<table>
<thead>
<tr>
<th>LG #1</th>
<th><strong>Courses</strong></th>
<th>Graduates will demonstrate and apply knowledge of the core competencies in Food Processing and Engineering.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td><strong>Courses</strong></td>
<td>Food Processing Technologies 11:400:301; Food Process Engineering R 11:400:302</td>
</tr>
<tr>
<td>Learning Outcomes:</td>
<td></td>
<td>1.1: Understand the concepts and principles of processing techniques and the effects of processing parameters on product quality.</td>
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<td></td>
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<td>1.2: Apply principles of food processing and engineering to various food industry operations.</td>
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<tr>
<th>LG #2</th>
<th><strong>Courses</strong></th>
<th>Graduates will demonstrate and apply knowledge of the core competencies in Food Chemistry and analysis.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td><strong>Courses</strong></td>
<td>Principles of Food Science 11:400:201; Principles of Food Science Lab G,R,S 11:400:202; Food Chemistry 11:400:411; Food Analysis G &amp; R 11:400:304; Food Physical Systems R 11:400:419</td>
</tr>
<tr>
<td>Learning Outcomes:</td>
<td></td>
<td>2.1: Understand the chemistry involved in the properties and reactions of various foods and its components.</td>
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<tr>
<td></td>
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<td>2.2: Understand and effectively applies the principles behind analytical techniques associated with food.</td>
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<td>2.3: Understand and effectively applies food chemistry and analysis methods.</td>
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<tr>
<th>LG #3</th>
<th><strong>Courses</strong></th>
<th>Graduates will demonstrate and apply knowledge of the core competencies of Food Microbiology.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td><strong>Courses</strong></td>
<td>Food Microbiology 11:400:423; Food Microbiology Lab G,R,S 11:400:424</td>
</tr>
<tr>
<td>Learning Outcomes:</td>
<td></td>
<td></td>
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</tbody>
</table>
3.1: Demonstrate ability to identify the causes of food spoilage and predict the specific microorganisms that can spoil a given food when prepared, processed, and stored under given conditions.

3.2: Demonstrate ability to identify important pathogens, the conditions under which they grow, related detection techniques, and methods for inactivation and control.

3.3: Demonstrate knowledge of food preservation techniques to reduce and/or inhibit the growth of microorganisms.

**LG #4**

Graduates will demonstrate critical thinking and quantitative reasoning skills to solve technical and applied problems in Food Science.

**Courses**

- *Food Processing Technologies 11:400:301*
- *Sensory Evaluation of Foods 11:400:405*

**Learning Outcomes:**

4.1: Critically evaluate reports/information in Food Science.

4.2: Effectively apply quantitative analytical techniques including statistical analysis principles to problems in Food Science.

4.3: Understand the basic principles of sensory analysis and applies those principles to real-world problems.

4.4: Apply the principles of Food Science to practical, real-world problems in Product Development.

4.5: Proficient in government laws and regulations required for the manufacture and sale of food products.

**LG #5**

Graduates will effectively communicate Food Science issues.

**Courses**

- *Science of Food 11:400:103 OR Food and Health 11:400:104*
- *Current Issues in Food Science & Food Law 11:400:314*

**Elective courses**

- *Food as Medicine 11:400:106*
- *Foods: from Field to Table 11:400:107*
- *Nutrigenomics 11:400:410*
- *Food Safety: Fads, Facts and Politics 11:400:422*
**Learning Outcomes:**

5.1: Demonstrate ability to write clear and concise technical reports and research articles.

5.2: Demonstrate the ability to deliver clear and concise technical presentations.

5.3: Demonstrate the ability to gather scientific and non-scientific information and interpret content and quality of the literature in Food Science.

5.4: Demonstrate the ability to clearly communicate scientific principles and data to lay audiences.

5.5: Demonstrate effective listening skills as well as ability to accept constructive criticisms.

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**LG #6**

Gradedes will demonstrate effective professional and leadership skills.

- *Food Product Development 11:400:412*

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**Learning Outcomes:**

6.1: Demonstrate the ability to work independently as well as to work cooperatively in cross-disciplinary teams.

6.2: Understand the importance of and is committed to professional integrity and ethical values within the workplace.

6.3: Demonstrate ability to work and/or interact with individuals from diverse cultures.

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*Course(s) in bold fulfill(s) the requirements of program learning goal for all options of study in Food Science Major*

R: Courses required for Food Science Research option
G: Courses required for Food Science General option
S: Courses required for Food Science Sustainability option