COURSE TITLE: Baking and Pastry Arts

Course Description:

Baking and Pastry Arts is designed to equip students with the principles and techniques of baking and pastry-making from fundamentals to the latest trends. The course includes baking technologies, equipment, preparation procedures, production methods, pastry methods, science of bread baking, confections and desserts, showpieces, cost control, food safety, and presentation techniques. This course requires a fully-equipped, school-based commercial kitchen with food service and dining areas.

Potential Certifications/Credentials:

Alabama Certified Employee (ACE) / Certified Front Desk Representative / Certified Guest Service Professional / Food and Beverage – Skills for Success / Meat Cutter – Skills for Success / ProStart National Certificate of Achievement – COA (must pass the final exam for Level 1 and Level 2 and complete 400 hours of mentored work experience and then apply for credential) / ServSafe Manager

Course Scope and Sequence

Topic #	Topic Title	Estimated Hours
1	Foundational Standards	30
2	History, Trends, and Traditions of the Baking and Pastry Industry	30
3	Baking and Pastry Basics	40
4	Products in Professional Baking	40

Plans of Instruction

Foundational Standards

Supporting–will be taught throughout the course as needed for the unit.

F1. Incorporate safety procedures in handling, operating, and maintaining tools and machinery; handling materials; utilizing personal protective equipment; maintaining a safe work area; and handling hazardous materials and forces.

F2. Demonstrate effective workplace and employability skills, including communication, awareness of diversity, positive work ethic, problem-solving, time management, and teamwork.

F3. Explore the range of careers available in the field and investigate their educational requirements, and demonstrate job-seeking skills including resume-writing and interviewing.

F4. Advocate and practice safe, legal, responsible, and ethical use of information and technology tools specific to the industry pathway.

F5. Participate in a Career and Technical Student Organization (CTSO) to increase knowledge and skills and to enhance leadership and teamwork.

F6. Investigate various applicable professional organizations within the hospitality and tourism industry.

Topic 2 Title: History, Trends, and Traditions of the Baking and Pastry Industry

Content Standards

1. Research and report information about the history and current trends of the professional baking and pastry industry.
2. Compare and contrast international and regional baking and pastry items and their preparation methods.

Unpacked Learning Objectives

Students know:

- The general timeline of the baking and pastry profession and identify a variety of trends that define its current state.
- The shared and differing characteristics of a variety of regional and international baking and pastry items.

Students will be able to:

- Identify the difference between method,ingredients and flavors.
- Outline key historical developments in the baking and pastry profession and describe current trends in the baking and pastry industry.
- Organize a variety of regional and international baking and pastry items according to their shared characteristics in method, ingredients, or flavor profile.

Students understand:

- The baking and pastry industry has a strong historical foundation that allows for adaptation to current trends.
- The shared characteristics of global baking and pastry items while identifying the influence of geographic location and culture that differentiate said items.

Driving/Essential Question	What are some of the key factors to consider when selecting ingredients, cultural influence,and geographic locations for baking and pastry dishes?
Exemplar High Quality Task	The student will be able to properly execute a baking and pastry recipe with individual thinking and present the finished product.

Map of Student Learning by Learning Objective

Unpacked Learning Objective SWBAT	Potential Subtasks for Assessments Formative/Summative	**Potential Learning Activities** **Link to Differentiation Examples**	**Integrated and Related Academic Content: ELA, Math, Science, and/or Social Studies Concepts and Activities**	**Equipment, Technology and Materials** **Equipment List by CTE Cluster** **Link to Helpful Tech Tools**
Students will compare and contrast international and regional baking and pastry items and their preparation methods.	**Summative:** Create a menu for a modern bakery with emphasis on both traditional baking methods and current trends.	Create a comprehensive portfolio that includes Historical Research paper on history and cultural significance of a specific type of baked good or pastry from a particular region or era: This should include origins and Historical Context, Evolution over time,Cultural Significance and Traditional Methods, and Influences from other cultures or regions.	**ELA:** Research and report pertinent information about the history and current trends of the professional baking and pastry industry in Cornell notes format, including key historical milestones, influential figures, and emerging trends. **Social Studies:**Students construct a timeline using correct increments for dates related to the history of baking and pastry **ELA**:Students write and make recipes for their own dishes in the kitchen.	Mixer, Oven, Stove

Research and Report on the history and current trends of the professional baking and pastry industry *Classical Brigade *Pastry Chef or Patissier *Guilds	**Formative:** Explore a specific traditional baking technique and a modern trend by researching,experimenting and reflecting on how they can be integrated or contrasted in the creation of baked products. This will consist of research and development.	Create a visual timeline comparing the trends throughout the history of the baking and pastry industry.	**ELA:** Create a Venn diagram that explores the similarities and differences in ingredients, techniques, and cultural significance between international and regional baking and pastry items. **Math**: Students use addition or subtraction to make recipe conversions for catering events. **Science:** Students use empirical evidence to compare and contrast international and regional baking and pastry methods. **Social Studies:** Create a presentation based on a single country's baking and pastry items. Include the history of the item and how they have historically changed.	Measuring cups, spoons, mixing bowls, and spatulas

Key Vocabulary

Creaming, Measuring, Leaveners, Fats, Sugar, Extract, Pastry Chef, Emulsifiers, Functions, Techniques, Baking, Sponge, Bread, Laminated dough

Work-Based Learning, Simulated Work , and Experiential Learning:

The student at the end of the course will be able to execute and perform every job in the front of the house and baking of the house. They will be able to execute and create world renowned pastries.

CTSO Connection:

Bakery and Pastry Arts STAR Event

Certification/Credential Connection:

Alabama Certified Employee (ACE) / Certified Guest Service Professional / Food and Beverage – Skills for Success / ServSafe Manager

Topic 3 Title: Baking and Pastry Basics

Content Standards

3. Describe techniques, methods, protocols, and terms used in baking and pastry arts professional work environments.

4. Research the characteristics and functions of various ingredients and justify their use in preparing baked goods and pastries, including flours, extracts, emulsifiers, sugars, fats, and leaveners.

5. Demonstrate industry-standard scaling and measuring techniques, baking and pastry preparation methods, and safe storage methods when preparing baked goods.

6. Calculate ratios, baker's percentage, formulas, yields, weights, and measures.

7. Evaluate the quality of baking and pastry products, including plated desserts and displays.

8. Describe and model protocols for adhering to health codes, safety standards, and cottage food laws while preparing food.
   Examples: regulations from UDSA, FDA, CDC, county and state health departments

Unpacked Learning Objectives

Students know:

- How to explain the techniques, methods, and protocols used in baking and pastry while accurately using professional terminology.
- How to categorize baking and pastry ingredients and determine tHe specific ingredients needed for a variety of baking and pastry items.
- Correct procedures for the measuring, preparation, and storage of baked goods.
- Correct process to determine ingredient quantities in baking and pastry formulas and recipes.
- The subjective and objective criteria by which baking and pastry products can be evaluated both visually and through experiential tasting.
- Correct procedures for the safe and sanitary production of baking and pastry items.

Students are able to:

- Define professional terminology and use the terms in explaining techniques, methods, and protocols used in the baking and pastry profession.
- Select the correct ingredients according to their application in the preparation of baking and pastry items.
- Produce a variety of baked goods through the use of accurate scaling and measurement, baking and pastry method application, and safe

handling.
- Correctly calculate formula values through the application of baker's math concepts.
- Evaluate and substantially critique baking and pastry items utilizing descriptive terminology and specific criteria.
- Identify the safety and sanitation risks in baking and pastry production and describe the correct interventions to prevent compromising product safety.
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Students understand:
- Communicate using the foundational language and concepts of a professional baking and pastry environment.
- Identify and differentiate the ingredients used in the preparation of professional baking and pastry items.
- Prepared with career-ready skills for entry level jobs in the baking and pastry industry.
- Apply industry-standard mathematical concepts in the adaptation and use of baking and pastry production formulas.
- Engage critical thinking skills to intentionally evaluate baking and pastry items to determine strengths are areas for improvement.
- Demonstrate industry-required safety and sanitation awareness with an understanding of the purpose and process for doing so.

Driving/Essential Question	Will the student be able to execute and give all the necessary demonstrations of the baking and pastry industry and the standards?
Exemplar High Quality Task	The student will be able to execute industry standard techniques and protocols in the baking and pastry kitchen.

Map of Student Learning by Learning Objective

Unpacked Learning Objective SWBAT	Potential Subtasks for Assessments Formative/Summative	Potential Learning Activities Link to Differentiation Examples	Integrated and Related Academic Content: ELA, Math, Science, and/or Social Studies Concepts and Activities	Equipment, Technology and Materials Equipment List by CTE Cluster Link to Helpful Tech Tools
Describe techniques, methods, protocols,and terms used in the baking and pastry arts professional environment.	**Summative:** Describe How Students have used different techniques,methods,and protocols and how they work in the professional environment of the kitchen.	Mise en Place Practice Each student will set up their own workstations with all the ingredients that they will need for the recipe. We will discuss the importance of weighing ingredients. This will be followed by a baking task like making cookies.	**ELA:** Describe techniques, methods, protocols, and terms used in the baking and pastry arts by creating an instructional guide which includes examples and explanations of their applications. **Social Studies:** Study different ethnic cultures around the world and create an interactive map with each continent. Display a recipe from each continent on the map.	Kitchen Racks, sheet pans, Cooling Racks.
Research the characteristics and functions of various ingredients and justify the use in preparing baked goods and pastries. To include flour,sugar,butter,	**Formative:** Research and develop different uses and functions of baking and pastry items. **Summative:**	Ingredient Exploration: Lab activity for students to examine,taste,and discuss various ingredients like Flour,Sugar,fats, and Leavening agents.	**ELA:** Write an analytical report that explains each ingredient's (flour, sugar, butter, salt, and extracts) role, properties, and effects on the final product.	Pastry decorating equipment, rolling pin and Cookie decorating equipment and cookie stamps. Chocolate tempering machine and molds.

salt and extracts.	Describe and give facts on why they used certain ingredients.	Conduct different experiments like Baking Soda VS Baking Powder in a Recipe. Then they will describe in a paper the cause and effect of the final experiment.	**Math**Calculate ingredients using English and metric units of measure.**Social Studies:** Study how various ingredients are used based on each continent and how those ingredients vary. Create a presentation with a group about one specific ingredient. **Science:** Investigate chemical reactions of additives in cooking and baking to determine which ingredients are needed to achieve the desired product.	
Demonstrate industry standards for baking and pastry.	**Summative:**	Recall the correct methods of measuring and baking and packing of baked goods according to industry standards. Labs: Dutch babies, Individual Fruit Pizza, Puppy Chow, and Churros.	**ELA:** Create a detailed instructional video or written guide that outlines and showcases proper techniques, sanitation practices, and quality control measures used in professional baking and pastry environments. **ELA:** Prepare bakery and pastry items for a catering event and execute the function with the help of fellow team members. **Math:** Compute and use English and metric units of	Convection oven, stove, mixers, baking racks, sheet pans, cooling racks, digital scale, bakers scale, measuring cups and spoons.

			measure to properly weigh ingredients. **Social Studies:** Create a map of the regional US using the standards for baking and pastry.	
Scale, measure, mix ,and bake different baking and pastry items in a lab setting.	**Formative** Students are able to use the proper scales needed to execute a recipe in baking and pastry. The student will be able to have knowledge of all baking and pastry equipment. **Summative:** Lab Report(s)	Various baking and pastry labs.	**ELA:** Apply scaling, measuring, mixing, and baking techniques to prepare a baking and pastry item by documenting the process and results. **Math:** Compute baker's percentage to find yields to recipes in baking and pastry.	Scales, notebook and pen, chrome book, scales, measuring cups and spoons, bakers scale, digital scale, mixer,sheet pan, bakers rack, convection oven, and stove.
Students are able to calculate, ratio, baker's percentage, formulas, yields, weights, and measures for baking and pastry items.	**Summative:** Students are able to apply concepts of baker's math to calculate ratios,baker's percentage,formulas, yield, weights, and measurements.	Calculate the weight for individual ingredients in a recipe using the provided baker's percentage formula. Bread Lab (For comparison lab: provided different baker's percentage formulas and have students compare the similarities and differences between produced products.)	**ELA:** Create an infographic that explains how these ratios, baker's percentages, formulas, yields, weights, and measures for baking and pastry items impact a final product. **Math:** Convert decimals and percentages to solve baker's percentages and recipe yields. **Social Studies:**Evaluate and use social skills to find and execute regional and	Scales, notebook and pen, measuring cups and spoons. Baking formulas

			international baking and pastry recipes. Utilize math and social studies to choose and execute the recipe with team members.	
Students are able to evaluate the quality of baking and pastry products, included but not limited to plating desserts and making displays.	**Summative:** Product rubric	Evaluate each other's group bakery or pastry items using a provided rubric.	**ELA:** Assess the quality of baking and pastry products by writing a critique or review that evaluates visual appeal, taste, and presentation with recommendations for improvement. **ELA:** Utilize the proper procedure for evaluating and using the correct substitutions for the recipe. The student will achieve the expected dish. **Math:** Use aesthetic mathematics such as the Golden Ratio and Rule of Thirds as they arrange their displays. **Social Studies:** Create a display of the popular plating techniques used from various decades starting in the 1920s.	Display case, tables, plates, and baking and pastry decorating equipment.
Describe and model protocols for the health codes, safety standards,	Formative: Food Code Venn Diagram	Model the correct procedures of working and baking in the kitchen.	**ELA:** Explain and model protocols for health codes, safety standards, and cottage food laws while	ServSafe updated version. Chrome book to check on any new or description of laws that are current.

cottage food laws while preparing food.		Compare and contrast cottage food laws to industrial kitchen protocols.	preparing food by creating an instructional manual that outlines food preparation. **ELA**: Summarize the proper food and drug procedures when working in the kitchen. Demonstrate the proper handling for food in the kitchen. **Math:** Apply addition and subtractions for temperature controls and time management **Social Studies:** Create a chart on changes in health protocols over the past 50 years in the food industry.	

Key Vocabulary

Scale, Measure, Laws, Standards, Equipment, Cottage law, Protocols, Health codes, Quality, Yields, Formula, Baker's percentage, and Weight

Work-Based Learning, Simulated Work Experiences, and Experiential Learning:

The student will be able to bake, execute, plate, and evaluate a baking procedure of a Pastry Dish.

CTSO Connection:

Bakery and Pastry Arts STAR Event

Topic 4 Title: Products in Professional Baking

Content Standards

9. Modify recipes to create healthier alternatives.
   a. Substitute for fats, grains, sweeteners, and other ingredients in a recipe.
   b. Reduce the amounts of fats, sweeteners, grains, and other ingredients in a recipe.
   c. Modify recipes to include vegetarian and/or vegan diets.

10. Create lean, rich, and artisan yeast doughs and quick breads.

11. Create cookies, pies, tarts, and laminated doughs.

12. Create cakes, fillings, and icings and decorate cakes.

13. Create egg-based custards, creams, and meringues.

14. Describe processes used to create fundamental products in professional bakeries, including yeast and chemical leavening, emulsions, foaming, lamination, proofing, folding, creaming, and two-stage mixing.

Unpacked Learning Objectives

Students know:

- Ways to modify baking and pastry recipes to produce healthier alternatives.
- How to make basic modifications to baking and pastry recipes that include ingredient substitution.
- How to reduce ingredient quantities to improve nutritional values while maintaining desired outcomes in baking and pastry recipes.
- Which baking and pastry ingredients are excluded from a vegetarian and/or vegan diet.
- How to modify recipes to comply with vegetarian and/or vegan diet requirements.
- Proper mixing methods, proofing times, and cook times to successfully prepare a variety of yeast doughs and quick breads.
- General procedures used in creating a variety of cookies, pies, tarts, and laminated doughs.
- Proper methods to prepare cakes, fillings, and icings.
- Proper procedure for assembling, icing, and decorating cakes.
- Processes used to create fundamental products in professional bakeries, including yeast and chemical leavening, emulsions, foaming, lamination, proofing, folding, creaming, and two-stage mixing.

Students are able to:

- Modify a baking and pastry recipe to create a product with improved nutritional values.
- Successfully select ingredient substitutions in baking and pastry recipes to achieve desired outcomes.

- Intentionally select and reduce ingredient quantities to improve nutritional values in baking and pastry recipes.
- Omit or substitute animal-derived products in baking and pastry recipes to successfully create items that comply with vegetarian and/or vegan diets.
- Apply the proper mixing methods, proofing times, and cook times to successfully prepare a variety of yeast doughs and quick breads.
- Apply the proper mixing methods and make up in creating a variety of cookies, pies, tarts, and laminated doughs.
- Select the correct methods to prepare cakes, fillings, and icings.
- Execute the proper procedure for assembling, icing, and decorating cakes.
- Successfully prepare egg-based custards, creams, and meringues.
- Define and explain the processes used to create fundamental products in professional bakeries, including yeast and chemical leavening, emulsions, foaming, lamination, proofing, folding, creaming, and two-stage mixing.

Students understand:

Driving/Essential Question	What challenges will the student experience in the kitchen and how will they deal with it?
Exemplar High Quality Task	The student will be able to independently think and execute a baking and pastry recipe when they do not have all ingredients and they will be able to substitute an item and still have the same outcome.

Map of Student Learning by Learning Objective

Unpacked Learning Objective SWBAT	Potential Subtasks for Assessments Formative/Summative	Potential Learning Activities Link to Differentiation Examples	Integrated and Related Academic Content: ELA, Math, Science, and/or Social Studies Concepts and Activities	Equipment, Technology and Materials Equipment List by CTE Cluster Link to Helpful Tech Tools
Students are able to create and modify recipes for a healthy alternative.	**Summative:** Write a summary of how the modification changed the product.	Lab: Modified recipe lab: Create original and modified recipes to evaluate the differences. Example: adding protein powder to a recipe to	**ELA:** Adapt a recipe by creating a healthy alternative by writing a blog post that includes nutritional information, ingredient substitutions,	Convection oven, stove ,digital scale, bakers scale, bakers rack, sheet pans, cooling racks, measuring cups and measuring spoons, and not limited to but they

		increase healthfulness to the product.	and modifications that maintain flavor and texture. **ELA:** Utilize substitution techniques to produce healthy alternatives to traditional baking and pastry items. **Social Studies:** Study various culture differences in the preparation of food for healthier alternatives.	will need notebook and paper for modifying recipes.
Students are able to substitute fats, grains, sweeteners, and other ingredients in a recipe.	**Formative:** Summarize what happens to the final product when substituting an ingredient in a recipe. **Summative:** Lab Report	Lab: Substitution Lab Students create different versions of the same recipes with different substitutes for fat, sugar, or grains, etc. Example: applesauce instead of fat	**ELA:** Create a comparative analysis that demonstrates how substitutions of different types of fats, grains, sweeteners, and other ingredients affect flavor, texture, and nutritional content. **Math:** Model the Baker Percentage to make the proper substitutions for healthy recipe alternatives. **Science:** Outline empirical evidence to compare and contrast ingredients (fats, grains, sweeteners, etc.) to increase the nutritional value of a recipe without compromising the desired outcome.	oven, stove, digital scale, baker scale, measuring cups and spoons, bakers rack, sheet pans, cooling rack, notebook and pen for modifying the recipes.

			Social Studies: Create a recipe that incorporates the alternative ingredients. Using this recipe, attach it to a region of the US that would most likely serve this in a restaurant.	
Create recipes to reduce the amount of fat, sweeteners, grains, and other ingredients in a recipe.	**Formative:** Summarize what happens to the final product when changing the amount of an ingredient in a recipe. **Summative:** Lab Report	Reduction Lab: Students experiment with different amounts of ingredients (e.g. fat, sugar, grains, etc.) to determine product outcome. Example: ¾ c. of sugar instead of 1 cup of sugar.	**ELA:** Design a recipe booklet that includes original and adjusted recipes, highlighting the changes and their impact. **Science:** Use experimental design and the scientific method to determine the lowest amount of fats, grains, etc. that does not compromise the overall product. **Social Studies:** Prepare popular recipes from around the world and alter them to include a reduced amount of fat, sweeteners, grains, and other ingredients.	oven, stove, proof box, mixer, scale, digital scale, bakers rack, sheet pans, cooling racks, notebook and pen for modifying recipes.
Modify a recipe to include vegetarian, diabetic, gluten free and or vegan.	**Formative:** Summarize what happens to the final product when changing an ingredient in a recipe from non-vegan to vegan. **Summative:**	Vegan Lab: Determine non-vegan products in a recipe and find an alternate ingredient that will produce a vegan product. Create the product in the lab and	**ELA:** Create a portfolio that presents the original recipes alongside adjusted versions, explaining the substitutions and their dietary suitability.	stove, oven, bakers rack ,cooling rack, digital scale, baker's scale, measuring cups and measuring spoons. Notebook and pen to modify recipes.

	Lab Report	compare it to the original recipe.	**Social Studies:** Use the knowledge of different regional cuisine to make proper substitutions for different diets to include vegan, vegetarian, diabetic and gluten free. **Science:** Recognize the chemical and physical properties of different ingredients in order to modify recipes without compromising the overall product.	
The student will be able to create lean, rich, and artisan based breads, pastries and quick breads.	**Formative:** Graphic organizer distinguishing the types of doughs and examples of each. **Summative:** Lab Reports	Various bread labs: Lean Doughs Rich Doughs Artisan Breads Quick Breads	**ELA:** Produce a collection of baked goods and document the process in a detailed recipe book. **Math:** Identify the knowledge needed to use the proper math to determine proper time and executions of a baking and pastry recipe from start to finish.The items will include yeast driven breads and pastries, and quick breads. **Social Studies:** Study various European style breads and pastries. Identify the differences in the styles of the breads.	stove, oven, baker's rack, cooling racks, digital scale, baker's scale, measuring cups and measuring spoons. Notebook and pen to modify recipes,

Create cookies, pies, tarts, and laminated doughs.	**Formative:** Lab Reports	Lab activity preparation, execution, observation and analysis, and cleanup and Reflection. The different labs will include pie,tart,cookies, and laminated dough.	**ELA:** Produce a collection of baked goods and document the process in a detailed recipe book. **Math:** Identify the knowledge needed to use the proper math to determine proper time and executions of a baking and pastry recipe from start to finish.The items will include cookies, pies, tarts and laminated doughs.	stove, oven, bakers rack ,cooling rack, digital scale, baker's scale, measuring cups and measuring spoons. Notebook and pen to modify recipes.
Create cakes, fillings and icings and decorate cakes.	**Formative:** Lab Reports	Lab activity creates a layer cake including	**ELA:** Produce a collection of baked goods and document the process in a detailed recipe book. **Math:** Identify the knowledge needed to use the proper math to determine proper time and executions of a baking and pastry recipe from start to finish.The items will include cakes, fillings and icings.. **Social Studies:** Study various styles of icings used around the world.	stove, oven, bakers rack ,cooling rack, digital scale, baker's scale, measuring cups and measuring spoons. Notebook and pen to modify recipes.
Create egg-based custards, creams, and meringues.	**Formative:** Lab Reports	Lab activity will be to correctly create an egg based custard, cream, and	**ELA:** Produce a collection of baked goods and	stove, oven, bakers rack ,cooling rack, digital scale, baker's scale, measuring cups and measuring

		meringue.The finished product will be graded on taste, texture, color, and flavor.	document the process in a detailed recipe book. **Math:** Identify the knowledge needed to use the proper math to determine proper time and executions of a baking and pastry recipe from start to finish.The items will include egg-based custards, creams and meringues..	spoons. Notebook and pen to modify recipes.
Describe the processes according to the categorical methods that include yeast and chemical leavening, emulsions, foaming, lamination, proofing, folding, creaming, and two-stage mixing.	**Summative:** Infographic and chart		**ELA:** Create an infographic defining the methods of producing different baked goods. Place the infographic in the detailed recipe book that students have been creating. **Science**: chart the effects of different leaving processes in baked goods.	

Key Vocabulary

Modify, Scale, Alternative, Healthy, Yeast, Lean and Rich Dough, Baking and Pastry

Work-Based Learning, Simulated Work Experiences, and Experiential Learning:

Students are able to adapt and make changes to recipes for healthy alternative diets. This is a skill that will be useful in the Culinary industry.

CTSO Connection:

Bakery and Pastry Arts FCCLA STAR Event; Pastry Arts Technical Decorating Skills-FCCLA Skills Demonstration Event

Certification/Credential Connection:

Alabama Certified Employee (ACE) / Food and Beverage – Skills for Success / ServSafe Manager