  0  5  0  2  7  0  0  9 - 1  0  0  0  3  6  3  2

Approval recommended by:

Department Head - Type Name & Sign Date

Chair, College Review Committee Date

Dean of College Date

(If cross-listed course)

Submitted to Coordinating Board by:

Dean of College Date

Effective Date

Questions regarding this form should be directed to Sandra Williams at 845-8201 or sandra-williams@tamu.edu. Curricular Services – 12/08

1 of 17 B2
SYLLABUS
SENSORY EVALUATION OF FOODS OF ANIMAL ORIGIN
FSTC 687 - ANSC 487/687

Lecture 2 hours per week and Lab 2 hours per week: 1:50 to 3:50 MW Room 300 Kleberg

COURSE DESCRIPTION

Sensory Evaluation of Foods. (2-2). Credit 3. Application of sensory science principles and practices to food systems including an understanding of discriminative, descriptive and consumer sensory techniques. Prerequisites: CHEM 222 or 228, Junior, Senior or Graduate Classification.

OBJECTIVES

Students will be able to:

1. Understand environmental, psychological and physiological factors that affect sensory verdicts
2. Understand the basic sensory principles for conducting discriminative, descriptive and consumer sensory tests and to be able to apply these principles to food products.
3. Understand how to manage, enter, analyze, and interpret sensory data.
4. Present sensory results in written and oral communication forms based on the results of data analyses.

LECTURER
Dr. Rhonda K. Miller
Room 310 Kleberg Center
rmiller@tamu.edu
845-3901 Office
690-6138 Home
218-8642 Cell
TEXT BOOKS and REFERENCE MATERIALS

REQUIRED:


SUGGESTED:


SCIENTIFIC JOURNALS

Journal of Food Science - Institute of Food Technologists (IFT)
Food Technology - IFT
Journal of Sensory Studies
Journal of Animal Science - American Society of Animal Science
Meat Science
Journal of Food Protection
Journal of Food Quality
Journal of Food Biochemistry
Journal of Food Texture
Journal of Food Technology
Journal of Science, Food and Agriculture
SOCIETIES
American Society of Testing Materials - ASTM - Subcommittee E-18
Institute of Food Technologists, Sensory Section
American Meat Science Association

AMERICANS WITH DISABILITIES ACT (ADA) POLICY STATEMENT
The Americans with Disabilities Act (ADA) is a federal anti-discrimination statute that provides comprehensive civil rights protection for persons with disabilities. Among other things, this legislation requires that all students with disabilities be guaranteed a learning environment that provides reasonable accommodation of their disabilities. If you believe you have a disability requiring an accommodation, please contact the Department of Student Life, Services for Students with Disabilities in Room B118 of Cain Hall or call 845-1637.

ACADEMIC INTEGRITY AND HONESTY
It is the personal responsibility of each student to maintain the highest level of scholastic integrity at the university by refusing to participate in or tolerate any form of scholastic dishonesty. Additional information may be obtained from the Student Handbook or at the Handbook website http://www.tamu.edu/aggiehonor/philosophy.php

Upon accepting admission to Texas A&M University, a student immediately assumes a commitment to uphold the Honor Code, to accept responsibility for learning and to follow the philosophy and rules of the Honor System. Students will be required to state their commitment on examinations, research papers, and other academic work. Ignorance of the rules does not exclude any member of the Texas A&M University community from the requirements or the processes of the Honor System. For additional information, please visit: www.tamu.edu/aggiehonor/.
AGGIE HONOR CODE

“An aggie does not lie, cheat or steal or tolerate those who do.”

On all course work assignments, and examinations at Texas A&M University, the following Honor Pledge shall be preprinted and signed by the student:

“On my honor, as an Aggie, I have neither given nor received unauthorized aid on this academic work.”

PLAGIARISM
As commonly defined, plagiarism consists of passing off as one's own the ideas, words, writings, etc., which belong to another. In accordance with this definition, you are committing plagiarism if you copy the work of another person and turn it in as your own, even if you should have the permission of that person. Plagiarism is one of the worst academic sins, for the plagiarist destroys the trust among colleagues without which research cannot be safely communicated.

COPYRIGHT
The handouts used in this course may be copyrighted materials. "Handouts" refers to all materials generated for this class, which includes but are not limited to syllabi, in-class materials, and handouts. Because these materials may be copyrighted, you do not have the right to copy the handouts, unless permission is expressly granted.

ATTENDANCE POLICY AND MAKE-UP EXAMS
Regular attendance is expected of all students. Anticipated absences should be cleared with the instructor prior to the absence. Refer to Student Rules at: http://student-rules.tamu.edu. Make-up exams and work will be allowed only under extenuating circumstances for which written excuses are provided. If problems arise, please do not hesitate to contact the instructor.

AUDIT POLICY
Regular attendance is expected along with participation in lecture and laboratory sections. Exams must be taken.

OFFICE HOURS
Students are encouraged to see the instructor for individual conferences as needed. DO NOT be reluctant to schedule a conference. Defined office hours are
not maintained by the instructor; however, the door is always open to students when the instructor is in the office. If you cannot contact the instructor during non-class hours, please leave a message with Ms. Veronica Rosas, the secretary in 310 Kleberg, for the Instructor. Remember, it is your right as a student in this class to have conferences with the instructor when needed, do not hesitate to use this right.

EXAMINATIONS AND GRADING

<table>
<thead>
<tr>
<th>Test Description</th>
<th>Points</th>
</tr>
</thead>
<tbody>
<tr>
<td>Quiz Environmental Testing and Controls</td>
<td>60</td>
</tr>
<tr>
<td>Discriminative Written Report</td>
<td>70</td>
</tr>
<tr>
<td>Discriminative Oral Report</td>
<td>70</td>
</tr>
<tr>
<td>Discriminative Quiz</td>
<td>30</td>
</tr>
<tr>
<td>Discriminative Participation points</td>
<td>30</td>
</tr>
<tr>
<td>Discriminative Written Report</td>
<td>70</td>
</tr>
<tr>
<td>Discriminative Oral Report</td>
<td>70</td>
</tr>
<tr>
<td>Descriptive Quiz</td>
<td>30</td>
</tr>
<tr>
<td>Descriptive Participation points</td>
<td>30</td>
</tr>
<tr>
<td>Consumer Written Report</td>
<td>70</td>
</tr>
<tr>
<td>Consumer Oral Report</td>
<td>70</td>
</tr>
<tr>
<td>Consumer Quiz</td>
<td>30</td>
</tr>
<tr>
<td>Consumer Participation points</td>
<td>30</td>
</tr>
<tr>
<td>Final Exam</td>
<td>100</td>
</tr>
<tr>
<td>Total Points</td>
<td>760</td>
</tr>
</tbody>
</table>

GRADING SYSTEM:

A = 90-100
B = 80-89
C = 70-79
D = 60-69
F = <60

Student Requirements and Graduate Student Requirements

Students will be segmented into groups based on comparable classification and food emphasis. For example, a graduate student will be assigned to each group and will have responsibility for data analyses and interpretation. Each group will be assigned a sensory problem so that groups will be addressing sensory problems across food categories. Each group will independently conduct sensory evaluation
for their food using the appropriate tests. Groups will be changed for each of the three sensory testing projects to strengthen student's ability to work in a group.

Data entry will be conducted in a MicroSoft Excel Worksheet and data will be analyzed using SAS. The data analyses portion of the class will be conducted with assistance from the instructor. The interpretation of the analyses will be the responsibility of the students within the groups. Graduate students will be selected as leaders within each group and should lead data entry, analyses, and interpretation.

The written report will consist of up to 10 or 15 double-spaced, type-written pages (8x11 size paper) that will consist of Introduction, Materials and Methods, Results, and Conclusion sections written by the group. Additional tables and figures can be used to present data. See attached guidelines for each section.

The oral presentation will consist of presenting the written report orally by the group. Oral presentations will consist of a presentation segment, 15 to 20 minutes, and a question and answer section. Oral presentations will be given using MicroSoft PowerPoint. A projector and computer will be supplied for presenting. See attached guidelines.

Quizzes will be over assigned reading. For each of the four quizzes, chapters in the text have been assigned. At the beginning of the defined class period, a quiz over the material presented in the text book will be given. The instructors lectures and the text book have been coordinated, but information in the text book is to supplement lectures. Questions on quizzes may or may not have been presented in the classroom lectures.

Participation points will be assigned by each member of a group for all members of the group individually. A total of 30 points are possible for participation. An individuals participation points will be based on the average of the other members of the group using the form attached.
<table>
<thead>
<tr>
<th>DATE</th>
<th>TOPIC</th>
</tr>
</thead>
<tbody>
<tr>
<td>1-21</td>
<td>Introduction - Overview of Class and Description of Projects</td>
</tr>
<tr>
<td></td>
<td>Environmental and Testing Environmental Controls</td>
</tr>
<tr>
<td>1-26</td>
<td>Testing Room Conditions and Environmental Influences on Sensory</td>
</tr>
<tr>
<td></td>
<td>Verdicts</td>
</tr>
<tr>
<td></td>
<td><strong>Assigned Reading</strong> - Chapters 2 and 3 (pgs. 7 to 38)</td>
</tr>
<tr>
<td>1-28</td>
<td>Psychological and Physiological Factors Influencing Sensory Verdicts</td>
</tr>
<tr>
<td></td>
<td><strong>Assigned Reading</strong> - Chapter 3 (pgs. 39 to 43)</td>
</tr>
<tr>
<td>2-2</td>
<td>Quiz on Environmental and Testing Controls - Chapters 2 and 3</td>
</tr>
<tr>
<td></td>
<td>Trained versus Consumer Panelists</td>
</tr>
<tr>
<td></td>
<td>Basic Discriminative Sensory Tools</td>
</tr>
<tr>
<td></td>
<td><strong>Assigned Reading</strong> - Chapter 6 (pgs. 63 to 104)</td>
</tr>
<tr>
<td>2-4</td>
<td>Selection of Discriminative Experiment and Overview of Testing</td>
</tr>
<tr>
<td></td>
<td>Requirements</td>
</tr>
<tr>
<td></td>
<td><strong>Assigned Reading</strong> - Chapters 7 (pgs 105 to 128)</td>
</tr>
<tr>
<td>2-9</td>
<td>Quiz on Discriminative Testing - Chapters 6 and 7</td>
</tr>
<tr>
<td>2-11</td>
<td>Conduct Discriminative Experiment</td>
</tr>
<tr>
<td>2-16</td>
<td>Enter Data and Analyze Data; Begin Report Writing</td>
</tr>
<tr>
<td>2-18</td>
<td>Report Writing of Experiment and Development of Oral Presentation</td>
</tr>
<tr>
<td>2-23</td>
<td><strong>Discriminative Testing Report and Presentations</strong></td>
</tr>
<tr>
<td></td>
<td>Descriptive Testing</td>
</tr>
<tr>
<td>2-25</td>
<td>Descriptive Sensory Techniques</td>
</tr>
<tr>
<td></td>
<td><strong>Assigned Reading</strong> - Chapters 9, 10 and and 11 (pgs. 141 to 253)</td>
</tr>
<tr>
<td>3-2</td>
<td>Selection and Training of Descriptive Sensory Panelists; Schedule</td>
</tr>
<tr>
<td></td>
<td>training sessions for Descriptive panelists - 4 minimum sessions</td>
</tr>
<tr>
<td>3-4</td>
<td>Experimental Design Issues and Data Analyses - Chapter 13 (pgs 313 to</td>
</tr>
<tr>
<td></td>
<td>355</td>
</tr>
<tr>
<td>3-9</td>
<td>Selection of Discriminative Experiment and Overview of Testing</td>
</tr>
<tr>
<td></td>
<td>Requirements</td>
</tr>
<tr>
<td>3-11</td>
<td>Quiz on Descriptive Testing - Chapters 9, 10 and 11</td>
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<tr>
<td>3-25</td>
<td>Report Writing of Experiment and Development of Oral Presentation</td>
</tr>
<tr>
<td>3-30</td>
<td><strong>Descriptive Testing Report and Presentations</strong></td>
</tr>
</tbody>
</table>
Consumer Evaluation

4-1 Consumer Sensory Techniques

**Assigned Reading** - Chapter 12 (pgs. 255 to 309)

4-6 Selection on Consumer Panelists and Experimental Design Issues

4-8 Ballot Development

4-13 Selection of Consumer Experiment and Overview of Ballot Development

4-15 Quiz on Consumer Testing - Chapter 12

Set Up for Consumer Testing and Testing

4-20 Data Entry and Analyses; Begin Report Writing

4-22 Report Writing of Experiment and Development of Oral Presentation

4-27 Consumer Testing Report and Presentation

4-29 Multivariate Techniques Used in Sensory Analyses - Chapter 14

(rgs 357 to 404)

5-4 Preference Mapping, Course Overview and Summary

5-12 3:30 to 5:30 **Final Exam**
I. OUTLINE FOR WRITTEN REPORT - 70 POINTS

The written report will consist of up to 10 double-spaced, type-written pages (8x11 size paper) which should follow the following outline.

A. TITLE OF PROJECT
   PROJECT LEADERS

B. STATE HYPOTHESIS
   DEFINE PROBLEM - JUSTIFICATION
   Write why you are doing the project, what you are testing, etc. This does not have to be long, just concise and to the point.

C. PROJECT OBJECTIVES

D. EXPERIMENTAL DESIGN
   1. PROJECT PROTOCOL - This should include the samples that you used, where they were obtained, how they were stored, how they were prepared prior to presentation to the panelists, and any other information that would allow someone else to repeat the experiment.
   2. SENSORY TECHNIQUES - Define the details of how you conducted your experiment. Remember that you are to
   3. STATISTICAL DESIGN - Define how you analyzed your data. For discriminative tests you need to include the number of correct responses and the total number or any other pertinent data.

E. RESULTS AND DISCUSSION - Provide tables or figures of your results and define what you found out.

F. CONCLUSION AND RECOMMENDATION - What do you recommend! Accept or reject your hypothesis.
E. REFERENCES

F. ADDITIONAL INFORMATION - Include ballot, randomization scheme, any other materials that are pertinent to the study and would allow you to repeat the study (i.e., reference standardized use in training, scales developed with standards)

II. GUIDELINES FOR ORAL PRESENTATION - 70 POINTS

Feel free to use overheads or other visual aids as needed throughout presentation, but visual aids are not required.

The oral presentation will consist of presenting the written report orally by all students in the group so divide up the sections for presentation. The oral presentation should follow the same outline as for the written presentation.

It might be nice to have examples of the products that you evaluated.

Remember that this is to be similar to if you have to present the results of a sensory experiment within a company.

Oral presentations will consist of up to 15 minutes and will include a question and answer section.
Group Written Reports
Descriptive Tests

I. OUTLINE FOR WRITTEN REPORT - 70 POINTS

The written report will consist of up to 15 double-spaced, type-written pages (8x11 size paper) which should follow the following outline.

A. TITLE OF PROJECT
PROJECT LEADERS

B. STATE HYPOTHESIS

DEFINE PROBLEM - JUSTIFICATION
Write why you are doing the project, what you are testing, etc. This does not have to be long, just concise and to the point.

C. PROJECT OBJECTIVES

D. EXPERIMENTAL DESIGN

1. PROJECT PROTOCOL - This should include the samples that you used, where they were obtained, how they were stored, how they were prepared prior to presentation to the panelists, and any other information that would allow someone else to repeat the experiment.

2. SENSORY TECHNIQUES - Define the details of how you conducted your experiment. Remember that you are to writing this so that the study can be repeated. This section has to contain panel training session information - best if presented in a table with the objective/goal of the session and a listing of examples presented and an explanation of what was to be accomplished by the examples. Also include if comments on the effectiveness of each example.

   This section has to include all of the information for meeting JFS sensory guidelines - included. This is the information that should be included in every manuscript that you publish using sensory.

3. STATISTICAL DESIGN - Define how you analyzed your data. You
need to include the analysis of variance table. Include a discussion of how you tested for panelist effects. Then discuss the final analysis of your data. You need to define blocks, covariates, main effects, interactions and random effects. Also include mean method used for reporting data and mean separation tests used. Significance levels should be defined.

E. RESULTS AND DISCUSSION - Provide tables or figures of your results and define what you found out.

F. CONCLUSION AND RECOMMENDATION - What do you recommend! Accept or reject your hypothesis.

E. REFERENCES - only if needed

F. ADDITIONAL INFORMATION - Include ballot, randomization scheme, any other materials that are pertinent to the study and would allow you to repeat the study (ie., reference standardized use in training, scales developed with standards)

II. GUIDELINES FOR ORAL PRESENTATION - 70 POINTS

Feel free to use overheads or other visual aids as needed throughout presentation, but visual aids are not required.

The oral presentation will consist of presenting the written report orally by all students in the group so divide up the sections for presentation. The oral presentation should follow the same outline as for the written presentation.

It might be nice to have examples of the products that you evaluated.

Remember that this is to be similar to if you have to present the results of a sensory experiment within a company. Oral presentations will consist of up to 15 minutes and will include a question and answer section.
Group Written Reports
Consumer Tests

I. OUTLINE FOR WRITTEN REPORT - 70 POINTS

The written report will consist of up to 15 double-spaced, type-written pages (8x11 size paper) which should follow the following outline.

A. TITLE OF PROJECT
PROJECT LEADERS

B. STATE HYPOTHESIS

DEFINE PROBLEM - JUSTIFICATION
Write why you are doing the project, what you are testing, etc. This does not have to be long, just concise and to the point.

C. PROJECT OBJECTIVES

D. EXPERIMENTAL DESIGN

1. PROJECT PROTOCOL - This should include the samples that you used, where they were obtained, how they were stored, how they were prepared prior to presentation to the panelists, and any other information that would allow someone else to repeat the experiment.

2. SENSORY TECHNIQUES - Define the details of how you conducted your experiment. Remember that you are to writing this so that the study can be repeated. This section has to contain panel recruitment criteria, screening interview document, randomization of samples to consumer, moderator script for conducting sessions with consumers, and any environmental and product controls used in the study.

   This section has to include all of the information for meeting JFS sensory guidelines - attached. This is the information that should be included in every manuscript that you publish using sensory.

3. STATISTICAL DESIGN - Define how you analyzed your data. You need to include the analysis of variance table. Include a discussion of blocks
and covariates and why they were included. Discuss any preliminary analyses and then the final analysis of your data. You need to define blocks, covariates, main effects, interactions and random effects in the final model. Also include mean method used for reporting data and mean separation tests used. Significance levels should be defined.

E. RESULTS AND DISCUSSION - Provide tables or figures of your results and define what you found out.

F. CONCLUSION AND RECOMMENDATION - What do you recommend! Accept or reject your hypothesis.

E. REFERENCES

F. ADDITIONAL INFORMATION - Include ballot, randomization scheme, any other materials that are pertinent to the study and would allow you to repeat the study.

II. GUIDELINES FOR ORAL PRESENTATION - 70 POINTS

Feel free to use overheads or other visual aids as needed throughout presentation, but visual aids are not required.

The oral presentation will consist of presenting the written report orally by all students in the group so divide up the sections for presentation. The oral presentation should follow the same outline as for the written presentation.

It might be nice to have examples of the products that you evaluated.

Remember that this is to be similar to if you have to present the results of a sensory experiment within a company. Oral presentations will consist of up to 15 minutes and will include a question and answer section.
# Evaluation of Participation within a Group

## 30 points

Testing Type (circle one)  Discriminative  Descriptive  Consumer

**Group Name**

**Evaluation of**

<table>
<thead>
<tr>
<th>Item</th>
<th>Possible Points</th>
<th>Points Given</th>
</tr>
</thead>
<tbody>
<tr>
<td>Provided input into and planning of design of study</td>
<td>10</td>
<td></td>
</tr>
<tr>
<td>Participated in conducting the study</td>
<td>10</td>
<td></td>
</tr>
<tr>
<td>Participated in analyzing the data and writing the final report</td>
<td>10</td>
<td></td>
</tr>
</tbody>
</table>

**Total Points**

Scoring should be based on:

- 0 = individual did not participate, they allowed other members to do the work and they took credit for group effort
- 5 = individual participated with about 50% effort where they helped some, but they allowed other members to do most of the work and they only participated partially
- 10 = individual showed leadership and was fully engaged in the effort; individual provided 100% effort to complete this task
STUDENT INFORMATION

Course________________________ Date________________________

Name______________________________________________
Preferred Name_______________________________________

e-mail Address __________________________ Local Phone ___________

Hometown/State/Country ______________________________________

Background: (circle one) City Urban Rural Farm Ranch

Food Related Activities:__________________________________________

__________________________________________________________

Classification: (circle one) FR SOPH JR SR GR-MS PhD

Major______________________________
Minor______________________________

University/ Professional/ Social Organizations to Which You Belong
__________________________________________________________
__________________________________________________________
__________________________________________________________

Work Experience ____________________________________________
__________________________________________________________
__________________________________________________________

What are your career plans after receiving your degree?
__________________________________________________________