Massachusetts Department of
ELEMENTARY & SECONDARY
EDUCATION

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Vocational Technical Education Framework

Hospitality & Tourism Occupational Cluster

Culinary Arts (VCUL)

CIP Code 520901

June 2014

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Acknowledgements

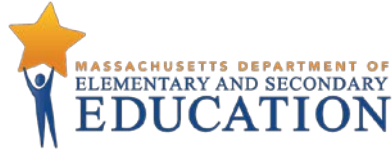The Massachusetts Department of Elementary and Secondary Education, Office for Career/ Vocational Technical Education, launched the Vocational Technical Education Framework Revision Project in April 2012. This Framework is the result of that effort and of the contributions of many educators across the state. The Department of Elementary and Secondary Education wishes to thank all of the Massachusetts groups that contributed to the development of these standards and all the individual teachers, administrators, and private sector advisory committee members who provided valuable employer validation of the standards for the Culinary Arts Framework of the Hospitality & Tourism Occupational Cluster.

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Mitchell D. Chester, Ed.D.
Commissioner

July 2014

Dear Colleagues,

I am pleased to present to you the *Massachusetts Vocational Technical Education Frameworks,* adopted by the Department of Elementary and Secondary Education in June 2014. These frameworks, one for each of the 44 vocational technical programs, include standards in multiple strands representing all aspects of the industries that students in the vocational technical education program are preparing to enter.

The frameworks also include a crosswalk between the technical standards and relevant standards in Massachusetts Curriculum Frameworks to support effective integration of academic and technical content.

The comments and suggestions received during revision of the 2007 *Massachusetts Vocational Technical Education Frameworks* have strengthened these frameworks. We will continue to work with schools and districts to implement the 2014 *Massachusetts Vocational Technical Education Frameworks* over the next several years, and we encourage your comments.

I want to thank everyone who worked with us to create challenging learning standards for Massachusetts students. I am proud of the work that has been accomplished.

Sincerely,

Mitchell D. Chester, Ed.D.
Commissioner of Elementary and Secondary Education

Introduction

Overview & Organization and Key Changes

<u>Overview</u>

The Massachusetts Department of Elementary and Secondary Education understands the necessity of maintaining current Vocational Technical Education Frameworks which ensure career/vocational technical education students across the Commonwealth are taught the most rigorous standards aligned to the needs of business and industry.

With the advent of the Massachusetts Teaching & Learning System the Office for Career/Vocational Technical Education (CVTE) recognized the significance of including career/vocational technical education in the system and developed a comprehensive plan for including vocational technical education. The plan was designed in a Two Phase Process. Phase One included the revision of strands two, three, and six, of all of the Vocational Technical Education Frameworks. Phase Two consisted of three major components (projects) all equally crucial;

1. The revision of Strands One, Four, and Five to complete the revision of all six strands of the Vocational Technical Education Frameworks;

2. Statewide Professional Development on all revised strands, with training on strands two, three, and six delivered fall 2013, and training on strands one, four, and five delivered spring 2014;

3. The creation and development of additional Model Curriculum Unit (MCU) Teams.

The Office for Career/Vocational Technical Education Framework Team, with support from consultants, began Phase One in the 2012-2013 school year, to revise three of the six strands contained in all of the Vocational Technical Education (VTE) Frameworks. The state was organized into "Collaborative Partnerships" comprised of teams of project administrators, highly qualified subject matter educators, and business and industry partners, whose task was to revise Strand Two – Technical, Strand Three – Embedded Academics, and Strand Six – Technology Literacy. Each team met with a vocational advisory committee which included business and industry representatives and postsecondary education professionals, whose mission was to review and revise the team's draft document during the revisionary process. Once strand two was revised, academic teachers (typically one English Language Arts teacher, one Mathematics teacher, and one Science teacher) worked with the technical subject matter teachers to develop a crosswalk between academic curricula standards and the technical standards, and provided examples of embedded academic content.

The Office for Career/Vocational Technical Education solicited statewide input from technical and academic teachers and administrators at the annual Massachusetts Association of Vocational Administrators (MAVA)/Massachusetts Vocational Association (MVA) - Connecting for Success Conference. Each framework team met with their content colleagues and reviewed the draft revisions and obtained

valuable feedback.   Additionally, all drafts were reviewed and revised by the Massachusetts Vocational Technical Teacher Testing Program, to ensure appropriate measurable language.

Project consultants designed a new template to ensure all framework teams entered new standards and additional resources in a consistent manner. The framework teams created an "Appendix" listing potential industry recognized credentials attainable by secondary students; lists of professional, student, and relevant government organizations; and useful resources and websites. *It is important to note that although most Framework Teams provided information for the "Appendix", not all teams did. Therefore, sub-headings within the "Appendix" without information have been deleted.   Disclaimer: Reference in the Appendices Section to any specific commercial products, processes, or services, or the use of any trade, firm or corporation name is for the information and convenience of the public, and does not constitute endorsement or recommendation by the Massachusetts Department of Elementary and Secondary Education.*

The Office for Career/Vocational Technical Education facilitated a comprehensive vetting process throughout the Commonwealth. During the fall of 2012 districts throughout Massachusetts solicited feedback from each Vocational Program's Advisory Committee members at the Fall Board meetings. Additionally, the Office for Career/Vocational Technical Education met with various licensing boards at the Massachusetts Division of Professional Licensure and provided the applicable draft framework to each board for review. All framework drafts were posted on the CVTE website for public comment. Comments and suggested revisions received were shared with each framework team for response and edits, as appropriate.

The Phase I Process was completed on an accelerated timetable and resulted in all Vocational Technical Education Frameworks; Stand Two and Strand Six, revised with current, rigorous, relevant standards. Strand Three has been redesigned into a crosswalk which directly correlates academic and technical standards. An appendix of useful material for technical teachers recommended by their peers was added to each framework.

Phase II of the Framework Revision Process consisted of three major projects;

1. The Strands One, Four & Five Project, to complete the revision of all six strands of the Vocational Technical Education Frameworks;
2. Statewide Professional Development on all revised strands, with training on strands two, three, and six delivered fall 2013, and training on strands one, four, and five delivered spring 2014;
3. The creation and development of additional Model Curriculum Unit (MCU) Teams.

The Strands One, Four, & Five Project began in the fall of 2013 with the formation of a leadership team and three work groups. Co-Managers led the leadership team comprised of three Strand Coordinators who facilitated work teams and reviewed, researched, and revised these common strands. All skills specific to the vocational technical program have been included into Strand Two Technical.

 The Strand One Team revised the safety knowledge and skills that all students need to acquire. The team included relevant issues (i.e., bullying, climate), laws, regulations, guidelines and policies pertaining to safety.

The Strand Four Team revised the Employability Knowledge and Skills that <u>all</u> students need to acquire. Teams considered current research on career readiness, including the work of the College Career Readiness Task Force convened by the Department, changes in workplace, technological changes that impact how people perform their work (i.e., communications methods), and included standards that emphasize the need for lifelong learning and adaptability given the multiple career changes over and an individual's working life. The team recommended this strand be renamed to: Career Readiness.

The Strand Five Team revised the Management & Entrepreneurship Knowledge and Skills that <u>all</u> students need to acquire. All business owners and employees must possess management and financial skills to be productive members of society. Skills included financial knowledge and basic business management skills.

All Strand One, Four and Five Project Teams worked collaboratively with staff from the Department of Elementary and Secondary Education and the Advisors of the Massachusetts Career and Technical Student Organizations to crosswalk standards to national Career & Technical Student Organizations Curricula, as applicable.

The Office for Career/Vocational Technical Education contracted the MAVA Consultant Team to work closely with the office to complete all of the work accomplished during Phase II of the Project.

A remarkable amount of work was accomplished through the efforts of hundreds of professionals who collaborated and diligently supported this work. The Office for Career/Vocational Technical Education is grateful for all the support received from the field, particularly all of the teachers (technical and academic), administrators, advisory committee members, business and industry representatives, the Division of Professional Licensure - boards, the Massachusetts Association of Vocational Administrators, the MAVA Consultants, and the Massachusetts Vocational Association, whose contributions were tremendous.

Special thanks to all staff in the Office for Career/Vocational Technical Education and the CVTE Framework Revision Team who provided guidance and numerous contributions during Phase One of the project.

Organization and Key Changes

This section contains the following:

- Highlights of Changes to the Vocational Technical Education Frameworks; which includes a summary of changes made to each strand.
- Organization of the Frameworks – Strand Two illustrates structure of topic headings, standards and objectives, and performance examples.

Highlights of Changes to the Vocational Technical Education Frameworks:

Strand One:

Safety and Health Knowledge and Skills have been revised to contain the safety standards that are common to all programs. The Strand One Team worked collaboratively with staff from the Department of Elementary and Secondary Education and the Advisors of the Career and Technical Student Organizations (CTSO) to crosswalk standards to national CTSO Curricula, as applicable.

- No objectives were deleted, only modified.
- Language and wording was clarified.
- Additions included a focus on maintaining a safe school and workplace in terms of creating a positive climate/environment.
- Student safety credential program has been revised.
- Safety attire has been revised.
- Emergency equipment and fire safety has been revised.
- Many new Performance Examples have been included.
- Within each strand, standards and objectives were grouped under Topic Headings, which are displayed in bold. Each standard is followed by a performance example. See the section below titled: "Organization of the Frameworks – Strand Two". All strands were organized in that manner, with the exception of the former Strand Three.

Strand Two:

The Technical Standards Knowledge and Skills have been revised to reflect business and industry changes since the adoption of the 2007 Vocational Technical Education Frameworks (VTEF). There are additional changes to Strand Two below:

- The Technical Knowledge and Skills (Strand Two) section contains standards specific to the particular vocational program; suffix "a" (as common to all programs) and suffix "c" (as common within a cluster) have been removed.
- Each VTEF Strand Two begins with safety and health knowledge and skills specific to the particular vocational program.
- Within each strand, standards and objectives were grouped under Topic Headings, which are displayed in bold. Each standard is followed by a performance example. See the section below

titled: "Organization of the Frameworks – Strand Two". All strands were organized in that manner, with the exception of the former Strand Three.

- Strand Two of the Frameworks for Animal Science, Environmental Science and Technology, and Horticulture, begin with core standards required for all participants in the programs, followed by a series of standards organized in concentrations. See the section below titled: "Organization of the Frameworks – Strand Two" for more information.
- An update to some of the vocational programs framework is the addition of advanced or supplemental standards which are noted in Strand Two by an asterisk (*). *These standards are not required, but are provided as suggestions that districts may choose to use to increase the depth of a particular topic, or add additional topics, particularly for advanced students or for those seniors who do not participate in cooperative education.* See the section below titled: "Organization of the Frameworks – Strand Two" for more information.

Strand Three:

Since the purpose of Strand Three was to correlate academic content that was *embedded* in the knowledge and skills necessary to perform certain technical skills, it was logical to highlight those connections through a crosswalk between the academic curriculum standards and the technical standards (Strand Two). The crosswalk directly correlates the English Language Arts (2011) and Mathematics (2011) Frameworks, incorporating the Common Core Standards and the Science and Technology/Engineering Frameworks. The crosswalk can be found in the appendix of each vocational framework. The crosswalk also includes performance examples which illustrate integrated academic and technical content.

- Embedded Academics has been replaced with a crosswalk between the academic curriculum standards and the technical knowledge and skills standards. The crosswalk is located in the Appendices.

Strand Four:

Employability (and Career Readiness) Knowledge and Skills focused on providing students with general knowledge and skills to be college and career ready. The Strand Four Team worked collaboratively with staff from the Department of Elementary and Secondary Education and the Advisors of the Career and Technical Student Organizations to crosswalk standards to national CTSO Curricula, as applicable.

- Language and wording were clarified.
- Additions included a focus on providing students with skills for employability/career readiness.
- Modifications included Career Exploration & Navigation, Communication in the Workplace, and Work Ethic & Professionalism.
- New Performance Examples have been included.
- Within each strand, standards and objectives were grouped under Topic Headings, which are displayed in bold. Each standard is followed by a performance example. See the section below titled: "Organization of the Frameworks – Strand Two". All strands were organized in that manner, with the exception of the former Strand Three.

Strand Five:

Strand Five contains Management and Entrepreneurship Knowledge and Skills that are general for all students. The Strand Five Team worked collaboratively with staff from the Department of Elementary and Secondary Education and the Advisors of the Massachusetts Career and Technical Student Organizations to crosswalk standards to national Career & Technical Student Organizations Curricula, as applicable.

- Language and wording were clarified and organized into a logical format.
- The Strand Five Team felt that the 2007 curriculum remained valid.
- Additions included a focus on providing students with skills for management and entrepreneurship applicable to all vocational programs.
- Modifications included Starting and Managing a Business, Marketing, and Financial Concepts & Applications in Business, and Legal/Ethical/Social Responsibilities.
- New Performance Examples have been included.
- Within each strand, standards and objectives were grouped under Topic Headings, which are displayed in bold. Each standard is followed by a performance example. See the section below titled: "Organization of the Frameworks – Strand Two". All strands were organized in that manner, with the exception of the former Strand Three.

Strand Six

Strand Six Technology Literacy Knowledge and Skills has been replaced with the 2008 Massachusetts Technology Literacy Standards and Expectations Framework.

Appendix[1]

Each framework contains an "Appendix" section which includes an Embedded Academic Crosswalk, Industry Recognized Credentials, Statewide Articulation Agreements, Professional, Governmental, and Student Organizations, Resources, and relevant websites.

The Appendix[2] contains:

- Embedded Academic crosswalks for English Language Arts, Mathematics, and Science & Technology/Engineering.
- Statewide Articulations: Current statewide Articulation Agreements and/or Apprenticeship Programs available to the specific vocational program are listed on this page. The development of new statewide articulations continues, and therefore these pages will be revised as new agreements are finalized.

- Industry-Recognized Credentials: Technical Teacher Teams generated lists of credentials for the vocational programs. Program Advisory Committees throughout the state reviewed and provided recommendations through the validation process. *The credential list has been provided as a resource only and districts are not obligated to provide all of the specified credentials for students.*

- Other: These pages provide lists of reference materials, government agencies, professional and student organizations, and useful websites created by each framework team. These are intended as helpful resources for technical teachers, identified by peers. These are not recommended or required by the Department of Elementary & Secondary Education.

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[1] *Note:* Although most Framework Teams provided information for the "Appendix", not all teams did. *Therefore, sub-headings within the "Appendix" without information have been deleted.*

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The Vocational Technical Education Frameworks contain knowledge and skills covering all aspects of industry, reflected in six strands: Safety and Health, Technical, Embedded Academics, Employability, Management and Entrepreneurship, and Technological.

Within each strand, standards and objectives were grouped under topic headings, which are displayed in bold. Each standard is followed by a performance example. In the excerpt below, 2.A is the topic; 2.A.01 is the first standard and 2.A.01.01 and 2.A.01.02 are the objectives under that standard.

2.A   Automotive Technology Specific Safety Practices
2.A.01   Identify and describe safety procedures when dealing with different types of automotive lifts according to current industry standards.
       2.A.01.01   Demonstrate procedures for safe lift operations.
       2.A.01.02   Demonstrate safe use, placement and storage of floor jacks and jack stands.

> 2.A.01   Performance Example:
>
> - Student will set up lift using manufacturer's suggested lift points.

2.A.02   Demonstrate and describe safety procedures when dealing with high pressure systems including necessary ventilation according to current industry standards.
       2.A.02.01   Describe and demonstrate the importance of safety procedures to be used when servicing high pressurized systems (fuel systems, brakes, air conditioning, suspension, hydraulic systems, etc.).
       2.A.02.02   Describe and demonstrate safe use of oxygen/acetylene torches and electric welding equipment.
       2.A.02.03   Demonstrate ventilation procedures to be followed when working in the lab/shop area.

> 2.A.02   Performance Example:
>
> - Student will relieve fuel system pressure to perform necessary repairs.

2.A.03   Identify and describe safety procedures when dealing with electrical circuits according to current industry standards.
       2.A.03.01   Describe safety procedures to be followed when servicing supplemental restraint systems.
       2.A.03.02   Demonstrate safety awareness of high voltage circuits of electric or hybrid electric vehicles and related safety precautions.

> 2.A.03   Performance Example:
>
> - Safely disable Supplemental Restraint System (SRS) air bag for repair using manufacturer's recommendations.

There are additional changes to some of the Frameworks Strand Two (Technical Knowledge and Skills). Specifically, Strand Two of the Frameworks for Animal Science, Environmental Science and Technology and Horticulture begin with core standards required for all participants in the programs, followed by a series of standards organized in concentrations. For example, Strand Two of the Horticulture Framework begins with the core standards required of all Horticulture students

(Topics 2.A through 2.I). These standards are followed by the three concentrations: Arboriculture (Topics 2.J through 2.L), Greenhouse Management and Floriculture (Topics 2.J. through 2.L) and Landscape and Turf Management (Topics 2.M through 2.Q).

Advanced / Supplemental Standards (Not Required)

Another variation that is new to the revised Strand Two Frameworks is the addition of advanced or supplemental standards which are noted with the use of an asterisk (*). *These standards are not required, but are provided as suggestions that districts may choose to use to increase the depth of a particular topic, or add additional topics, particularly for advanced students or for those seniors who do not participate in cooperative education.*

The following is an example from Automotive Technology, where entire topics were added:

Advanced Automotive Technology Technical Knowledge and Skills
Note: The following competencies are optional, supplementary competencies suitable for advanced students. These are not required.

2.CC   **Demonstrate appropriate engine repair techniques.**
      2.CC.01   Perform appropriate cylinder Head Repair.
           2.CC.01.01*   Diagnose, remove and replace cylinder head(s).
           2.CC.01.02*   Clean and visually inspect a cylinder head for cracks; check gasket surface areas for warpage and surface finish; check passage condition; determine necessary action.

The following is an example from the Strand Two Radio and Television Broadcasting Framework that shows the addition of an advanced objective, 2.B.04.08*:

    2.B.04   Explain concepts fundamental to shooting in cinema and video.

2.B.04.01	Compare and contrast a single-camera and a multiple-camera production.
2.B.04.02	Explain the importance of shooting for the edit (i.e., match on action, sequencing, coverage).
2.B.04.03	Explain the importance of continuity.
2.B.04.04	Explain the 180° Rule line, and its application in various cinema scenarios.
2.B.04.05	Identify and establish a specific point-of-view when shooting from a script.
2.B.04.06	Analyze the methods in which specific shots can evoke emotion from an audience.
2.B.04.07	Define drop frame and non-drop frame code shooting and explain how to account for both when preparing for an edit.
2.B.04.08*	Describe various cinematographic methods necessary when shooting scenes that incorporate post-production visual effect.

> 2.B.04   Performance Examples:
>
> - Students will list similarities and differences of single-camera and multiple-camera shoots.
> - Students will describe multiple shooting considerations that are useful in streamlining the editing process.

Strand 1: Safety and Health Knowledge and Skills

1.A   Fundamentals of Health and Safety

1.A.01   Describe and apply health and safety regulations.

   1.A.01.01   Identify, describe and apply health and safety regulations that apply to specific tasks and jobs. Students must complete a safety credential program, e.g., Occupational Safety and Health Administration 10, CareerSafe and ServSafe.

   1.A.01.02   Identify, describe and apply Environmental Protection Agency (EPA) and other environmental protection regulations that apply to specific tasks and jobs in the specific occupational area.

   1.A.01.03   Identify, describe and apply Right-To-Know (Hazard Communication Policy) and other communicative regulations that apply to specific tasks and jobs in the specific occupational area.

   1.A.01.04   Explain procedures for documenting and reporting hazards to appropriate authorities.

   1.A.01.05   Identify and describe potential consequences for non-compliance with appropriate health and safety regulations.

   1.A.01.06   Identify and list contact information for appropriate health and safety agencies and resources.

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1. A.01   Performance Examples:
- List and define OSHA Health and Safety Regulations, EPA and other environmental protection regulations to occupational area.
- List and define Right-to-Know regulations and reporting of hazards and contact information for appropriate health and safety agencies.
- List the laws and rules of regulatory agencies governing sanitation and safety.
- Utilize OSHA as well as health and safety websites for purposes of research.

1.A.02   Demonstrate appropriate health and safety practices based on the specific occupational area.

   1.A.02.01   Identify, describe and demonstrate the effective use of Safety Data Sheets (SDS).

   1.A.02.02   Read and interpret chemical, product and equipment labels to determine appropriate health and safety considerations.

   1.A.02.03   Identify, describe and demonstrate personal, shop and job site safety practices and procedures.

   1.A.02.04   Demonstrate safe dress and use of relevant safety gear, personal protective equipment (PPE) and ergonomics, e.g., wrist rests, adjustable workspaces, equipment, gloves, proper footwear, earplugs, eye protection and breathing apparatus.

   1.A.02.05   Demonstrate appropriate safe body mechanics, including appropriate lifting techniques and ergonomics.

1.A.02.06	Locate emergency equipment, first aid kit, SDS information directories and emergency action/response plan/escape routes in your lab, shop and classroom, including labels and signage that follow OSHA Hazard Communication Program (HAZCOM), eyewash stations, shower facilities, sinks, fire extinguishers, fire blankets, telephone, master power switches and emergency exits.
1.A.02.07	Demonstrate the safe use, storage, and maintenance of every piece of equipment in the lab, shop and classroom, e.g., the OSHA Lockout/Tagout Program (LOTO).
1.A.02.08	Describe safety practices and procedures to be followed when working with and around electricity, e.g., ground fault circuit interrupter (GFCI) and frayed wiring.
1.A.02.09	Handle, store, dispose of and recycle hazardous, flammable and combustible materials, according to EPA, OSHA and product specifications.
1.A.02.10	Demonstrate appropriate workspace cleaning, sanitation, disinfection and sterilization procedures required in specific occupational areas, e.g., Workplace Housekeeping OSHA Regulations.

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1. A.02 Performance Examples:
- Identify, describe and demonstrate the use of SDS.
- List and demonstrate shop dress code, safety procedures and location of emergency equipment in labor classroom.
- Define and demonstrate safe storage and maintenance of equipment and proper disposal or recycling of hazardous, flammable and combustible materials.
- Identify, describe and demonstrate the Universal Precautions set of guidelines.

1.A.03	Demonstrate appropriate responses to situations that may threaten health and safety.
1.A.03.01	Describe First Aid procedures for potential injuries and other health concerns in the specific occupational area.
1.A.03.02	Describe the importance of emergency preparedness and an emergency action/response plan.
1.A.03.03	Describe procedures used to handle emergency situations, defensive measures and accidents, including identification, reporting, response, evacuation plans and follow-up procedures.
1.A.03.04	Identify, describe and demonstrate safety practices in specific occupational areas used to avoid accidents.
1.A.03.05	Identify and describe fire protection, protection, precautions and response procedures.
1.A.03.06	Discuss the role of the individual and the company/organization in ensuring workplace safety including transportation to and from school, school activities and the workplace.
1.A.03.07	Discuss ways to identify, prevent and report school and workplace violence, discrimination, harassment and bullying.
1.A.03.08	Demonstrate positive and appropriate behavior that contributes to a safe and healthy environment in school and the workplace.

1. A.03 Performance Example:
- Define first aid procedures and protocols used to handle emergency situations and practices used to avoid accidents.
- View safety videos and discuss the role of workplace safety.
- Attend or participate in a human rights alliance organization presentation.
- Observe and/or demonstrate the appropriate use of a fire extinguisher using the (PASS) technique: Pull, Aim, Squeeze, Sweep.
- Review and discuss specific policies, procedures and protocols regarding discrimination, harassment and bullying.
- Discuss and/or role-play proper and respectful behavior that contributes to a positive climate.
- Discuss and/or demonstrate behavior that contributes to a collaborative/teamwork environment.

Selected Websites

- Bullying Prevention and Intervention Resources : www.doe.mass.edu/bullying
- Centers for Disease Control and Prevention: www.cdc.gov
- Environmental Protection Agency : www.epa.gov
- "Lost Youth – Four Stories of Injured Young Workers"– WorkSafeBC: http://www2.worksafebc.com/Publications/Multimedia/Videos.asp?reportid=34291
- Massachusetts Department of Elementary and Secondary Education. (2011). Career/Vocational Technical Education Safety Guide: www.doe.mass.edu/cte
- Massachusetts Department of Elementary and Secondary Education: www.doe.mass.edu
- Massachusetts Emergency Management Agency: www.mass.gov/eopss/agencies/mema
- Massachusetts General Law: www.malegislature.gov
- Massachusetts Health and Human Services: www.mass.gov/dph
- Massachusetts Right to Know Law Summary: http://www.mass.gov/lwd/docs/dos/mwshp/hib397.pdf
- Safety Data Sheet: www.sdsonline.com
- National Fire Protection Association: www.nfpa.org
- Protection of Student Rights: Massachusetts General Law: https://malegislature.gov/Laws/GeneralLaws/PartI/TitleXII/Chapter76/Section5
- Occupational Safety and Health Administration: www.osha.gov
- Readiness and Emergency Management for Schools: www.rems.ed.gov
- Safe and Healthy Learning Environments: www.doe.mass.edu/ssce/safety.html

Strand 2: Technical Knowledge and Skills

2.A   Culinary Arts Safety Knowledge and Skills

2.A.01   Demonstrate proper food safety and sanitation.

2.A.01.01   Identify the Hazard Analysis Critical Control Point (HACCP) during all food handling processes as a method for minimizing the risk of food borne illness.

2.A.01.02   Identify microorganisms related to food spoilage and illnesses; and describe their requirements and methods for growth.

2.A.01.03   Describe symptoms common to food borne illnesses and how illness can be prevented.

2.A.01.04   Conduct a sanitation self-inspection and recommend modifications for compliance with current industry and OSHA standards.

2.A.01.05   Outline compliance requirements of sanitation and health inspections.

2.A.01.06   Show exemplary appearance and hygiene.

2.A.01.07   Describe cross contamination and use of acceptable procedures when preparing and storing potentially hazardous foods.

2.A.01.08   List the reasons for and recognize signs of food spoilage and contamination.

2.A.01.09   Outline the requirements for receiving and storage of raw and prepared foods.

2.A.01.10   Identify risks associated with high risk populations.

2.A.01.11   Recognize what foods are most likely to become unsafe.

2.A.01.12   List the major foodborne illnesses and describe their characteristics.

2.A.01.13   Demonstrate how to prevent time temperature abuse throughout the flow of food.

2.A.01.14   Demonstrate the usage of thermometers in receiving, storing, preparing, cooking reheating foods, how to calibrate a thermometer and logging temperatures according to current industry and OSHA standards.

2.A.01.15   Demonstrate how to prevent contamination of food, hot holding foods, cold holding foods, self service areas and serving customers.

2.A.01.16   Identify common food allergens in food service and describe ways to produce allergen safe food for customers with food allergies.

2.A.01   Performance Examples:
- Define HACCP and list microorganisms related to food spoilage and illnesses.
- Perform a sanitation self-inspection highlighting compliance requirements.
- Define cross contamination and list acceptable procedures when receiving and storing foods.
- List risks associated with high risk population. What tools are most likely to become unsafe; major food-borne illnesses and their characteristics and how to prevent time temperature abuse throughout the flow of food.
- Demonstrate how to use thermometers and prevent time temperature abuse and contamination in food, hot holding foods and cold holding foods, self-service area and serving customers. according to current industry and OSHA standards

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2.A.02   Identify chemicals and uses in food service.

2.A.02.01   Describe types of cleaners and sanitizers and their use.

2.A.02.02 Develop cleaning and sanitizing schedule and procedures for equipment and facilities.

2.A.02.03 Identify the location of S.D.S. binder. Identify all chemicals used in the facility, and using S.D.S sheets, list their potential hazards and emergency procedures in case of mishandling.

2.A.02 Performance Example:
- List types of cleaners and sanitizers and their use and develop a cleaning and sanitizing schedule and procedures for equipment and facilities.

2.B Fundamentals of Food Service

2.B.01 Apply the fundamentals of food service.

2.B.01.01 Demonstrate hand tool and equipment operation, emphasizing technique.

2.B.01.02 Define terminology used in food service.

2.B.01.03 Discuss the application of labor saving products.

2.B.01.04 Explain and demonstrate liquid and dry measures.

2.B.01.05 Explain mise en place.

2.B.01.06 Read, analyze and follow a standard recipe.

2.B.01.07 Identify ingredients used for cooking and baking.

2.B.01.08 Demonstrate knife skills according to current industry and OSHA standards.

2.B.01 Performance Examples:
- Perform hand tool and equipment operation emphasizing on techniques and safety skills.
- Review a standard recipe, identify the ingredients and accurately use liquid and dry measure.
- Prepare a work station and summarize the concept of mise en place.

2.B.02 Apply the fundamentals of menu planning, ordering, receiving and storage.

2.B.02.01 Plan a menu.

2.B.02.02 Order food products.

2.B.02.03 Cost out given recipe.

2.B.02 Performance Examples:
- Prepare a menu; calculate food costs and labor costs.
- Identify all food products needed to prepare a given menu and demonstrate procedure of ordering, receiving and storage of all food products.
- Calculate the total cost of the menu

2.C Fundamentals of Dining Room Operations

2.C.01 Demonstrate dining room operations.

2.C.01.01 Set up tables for service.

2.C.01.02 Set up various dining room stations for service (e.g., beverages, condiments, bread, salads, etc.).

2.C.01.03 Arrange and maintain buffet table.

2.C.01.04 Conduct a pre-meal meeting.

2.C.01.05 Prepare and maintain restaurant and work stations for dining room service.

2.C.01.06 Identify the sequence/steps of service, including banquet and catering.

2.C.01.07 Identify and perform all methods of service.

2.C.01.08	Set up and break down a hot and cold buffet.
2.C.01.09	Prepare tray service.
2.C.01.10	Perform the duties of a cashier.
2.C.01.11	Perform the duties of an expediter.
2.C.01.12	Perform duties of a dining room supervisor.
2.C.01.13	Perform host or hostess duties.
2.C.01.14	Explain methods used to accommodate customers.
2.C.01.15	Manage dining room floor plans.
2.C.01.16	Demonstrate a function set up using a banquet event order.
2.C.01.17	Compare the differences between a` la carte and banquet food service.

2.C.01 Performance Examples:
- Arrange and maintain buffet table service including banquet and catering services.
- Manage and maintain restaurant and work stations for dining room service.
- Perform duties of dining room manager and cashier.
- Summarize the difference between a la carte and banquet service.

2.D   Fundamentals of Utility Services

2.D.01   Demonstrate utility services.
2.D.01.01	Perform dishwashing services.
2.D.01.02	Clean and sanitize pots and pans.
2.D.01.03	Clean and sanitize kitchen work areas.
2.D.01.04	Clean and sanitize stationary equipment.

2.D.01 Performance Examples:
- Perform dishwashing services to include procedure for cleaning and sanitizing pots, pans, kitchen work areas and stationary equipment.

2.E   Fundamentals of Basic Nutrition

2.E.01   Explain basic nutrition.
2.E.01.01	List the food groups in the current USDA Food Guide My Plate and the recommended daily servings from each.
2.E.01.02	Define calories (Kcals), Macro/Micro Nutrients and common food sources.
2.E.01.03	Describe a balanced diet and the methods for weight loss while maintaining a balanced diet.
2.E.01.04	Define RDA guidelines.
2.E.01.05	Summarize information provided on food labels.
2.E.01.06	Identify common food allergies and determine substitutions.
2.E.01.07	Identify recommended portions of food groups in a balanced diet.
2.E.01.08	Identify and prepare foods to meet special dietary needs.

2.E.01 Performance Examples:
- List the food groups and recommended serving sizes based on the USDA Food Guide My Plate.
- Describe nutrients and their functions.
- Define RDA guidelines and summarize information on food labels.
- List common food allergies, recommend substitutions and identify foods to meet special diets.

2.F Fundamentals of Cooking Methods

2.F.01　　Describe and demonstrate cooking methods.

　　　　　2.F.01.01　　Identify cooking methods.
　　　　　2.F.01.02　　Demonstrate baking/roasting.
　　　　　2.F.01.03　　Demonstrate braising.
　　　　　2.F.01.04　　Demonstrate broiling.
　　　　　2.F.01.05　　Demonstrate deep-frying.
　　　　　2.F.01.06　　Demonstrate grilling.
　　　　　2.F.01.07　　Demonstrate griddling.
　　　　　2.F.01.08　　Demonstrate pan-frying.
　　　　　2.F.01.09　　Demonstrate poaching.
　　　　　2.F.01.10　　Demonstrate sautéing.
　　　　　2.F.01.11　　Demonstrate steaming.
　　　　　2.F.01.12　　Demonstrate stewing.

2.F.01　Performance Examples:
- List and define cooking methods; moist heat and dry heat.
- Perform all moist heat cooking methods.
- Perform all dry heat cooking methods.

2.F.02　　Prepare grains, legumes, and starches.

　　　　　2.F.02.01　　Identify, prepare and cook grains.
　　　　　2.F.02.02　　Identify, prepare and cook legumes.
　　　　　2.F.02.03　　Identify, prepare and cook rice.
　　　　　2.F.02.04　　Identify, prepare and cook pasta.
　　　　　2.F.02.05　　Identify, prepare and cook potatoes.

2.F.02　Performance Examples:
- Identify and prepare grains.
- Identify and prepare legumes.
- Identify and prepare starches.

2.F.03　　Prepare stocks and sauces.

　　　　　2.F.03.01　　Identify and prepare brown, white, fish, and vegetable stock.
　　　　　2.F.03.02　　Identify and prepare 5 mother sauces.
　　　　　2.F.03.03　　Identify and prepare intermediate and small sauces.
　　　　　2.F.03.04　　Identify and prepare non-roux-based sauces.
　　　　　2.F.03.05　　Identify and use thickening agents.

2.F.03　Performance Examples:
- Prepare four major sauces.
- Prepare mother sauces and small sauces.
- Identify and prepare thickening agents and non-roux-based sauces.

2.F.04　　Prepare soups.

　　　　　2.F.04.01　　Identify and prepare thick soups.

2.F.04.02   Identify and prepare clear soups.

2.F.04.03   Identify and prepare specialty soups.

2.F.04	Performance Examples:
	▪ Identify and prepare thick and clear soups.
	▪ Identify and prepare specialty soups.

2.F.05   Prepare various types of meat.

2.F.05.01   Identify various cuts and types of meat.

2.F.05.02   Cut and prepare meats for various cooking methods.

2.F.05	Performance Examples:
	▪ List and identify various cuts and types of meat.
	▪ Cut and prepare meats for various cooking methods.

2.F.06   Prepare various types of seafood.

2.F.06.01   Identify various cuts and types of seafood.

2.F.06	Performance Examples:
	▪ List and identify various cuts and types of seafood.
	▪ Cut and prepare seafood for various cooking methods.

2.F.07   Prepare various types of poultry.

2.F.07.01   Identify various cuts and types of poultry.

2.F.07.02   Cut and prepare poultry for cooking methods.

2.F.07	Performance Examples:
	▪ List and identify various cuts and types of poultry.
	▪ Cut and prepare poultry for various cooking methods.

2.F.08   Prepare sandwiches.

2.F.08.01   Identify types of sandwiches.

2.F.08.02   Prepare basic and specialty sandwiches.

2.F.08	Performance Examples:
	▪ List the types of sandwiches, prepare basic and specialty sandwiches.

2.F.09   Prepare breakfast meats, eggs, cereals and batter products.

2.F.09.01   Identify and prepare breakfast meats.

2.F.09.02   Identify and prepare eggs.

2.F.09.03   Identify and prepare cereals.

2.F.09.04   Identify and prepare batter products.

2.F.09	Performance Examples:
	▪ Prepare breakfast to include meats, eggs and cereals.
	▪ Prepare breakfast batter products.

2.F.10   Apply the fundamentals of Garde Manger, hors d'oeuvres, and appetizers.

2.F.10.01   Identify tools and equipment used in garde manger.

2.F.10.02   Prepare fruit and vegetable dishes and garnishes.

2.F.10.03   Present food using various buffet techniques.

2.F.10.04 Prepare hot and cold appetizers and hors d'oeuvres.

2.F.10.05 Prepare various marinades, salads, and dressings.

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2.F.10 Performance Examples:
- List tools and equipment used for garde manger.
- Prepare fruits and vegetable dishes and garnishes.
- List and prepare various marinades, salads and dressings.

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2.F.11 Apply the fundamentals of baking.

   2.F.11.01 Identify ingredients used for baking.

   2.F.11.02 Describe properties and list function of ingredients.

   2.F.11.03 Define baking terms.

   2.F.11.04 Select equipment and utensils for specific baking applications.

   2.F.11.05 Identify mixing methods used in baking.

   2.F.11.06 Identify healthy alternatives and substitutions used in baking.

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2.F.11 Performance Examples:
- Identify ingredients and tools used in baking.
- Identify mixing methods and healthy alternatives used in baking.

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2.F.12 Prepare baked goods.

   2.F.12.01 Identify various baked goods, including yeast-raised products, quick-breads, muffins, pies, pie dough products, cakes, cookies, and paté-a-choux.

   2.F.12.02 Multiply and reduce a recipe for baked goods.

   2.F.12.03 Prepare, bake, and finish lean dough products.

   2.F.12.04 Prepare, bake, and finish rich dough products.

   2.F.12.05 Prepare, bake, and finish rolled-in products.

   2.F.12.06 Prepare, bake, and finish quick breads, biscuits, and muffins.

   2.F.12.07 Prepare, bake, and finish pie dough and pie dough products.

   2.F.12.08 Prepare, bake, and finish fat type cakes.

   2.F.12.09 Prepare, bake, and finish egg foam cakes.

   2.F.12.10 Prepare, bake, and finish cookies using different make-up methods.

   2.F.12.11 Prepare, bake, and finish pâte-à-choux based desserts.

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2.F.12 Performance Examples:
- Identify various baked goods, multiply and cost out recipes for baked goods.
- Prepare, bake and finish products.

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2.F.13 Prepare frostings and finish baked goods.

   2.F.13.01 Identify and prepare various types of frostings and icings.

   2.F.13.02 Prepare baked goods to be finished.

   2.F.13.03 Frost cakes and pastries.

   2.F.13.04 Make borders and floral designs for decorated cakes.

   2.F.13.05 Inscribe a cake.

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2.F.13 Performance Examples:
- Identify, list and prepare various types of frostings and icings.
- Frost cakes and pastries, make borders, floral designs, decorated and inscribe cakes.

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Hospitality & Tourism Occupational Cluster   Culinary Arts Framework

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2.F.14   Prepare desserts.
        2.F.14.01   Identify non-baked desserts commonly created in a bakery.
        2.F.14.02   Prepare and cook custards and fillings.
        2.F.14.03   Prepare specialty desserts.
        2.F.14.04   Prepare plated desserts.

2.F.14   Performance Examples:
- Prepare non-baked desserts created in a bakery.
- Prepare and cook custard, fillings, specialty desserts and plated desserts.

Strand 3: Embedded Academics

Strand 3: Embedded Academics, a critical piece of a Vocational Technical Education Framework, are presented as Crosswalks between the Massachusetts Vocational Technical Education Frameworks and the Massachusetts Curriculum Frameworks. These Crosswalks are located in the Appendix of this Framework.

Academic Crosswalks

Strand 4: Employability and Career Readiness

4.A   **Career Exploration and Navigation**

4.A.01   Develop a career plan and portfolio.

    4.A.01.01   Develop and revise career plan annually based on workplace awareness and skill attainment.

    4.A.01.02   Assess personal strengths and interest areas to determine potential careers, career pathways and career ladders.

    4.A.01.03   Examine potential career field(s)/discipline(s) and identify criteria to select, secure and keep employment in chosen field(s).

    4.A.01.04   Research and evaluate a variety of careers utilizing multiple sources of information and resources to determine potential career(s) and alternatives.

    4.A.01.05   Identify training and education requirements that lead to employment in chosen field(s) and demonstrate skills related to evaluating employment opportunities.

    4.A.01.06   Explore and evaluate postsecondary educational opportunities including degrees and certifications available, traditional and nontraditional postsecondary pathways, technical school and apprenticeships, cost of education, financing methods including scholarships and loans and the cost of loan repayment.

    4.A.01.07   Create a portfolio showcasing academic and career growth including a career plan, safety credential, resume and a competency profile demonstrating the acquisition of the knowledge and skills associated with at least two years of full-time study in the Chapter 74 program.

4.A.02   Demonstrate job search skills.

    4.A.02.01   Conduct a job search and complete written and electronic job applications, resumes, cover letters and related correspondence for a chosen career path.

    4.A.02.02   Explore and evaluate postsecondary job opportunities and career pathways specific to career technical areas.

    4.A.02.03   Identify role and use of social media and networking for staying current with career and employment trends as well as networking, job seeking and career development opportunities.

    4.A.02.04   Demonstrate ability to use social media and networking to develop useful occupational contacts, job seeking and career development opportunities.

4.A.03   Demonstrate all phases of the job interview process.

    4.A.03.01   Gather relevant information about potential employer(s) from multiple print and digital sources, assessing the credibility and accuracy of each source.

    4.A.03.02   Identify employment eligibility criteria, such as drug/alcohol free status, clean driving record, etc.

| 4.A.03.03 | Practice effective interviewing skills: appearance, inquiry and dialogue with interviewer, positive attitude and evidence of work ethic and skills. |
| 4.A.03.04 | Explore and evaluate employment benefit packages including wages, vacation, health care, union dues, cafeteria plans, tuition reimbursement, |

4. A   Performance Examples:
- Conduct research to analyze and present on specific careers within a cluster.
- Conduct web-based job search using sites such as Monster.com, CareerBuilder.com, Indeed.com, Snagajob.com, Simplyhired.com and others.
- Create profile on social media/networking site such as LinkedIn and/or LinkedIn University for postsecondary research and employment opportunities.
- Complete online job application.
- Conduct and videotape practice interviews for instructor and student analysis.
- Provide students with sample employment and benefit packages for evaluation.

retirement and 401K.

4.B   Communication in the Workplace

4.B.01   Demonstrate appropriate oral and written communication skills in the workplace.

4.B.01.01	Communicate effectively using the language and vocabulary appropriate to a variety of audiences within the workplace including coworkers, supervisors and customers.
4.B.01.02	Read technical and work-related documents and demonstrate understanding in oral discussion and written exercise.
4.B.01.03	Demonstrate professional writing skills in work-related materials and communications (e.g., letters, memoranda, instructions and directions, reports, summaries, notes and/or outlines).
4.B.01.04	Use a variety of writing/publishing/presentation applications to create and present information in the workplace.
4.B.01.05	Identify, locate, evaluate and use print and electronic resources to resolve issues or problems in the workplace.
4.B.01.06	Use a variety of financial and data analysis tools to analyze and interpret information in the workplace.
4.B.01.07	Orally present technical and work-related information to a variety of audiences.
4.B.01.08	Identify and demonstrate professional non-verbal communication.

4.B.02   Demonstrate active listening skills.

4.B.02.01	Listen attentively and respectfully to others.
4.B.02.02	Focus attentively, make eye contact or other affirming gestures, confirm understanding and follow directions.
4.B.02.03	Show initiative in improving communication skills by asking follow-up questions of speaker in order to confirm understanding.

4.C   Work Ethic and Professionalism

4.C.01   Demonstrate attendance and punctuality.

4.C.01.01   Identify and practice professional time-management and attendance behaviors including punctuality, reliability, planning and flexibility.

4.C.02   Demonstrate proper workplace appearance.

4.C.02.01   Identify and practice professional appearance specific to the workplace.

4.C.02.02   Identify and practice personal hygiene appropriate for duties specific to the workplace.

4.C.02.03   Identify and wear required safety gear specific to the workplace.

4.C.03   Accepts direction and constructive criticism.

4.C.03.01   Demonstrate ability (both verbally and non-verbally) to accept direction and constructive criticism and to implement solutions to change behaviors.

4.C.03.02   Ask appropriate questions to clarify understanding of feedback.

4.C.03.03   Analyze own learning style and seek instructions in a preferred format that works best for their understanding (such as oral, written or visual instruction).

4.C.04   Demonstrate motivation and initiative.

4.C.04.01   Evaluate assigned tasks for time to completion and prioritization.

4.C.04.02   Demonstrate motivation through enthusiasm, engagement, accurate completion of tasks and activities.

4.C.04.03   Demonstrate initiative by requesting new assignments and challenges.

4.C.04.04   Explain proposed solutions to challenges observed in the workplace.

4.C.04.05   Demonstrate the ability to evaluate multiple solutions to problems and challenges using critical reasoning and workplace/industry knowledge and select the best solution to the problem.

4.C.04.06   Implement solution(s) to challenges and/or problem(s) observed in the workplace.

4.C.04.07   See projects through completion and check work for quality and accuracy.

4.C.05   Demonstrate awareness of workplace culture and policy.
        4.C.05.01   Display ethical behavior in use of time, resources, computers and information.
        4.C.05.02   Identify the mission of the organization and/or department.
        4.C.05.03   Explain the benefits of a diverse workplace.
        4.C.05.04   Demonstrate a respect for diversity and its benefit to the workplace.

4.C.06   Interact appropriately with coworkers.
        4.C.06.01   Work productively with individuals and in teams.
        4.C.06.02   Develop positive mentoring and collaborative relationships within work environment.
        4.C.06.03   Show respect and collegiality, both formally and informally.
        4.C.06.04   Explain and follow workplace policy on the use of cell phones and other forms of social media.
        4.C.06.05   Maintain focus on tasks and avoid negative topics or excessive personal conversations in the workplace.
        4.C.06.06   Negotiate solutions to interpersonal and workplace conflicts.

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4. C   Performance Examples:
- Complete a learning style analysis tool.
- Develop a rubric to assess work ethic and professionalism as detailed in the standards above.

Student Organizations

Business Professionals of America   www.bpa.org

Selected Websites

- 5 Ways to Ace a Job Interview: http://kidshealth.org/teen/school_jobs/jobs/tips_interview.html
- America's Career Resource Network: http://acrn.ovae.org/teachers/careerexpclassrm.htm
- Career Cruiser – Florida Department of Education: http://www.fldoe.org/workforce/pdf/cruiser.pdf
- Career Development Guide and Glossary: http://www.doe.mass.edu/connect/cde.html
- Career One Stop: http://www.careeronestop.org/
- Career Plan: http://www.doe.mass.edu/cd/plan/intro.html
- Career Plan Model: http://www.doe.mass.edu/ccr/epp/samples/cpmodel_11x17.pdf
- Checklist: http://www.doe.mass.edu/cd/plan/checklist.pdf
- Career Tech: http://www.okcareertech.org/cac/Pages/resources_products/ethics_web_sites.htm
- Ethics Resource Center: http://www.ethics.org/
- Interaction in the Workplace: http://hrweb.berkeley.edu/guides/managing-hr/interaction/communication

- Individual Learning Plans: How-to Guide: "Promoting Quality Individualized Learning Plans: A How to Guide on the High School Years" http://www.ncwd-youth.info/ilp/how-to-guide
- ILP Fact Sheet: http://www.ncwd-youth.info/fact-sheet/individualized-learning-plan
- ILP Policy Brief: http://www.ncwd-youth.info/ilp/produce-college-and-career-ready-high-school-graduates
- ILP Resources Home Page: http://www.ncwd-youth.info/ilp
- Interview Skills Lesson Plans: http://www.amphi.com/media/1220281/interview%20skills%20lesson%20plan.doc
- Labor and Workforce Development: http://www.mass.gov/lwd/employment-services/preparing-for-your-job-search/
- Maine Community College System – Center for Career Development: http://www.ccd.me.edu/careerprep/CareerPrepCurriculum_LP-6.pdf
- Massachusetts Work-Based Learning: http://skillspages.com/masswbl
- North Dakota Association of Agriculture Educators: http://www.ndaae.org/attachments/File/Preparing_students_for_a_Job_Interview.pptx
- NY CTE Learning Standards—Career Development and Occupational Studies (CDOS) Resource Guide with Core Curriculum: http://www.p12.nysed.gov/cte/cdlearn/cdosresourceguide.html
- Occupational Outlook Handbook: http://www.bls.gov/ooh/
- Purdue OWL Job Search Resources (for writing resumes, applications, and letters): https://owl.english.purdue.edu/engagement/34/
- Soft Skills to Pay the Bills — Mastering Soft Skills for Workplace Success: http://www.dol.gov/odep/topics/youth/softskills/
- US Department of Labor: http://www.dol.gov/dol/audience/aud-unemployed.htm
- Workplace Communication: http://www.regionalskillstraining.com/sites/default/files/content/WC%20Book%201.pdf
- Your Plan For the Future: http://www.yourplanforthefuture.org

Strand 5: Management and Entrepreneurship Knowledge and Skills

5.A   **Starting a Business**

5.A.01   Demonstrate an understanding of the practices required to start a business.

      5.A.01.01   Define entrepreneurship and be able to recognize and describe the characteristics of an entrepreneur.

      5.A.01.02   Compare and contrast types of business ownership (i.e., sole proprietorships, franchises, partnerships, corporations).

      5.A.01.03   Identify and explain the purpose and contents of a business plan.

      5.A.01.04   Demonstrate an understanding of the principles and concepts of a business's supply chain (i.e., suppliers, producers and consumers.

> 5. A   Performance Examples:
> - Develop a presentation pertaining to an entrepreneur and their business.
> - Communicate with a business owner and discuss the pros and cons of starting and owning a business. Summarize the main points of the discussion.
> - Choose a product or service and describe the process leading to distribution.
> - Write a business plan for a business in your community.

5.B   **Managing a Business**

5.B.01   Demonstrate an understanding of managing a business.

      5.B.01.01   Formulate short- and long-term business goals.

      5.B.01.02   Demonstrate effective verbal, written and visual communication skills.

      5.B.01.03   Utilize a decision-making process to make effective business decisions.

      5.B.01.04   Identify a business's chain of command and define its organizational structure.

      5.B.01.05   Identify and apply effective customer service skills and practices.

      5.B.01.06   Identify, interpret and develop written operating procedures and policies.

      5.B.01.07   Track inventory, productivity and labor cost.

      5.B.01.08   Demonstrate business meeting skills.

      5.B.01.09   Identify professional organizations and explore their benefits.

> 5. B   Performance Examples:
> - Working as a team, role-play situations that an entrepreneur might face in dealing with customers or employees.
> - Contact a relevant professional organization and request information about its benefits, membership requirements and costs.
> - Plan and conduct a business meeting.
> - Identify companies that are known for customer service and list the practices that help differentiate themselves from all others in their industry.

5.C   **Marketing a Business**

5.C.01   Demonstrate an understanding of marketing and promoting a business.

      5.C.01.01   Explain the role of business in the economy.

      5.C.01.02   Describe the relationship between business and community.

      5.C.01.03   Describe methods of market research and identifying target markets.

5.C.01.04	Describe and apply the concepts of a marketing mix (the 4Ps of marketing: product, price, place and promotion).
5.C.01.05	Compare and contrast the promotional tools and techniques used to sell products, services, images and ideas.
5.C.01.06	Describe the impact of supply and demand on a product or business.
5.C.01.07	Identify direct and indirect competition on a business.
5.C.01.08	Identify and use sales techniques to meet client needs and wants.
5.C.01.09	Discuss strategies to acquire and retain a customer base.

5. C   Performance Examples:
- Research reliable sources to identify marketing and industry data related to a business.
- Conduct market research by developing a survey and presenting the results.
- Create a promotional campaign using a variety of media.
- Write a marketing plan for a product.

5.D   Financial Concepts and Applications in Business

5.D.01   Demonstrate an understanding of financial concepts and applications.

5.D.01.01	Identify essential financial reports and understand their purpose (i.e., budget, balance sheet and income statement).
5.D.01.02	Describe payroll practices (i.e., deductions – federal, FICA and state taxes and insurances).
5.D.01.03	Identify the importance of maintaining accurate records.
5.D.01.04	Apply practices related to pricing, purchasing and billing.
5.D.01.05	Maintain and reconcile a checking account.
5.D.01.06	Identify the options for funding a business.

5. D   Performance Examples:
- Given an employee time card and rate of pay, calculate gross pay, taxes, deductions and net pay.
- Develop a budget for a simulated business or project.
- Analyze and discuss financial documents from a company.
- Research various methods of funding a business.

5.E   Legal/Ethical/Social Responsibilities

5.E.01   Demonstrate an understanding of legal, ethical and social responsibility for businesses.

5.E.01.01	Identify state and federal laws and regulations related to managing a business.
5.E.01.02	Describe and identify ethical business practices.
5.E.01.03	Demonstrate an understanding of business contracts.
5.E.01.04	Explain the role of diversity in the workplace.
5.E.01.05	Explain the role of labor organizations.
5.E.01.06	Identify practices that support clean energy technologies and encourage environmental sustainability.
5.E.01.07	Demonstrate an understanding of how technology advancements impact business practices.

Selected Websites

- CVTE Strand 1, 4, and 5 Resources: https://sites.google.com/a/mccanntech.org/cvte-strands-1-4-and-5-resources/
- Entrepreneur: http://www.entrepreneur.com
- Inc. Magazine: http://www.inc.com/
- Junior Achievement "Be Entrepreneurial Program": https://www.juniorachievement.org/web/ja-usa/home
- Kahn Academy Interviews with Entrepreneurs: https://www.khanacademy.org/economics-finance-domain/entrepreneurship2/interviews-entrepreneurs
- Kauffman Founders School: http://www.entrepreneurship.org/en/founders-school.aspx
- National Federation of Independent Business: www.nfib.com
- National Foundation for Teaching Entrepreneurship (NFTE): www.nfte.com
- SBA Loans: http://www.sba.gov
- SkillsUSA Professional Development Program Competency List: http://www.skillsusa.org/downloads/PDF/lessons/professional/PDPPreview.pdf
- Small Business Administration: www.sba.gov

Glossary

Term	Definition
Balance sheet	A statement of the assets, liabilities and capital of a business at a particular point in time.
Budget	An estimate of income and expenditure for a set period of time.
Business Ownership	Types of business ownership refer to the legal structure of an organization. Legal structures include: Sole Proprietorship, Partnerships, Corporations and Limited Liability Companies.
Business Plan	A written document that describes in detail your business goals and how you are going to achieve them from a marketing, operational and financial point of view.

Term	Definition
Chain of Command and Organizational Structure	Refers to the management structure of an organization. It identifies lines of authority, lines of communication, and reporting relationships. Organizational structure determines how the roles, power and responsibilities are assigned and coordinated and how information flows between the different levels of management. (A visual representation of this structure is called an org chart).
FICA	Federal Insurance Contributions Act requires taxes deducted from pay for supporting Social Security.
Income Statement	A financial statement providing operating results for a specific time period showing a business's revenues, expenses and profit or loss.
Market Research	• Primary: Surveys, Focus Groups, Observation • Secondary: Websites, Internet
Marketing Mix	A set of controlled variables that formulate the strategic position of a product or service in the marketplace. These variables are known as the 4 P's of marketing and include product, place, price and promotion.
Methods to Track Inventory, Productivity and Labor Cost	Refers to the processes a business uses to account for: 1) the inflows and outflows of inventory and materials related to inventory; 2) the efficiency of operations and 3) the cost of labor including salary and benefits.
Promotional Tools and Techniques	The six elements of a promotional mix are: advertising, visual merchandising, public relations, publicity, personal selling and sales promotion.
Supply Chain	The supply chain, or channel of distribution, describes how the product is handled and/or distributed from suppliers with materials, to the manufacturer, wholesaler or retailer and finally to the consumer.
Target Market	Those who are most likely to buy your product or service.

6.A   Technology Literacy Knowledge and Skills (Grades 9 through 12)

6.A.01   Demonstrate proficiency in the use of computers and applications, as well as an understanding of the concepts underlying hardware, software, and connectivity.

6.A.01.01   Use online help and other support to learn about features of hardware and software, as well as to assess and resolve problems.

6.A.01.02   Install and uninstall software; compress and expand files (if the district allows it).

6.A.01.03   Explain effective backup and recovery strategies.

6.A.01.04   Apply advanced formatting and page layout features when appropriate (e.g., columns, templates, and styles) to improve the appearance of documents and materials.

6.A.01.05   Use editing features appropriately (e.g., track changes, insert comments).

6.A.01.06   Identify the use of word processing and desktop publishing skills in various careers.

6.A.01.07   Identify the use of database skills in various careers.

6.A.01.08   Define and use functions of a spreadsheet application (e.g., sort, filter, find).

6.A.01.09   Explain how various formatting options are used to convey information in charts or graphs.

6.A.01.10   Identify the use of spreadsheet skills in various careers.

6.A.01.11   Use search engines and online directories.

6.A.01.12   Explain the differences among various search engines and how they rank results.

6.A.01.13   Explain and demonstrate effective search strategies for locating and retrieving electronic information (e.g., using syntax and Boolean logic operators).

6.A.01.14   Describe good practices for password protection and authentication.

6.A.02   Demonstrate the responsible use of technology and an understanding of ethics and safety issues in using electronic media at home, in school, and in society.

6.A.02.01   Demonstrate compliance with the school's Acceptable Use Policy.

6.A.02.02   Explain issues related to the responsible use of technology (e.g., privacy, security).

6.A.02.03   Explain laws restricting the use of copyrighted materials.

6.A.02.04   Identify examples of plagiarism, and discuss the possible consequences of plagiarizing the work of others.

6.A.03   Design and implement a personal learning plan that includes the use of technology to support lifelong learning goals.

6.A.03.01   Evaluate the authenticity, accuracy, appropriateness, and bias of electronic resources, including Web sites.

6.A.03.02   Analyze the values and points of view that are presented in media messages.

6.A.03.03   Describe devices, applications, and operating system features that offer accessibility for people with disabilities.

6.A.03.04	Evaluate school and work environments in terms of ergonomic practices.
6.A.03.05	Describe and use safe and appropriate practices when participating in online communities (e.g., discussion groups, blogs, social networking sites).
6.A.03.06	Explain and use practices to protect one's personal safety online (e.g., not sharing personal information with strangers, being alert for online predators, reporting suspicious activities).
6.A.03.07	Explain ways individuals can protect their technology systems and information from unethical users.
6.A.04	Demonstrate the ability to use technology for research, critical thinking, problem solving, decision making, communication, collaboration, creativity, and innovation.
6.A.04.01	Devise and demonstrate strategies for efficiently collecting and organizing information from electronic sources.
6.A.04.02	Compare, evaluate, and select appropriate electronic resources to locate specific information.
6.A.04.03	Select the most appropriate search engines and directories for specific research tasks.
6.A.04.04	Use a variety of media to present information for specific purposes (e.g., reports, research papers, presentations, newsletters, Web sites, podcasts, blogs), citing sources.
6.A.04.05	Demonstrate how the use of various techniques and effects (e.g., editing, music, color, rhetorical devices) can be used to convey meaning in media.
6.A.04.06	Use online communication tools to collaborate with peers, community members, and field experts as appropriate (e.g., bulletin boards, discussion forums, listservs, Web conferencing).
6.A.04.07	Plan and implement a collaborative project with students in other classrooms and schools using telecommunications tools (e.g., e-mail, discussion forums, groupware, interactive Web sites, video conferencing).

Appendices

The framework teams created an "Appendix" listing potential industry recognized credentials attainable by secondary students; lists of professional, student, and relevant government organizations; and useful resources and websites. *** It is important to note that although most Framework Teams provided information for the "Appendix", not all teams did. Therefore, sub-headings within the "Appendix" without information have been deleted***.

Disclaimer: Reference in the Appendices Section to any specific commercial products, processes, or services, or the use of any trade, firm or corporation name is for the information and convenience of the public, and does not constitute endorsement or recommendation by the Massachusetts Department of Elementary and Secondary Education.

Embedded Academic Crosswalks

Embedded English Language Arts and Literacy

CVTE Learning Standard Number	Strand Coding Designation Grades ELAs Learning Standard Number	Text of English Language Arts Learning Standard
2.A.01	RI.11-12.1 RI.11-12.4 RI.11-12.7 RI.11-12.10 W.11-12.1 W.11-12.2 W.11-12.4 W.11-12.6 W.11-12.7 W.11-12.8 W.11-12.9 W11-12.10	Develop and strengthen writing as needed by planning, revising, editing, rewriting, or trying a new approach, focusing on addressing what is most significant for specific purpose and audience.
Performance Example: • Outline compliance requirements for sanitation and health inspections, Formulate open-ended questions on possible outcomes with research and documentation on potential remedies.		
2.A.01	SL.11-12.2 SL.11-12.4 SL.11-12.5 SL.11-12.6 L.11-12.1 L.11-12.3 L.11-12.4 L.11-12.6	Produce clear and coherent writing in which the development organization and style are appropriate to task, purpose and audience.
Performance Example: • Deliver formal presentation for particular audiences using clear and appropriate organizations, gestures, tone and vocabulary on the topics of cross contamination. Include the use of acceptable procedures when preparing and storing potentially hazardous foods.		
2.A.01	RI.11-12.4 RI.11-12.7	Produce clear and coherent writing in which the development organization and style are appropriate to task, purpose and audience.

	RI.11-12.10	
	W.11-12.2	
	W.11-12.7	
	W.11-12.8	
	W.11-12.9 L.11-12.3 L.11-12.4 L.11-12.5 L.11-12.6	

Performance Example:
• Use general dictionaries, specialized dictionaries, thesauruses, histories of language, books of quotations and other related references as needed on the topic of cross contamination.

2.A.02	W.11.12.4 W.11.12.10	Produce clear and coherent writing in which the development organization and style are appropriate to task, purpose and audience. Write routinely over extended time frames and shorter time frames for a range of discipline specific tasks, purposes and audiences.

Performance Example:
• Students will demonstrate key components of good written communication skills in writing and developing a cleaning and sanitation schedule and procedures for equipment and facilities.

2.C.01	W.9.12.5	Develop and strengthen writing as needed by planning, revising, editing, rewriting or typing a new approach, focusing on addressing what is most significant for specific purposes and audiences.

Performance Example:
• Using graphic organizers, students will create an organizational chart on the departments of food and beverage property. • Students will create a flip chart defining job descriptions in the food industry demonstrating clear, concise and coherent writing.

2.E.01	W.6.12.4	Produce clear and coherent writing in which the development organization and style are appropriate to task, purpose and audience.

Performance Example:
• Using content specific topics, students will create graphic organizers such as top-down webs and venn diagrams demonstrating knowledge and understanding of the topic, using domain specific vocabulary.

2.F.05 2.F.06 2.F.07 2.F.10 2.F.13	W.6.12.4 W.9.12.5	Produce clear and coherent writing in which the development organization and style are appropriate to task, purpose and audience. Develop and strengthen writing as needed by planning, revising, editing, rewriting or typing a new approach, focusing on addressing what is most significant for specific purposes and audiences.

Performance Example:
• Using content specific topics, students will create graphic organizers such as top-down webs and venn diagrams demonstrating knowledge and understanding of the topic, using domain specific vocabulary.

Embedded Mathematics

CVTE Learning Standard Number	Math Content Conceptual Category and Domain Code Learning Standard Number	Text of Mathematics Learning Standard
2.B.01	N-Q.1 N-Q.2 N-Q.3 A-SSE.3`	Number and Quantity Number and Quantity Number and Quantity Algebra – Seeing Structure in Expressions
Performance Example: • Use units as a way to understand problems and to guide the solution of multi-step problems, such as changing quantities in a standard recipe. • Choose and produce an equivalent form of expression and explain properties of the quantity when using liquid and dry measures.		
2.B.02	A-CED.1	Algebra – Creating Equations
Performance Example: • Create equations and inequalities in one variable and use them to solve problems when planning a menu and determining pricing.		
2.C.01 2.C.02	Measurement 10 10.M.1	Calculate perimeter, circumference and area of geometric figures such as parallelograms, circles and triangles.
Performance Example: • Students will accurately design the layout for a large wedding in a banquet hall. It must include the area of the area of the room, the dance floor, the D.J. / band equipment, two buffet lines, beverage service area, small round table for cake; then based on the size of the room, estimate how many 10 ft. tables would fit.		
2.F.12	Patterns, Relations and Algebra 10	Solve everyday problems that can be modeled using systems of linear equations or inequalities. Apply algebraic and graphical methods to solution. Use technology when appropriate. Include mixture, rate and work problems.
Performance Example: • Students will be able to increase or decrease standardized recipes in preparing baked goods. • Students will be able to quantify the cost of each baked good.		

Embedded Science and Technology/Engineering

Life Science (Biology)

CVTE Learning Standard Number	Subject Area, Topic Heading and Learning Standard Number	Text of Biology Learning Standard
2.A.01.01 2.A.01.02 2.A.01.03 2.A.01.15	Biology 2.3	Use the cellular evidence (e.g. cell structure, cell number, cell reproduction) and modes of nutrition to describe the six kingdoms (Archaebacteria, Eubacteria, Protista, Fungi, Plantae, Animalia
Performance Example: • Students will explain how the most common types of food borne illness originate. They will give examples of different types of food borne illnesses, provide the organism type, its cellular structure and modes of reproduction. Students will then explain how to prevent contamination and methods of infestations of various pests and pathogenic microbes.		
2.A.01.01	Anatomy and Physiology 4.7	Recognize that communication among cells is required for

2.E.01.06		coordination of body functions. The nerves communicate with electrochemical signals, hormones circulate through the blood and some cells produce signals to communicate only with nearby cells.
Performance Example: • Students will accurately define term "allergy" versus "food intolerance" and explain how the human body responds to foods in each situation.		

Physical Science (Chemistry)

CVTE Learning Standard Number	Subject Area, Topic Heading and Learning Standard Number	Text of Chemistry Learning Standard
1.A.02 1.A.02.03	Properties of Matter 1.1	Identify and explain physical properties (i.e. density, melting point, conductivity, malleability) and chemical properties (i.e. the ability to form new substances). Distinguish between chemical and physical changes.
Performance Example: • Students will correctly read and interpret information on an SDS to best protect themselves, their colleagues and customers.		
2.A.01.15 2.A.02.01 2.A.02.07	Solutions, Rates of Reaction and Equilibrium 7.1	Describe the process by which solutes dissolve in solvents.
Performance Example: • Students will accurately create 10% bleach solution for disinfecting purposes and be able to identify the solute, solvent and final solution.		
2.A.01.01 2.A.01.02	Acids and bases and oxidation – Reduction Reactions 8.2	Relate hydrogen ion concentrations to the ph scale and to acidic, basic and neutral solutions. Compare and contrast various common acids and bases (e.g. vinegar, baking soda, soap, citrus juice).
Performance Example: • Students will explain why bacterial growth is inhibited in acidic environments.		
2.F.11	1, 4 Grades 11 – 12	Chemistry
Performance Example: • Distinguish between chemical and physical changes in the methods used in baking.		

Physical Science (Physics)

CVTE Learning Standard Number	Subject Area, Topic Heading and Learning Standard Number	Text of Physics Learning Standard
2.F.01 2.F.02	Heat and Heat Transfer 3.1	3.1 Explain how heat energy is transferred by convection, conduction and radiation.
Performance Example: • Students will explain the benefit of convection ovens over traditional ovens and describe various scenarios in which a food service director would need the use of convection ovens versus traditional oven settings. Students will additionally discuss the benefits of microwave ovens and radiation exposure to minimize food borne illness.		
2.A.01.14	Heat Transfer 3.2	Explain how heat energy will move from a higher to a lower temperature until equilibrium is reached.
Performance Example:		

- Students will accurately demonstrate how to take temperature of prepared foods to ensure minimal food poisoning risk. Students will explain the rationale behind the criteria for each measurement (why thermometers are inserted into the thickest part of the meat, poultry and fish.

ARTICULATION AGREEMENT

Between

Massachusetts Community Colleges

And

Massachusetts Chapter 74-Approved Secondary
Career/Vocational Technical Culinary Arts Programs

Effective Date: December 5, 2012

for more information, click

http://www.masscc.org/partnerships-initiatives/voc-schools-articulation-agreements

Industry Recognized Credentials (Licenses and Certifications/Specialty Programs)

American Culinary Federation

1. ACF Student Certification: www.acfchefs.org
2. Certification for Foodsource Educators and Industry Professionals: www.cafemeetingplace.com
3. Career Safe Certification: www.careersonline.com
4. ProStart National Certificate of Achievement: www.nraef.org/ProStart-National-Certificate-of-Achievement - (COA)
5. Servsafe Food Handlers Certificate: www.servsafe.com/home
6. Baking Schools and Certificates: www.degreedictionary.org/articles_baking_schools_and_certifications
7. Massachusetts Restaurant Association Food Handlers Certificate: www.massrestaurantassoc.org
8. Allergy Awareness Certificate: www.restaurant.org

Other

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Related National, Regional, and State Professional Organizations

- Massachusetts Restaurant Association, 1200 17th St. NW., Washington, DC 20036.
- National Restaurant Association, 180 Center Place Way, St. Augustine, FL 32095
- American Personal & Private Chef Association

Student Organizations

- American Culinary Federation
- National Restaurant Association Education Foundation Pro Start
- Skills USA www.maskillsusa.org

Selected Websites

- www.nutritionist-world.com
- www.myfootpath.com
- www.culinary-careers.org
- www.indeed.com
- www.ehow.com