



Program of Study Guide: **Baking and Pastry Arts - DRAFT**

Comprehensive guidelines and course standards
for the Culinary and Food Services pathway

Office of College and Career Pathways

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MARYLAND STATE DEPARTMENT OF EDUCATION

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Purpose

The purpose of this document is to communicate the required Career and Technical Education (CTE) academic standards for the Baking and Pastry Arts Program of Study. The academic standards in this document are theoretical and performance based. The standards contain content from multiple state departments of education, the College Board, the American Culinary Federation, and the National Restaurant Association. They have been reviewed and vetted by members of the Maryland business and industry community.

In addition to academic standards, the Maryland State Department of Education (MSDE) has incorporated into this document Labor Market Information (LMI) definitions and explanations for the Program of Study; program aligned Industry Recognized Credentials; and Work-Based Learning resources and requirements by course level.

This document is intended for use by educational administrators and practitioners. A similar document is available for each state-approved CTE Program of Study.

Sources of Standards

The development of the Baking and Pastry Arts I-IV course standards is informed by several authoritative sources that provide comprehensive guidelines and frameworks for baking and pastry arts education. These sources collectively provide a robust foundation for developing comprehensive and industry-aligned standards for the Baking and Pastry Arts I-IV courses, ensuring that students acquire the necessary skills and knowledge to succeed in the field of culinary and food services.

Below is a list of these sources, along with descriptions, their applications in course development, and corresponding web links:

Here is a comprehensive list of sources for the standards used in developing the Baking and Pastry Arts I, II, III, and IV courses:

1. **Advance CTE's Career Clusters Framework**

- A. **Description:** The Advance CTE framework provides a nationally recognized structure for organizing career and technical education (CTE) into 16 Career Clusters. Each cluster represents a grouping of occupations and industries, with the Hospitality, Events, & Tourism Career Cluster focusing on careers related to food and beverage services, lodging, travel, tourism, recreation, and event planning.
- B. **Usage:** This framework serves as a foundational guideline for developing Baking and Pastry Arts standards, ensuring alignment with industry-specific expectations and emphasizing essential knowledge and skills for each level of study.
- C. **Source:** Advance CTE Career Clusters: <https://careertech.org/career-clusters/>

2. **ServSafe Certification Standards (National Restaurant Association)**

- A. **Description:** ServSafe provides widely recognized food safety training programs and certifications, including the Food Handler and Food Manager certifications. These certifications are essential for ensuring that culinary professionals understand and apply safe food handling practices.
- B. **Usage:** The ServSafe standards guide the food safety components of Baking and Pastry Arts I and II, establishing foundational and advanced food safety knowledge necessary for students preparing for professional roles in foodservice.
- C. **Source:** ServSafe by the National Restaurant Association: <https://www.servsafe.com/>

3. **American Culinary Federation (ACF) Certification Standards**

- A. **Description:** The American Culinary Federation (ACF) is a leading professional organization for chefs and culinary professionals. ACF offers several certifications, including the Certified Fundamentals Pastry Cook (CFPC), which recognizes foundational skills and knowledge in pastry arts.
- B. **Usage:** ACF's CFPC certification standards inform the advanced pastry techniques and knowledge in Baking and Pastry Arts III and IV, preparing students for the credential and ensuring alignment with industry-recognized competencies.
- C. **Source:** American Culinary Federation Certifications: <https://www.acfchefs.org/ACF/Certify/>

4. **Retail Bakers of America (RBA) Certification Standards**

- A. **Description:** The Retail Bakers of America (RBA) offers certifications, such as the Certified Journey Baker, which validate competencies in professional baking, ingredient knowledge, and baking techniques.
- B. **Usage:** RBA certification standards guide the curriculum in Baking and Pastry Arts III and IV, with an emphasis on the practical baking skills and techniques expected of entry-level professionals in the retail baking industry.
- C. **Source:** [Retail Bakers of America Certifications: <https://www.retailbakersofamerica.org/certification/certification-requirements>

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5. **ProStart Certification Standards (National Restaurant Association Educational Foundation)**
 - A. **Description:** ProStart is a career and technical education program that provides high school students with culinary and management skills and offers the ProStart Certificate of Achievement upon successful completion.
 - B. **Usage:** The ProStart standards are referenced in Baking and Pastry Arts III and IV to ensure students gain broad knowledge in both culinary techniques and management practices, preparing them for industry-recognized certification and career readiness.
 - C. **Source:** ProStart Program by the National Restaurant Association Educational Foundation: <https://chooserestaurants.org/ProStart>
 6. **National Institute for Occupational Safety and Health (NIOSH) Food Safety and Occupational Health Standards**
 - A. **Description:** NIOSH provides guidelines for maintaining health and safety in workplaces, including foodservice environments, covering topics such as hazard analysis, critical control points (HACCP), and kitchen safety practices.
 - B. **Usage:** NIOSH standards inform the safety and sanitation aspects of the Baking and Pastry Arts courses, with a focus on maintaining a safe work environment and reducing occupational hazards in a professional kitchen.
 - C. **Source:** NIOSH Food Safety and Health: <https://www.cdc.gov/niosh/>

Course Descriptions

Course Level	Course Information	Description
Required Core: Course 1	Baking and Pastry Arts I SCED: <XX> Grades: 9-12 Prerequisite: None Credit: 1	Baking and Pastry Arts I is an introductory course that immerses students in the foundational skills of Baking and Pastry Arts, emphasizing food safety, basic baking techniques, and ingredient functions. Students will explore the science behind baking processes while learning essential skills such as measurement, mixing, and basic pastry techniques.
Required Core: Course 2	Baking and Pastry Arts II SCED: <XX> Grades: 10-12 Prerequisite: Baking and Pastry Arts I Credit: 1	Building on the foundations of Baking and Pastry Arts I, this course introduces students to intermediate baking and pastry techniques, focusing on advanced food safety and kitchen management. Students will develop skills in dough preparation, fermentation, and precise temperature control while learning to manage food safety at a supervisory level.
Optional Flex: Course 1	Baking and Pastry Arts III SCED: <XX> Grades: 11-12 Prerequisite: Baking and Pastry Arts I and II Credit: 1	Progressing from Baking and Pastry Arts II, this course deepens students' expertise in advanced pastry and baking techniques, preparing them for certifications and hands-on experience in a professional environment. Students will refine their skills in complex baking methods such as laminated doughs, specialty breads, and plated desserts, with an emphasis on presentation and quality control.
Optional Flex: Course 2	Career Connected Learning I SCED: <XX> Grades: 11-12 Prerequisite: Baking and Pastry Arts I and II Credit: 1	This flexible, work-based learning course introduces students to real-world applications of classroom knowledge and technical skills through on-the-job experiences and reflective practices. Students engage in career exploration, skill development, and professional networking by participating in youth apprenticeships, registered apprenticeships, pre-apprenticeships, internships, capstone projects, or other approved career-connected opportunities. Variable credit (1–3) accommodates the required on-the-job training hours and related instruction. By integrating industry standards, employability skills, and personalized learning goals, Career Connected Learning I equips students to make informed career decisions, develop a professional portfolio, and build a strong foundation for success in postsecondary education, training, or the workforce.

Course Level	Course Information	Description
Optional Flex: Course 3	Career Connected Learning II SCED: <XX> Grades: 11-12 Prerequisite: Career Connected Learning I Credit: 1	Building on the foundational experiences of Career Connected Learning I, this advanced work-based learning course provides students with deeper on-the-job practice, leadership opportunities, and refined career exploration. Students continue to enhance their technical and professional skills, expanding their industry networks and aligning personal goals with evolving career interests. Variable credit (1–3) remains aligned with the required training hours and related instruction. Through elevated responsibilities and skill application, Career Connected Learning II prepares students to confidently transition into higher-level postsecondary programs, apprenticeships, or the workforce.

Dual Enrollment and Career Connected Learning Experiences Must be Aligned to the CTE Core.

Industry-Recognized Credentials and Work-Based Learning

Industry-Recognized Credentials – The standards in this document are aligned to the following certifications:

The course standards align to and prepare students for the following certifications:

By the end of Baking and Pastry Arts I: ServSafe Food Handler (not on the IRC list).

By the end of Baking and Pastry Arts II: ServSafe Manager

Optional Credentials (via the Flex Course options): American Culinary Federation (ACF) Certified Fundamentals Pastry Cook (CFPC) certification, Retail Bakers of America (RBA) Certified Journey Baker, or ProStart Certificate of Achievement

Work-Based Learning Examples and Resources

Baking and Pastry Arts I: Career Awareness	Baking and Pastry Arts II: Career Preparation	Flex Courses: Career Preparation
<ul style="list-style-type: none"> Industry Visits Guest Speakers Participation in Career and Technical Student Organizations Postsecondary Visits – Program Specific Site Tours Mock Interviews 	<ul style="list-style-type: none"> All of Career Awareness plus the following: Job Shadow Paid and Unpaid Internships 	<ul style="list-style-type: none"> Paid and Unpaid Internships Apprenticeships

Labor Market Information: Definitions and Data

Labor market information (LMI) plays a crucial role in shaping Career and Technical Education (CTE) programs by providing insights into industry demands, employment trends, and skills gaps. This data helps education leaders assess the viability of existing programs and identify opportunities for new offerings. By aligning CTE programs with real-time labor market needs, schools can better prepare students for in-demand careers and ensure that resources are effectively used to support pathways that lead to high-quality, sustainable employment.

Standard Occupational Code (SOC) and Aligned Industry:

Indicator	Definition	Pathway Labor Market Data
High Wage¹	<p>Those occupations that have a 25th percentile wage equal to or greater than the most recent MIT Living Wage Index for one adult in the state of Maryland, and/or leads to a position that pays at least the median hourly or annual wage for the DC-VA-MD-WV Metropolitan Statistical Area (MSA).</p> <p><i>Note: A 25th percentile hourly wage of \$24.74 or greater is required to meet this definition.</i></p>	<p>Standard Occupational Code 11-9050: Food Service Managers 51-3011: Bakers</p> <p>Hourly Wage/Annual Salary 25th Percentile: \$15.66 / \$46,862.00 50th Percentile: \$17.80 / \$37,024.00 75th Percentile: \$20.64 / \$42,931.00</p>
High Skill	<p>Those occupations located within the DC-VA-MD-WV Metropolitan Statistical Area (MSA) with the following education or training requirements: completion of an apprenticeship program; completion of an industry-recognized certification or credential; associate's degree, bachelor's degree, or higher.</p>	<p>Typical Entry-Level Education</p> <p>To enter the occupation, chefs and head cooks typically need a high school diploma plus experience. Some attend a culinary program at a community college, technical school, Baking and Pastry Arts school, or 4-year college. Others learn through apprenticeship programs or in the Armed Forces.</p>
In-Demand	<p>Annual growth plus replacement, across all Maryland occupations, is <u>405</u> openings between 2024-2029.</p>	<p>Annual Openings</p>

¹ Living Wage Calculator: <https://livingwage.mit.edu/states/24>

Labor Market Information Data Source

Lightcast Q4 2024 Data Set. Lightcast occupation employment data are based on final Lightcast industry data and final Lightcast staffing patterns. Wage estimates are based on Occupational Employment Statistics (QCEW and Non-QCEW Employees classes of worker) and the American Community Survey (Self-Employed and Extended Proprietors). Occupational wage estimates are also affected by county-level Lightcast earnings by industry. Foundational data for the state of Maryland is collected and reported by the Maryland Department of Labor.

Methodology for High Wage Calculations

To combine labor market data across multiple Standard Occupational Classifications (SOCs), a weighted average approach was used to ensure accurate representation of the marketplace. Median wages for each SOC were weighted based on their respective employment levels, reflecting the relative demand for each occupation. This method ensures that occupations with higher employment contribute proportionately to the overall wage calculation. Additionally, job openings from all relevant SOCs were summed to determine the total projected demand. For example, if Mechanical Engineers account for 67% of total employment and Electrical Engineers for 33%, their respective wages are weighted accordingly, and job openings are aggregated to provide a comprehensive view of labor market opportunities. This approach delivers a balanced and accurate representation of both wages and employment demand for the program.

Methodology for In-Demand Calculations

The baseline for annual job openings, taking into account new positions and replacement positions, was determined by taking the average of all annual job openings between 2024 and 2029 across all 797 career sectors at the 5-digit SOC code level. For the 2024-2029 period, average job openings (growth + replacement) is 405.

Course Standards: Baking and Pastry Arts I

1. GENERAL REQUIREMENTS. This course is recommended for students in Grades 9-12.

2. INTRODUCTION

- A. Career and Technical Education (CTE) instruction provides content aligned with challenging academic standards and relevant technical knowledge and skills for students to further their education and succeed in current or emerging professions.
- B. The Hospitality, Events, & Tourism Career Cluster is dedicated to careers in the service, operation, and management of establishments involved in the preparation and serving of food and drinks with significant emphasis on providing exceptional culinary experiences and delivering high-quality customer service. These establishments vary widely, encompassing independently owned restaurants, nationwide restaurant chains, noncommercial dining facilities, bakeries, and catering services. Professionals in this career cluster span all aspects and levels of food preparation, including beverage specializations, as well as restaurant management, operations support, and health and safety.
- C. The Baking and Pastry Arts Program of Study is a comprehensive pathway that equips high school students with the skills, knowledge, and hands-on experience necessary for careers in the baking and pastry arts. This program offers an in-depth exploration of baking techniques, food science, and industry-standard safety practices while preparing students for professional certifications recognized in the culinary and hospitality sectors.
- D. Baking and Pastry Arts I provides hands-on practice reinforcing safe food handling and sanitation procedures necessary for any baking environment. By the end of the course, students will be prepared to earn the ServSafe Food Handler certification, demonstrating their knowledge of basic food safety practices.
- E. Students will participate in at least two Career-Connected Education and Work-Based Learning experiences in this course, which might include informational interviews or job shadowing relevant to the program of study.
- F. Students are encouraged to participate in extended learning experiences through aligned Career and Technical Student Organizations (CTSOs). CTSOs are a cocurricular requirement in the Carl D. Perkins Act, and alignment to CTSO activities is an expectation for CTE programs in the state of Maryland.

3. KNOWLEDGE AND SKILLS

- A. **The student demonstrates the necessary skills for career development, maintenance of employability, and successful completion of course outcomes. The student is expected to:**
 - 1. Identify and demonstrate positive work behaviors that enhance employability and job advancement, such as regular attendance, promptness, proper attire, maintenance of a clean and safe work environment, and pride in work.
 - 2. Demonstrate positive personal qualities such as flexibility, open-mindedness, initiative, active listening, and a willingness to learn.
 - 3. Employ effective reading, writing, and technical documentation skills.
 - 4. Solve problems using critical thinking techniques and structured troubleshooting methodologies.
 - 5. Demonstrate leadership skills and collaborate effectively as a team member.
 - 6. Implement safety procedures, including proper use of software and following privacy guidelines.

7. Exhibit an understanding of legal and ethical responsibilities in the culinary field, following copyright laws and regulations.
 8. Demonstrate time-management skills and the ability to prioritize tasks in a technical setting.
- B. The student identifies various career pathways in the baking and food service field. The student is expected to:**
1. Develop a career plan that includes the necessary education, certifications, job skills, and experience for specific roles in baking and pastry arts.
 2. Create a professional resume and portfolio that reflect skills, projects, certifications, and recommendations.
 3. Demonstrate effective interview skills for roles in baking and food service.
- C. The student develops technology and digital literacy skills. The student is expected to:**
1. Use technology as a tool for research, organization, communication, and problem-solving.
 2. Use digital tools, including computers, mobile devices, collaboration platforms, and cloud services, to access, manage, and create information.
 3. Demonstrate proficiency in using emerging and industry-standard technologies, including baking and pastry skills and applying creative effects to create visually appealing and tasteful products.
 4. Understand ethical and legal considerations for technology use, including the principles of data protection, copyright, and responsible technology use.
- D. The student integrates core academic skills into culinary practices. The student is expected to:**
1. Demonstrate the use of clear communication techniques by documenting baking processes, including recipe notes, quality evaluations, and troubleshooting steps that are consistent with industry standards.
 2. Apply English concepts such as Interpreting technical texts with recipes, food safety guidelines, and equipment manuals, with accuracy.
 3. Use mathematical concepts, such as ratio and proportion, for ingredient scaling and recipe adjustments.
- E. The student demonstrates the necessary skills to maintain food safety and sanitation practices in baking and culinary environments. The student is expected to:**
1. Identify and apply basic food safety procedures, including personal hygiene, cross-contamination prevention, and time and temperature control.
 2. Explain and adhere to procedures for cleaning and sanitizing baking tools, surfaces, and equipment in compliance with health standards.
 3. Describe common foodborne pathogens and preventative measures, integrating these concepts in daily baking operations.
 4. Apply ServSafe guidelines for safe food storage, handling, and temperature control.
- F. The student demonstrates the necessary skills to understand and implement fundamental baking techniques and ingredient functions. The student is expected to:**
1. Identify the primary ingredients in baking (flour, sugar, eggs, fats, and leavening agents) and explain their roles and interactions in recipes.

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2. Apply basic measurement and scaling techniques, including the use of metric and standard units, for accuracy in ingredient preparation.
 3. Practice essential baking techniques, such as mixing, kneading, folding, and creaming, with attention to recipe specifications.
 4. Analyze the impact of time, temperature, and ingredient proportions on the quality and texture of baked products.
 5. Analyze and interpret results from baking experiments, focusing on texture, taste, and consistency, to understand ingredient functions and improve techniques.
- G. **The student demonstrates the necessary skills to manage baking operations and follow industry protocols. The student is expected to:**
1. Demonstrate effective time management by planning, organizing, and executing baking tasks within specified timelines.
 2. Communicate clearly and accurately in a team setting, ensuring all members understand their roles in the production process.
 3. Practice proper storage and inventory procedures for baking ingredients, focusing on rotation, expiration dates, and proper environmental conditions.
 4. Use basic tools and equipment safely and efficiently, following standard operating procedures for maintenance and troubleshooting.
- H. **The student demonstrates the necessary skills to integrate core academic skills in a baking and culinary context. The student is expected to:**
1. Apply mathematical concepts, such as ratio and proportion, for ingredient scaling and recipe adjustments.
 2. Communicate effectively by documenting baking processes, including recipe notes, quality evaluations, and troubleshooting steps.
 3. Interpret technical texts, such as recipes, food safety guidelines, and equipment manuals, with accuracy.
 4. Analyze and interpret results from baking experiments, focusing on texture, taste, and consistency, to understand ingredient functions and improve techniques.

Course Standards: Baking and Pastry Arts II

1. **GENERAL REQUIREMENTS.** This course is recommended for students in Grades 10-12.
2. **INTRODUCTION**
 - A. Career and Technical Education (CTE) instruction provides content aligned with challenging academic standards and relevant technical knowledge and skills for students to further their education and succeed in current or emerging professions.
 - B. The Hospitality, Events, & Tourism Career Cluster is dedicated to careers in the service, operation, and management of establishments involved in the preparation and serving of food and drinks with significant emphasis on providing exceptional culinary experiences and delivering high-quality customer service. These establishments vary widely, encompassing independently owned restaurants, nationwide restaurant chains, noncommercial dining facilities, bakeries, and catering services. Professionals in this career cluster span all aspects and levels of food preparation, including beverage specializations, as well as restaurant management, operations support, and health and safety.
 - C. The Baking and Pastry Arts Program of Study is a comprehensive pathway that equips high school students with the skills, knowledge, and hands-on experience necessary for careers in the baking and pastry arts. This program offers an in-depth exploration of baking techniques, food science, and industry-standard safety practices while preparing students for professional certifications recognized in the culinary and hospitality sectors.
 - D. Baking and Pastry Arts II focuses on ingredient science, recipe adaptation, and multi-step baking processes. By the end of the course, students will be ready to earn the ServSafe Food Manager certification, preparing them for roles that require advanced knowledge of food safety and kitchen oversight.
 - E. Students will participate in at least two Career-Connected Education and Work-Based Learning experiences in this course, which might include informational interviews or job shadowing relevant to the program of study.
 - F. Students are encouraged to participate in extended learning experiences through aligned Career and Technical Student Organizations (CTSOs). CTSOs are a cocurricular requirement in the Carl D. Perkins Act, and alignment to CTSO activities is an expectation for CTE programs in the state of Maryland.
3. **KNOWLEDGE AND SKILLS**
 - A. **The student demonstrates the necessary skills for career development, maintenance of employability, and successful completion of course outcomes. The student is expected to:**
 1. Identify and demonstrate positive work behaviors that enhance employability and job advancement, such as regular attendance, promptness, proper attire, maintenance of a clean and safe work environment, and pride in work.
 2. Demonstrate positive personal qualities such as flexibility, open-mindedness, initiative, active listening, and a willingness to learn.
 3. Employ effective reading, writing, and technical documentation skills.
 4. Solve problems using critical thinking techniques and structured troubleshooting methodologies.
 5. Demonstrate leadership skills and collaborate effectively as a team member.
 6. Implement safety procedures, including proper use of software and following privacy guidelines.

7. Exhibit an understanding of legal and ethical responsibilities in the culinary field, following copyright laws and regulations.
 8. Demonstrate time-management skills and the ability to prioritize tasks in a technical setting.
- B. The student identifies various career pathways in the baking and food service field. The student is expected to:**
1. Develop a career plan that includes the necessary education, certifications, job skills, and experience for specific roles in baking and pastry arts.
 2. Create a professional resume and portfolio that reflect skills, projects, certifications, and recommendations.
 3. Demonstrate effective interview skills for roles in baking and food service.
- C. The student develops technology and digital literacy skills. The student is expected to:**
1. Use technology as a tool for research, organization, communication, and problem-solving.
 2. Use digital tools, including computers, mobile devices, collaboration platforms, and cloud services, to access, manage, and create information.
 3. Demonstrate proficiency in using emerging and industry-standard technologies, including baking and pastry skills and applying creative effects to create visually appealing and tasteful products.
 4. Understand ethical and legal considerations for technology use, including the principles of data protection, copyright, and responsible technology use.
- D. The student integrates core academic skills into culinary practices. The student is expected to:**
1. Demonstrate the use of clear communication techniques by documenting baking processes, including recipe notes, quality evaluations, and troubleshooting steps that are consistent with industry standards.
 2. Apply English concepts such as Interpreting technical texts with recipes, food safety guidelines, and equipment manuals, with accuracy.
 3. Use mathematical concepts for measurement and conversion (Fahrenheit vs. Celsius), ratios and proportions as well as fraction and decimal conversions.
- E. The student demonstrates the necessary skills in advanced food safety and sanitation practices for a baking environment. The student is expected to:**
1. Apply advanced ServSafe protocols for preventing cross-contamination and maintaining safe temperatures.
 2. Implement management-level food safety procedures, including hazard analysis and critical control points (HACCP).
 3. Conduct routine safety inspections and apply corrective actions to ensure compliance with health regulations.
- F. The student demonstrates mastery in advanced baking techniques and production processes. The student is expected to:**
1. Execute complex baking methods, including lamination, proofing, and controlled fermentation.
 2. Manage production schedules and calculate ingredient scaling for high-volume baking.

3. Utilize precision tools and equipment, such as digital thermometers and proofing cabinets, for quality control.

G. The student demonstrates knowledge of ingredient science and its applications in baking.

The student is expected to:

1. Analyze the chemical and physical properties of ingredients and their effects on baking processes.
2. Experiment with ingredient modifications to adapt recipes for dietary restrictions or desired textures.
3. Understand the science of leavening agents and their role in product consistency and quality.

H. The student demonstrates the necessary skills for customer service and operations management within a bakery setting. The student is expected to:

1. Develop customer service strategies to enhance the guest experience in a bakery or foodservice environment.
2. Apply principles of inventory control and cost management to minimize waste and maximize efficiency.
3. Collaborate with team members to manage workflow, delegate tasks, and ensure timely product delivery.

I. I. The student demonstrates foundational knowledge in pastry and bakery arts to prepare for advanced certifications. The student is expected to:

1. Begin developing a portfolio of complex baked goods, including pastries, breads, and specialty items.
2. Explore industry certification pathways (CFPC, RBA Journey Baker, ProStart) and identify skills required for each.
3. Reflect on personal progress in skill development to set goals for advanced certification readiness.

Course Standards: Baking and Pastry Arts III

1. **GENERAL REQUIREMENTS.** This course is recommended for students in Grades 10-12.
2. **INTRODUCTION**
 - A. Career and Technical Education (CTE) instruction provides content aligned with challenging academic standards and relevant technical knowledge and skills for students to further their education and succeed in current or emerging professions.
 - B. The Hospitality, Events, & Tourism Career Cluster is dedicated to careers in the service, operation, and management of establishments involved in the preparation and serving of food and drinks with significant emphasis on providing exceptional culinary experiences and delivering high-quality customer service. These establishments vary widely, encompassing independently owned restaurants, nationwide restaurant chains, noncommercial dining facilities, bakeries, and catering services. Professionals in this career cluster span all aspects and levels of food preparation, including beverage specializations, as well as restaurant management, operations support, and health and safety.
 - C. The Baking and Pastry Arts Program of Study is a comprehensive pathway that equips high school students with the skills, knowledge, and hands-on experience necessary for careers in the baking and pastry arts. This program offers an in-depth exploration of baking techniques, food science, and industry-standard safety practices while preparing students for professional certifications recognized in the culinary and hospitality sectors.
 - D. Baking and Pastry Arts III introduces students to operational management concepts such as inventory control, cost management, and customer relations in a bakery setting. By the end of the course, students will be prepared to pursue the Certified Fundamentals Pastry Cook (CFPC), Retail Bakers of America (RBA) Certified Journey Baker, or ProStart Certificate of Achievement, depending on their interests.
 - E. Students will participate in at least two Career-Connected Education and Work-Based Learning experiences in this course, which might include informational interviews or job shadowing relevant to the program of study.
 - F. Students are encouraged to participate in extended learning experiences through aligned Career and Technical Student Organizations (CTSOs). CTSOs are a cocurricular requirement in the Carl D. Perkins Act, and alignment to CTSO activities is an expectation for CTE programs in the state of Maryland.
3. **KNOWLEDGE AND SKILLS**
 - A. **The student demonstrates the necessary skills for career development, maintenance of employability, and successful completion of course outcomes. The student is expected to:**
 1. Identify and demonstrate positive work behaviors that enhance employability and job advancement, such as regular attendance, promptness, proper attire, maintenance of a clean and safe work environment, and pride in work.
 2. Demonstrate positive personal qualities such as flexibility, open-mindedness, initiative, active listening, and a willingness to learn.
 3. Employ effective reading, writing, and technical documentation skills.
 4. Solve problems using critical thinking techniques and structured troubleshooting methodologies.
 5. Demonstrate leadership skills and collaborate effectively as a team member.

6. Implement safety procedures, including proper use of software and following privacy guidelines.
 7. Exhibit an understanding of legal and ethical responsibilities in the culinary field, following copyright laws and regulations.
 8. Demonstrate time-management skills and the ability to prioritize tasks in a technical setting.
- B. The student identifies various career pathways in the baking and food service field. The student is expected to:**
1. Develop a career plan that includes the necessary education, certifications, job skills, and experience for specific roles in baking and pastry arts.
 2. Create a professional resume and portfolio that reflect skills, projects, certifications, and recommendations.
 3. Demonstrate effective interview skills for roles in baking and food service.
- C. The student develops technology and digital literacy skills. The student is expected to:**
1. Use technology as a tool for research, organization, communication, and problem-solving.
 2. Use digital tools, including computers, mobile devices, collaboration platforms, and cloud services, to access, manage, and create information.
 3. Demonstrate proficiency in using emerging and industry-standard technologies, including baking and pastry skills and applying creative effects to create visually appealing and tasteful products..
 4. Understand ethical and legal considerations for technology use, including the principles of data protection, copyright, and responsible technology use.
- D. The student integrates core academic skills into culinary practices. The student is expected to:**
1. Demonstrate the use of clear communication techniques by documenting baking processes, including recipe notes, quality evaluations, and troubleshooting steps that are consistent with industry standards.
 2. Apply English concepts such as Interpreting technical texts with recipes, food safety guidelines, and equipment manuals, with accuracy.
 3. Use mathematical concepts for measurement and conversion (Fahrenheit vs. Celsius), ratios and proportions as well as fraction and decimal conversions.
- E. The student demonstrates the necessary skills in advanced food safety and management practices within a baking environment. The student is expected to:**
1. Implement and oversee HACCP (Hazard Analysis Critical Control Points) protocols in a professional kitchen setting.
 2. Conduct regular food safety audits and provide corrective feedback to maintain compliance.
 3. Apply management-level ServSafe standards to ensure all team members adhere to best practices in food safety.
- F. The student demonstrates mastery of advanced pastry and baking techniques. The student is expected to:**
1. Produce a variety of complex baked goods, including laminated doughs, specialty breads, and plated desserts.

2. Utilize professional-grade tools and equipment to achieve precision in techniques, such as temperature-controlled proofing and chocolate tempering.
 3. Experiment with advanced flavor profiles and decorative techniques to create visually appealing and high-quality products.
- G. **The student demonstrates in-depth knowledge of ingredient functionality and food science in baking. The student is expected to:**
1. Analyze and control variables in recipes to achieve desired textures, flavors, and appearances.
 2. Understand the impact of environmental factors, such as humidity and temperature, on ingredient performance and final product quality.
 3. Modify recipes to accommodate dietary needs, such as gluten-free or vegan, while maintaining quality standards.
- H. **The student demonstrates the necessary skills for managing bakery operations and customer relations. The student is expected to:**
1. Apply principles of inventory and cost management to control waste and improve profitability.
 2. Develop marketing and customer service strategies to enhance the customer experience within a bakery or foodservice setting.
 3. Train and supervise peers in quality control and consistency standards for baked products.
- I. **The student demonstrates the foundational skills required for industry certification and prepares for work-based learning experiences. The student is expected to:**
1. Prepare a portfolio of signature baked goods to demonstrate proficiency in advanced pastry and bakery arts.
 2. Review certification requirements for CFPC, RBA Certified Journey Baker, and ProStart to align skills and knowledge with certification standards.
 3. Demonstrate professional communication, teamwork, and time management skills to prepare for work-based learning placements in the baking industry.

Course Standards: Career Connected Learning I and II

Career connected learning is an educational approach that integrates classroom instruction with real-world experiences, enabling high school students to explore potential careers and develop relevant skills before graduation. By participating in work-based learning opportunities—such as apprenticeships, internships, capstone projects, and school-based enterprises—students apply academic concepts in authentic settings, gain practical industry knowledge, and build professional networks. This hands-on engagement helps students connect their studies to future career paths, strengthens their problem-solving and communication skills, and supports a smoother transition into college, vocational programs, or the workforce.

All Career and Technical Education Programs of Study include aspects of work-based learning, and almost all of the programs include two Career Connected Learning (CCL) courses. Below are the course descriptions for CCL I and CCL II. [The CCL standards can be found via this link:](#)