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

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

2. Course prefix, number and complete title of course: **FSTC 697 - Applied Microbiology for Foods of Animal Origin: Processing, Sanitation & Sanitary Design**

3. Course description (not more than 50 words): Application of basic food microbiology knowledge and principles to food production processes and products; sources of microbiological contamination and their impact on food safety and spoilage; application of sanitary design and validation; testing and auditing to monitor and trouble-shoot the process.

4. Prerequisite(s): DASC/FSTC 326 or FSTC 606 or equivalent

   Cross-listed with ANSC 697 (stacked with FSTC 497)

   Cross-listed courses require the signature of both department heads.

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 the course be repeated within the same semester/term? □ Yes ☑ No

7. Has this course been taught as a 289/489/689? ☑ Yes □ No If yes, how many times? __________ Indicate the number of students enrolled for each academic period it was taught. 5-08A

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 or Food 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)

    | FSTC | 697 | APPL | MIC | FOODS | ANIM | ORIG |
    |------|-----|------|-----|-------|------|------|
    | Lect. | Lab | SCH | Subject Matter Content Code | Admin. Unit | Acad. Year | FICE Code | Level |
    | 0300030109010005027009-10003632 |

Approval recommended by:

Head of Department Date

Head of Department (if cross-listed course) Date

Submitted to Coordinating Board by:

Director of Academic Support Services Date

Questions regarding this form should be directed to Sandra Williams at 845-8836.

OAR/AS – 04/07
**FSTC 697**
**Applied Microbiology for Foods of Animal Origin: Processing, Sanitation & Sanitary Design**

**Instructor:** Margaret Hardin; 310A Kleberg; Tel: 979-862-7675; e-mail: Margaret.hardin@tamu.edu

**Office Hours:** Tuesday & Thursday: 3:30-4:30
Open Door Policy and by appointment

**Class Schedule:** TR 12:45 – 2:00; Kleberg Center

**Prerequisite Requirement:** DASC/FSTC 326 or FSTC 606 or equivalent

**Course Description:** Application of basic food microbiology knowledge and principles to food production processes and products; sources of microbiological contamination and their impact on food safety and spoilage; application of sanitary design and validation; testing and auditing to monitor and trouble-shoot the process.

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**A.**

<table>
<thead>
<tr>
<th>DATE</th>
<th>TOPIC</th>
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<tbody>
<tr>
<td>Jan. 20</td>
<td>Microbial Ecology of Meat and Poultry</td>
</tr>
<tr>
<td></td>
<td>Microbiological Contamination of Meat During Harvesting and Processing of Meat and Meat Products</td>
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<tr>
<td>22</td>
<td>Pathogens: Part I - <em>Escherichia coli</em> O157:H7 and company, <em>Salmonella</em> spp., <em>Listeria monocytogenes</em></td>
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<tr>
<td>27</td>
<td>Pathogens: Part II – <em>Staphylococci</em>, <em>Campylobacter</em>, <em>Yersinia</em>...and the rest of the story...</td>
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<td>29</td>
<td>Yeasts &amp; Molds – The Good, The Bad and The Fuzzy</td>
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<td>Sporeforming Bacteria in Meat and Poultry Products</td>
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<td>Feb. 3</td>
<td>Microbial Spoilage, and Control– Fresh Meat</td>
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<td>5</td>
<td>Chilling, Freezing, Thawing &amp; The Microbiology of Chilled Meat Storage</td>
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<td>Processing and Microbiology of Meat Industry By-Products</td>
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<td>10</td>
<td>Processing and Microbiology of Ready-to-Eat Meat and Poultry Products</td>
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<tr>
<td>12</td>
<td><strong>Exam 1</strong></td>
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<tr>
<td>17</td>
<td>Fermented, Dried and Dry-Cured Meat and Poultry Products</td>
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<td>19</td>
<td>Process Control and Validation – Cooking, Chilling, Fermenting, and Drying</td>
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<td>Date</td>
<td>Events</td>
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| 24   | - Indicator Organisms  
|      | - Testing, Rapid Methods, and Challenge Studies  
|      | - Current Issues in Meat and Poultry |
| 26   |  |
| Mar. | 3  | - Sanitation and the Food Industry  
|      |      | - Sources of Food Contamination – Raw Materials, Niches, and Transfer Points  
|      |      | - The Relationship of Microorganisms to Sanitation |
| 10   |  | - Biofilms |
| 12   |  | - Exam 2 |
|  |  | **SPRING BREAK: March 16-20** |
| 24   |  | - Cleaners and the Cleaning Process  
| 26   |      | - Sanitizers and the Sanitizing Process  
|      |      | - Chemical Safety  
|      |      | - Sanitary Design Principles for Facilities |
| April | 31  | - Sanitary Design Principles for Equipment  
|      |      | - Personnel Hygiene, GMPs and Operational Sanitation  
|      |      | - Sanitation and Allergens |
| 7    |  | - Measuring the Effectiveness of Cleaners, Sanitizers and the Cleaning/Sanitizing Process – How Clean is Clean? |
| 9    |  | - Environmental sampling: How do you do it? What do you do with the data? |
| 14   |  | - Exam 3 |
| 16   |  | - Pest Control  
|      |      | - Self-audits, Inspection |
| 21   |  | - Presentations I  
| 23   |      | - Presentations II  
|      |      | - Training, Education and Trouble Shooting |
| 28   |  | - Sanitation for Foodservice and Retail Operations  
|      |      | - Current Issues in Sanitation  
|      |      | - Guest Speaker (Optional) |
| May  | 13  | - Final Exam 8-10 am |
B. **Written and Presentation Assignments:**
Being able to communicate with individuals from a wide variety of socioeconomic and educational backgrounds is key to applied microbiology. Students will be asked to prepare a presentation and a written paper on a topic of their choosing related to either sanitation or food safety.

**Additional Requirements for Graduate Students**
Graduate students will meet for an additional hour of group discussion each week and will be asked to prepare an additional presentation for the class.

C. **Evaluation:**
1. Exams: 40%
2. Presentation: 20%
3. Written Assignment: 20%

D. **Grading System:**
   A = $\geq$ 90
   B = 80 – 90
   C = 70 – 79
   D = 60 – 69
   F = $\leq$ 60

E. **Resource Materials**
1. Peer Reviewed Scientific Journals
   a. Journal of Food Protections
   b. International Journal of Food Microbiology
   c. Food Microbiology
   d. Journal of Food Science

2. Non-refereed Journals
   a. Food Protection Trends
   b. Food Safety Magazine
   c. Food Processing
   d. Meatplace Magazine
   e. Meat and Poultry Magazine
   f. Food Packaging
   g. Provisioner

3. Books:


4. Web Sites & Links
   e. http://www.fda.gov/

F. Americans with Disabilities Act:
The Americans with Disabilities Act (ADA) is a federal antidiscrimination statue 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 for 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 Cain Hall, Rm. B118 or call 845-1637.

G. Academic Integrity and Honesty
   "An Aggie does not lie, cheat or steal, or tolerate those who do."

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. The Aggie Honor System (AHS) became effective September 1, 2004 and includes rules on how to handle scholastic dishonesty. Additional information may be obtained from the AHS web site (http://www.tamu.edu/aggiehonor/).

As commonly defined, plagiarism consists of passing off as one’s own 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 faults, for the plagiarist destroys the trust among colleagues without
which research cannot be safely communicated. Your work as an individual or team should be that of your own.

Integrity comes from within an individual and reflects who you really are. The personal values that contribute to integrity and gain the respect of others are honesty, trustworthiness, dependability, loyalty, high moral standards, a good work ethic, teamwork, fairness, discretion and the desire to live by these standards. Historically, Aggies have been known for their integrity. Don’t allow the influence of others or personal choices destroy your integrity. Once destroyed, integrity can never be regained.

H. Attendance/ Audit Policy/ Make-Up Exams:
Regular attendance and participation in the course is expected of all students. Anticipated absences should be cleared with the instructor prior to the absence. Emergency absences (serious illness, injury, death, etc.) should be reported as soon as possible. Those students auditing the course are expected to participate in all sessions. Make-up work and exams will be allowed under extenuating circumstances for which written excuses are provided.