

**J. Sargeant Reynolds Community College**  
**Course Content Summary**

**Course Prefix and Number:** CUL 120    **Credits:** 3

**Course Title:** Principles of Food Preparation

**Course Description:**

Applies scientific principles and techniques to the preparation of food, including carbohydrates, such as fruits, vegetables, sugars and starches; fats, including animal and vegetable, as well as natural and manufactured; and proteins, such as milk, cheese, eggs, legumes, beef, game, pork, lamb, fish and shellfish, and alternative products. Lecture 3 hours. Laboratory 3 hours. Total 6 hours per week. 4 credits

**General Course Purpose:**

This course prepares students for careers in the food service industry by exploring food preparations by aligning the relationship of nutrition and scientific principles through the application of heat through preparing and cooking of foods. The laboratory pairs theory and application with a focus on techniques for quality preparations of healthy tasty foods.

**Course Prerequisites/Corequisites:**

None

**Course Objectives:**

Upon completing the course, the student will be able to:

- Critique and analyze food products and recipes on the basis of food preparation principles
- Identify the characteristics of high quality food products based on the factors that affect the physical, chemical and biological reactions of carbohydrates, fats, water, sugars, and proteins
- Demonstrate the safe use and care of equipment used in small food quality preparation
- Know food preparation terminology and demonstrate techniques employed in food preparation
- Relate the importance of professional appearance and behavior to sanitation and safety
- Know basic information about the nutritional value of carbohydrates, fats, sugars, and proteins
- Evaluate products prepared in the laboratory by comparing with established quality standards
- Gain experience of applying principles of measurement of ingredients and mise en place
- Identify and properly use various kinds of kitchen tools and equipment
- Analyze the function of water and heat in food preparation; describe the stages of water
- Evaluate the factors that determine the preparation of high quality vegetables and other produce
- Recognize the nutritional importance of vegetables in the diet
- Analyze the effect of various cooking methods and cook-time on various food products, related to color, flavor, textural and structure changes, and enzymatic browning

- Emphasize the necessity for separation of starch granules for even hydration and gelatinization
- Identify high quality characteristics of sauces, illustrate, prepare and evaluate these sauces
- Demonstrate methods of cookery which retain the nutrients within foods
- Demonstrate methods of preparing various breakfast, lunch, dinner, and other meal period recipes
- Define principles of salad dressing formation based on emulsion principles and categories
- Recognize common emulsifiers used in food preparation and learn procedures on reforming broken emulsions
- Define the various food classifications, categories and characteristics that align with menu design
- Learn the role of salads, prepare and evaluate according to principles of quality salads
- Discuss and use marinades and salad dressings and relationship properties of fats and acids
- Learn appropriate deep fat frying temperatures for different foods – proteins, sugars, carbohydrates
- Study factors that affect the rate of fat decomposition, smoke point, and flash point
- Discuss the factors that influence fat absorption of fried foods, pan, shallow, deep frying
- Illustrate and compare quality characteristics of a gelatin prepared from various gelatin products
- Illustrate and discuss factors that affect the strength of a gelatin gel and gelatin foam
- Identify through laboratory observation the characteristics of high quality protein products
- Observe denaturation and coagulation of protein foods in the laboratory
- Identify the role of enzymes in coagulation of milk proteins and effects acids have on them
- Recognize different types of milk products and their uses in a food service operation
- Compare the flavor, cost, convenience and use in cooking of various types of milk products
- Understand the relationship between coagulation of milk proteins and the creation of natural cheese
- Demonstrate the effect of emulsifiers and heat on the protein, fat, and lactose in cheese
- Discuss and demonstrate the effect of high heat or prolonged heating on dairy proteins
- Differentiate between the coagulation temperature of egg whites, egg yolks, and whole egg
- Demonstrate selected preparation and cooking methods for cooking eggs
- Explain proper procedures while preparing an egg white foam of optimum volume, texture, stability
- Differentiate by diagram between primal cuts and secondary cuts on a beef carcass
- Prepare and compare dry, moist, and combination methods of meat cookery
- Discuss and illustrate factors that determine the tenderness of a cut of meat before cooking
- Discuss the effect of cooking has on quality characteristics of cooked meat
- Identify differences in fat, bone, muscle, and texture of meat cuts from different animals
- Review the factors that cause a cut of meat to be considered less tender
- Distinguish between inspection, quality grading, and yield grading of meat and meat products

- Identify the quality grades in proteins, dairy, produce, drystock, seafood, poultry, and fish
- Distinguish between fin-fish and shellfish and memorize the market forms of each
- Prepare different types of fin and shellfish utilizing a variety of cooking methods preparation
- Illustrate the use of legumes as meat substitutes
- Demonstrate the effects of adding certain ingredients to various foods and their affects
- Demonstrate and prepare baking methods and techniques for combining ingredients for baked products
- Illustrate leavening action as water is converted to steam in baked products
- Discuss, identify, and prepare a variety of protein and other alternative market products
- Discuss various dietary restraints, choice diets and eating lifestyles

**Major Topics to be Included:**

- Healthy food choice
- Preparing complete nutritionally balanced dishes
- Food safety, sanitation, and proper hygiene
- transfer of heat and how foods are affected
- Flavor, taste, pairing, as they affect the palate using a variety of spices and flavorings
- Discuss, identify, taste, prepare, evaluate various foods across all food groups
- Nutrition and compositional make up of foods
- Equipment identification, usage and cleaning of various kitchen tools

**Effective Date/Updated:** August 1, 2024