



MERCER
COUNTY COMMUNITY COLLEGE

COURSE OUTLINE

Course Number	Course Title	Credits
HOS 230	Experimental Kitchen	2
Hours: Lecture/Lab/Other	Co- or Pre-requisite	Implementation Semester & Year
1/3/0	HOS 101, HOS 111, HOS 118	Spring 2022

Catalog description:

Covers tastes and flavors (sweet, salt, bitter, sour, and umami). Students explore culinary herbs and spices, salts, peppers, oils, vinegars, essences, fragrances, oleoresins, concentrates, freeze dried fruit and vegetable products, and other flavor carriers and additives used in cooking and culinary research and development. Includes a hands-on lab application of techniques learned

General Education Category:
Not GenEd

Course coordinator:
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Required texts & Other materials:

Textbook: **Understanding Food: Principles and Preparations**,
Brown, Amy, 4th edition, 2010, Wadsworth Publishing

Course Student Learning Outcomes (SLO):

Upon successful completion of this course the student will be able to:

1. Analyze and apply the concepts of food chemistry as it relates to proteins, starches, gums, carbohydrates. [Supports ILGs # 3, 11; PLOs # 1, 5, 6]
2. Explore the functional and nutritional impact that manipulation of these products will have on the finished product. [Supports ILGs # 3; PLOs # 5, 6]
3. Compare and contrast the interaction between ingredients on a chemical, physical and microbial level. [Supports ILGs # 3; PLOs # 6, 7]
4. Analyze food systems and the practical application between ingredients on a chemical, physical and microbial level has on maintaining quality for storage and packaging of foods. [Supports ILGs # 3, 11; PLOs # 4, 7]
5. Research, assess and compare the outcomes from the preparation and cooking of various foods including proteins, starches and vegetables, sugar and yeast products. [Supports ILGs # 3, 10, 11; PLOs # 6, 7]
6. Students will demonstrate a working knowledge of food chemistry, ingredient interactions and manipulation through completion of a capstone project where the students create and analyze the outcomes after recreating a gold standard recipe while creating a frozen shelf stable product. [Supports ILGs # 3, 11; PLOs # 1, 2, 3, 5 6]

7. Research and demonstrate an understanding of the various laws and regulations as they apply to food science. [Supports ILGs # 4, 10; PLOs # 1, 4]

Course-specific Institutional Learning Goals (ILG):

Institutional Learning Goal 3. Science. Students will use the scientific method of inquiry, through the acquisition of scientific knowledge.

Institutional Learning Goal 4. Technology. Students will use computer systems or other appropriate forms of technology to achieve educational and personal goals.

Institutional Learning Goal 10. Information Literacy: Students will recognize when information is needed and have the knowledge and skills to locate, evaluate, and effectively use information for college level work.

Institutional Learning Goal 11. Critical Thinking: Students will use critical thinking skills understand, analyze, or apply information or solve problems.

Program Learning Outcomes for Culinary/Pastry Arts and Culinary Food Science

1. Apply safe and sanitary practices within any food production department compliant with safety regulations
2. Develop appropriate menus and recipe selections and recognize costs incurred and apply cost control techniques
3. Design and plan meal service, buffets and food-related activities and functions and understand the purchasing and requisition process
4. Develop professional written and verbal communication and computational skills related specifically to hospitality.
5. Demonstrate proficiency in a variety of professionally recognized culinary / pastry skills
6. Apply practical culinary techniques that stress creativity and innovation with respect to flavor and texture in food production
7. Apply scientific data collection and analysis skills and demonstrate an understanding of flavor development and textures utilizing various additives and techniques.

Units of study in detail – Unit Student Learning Outcomes:

Unit I Food Chemistry [Supports Course SLO # 1, 3, 7]

The student will be able to...

- Identify how individuals select foods for consumption. The section on food selection criteria includes the components of food selection and a discussion of their importance.,
- Demonstrate and understanding of the criteria and procedures used in the development of modern food products and their evaluation.,
- Explain and analyze the six classes of nutrients that individuals need for energy, growth, maintenance, and repair of cells, including carbohydrates, lipids, proteins, vitamins, minerals and water, and to identify their functions as well as non-nutritive food components
- Discuss the importance or role that food chemistry plays in understanding where those nutrients are with respect to food and the importance of that information in planning nutritious diets,

- Recognize the importance of federal and state regulations utilized to ensure food safety in the United States and apply those standards by creating HACCP flow charts
- Discuss various jobs in the food and nutrition field and the respective course work requirements for each route with focus placed on nutrition and food sciences, food service and career goals

Unit II Food Systems [Supports Course SLO # 1, 2, 4, 6]

The student will be able to...

- Discuss federal food legislation and the agencies that oversee the food industry in the United States, and the application of the regulations and the extent to which they affect the day-to-day operation of the food service industry
- Assess how and when to use the various species, breeds, cuts, and preparation styles appropriate for red meats, poultry and fish and shellfish in menu planning as well as nutrition counseling as well as proper storage methods as well as the overall effect on inventory and costs.
- Apply and evaluate the various functions of fluid cow's milk, its composition, and variations, purchasing principles, uses in food preparation, and storage practices. The products derived from milk, specifically butter, cheese, and frozen products,
- Demonstrate a working knowledge of the classification system for cheese and cheese products, the nutrient composition, production, purchase, preparation, and storage cheese,
- Apply concepts of the functions and uses of eggs in foods, preparation of eggs as an individual food, and their storage
- Analyze the proper preparation techniques for preparing and cooking fruits and vegetables to achieve optimum quality characteristics for taste and palatability, as well as nutritional retention of vitamins,
- Compare and contrast the composition of cereal grains, flours and products made from them and their functionality as it relates to other ingredients and chemical and physical manipulation,
- Compare and contrast the composition of starches and sauces and products combined with them and their functionality as it relates to other ingredients and chemical and physical manipulation,

Unit III Comparative Cooking Outcomes [Supports Course SLO # 1, 4, 5, 7]

The student will be able to...

- Apply the basic methods and specific terminology of food preparation.
- Calculate the effects of moist- and dry-heat preparation methods, types of heat transfer have on the preparation of proteins, starches and vegetables.,
- Demonstrate the ability to analyze cutlery techniques, measuring, and mixing techniques, as well as how and when to properly season and flavor foods and proper food presentation,
- Manipulate recipes for nutritional modifications, such as reducing the quantity of fat or salt in a recipe, and assess these changes as they adapt the recipe and adjust without sacrificing flavor, texture, color, etc. These standard techniques and the rationale behind such techniques will be evaluated and discussed,
- Apply the knowledge of food composition, the understanding of the nutrient content of foods, the understanding of how time, money and energy are managed and how each of these contributes and results in a psychologically and physiologically satisfying meal,
- Discuss the basic organizational patterns found in traditional food service operations.

Evaluation of student learning:

Lecture Participation	10%
Exams (3)	15%
Weekly Laboratory Presentations	25%
Capstone Project	20%
Homework Lab Notebook	10%
Final Written and Practical Skill Demo	20%