# Advanced Food Science Course No. 18317 Credit: 1.0

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| --- | --- | --- | --- |
| **Student name:**  |  | **Graduation Date:** |  |

Pathways and CIP Codes:Food Products & Processing Systems (01.0401)

Course Description:

Directions:The following competencies are required for full approval of this course. Check the appropriate number to indicate the level of competency reached for learner evaluation.

**RATING SCALE:**

4. Exemplary Achievement: Student possesses outstanding knowledge, skills or professional attitude.

3. Proficient Achievement:Student demonstrates good knowledge, skills or professional attitude. Requires limited supervision.

2. Limited Achievement:Student demonstrates fragmented knowledge, skills or professional attitude. Requires close supervision.

1. Inadequate Achievement:Student lacks knowledge, skills or professional attitude.

0. No Instruction/Training:Student has not received instruction or training in this area.

## Benchmark 1: Changes & Trends FPP.01.01

### Competencies

| **#** | **DESCRIPTION** | **RATING** |
| --- | --- | --- |
| 1.1 |  Evaluate changes and trends in the food products and processing industry.  |  |
| 1.2 | Predict trends and implications in the food products and processing industry.  |  |
| 1.3 | Determine appropriate industry response to consumer concerns to assure a safe and wholesome food supply. |  |

## Benchmark 2: Outreach & Relations FPP.01.02

### Competencies

| **#** | **DESCRIPTION** | **RATING** |
| --- | --- | --- |
| 2.1 | Evaluate the changes in the food products and processing industry brought about by industry organizations or regulatory agencies.  |  |
| 2.2 | Interact effectively with organizations, groups and regulatory agencies that affect the food products and processing industry.  |  |
| 2.3 | Prepare a plan for implementation of industry standards in food products and processing programs |  |

## Benchmark 3: Manage Operational Procedures FPP.02.01

### Competencies

| **#** | **DESCRIPTION** | **RATING** |
| --- | --- | --- |
| 3.1 | Evaluate the SSOP of a food products and processing company.  |  |
| 3.2 | Develop SSOP for a food products and processing company.  |  |
| 3.3 | Evaluate the GMP of a food products and processing company.  |  |
| 3.4 | Implement GMP for a food products and processing company. |  |
| 3.5 | Perform basic equipment and facility maintenance in a food products and processing operation. |  |

## Benchmark 4: Implement HACCP Procedures FFP.02.02

### Competencies

| **#** | **DESCRIPTION** | **RATING** |
| --- | --- | --- |
| 4.1 | Outline procedures to eliminate possible contamination hazards associated with food products and processing.  |  |
| 4.2 | Analyze the effectiveness of a food products and processing company’s Critical Control Point (CCP) procedures.  |  |
| 4.3 | Implement an HACCP program for a food products and processing facility. |  |

## Benchmark 5: Safety & Sanitation Procedures FFP.02.03

### Competencies

| **#** | **DESCRIPTION** | **RATING** |
| --- | --- | --- |
| 5.1 | Demonstrate approved food product handling techniques.  |  |
| 5.2 | Interpret quality-assurance test results and apply corrective procedures.  |  |
| 5.3 | Explain the importance of microbiological tests in food product preparation, listing common spoilage and pathogenic microorganisms.  |  |
| 5.4 | Conduct and interpret microbiological tests for food-borne pathogens and implement corrective procedures.  |  |
| 5.5 | Demonstrate proper record keeping in a food products and processing system. |  |

## Benchmark 6: Demonstrate Worker Safety Procedures FFP.02.04

### Competencies

| **#** | **DESCRIPTION** | **RATING** |
| --- | --- | --- |
| 6.1 | Evaluate a facility to determine the implementation of safety procedures. |  |

## Benchmark 7: Applying Principles of Science FFP.03.01

### Competencies

| **#** | **Description** | **RATING** |
| --- | --- | --- |
| 7.1 | Design a research project in food science using the scientific method.  |  |
| 7.2 | Conduct research in food science and interpret results to improve food products.  |  |
| 7.3 | Explain how the chemical and physical properties of foods influence nutritional value and eating quality.  |  |
| 7.4 | Determine and chemical and physical properties of food products |  |
| 7.5 | Compare and contrast the nutritive value of food and food groups.  |  |
| 7.6 | Design a daily food guide for a healthful diet.  |  |
| 7.7 | Compare and contrast food constituents and their relative value to product taste, appearance, etc..  |  |
| 7.8 | Analyze food products to identify food constituents.  |  |
| 7.9 | Formulate and explain incorporation of additives into food products. |  |
| 7.10 | Prepare and label foods according to the established standards of regulatory agencies.  |  |
| 7.11 | Plan and create a new food product.  |  |
| 7.12 | Perform sensory-testing and marketing functions to characterize and determine consumer preference and market potential. |  |

## Benchmark 8: Quality Food Products FFP.04.01

### Competencies

| **#** | **Description** | **RATING** |
| --- | --- | --- |
| 8.1 | Assign quality and yield grades to food products according to industry standards.  |  |
| 8.2 | Perform quality-control inspections of raw food products for processing.  |  |
| 8.3 | Implement procedures to maintain original food quality and yield.  |  |
| 8.4 | Compare and contrast accepted animal treatment and harvesting techniques. |  |
| 8.5 | Harvest animals using regulatory-agency-approved or industry-approved techniques.  |  |
| 8.6 | Explain desirable and undesirable characteristics of both pre-mortem and post-mortem animals in relation to the production of food products.  |  |
| 8.7 | Conduct pre-mortem and post-mortem inspections of animals. |  |

## Benchmark 9: Processed Food Products FPP.04.02

### Competencies

| **#** | **Description** | **Rating** |
| --- | --- | --- |
| 9.1 | Evaluate, grade and classify processed meat, egg, poultry, fish and dairy products. |  |
| 9.2 | Discuss desirable qualities of processed meat, egg, poultry, fish and dairy products. |  |
| 9.3 | Discuss desirable qualities of fruits and vegetables.  |  |
| 9.4 | Discuss desirable qualities of grains, legumes and oilseeds.  |  |
| 9.5 | Evaluate, grade and classify processed products from fruits and vegetables. |  |
| 9.6 | Evaluate, grade and classify finished products derived from grains, legumes and oilseeds. |  |

## Benchmark 10: Sale & Distribution FFP.04.030

### Competencies

| **#** | **Description** | **rating** |
| --- | --- | --- |
| 10.1 | Weigh and measure food products and perform conversions between units of measure.  |  |
| 10.2 | Use weights and measures to formulate and package food products.  |  |
| 10.3 | Prepare foods for sale and distribution as fresh-food products.  |  |
| 10.4 | Evaluate foods prepared for the fresh-food market based on factors such as shelf life, shrinkage, appearance and weight.  |  |
| 10.5 | Explain the processes of food preservation methods.  |  |
| 10.6 | Preserve foods using various methods and techniques. |  |
| 10.7 | Demonstrate techniques of preparing ready-to-eat food products.  |  |
| 10.8 | Evaluate ready-to-eat food products.  |  |
| 10.9 | Select and utilize packaging materials in storing processed foods and raw food products.  |  |
| 10.10 | Analyze the foods stored in various packaging materials to determine which materials retain desirable food qualities. |  |
| 10.11 | Select methods and conditions for storing raw and processed food products.  |  |
| 10.12 | Compare and contrast foods stored under varying conditions for quality, shelf life and intended use. |  |

I certify that the student has received training in the areas indicated.

Instructor Signature:

For more information, contact:

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