State of Rhode Island
DEPARTMENT OF ELEMENTARY AND SECONDARY EDUCATION
Shepard Building
255 Westminster Street
Providence, Rhode Island 02903-3400

Angélica Infante-Green
Commissioner

Enclosure 5b
November 2, 2021

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TO: Members of the Council on Elementary and Secondary Education

FROM: Angélica Infante-Green, Commissioner

RE: Request for Endorsement of CTE Program Standards

Starting in 2016, the Career & Technical Education (CTE) Board of Trustees began developing and approving CTE program standards, which RIDE has adopted. RIDE uses these standards to define the level of rigor and quality that CTE programs must meet to prepare students for the needs of business and industry.

The CTE Board of Trustees created these standards through collaborations between representatives from industry and education, organized around specific career clusters. These standards outline the skills and credentials required for students to succeed in specific career fields. Each standard includes a nationally-recognized career cluster, the name of the program/career field, a culminating industry-recognized credentials, applicable work-based learning requirements, an academic course of study, and required courses.

In alignment with the CTE Regulations of 2012 and following the amendments to RI General Laws 16-45.6.1 in 2021, RIDE is seeking a formal endorsement of these standards by the Council on Elementary and Secondary Education.

RECOMMENDATION: THAT, the Council on Elementary and Secondary Education endorses the Career and Technical Education Program Standards.

Career and Technical Education

Rhode Island
Career and Technical Education (CTE)
Industry-Specific Program Standards

Updated November 1, 2021

Standards have been approved by the CTE Board of Trustees and adopted by the Rhode Island Department of Education.

Standards were endorsed by the Council of Elementary and Secondary Education on [PENDING].

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US Dept. of Labor (USDOL) Career Cluster:

Arts / Audio Visual (AV) Technology / Communications

US Dept. of Labor (USDOL) Career Cluster: Arts / Audio Visual (AV) Technology / Communications
(Not a RI Governor's Workforce Board Priority Sector)

Career Field: Actor, Director or Theatre Educator

Skills/ knowledge needed to be prepared for entry-level work:

Upon successful completion of a RIDE approved Actor/Theatre Educator Pathway, the candidate is expected to have a working knowledge of the following and be able to apply this knowledge in a variety of situations.

- Demonstrate employability skills related to a career in arts and communication
- Pursue career development skills to advance in arts and communication careers

Overall Career Information

What Actors, Directors, Theatre Educator (Postsecondary) Specialists Do:

High School CTE Pathway Completion	Postsecondary Two-Year Programs	Four-Year College and University Programs	Dual Degree and Postgraduate
• Announcer • Actor	**Associate Degree programs include (examples):** • Associate of Arts in Theatre **Sample Job Titles:** • Actor • Director • Musician (Performance) • Composer/Arranger • Church Musician • Accompanist	**Bachelor of Arts or Theatre programs include (examples):** • Bachelor of Arts in Theatre • Bachelor of Arts in Theatre Education • Bachelor of Arts in Theatre Business Management **Sample Job Titles:** • Actor (Performance) • Director • Playwright • Local (community and professional) • Theatre Educator (K-12) • Post-Secondary Theatre Educator • Theatre/Acting Entrepreneur	**Theatre Arts or TheatreArts Education and (examples):** • Directing • Medicine • Law • History • Anthropology **Sample Job Titles** • Director • Acting Therapist • Copyright Lawyer • Theatre Historian • Corporate trainer

Job Outlook:

According to the U.S. Bureau of Labor Statistics the expected growth from 2016 to 2026 is:

Actors	7,400 new jobs	(12% growth- faster than average)
Producer and Directors	16, 500 new jobs	(12% growth- faster than average)
Musicians and Singers	6,000 new jobs	(3% growth)
Postsecondary Teachers	177,000 new jobs	(13% growth- faster than average)
High School Teachers	55,900 new jobs	(6% growth)
Middle School Teachers	36,800 new jobs	(6% growth)
Kindergarten and Elementary School Teachers	87,800 new jobs	(6% growth)

Pay:

According to the U.S. Bureau of Labor Statistics the median pay in 2016 was:

Actors	$22.30 per hour	-
Producers and Directors	-	($70,950 per year)
Music Directors and Composers	$25.14 per hour	($50,100 per year)
Musicians and Singers	$25.14 per hour	-
Postsecondary Teachers	-	($75,430 per year)
High School Teachers	-	($58,030 per year)
Middle School Teachers	-	($56,720 per year)
Kindergarten and Elementary School Teachers	-	($55,490 per year)

How to Become an Actor, Director or Theatre Educator in Rhode Island

Rhode Island CTE Program Requirements:

Each column MUST be met to satisfy the requirements of the Rhode Island CTE ACTOR, DIRECTOR or THEATREEDUCATOR *Standard.*

Academic Requirements		Safety Training		Mandatory Credential(s) Earned		Work-Based Experience + Career Ready Skills
Three full years of core theatrearts coursework **+** **Recommended Coursework in:** • Speech • Greek and Roman History • Foreign Languages (Italian, French, German preferred **Recommended extracurricular activities:** • Internship with partnering theatre, participating in performing arts productions	+	• OSHA 10 or equivalent	+	• Concurrent enrollmentin Theatre Course witha postsecondary partner **or** • National Occupational Competency Testing Institute (NOCTI) Exam	+	• This standard adoptsthe work-based learning standards as developed and approved by the RI Governor's WorkforceBoard.

Expected Industry Credential(s) and/or Certificate(s) granted upon successful completion of the CTE Program (if applicable):

High school students interested in becoming an actor or theatre educator should enroll in a minimum of three and preferably four years of a core curriculum, both artistic and technical theatre courses, small and large company stage performances, artistic small and large company performances, stage-performance class (theatre company, acting, stage craft, speech). Individuals in this pathway must also successfully complete the Theatre Performance/Theatre Education college courses in an approved (EEP) Early Enrollment Program or pass the National Occupational Competency Testing Institute (NOCTI) exam.

USDOL Career Cluster: Arts / Audio Visual (AV) Technology /Communications
(Not a RI Governor's Workforce Board Priority Sector)

Career Field: Arts Education

Overall Career Information

This standard prepares students to graduate from high school prepared to enter a career in Arts, A/V Technology& Communications program at the postsecondary level, and to be 'job ready' in jobs such as Museum and Gallery Directors, Curators, Educators or Therapists.

Skills/ knowledge needed to be prepared for entry-level work:

Upon completion of the Visual Arts Pathway the candidate is expected to demonstrate their skill and talent through a substantial portfolio of work, exhibit creativity through unique visual problem solving, display theirwork through traditional methods and a web- portfolio, display manual dexterity, possess customer service/interpersonal skills, and utilize a variety of materials such as pencil, charcoal, collage, paint, and printmaking.

Students interested in pursuing these careers specifically should be prepared for a highly competitive environment. A strong overall GPA and attention to detail are beneficial. Students may also consider courses inchild development, psychology, and/or art history.

Overall Career Information

Pay:

Prior experience gained through an internship or by volunteering in archives or museums is helpful in getting a job as an archivist, curator, museum technician, or conservator.

Entry Level:	**Two - Year Programs:**	**Four Year Programs:**
Sample Job Title/Median Annual Wage • Gallery Assistant - $34,131 • Art Gallery Security Guard - $34,557 • Art Framer - $34,636	Sample Job Title/ Median Annual Wage • Junior Art Director - $43,232	Sample Job Title/Median Annual Wage • Art Directors - $89,820 • Art Historians/Archivists - $47,230 • Museum/Gallery Curator - $50,459 • Museum Education Director - $36,048 • Visual Arts Educator - $43,360 • Art Therapist - $55,900

Job Outlook:

Overall employment of archivists, curators, museum technicians, and conservators is projected to grow

13 percent from 2016 to 2026. Job growth for elementary teachers and high school teachers over the decade from2014 to 2024 is projected at 6%. **www.bls.gov**

How to Become an Arts Educator in Rhode Island

Rhode Island CTE Program Requirements:

Requirements are summarized in the following table. Each column MUST be met to satisfy the requirements ofthe Rhode Island CTE Arts, A/V Technology & Communications.

Academic Requirements	**+**	**Mandatory Credential (s) Earned** **One or more of the following:**	**+**	**Work-Based Experience (s)** **+** **Career Readiness Skills**
• Three- Four consecutive years of Visual Arts Courses as aligned by individual district pathways. Recommended: •Art History •AP Art History	**+**	**One or more of the following**: •Concurrent/ Dual EnrollmentCollege Level Course (EEP) •Advanced Placement in 2-DDesign or Drawing •Comprehensive Visual ArtsPortfolio with Artist Statement: Includes a minimum of 15 pieces •National OccupationalCompetency Testing Institute (NOCTI)	**+**	• This standard adopts the work-based learning standards as developed and approved by the RI Governor's Workforce Board Visual Arts work-based learning experience(s) and/or related mentoringprogram **+** • **Career Readiness Skills Component** (i.e., Naviance)

Expected Industry Credential(s) and/or Certificate(s) granted upon successful completion of the CTE Program (ifapplicable):

NOCTI, Adobe Certified Associate

USDOL Career Cluster: Arts / Audio Visual (AV) Technology /Communications
(Not a RI Governor's Workforce Board Priority Sector)

Career Field: Craft and Fine Artist

Skills/ knowledge needed to be prepared for entry-level work:

Upon completion of the Visual Arts Pathway the candidate is expected to demonstrate their skill and talent through a substantial portfolio of work, exhibit creativity through unique visual problem solving, display theirwork through traditional methods and a web-portfolio, display manual dexterity, possess customer service/interpersonal skills, and utilize a variety of materials such as pencil, charcoal, collage, paint, and printmaking.

Pay: (Postsecondary Program) - The median annual wage and fine artists was $48,780 in May 2016, with anannual growth rate of 6%. (BLS.gov)

Entry Level: Sample Job Title/ Median Annual Wage	**Two - Year Programs:** Sample Job Title/ Median Annual Wage	**Four Year Programs:** Sample Job Title/ Median Annual Wage
• Artist's Assistant - $30,180 • Floral Designer - $31,360 • Gallery Assistant - $34,131 • Tattoo Artist - $30,758	• Junior Art Director - $43,232 • Set Designer - $41,500	• Art Directors - $89,820 • Industrial Designer - $67,790 • Illustrator - $44,613 • Jewelry/Metal Worker- $38,200 • Woodworker - $30,180 • Fashion Designer - $65,170 • Museum/Gallery Curator - $47,230

Job Outlook:
Overall, employment of craft and fine artists is projected to grow 6% from 2016-2026.

How to Become a Craft / Fine Artist in Rhode Island

Rhode Island CTE Program Requirements:

Requirements are summarized in the following table. Each column MUST be met to satisfy the requirements ofthe Rhode Island CTE Arts, A/V Technology & Communications.

Academic Requirements	**+**	**Mandatory Credential (s) EarnedOne or more of the following:**	**+**	**Work-Based Experience (s) + Career Readiness Skills**
• Three- Four consecutive		**One or more of the following**: • Concurrent/ Dual		• This standard adopts the work-basedlearning standards as

years of Visual Arts Courses as aligned by individual district pathways. <u>Recommended:</u> • Art History • AP Art History	+	EnrollmentCollege Level Course (EEP). • Advanced Placement in 2-D Design or Drawing. • National Occupational Competency Testing Institute (NOCTI). • Comprehensive Visual Arts Portfolio with Artist Statement: Includes a minimum of 15 pieces. • Adobe Certification	+	developed and approved by the RI Governor's Workforce Board. • Visual Arts worked based learning experiences(s) **and/ or** • Related mentoring program **+** • Career Readiness Skills Component

Expected Industry Credential(s) and/or Certificate(s) granted upon successful completion of the CTE Program (ifapplicable): NOCTI, Adobe Certified Associate

USDOL Career Cluster: Arts / Audio Visual (AV) Technology /Communications
(Not a RI Governor's Workforce Board Priority Sector)

Career Field: Dancer / Choreographer

Overall Career Information

This standard is for a high school graduate who is prepared to enter a BFA program at the secondary level and/orbe "job ready" at the assistant/apprenticeship level in private sector instruction or arts production/management.

Skills/knowledge needed to be prepared for entry-level work:

In the Performing Arts, the individual artist directly creates/performs the work of art or entertainment and arethe medium of creative expression. Upon successful completion of a RIDE Approved Dance Pathway, the candidate is expected to have a working knowledge of the following and be able to apply this knowledge in a variety of situations:

- Meet the minimum of Proficient Level in the National Core Arts Standards for Dance http://www.nationalartsstandards.org
- Meet 21st Century Core Competencies
- Demonstrate employability skills related to a career in Arts and Communication careers

Overall Career Information

Dancers:	$19.89/hour
Choreographers:	$24.28/hour or $50,500/year
Entertainers and performers, sports, and related workers:	$19.65/hour (median 2016)
Assistant Dance Instructor:	Tuition exchange
Teaching Artist:	$35/hour
Postsecondary Teachers:	$75,430/year (median for tenured professors2016) MA/MFA required
Public Education Dance Teacher:	($ 41,704 step one) depending on longevity andlevel of pursuit of higher education degrees (Masters and Doctorate) BFA minimum
Private Sector - Studio owner:	$40,600/year; Teachers: $30/hour average
Producers and Directors:	$70,950 (median 2016) Bachelor's Degree

Similar Occupations: (List of similar or related occupations)

- Dance photographer/videographer

- Dance Medicine: Kinesiology, dance therapy, Physical Therapy, athletic trainer, Massage
- Somatic trainer: (e.g., Feldenkrais, Alexander, Yoga)
- Dance Writer: (e.g., dance critique, dance history, dance notation)
- Stage Management: production

How to Become a Dancer / Choreographer in Rhode Island

Rhode Island CTE Program Requirements:

ACADEMIC REQUIREMENTS	+	MANDATORY CREDENTIAL(S)EARNED	+	WORK-BASED EXPERIENCE(S) + CAREER READINESS SKILLS
• College Preparatory Courses for RIHigh School Diploma • Three to four consecutive years ofspiraling Dance Curriculum (meeting NCAS Proficient Level – Minimum): technique, choreography and composition, dance history, anatomy (kinesiology), injury prevention, dance analysis and critique, pedagogy, production; and could include arts management (back and front of house), costume (set, lighting) design and construction/implementation. • 3 Pre-AP Arts Dance Units (CollegeBoard)	+	• Dance Education Assistant Certification from RI Dance Alliance Inc. (portfolio review). • AP Capstone including AP Seminar and AP Research (College Board) Optional: • National Honor Society for Dance Academics (NDEO)	+	• Internship with industry focus (e.g., assistant in private sector; dance company intern/apprentice in performance or arts management, marketing, and/or production; mentorship with choreographer or arts organization manager). • This standard adopts the work-basedlearning standards as developed andapproved by the RI Governor's Workforce Board.

Expected Industry Credential(s) and/or Certificate(s) granted upon successful completion of the CTE Program (if applicable):

Dance Education Assistant Certification, including portfolio review, sponsored by Rhode Island Dance Alliance,Inc.; Supplemental College Level Courses (credits towards college); and AP Seminar and AP Research - AP Capstone (College Board).

CREDENTIAL CERTIFYING ORGANIZATIONS: Rhode Island Dance Alliance, Inc. [Portfolio Review]; AP Capstone -AP Seminar and AP Research (College Board).

TESTING METHODOLOGY FOR CREDENTIAL: Portfolio review

USDOL Career Cluster: Arts / Audio Visual (AV) Technology /Communications

(Not a RI Governor's Workforce Board Priority Sector)

Career Field: Designer

Overall Career Information
This standard prepares students to graduate from high school prepared to enter a career in Arts, A/V Technology & Communications program at the post-secondary level, and to be 'job ready' as a designer.

Skills/ knowledge needed to be prepared for entry-level work:
Virtually all entry-level positions for industrial designers require a bachelor's degree in industrial design, engineering, architecture, or a similar field. Prospective industrial designers may be required to possess basic art and design skills before entering into a bachelor's degree program.

An associate's degree or higher is typically required to become a graphic designer, according to the U.S. Bureau of Labor Statistics (BLS). Many employers may require a bachelor's degree or significant work experience in addition to an associate's degree.

The Visual Arts Pathway prepares students with the foundational design and art experiences to gain acceptance into BFA programs. Students will have the opportunity to earn an Adobe certificate. Students will have the opportunity to earn credit through the College Board, or concurrent courses, or dual enrollment. Students will create a portfolio of 15-20 pieces to show mastery of foundation art making techniques and explore a chosen concept in depth.

Pay:

Entry Level: Sample Job Title/ Median Annual Wage	**Two - Year Programs:** Sample Job Title/ Median Annual Wage	**Four Year Programs:** Sample Job Title/ Median Annual Wage
• Floral Designer - $31,360 • Graphic Design Assistant - $18,000 • Industrial Design Assistant - $18,000 • Architectural Assistant - $18,000	• Web Developer - $66,130 • Drafters - $53,480 • Desktop Publisher - $41,090	• Graphic Designers - $46,900 • Industrial Designer - $67,130 • Architect - $76,930

Job Outlook:

Employment of graphic and industrial designers is projected to grow 4% from 2016 to 2026.

How to Become a Visual Arts Designer in Rhode Island

Rhode Island CTE Program Requirements and Expected Industry Credential(s) and/or Certificate(s) grantedupon successful completion of the CTE Program (if applicable):

Each column MUST be met to satisfy the requirements of the Rhode Island CTE Arts, A/V Technology & Communications.

Academic Requirements	**+**	**Mandatory Credential (s) Earned**	**+**	**Work-Based Experience (s) & Career Readiness Skills**
• Three- Four consecutive years of Visual Arts Courses as aligned by individual district pathways. <u>Recommended</u>: • Art History • AP Art History	**+**	**One or more of the following**: • Concurrent/ Dual Enrollment College Level Course (EEP) • Advanced Placement in 2-D Design or Drawing • National Occupational Competency Testing Institute (NOCTI) • Comprehensive Visual Arts Portfolio with Artist Statement: Includes a minimum of 15 pieces • Adobe Certification	**+**	• This standard adopts the work-based learning standards as developed and approved by the RI Governor's WorkforceBoard. Visual Arts worked based learning experience(s) **and/ or** • related mentoring program **+** • **Career Readiness Skills Component**

USDOL Career Cluster: Arts / Audio Visual (AV) Technology /Communications
(Not a RI Governor's Workforce Board Priority Sector)

Career Field: Graphic Communications Technology: Print Manufacturing-Pre-Production

Skills/knowledge needed to be prepared for entry-level work:

Upon completion of this high school Graphic Communications Technology training program, the candidate isexpected to know and be able to:

Duties (may include, but not limited to):

Taking orders from customers. Troubleshooting problems. Determining prepress requirements by reviewing workorders. Reformatting inside pages based on clients' requirements. Creating and importing graphics; converting, scanning, and enhancing documents, illustrations, and photographs, into digital images. Maintaining quality results by editing layouts including spelling, grammar, punctuation, reproduction, clarity, and consistency; adhering to prepress standards. Obtaining layout approval by submitting completed design and layout; reviewing andimplementing changes. Initiating printing production by transmitting files. Addressing management or customer concerns. Computer skills.

Required Curriculum:
GAERF-PrintED, administered by the Graphic Arts Education and Research Foundation (GAERF®) is a national accreditation program, based on industry standards, appropriate for secondary and post-secondary schools offering graphic communications curricula. Adobe Visual Design forms the foundations of Design and Print Production is a yearlong, project-based curriculum that develops career and communication skills in graphic design, illustration and print and digital media production, using Adobe tools. Visual Design develops four key skill areas: Project management and collaboration, Design, Research and communication, Professional digital photography, illustration, and page layout using Adobe tools. PLTW Computer Science coursesare part of the AP + PLTW computer science pathway. The program's interdisciplinary courses engage students in compelling, real-world challenges. As students work together to design solutions, they learn computational thinking – not just how to code – and become better thinkers and communicators.

Expected industry credential(s) and /or certificate(s) granted upon successful completion of the program (if applicable): Typically hold a certificate (GAERF-PrintED, Adobe, Skillconnect, NOCTI, AutoDesk, specialized proprietary software) or diploma in graphics operations (Xerox), design or printing technology. An alternative isan associate degree in graphic arts and imaging technology or printing and prepress technology.

Prerequisites for acquiring credential or certificate:

Study graphic communications, computers, commercial printing processes, math, lithography, and safety procedures.

Benefits of this level of achievement in the job market:

More job opportunities, an increased pay scale, job security, and increased subject matter expertise. High school and postsecondary CTE programs that lead to associate degrees, certificates, and industry-recognized credentials can help young people find skilled employment and give them the option of returning to school for a higher degree. CTE programs that earn industry certification receive high-quality curricula and professional developmentopportunities for their instructors. In addition, employers benefit from a more highly skilled workforce with certifiable skills. http://www.nrccte.org/core-issues/industry-recognized-credentials Descriptive analyses document the extent of general education CTE course taking by students with LD and their engagement in a concentrated program of occupationally specific general education CTE, a level of course taking early researchhas linked to improved post–high school employment outcomes.

Job Outlook: Employment of photographers is projected to grow 3 percent from 2014 to 2024, slower than theaverage for all occupations. Salaried jobs may be more difficult to find as more companies contract with freelancers rather than hire their own photographers. Prepress technicians face a challenging career outlook because the U.S. Bureau of Labor Statistics (BLS) expects to see a decline in jobs from 2014-2024, due in large part to technological developments that insert more automation into the printing process.

Pay: The most recent Rhode Island Labor Market Information for this profession identified as the production occupations dates from May 2015 and the entry-level wage is $11-$18/hr. Yearly wages are higher for entry-levelwages due to overtime. The median annual pay rate $34,080 + in 2015.

USDOL Career Cluster: Arts / Audio Visual (AV) Technology /Communications
(Not a RI Governor's Workforce Board Priority Sector)

Career Field: Graphic Communications Technology: Print Manufacturing-Production

Skills/knowledge needed to be prepared for entry-level work:

Upon completion of this high school Graphic Communications Technology training program, the candidate isexpected to know and be able to:

Duties: Taking orders from customers. Troubleshooting problems. Determining requirements by reviewing workorders. Reformatting inside pages based on clients' requirements. Operate various kinds of machinery making ground-level training on each piece of equipment important. Computer skills.

Required Curriculum: GAERF-PrintED, administered by the Graphic Arts Education and Research Foundation (GAERF®) is a national accreditation program, based on industry standards, appropriate for secondary and post- secondary schools offering graphic communications curricula. Adobe Visual Design forms the foundations of Design and Print Production is a yearlong, project-based curriculum that develops career and communication skills in graphic design, illustration and print and digital media production, using Adobe tools. Visual Design develops four key skill areas: Project management and collaboration, Design, Research and communication, Professional digital photography, illustration, and page layout using Adobe tools. PLTW Computer Science coursesare part of the AP + PLTW computer science pathway. The program's interdisciplinary courses engage students in compelling, real-world challenges. As students work together to design solutions, they learn computational thinking – not just how to code – and become better thinkers and communicators.

Expected industry credential(s) and /or certificate(s) granted upon successful completion of the program (if applicable): Typically hold a certificate (GAERF-PrintED, Adobe, Skillconnect, NOCTI, AutoDesk, specialized proprietary software) or diploma in graphics operations (Xerox), design or printing technology. An alternative isan associate degree in graphic arts and imaging technology or printing and prepress technology.

Prerequisites for acquiring credential or certificate: Study graphic communications, computers, commercialprinting processes, math, lithography, and safety procedures.

Benefits of this level of achievement in the job market: More job opportunities, an increased pay scale, job security, and increased subject matter expertise. High school and postsecondary CTE programs that lead to associate degrees, certificates, and industry-recognized credentials can help young people find skilled employment and give them the option of returning to school for a higher degree. CTE programs that earn industry certification receive high-quality curricula and professional development opportunities for their instructors. In addition, employers benefit from a more highly skilled workforce with certifiable skills. http://www.nrccte.org/core-issues/industry-recognized-credentials Descriptive

analyses document the extent ofgeneral education CTE course taking by students with LD and their engagement in a concentrated program of occupationally specific general education CTE, a level of course taking early research has linked to improved post–high school employment outcomes. http://ldx.sagepub.com/

Bureau of Labor Statistics: Job Outlook - Employment of print binding and finishing workers is projected todecline 4 percent from 2012 to 2022.

Pay:
The most recent Rhode Island Labor Market Information for this profession identified as the production occupations dates from May 2015 and the entry-level wage is $13/hr. for bindery and finishing and $14/hr. forpress. Yearly wages are higher for entry-level wages due to overtime. The median annual pay rate $34,080 + in2015.

USDOL Career Cluster: Arts / Audio Visual (AV) Technology /Communications
(Not a RI Governor's Workforce Board Priority Sector)

Career Field: Graphic Communications Technology: Design & Web-Print E-Commerce

Skills/knowledge needed to be prepared for entry-level work:

Upon completion of this high school Graphic Communications Technology training program, the candidate isexpected to know and be able to:

Duties:

Cultivate a solid body of work. Take the design "brief" to record requirements and client's needs. Schedule project implementation and define budget constraints. Work with a wide range of media and use graphic designsoftware. Think creatively and develop new design concepts, graphics, and layouts. Prepare rough drafts and present your ideas. Amend final designs to clients' comments and gain full approval. Work as part of a team withcopywriters, designers, stylists, executives etc.

Required Curriculum: PrintED, administered by the Graphic Arts Education and Research Foundation (GAERF®) isa national accreditation program, based on industry standards, appropriate for secondary and postsecondary schools offering graphic communications curricula. Adobe Visual Design forms the foundations of Design and Print Production is a yearlong, project-based curriculum that develops career and communication skills in graphic design, illustration and print and digital media production, using Adobe tools. Visual Design develops four key skillareas: Project management and collaboration, Design, Research and communication, Professional digital photography, illustration, and page layout using Adobe tools. PLTW Computer Science courses are part of the AP + PLTW computer science pathway. The program's interdisciplinary courses engage students in compelling, real-world challenges. As students work together to design solutions, they learn computational thinking – not just how to code – and become better thinkers and communicators.

Expected industry credential(s) and /or certificate(s) granted upon successful completion of the program (if applicable): Typically hold a certificate (GAERF-PrintED, Adobe, Skillconnect, NOCTI, AutoDesk, specialized proprietary software) or diploma in graphics operations (Xerox), design or printing technology. An alternative is anassociate degree in graphic arts and imaging technology or printing and prepress technology.

Prerequisites for acquiring credential or certificate:

Study graphic communications technology and or Adobe software, computers, commercial printing processes,math, lithography, and safety procedures.

Benefits of this level of achievement in the job market:

More job opportunities, an increased pay scale, job security, and increased subject matter expertise. High school and postsecondary CTE programs that lead to associate degrees, certificates, and industry-recognized credentials can help young people find skilled employment and give them the option of returning to school for a higher degree. CTE programs that earn industry certification receive high-quality curricula and professional developmentopportunities for their instructors. And employers benefit from a more highly skilled workforce Descriptive analyses document the extent of general education CTE course taking by students with LD and their engagement in a concentrated program of occupationally specific general education CTE, a level of course taking early research has linked to improved post–high school employment outcomes. http://ldx.sagepub.com/ content/early/2015/03/16/0022219415574774.abstract

Bureau of Labor Statistics: Job Outlook:

The Bureau of Labor Statistics expects the employment of graphic designers to grow as much as 13 percent annually, due to the increased emphasis on online advertising and technology firms. Furthermore, with the expansion of mobile Internet and increased adoption of broadband Internet, employers are looking every day forinnovative web designers who are able to take advantage of these technological advances. http://www. collegesanddegrees.com/programs/web-design/job-profile

Pay: The most recent Rhode Island Labor Market Information for this profession identified as the Graphic Designers Design & Web-Print ECommerce dates from May 2015 and the entry-level wage is $19/hr. The medianannual pay rate $52,000 + in 2015.

USDOL Career Cluster: Arts / Audio Visual (AV) Technology /Communications
(Not a RI Governor's Workforce Board Priority Sector)

Career Field: Graphic Communications Technology: Audio/Video

Skills/knowledge needed to be prepared for entry-level work:
Upon completion of this high school Graphic Communications Technology training program, the candidate isexpected to know and be able to:

Duties:
Set up and install equipment such as microphones, sound speakers, video screens, projectors, video monitors, recording equipment, connecting wires and cables, sound and mixing boards for events and functions such as concerts, sports events, meetings and conventions, presentations, and news conferences. Set up and operate audio/video equipment. Test and resolve equipment issues. Diagnose and correct media system problems. Mix sound inputs and feeds. Exceptional computer troubleshooting. Be familiar with Adobe type software programs,such as Dreamweaver, Flash, and InDesign. Maintain inventory of equipment.

Required Curriculum: PrintED, administered by the Graphic Arts Education and Research Foundation (GAERF®) isa national accreditation program, based on industry standards, appropriate for secondary and postsecondary schools offering graphic communications curricula. Adobe Visual Design forms the foundations of Design and Print Production is a yearlong, project-based curriculum that develops career and communication skills in graphic design, illustration and print and digital media production, using Adobe tools. Visual Design develops four key skillareas: Project management and collaboration, Design, Research and communication, Professional digital photography, illustration, and page layout using Adobe tools. PLTW Computer Science courses are part of the AP + PLTW computer science pathway. The program's interdisciplinary courses engage students in compelling, real-world challenges. As students work together to design solutions, they learn computational thinking – not just how to code – and become better thinkers and communicators.

Expected industry credential(s) and /or certificate(s) granted upon successful completion of the program (if applicable): Typically hold a certificate (GAERF-PrintED, Adobe, Skillconnect, NOCTI, Autodesk specialized proprietary software) or diploma in electronic prepress operations (Xerox) or printing prepress technology. Analternative is an associate degree in graphic arts and imaging technology or printing technology and college credit.

Prerequisites for acquiring credential or certificate:
Study graphic communications technology and or Adobe software, computers, math, lithography, and safety procedures.

Benefits of this level of achievement in the job market:
More job opportunities, an increased pay scale, job security, and increased subject matter expertise. High school and postsecondary CTE programs that lead to associate degrees, certificates, and industry-recognized credentials can help young people find skilled employment and give them the option of

returning to school for a higher degree. CTE programs that earn industry certification receive high-quality curricula and professional developmentopportunities for their instructors. And employers benefit from a more highly skilled workforce with certifiable skills. http://www.nrccte.org/core-issues/industry-recognized-credentials Descriptive analyses document the extent of general education CTE course taking by students with LD and their engagement in a concentrated program of occupationally specific general education CTE, a level of course taking early research has linked to improved post-high school employment outcomes. http://ldx.sagepub.com/ content/early/2015/03/16/0022219415574774.abstract

Bureau of Labor Statistics (BLS): Job Outlook:
The BLS projected that employment in the sector would grow by about six percent from 2012-2022.

Pay:
The most recent Rhode Island Labor Market Information for this profession identified as the Audio/Video technician's dates from May 2015 and the entry-level wage is $17/hr. The median annual pay rate $35,500 + in2015.

USDOL Career Cluster: Arts / Audio Visual (AV) Technology /Communications
(Not a RI Governor's Workforce Board Priority Sector)

Career Field: Graphic Communications Technology: Advertising/Marketing

Skills/knowledge needed to be prepared for entry-level work:

Upon completion of this high school Graphic Communications Technology training program, the candidate isexpected to know and be able to:

Duties:

Initiate and oversee multiple product promotions for several key e-commerce channels across a variety of platforms, social media outlets and mailing lists to drive revenue and social proof. Research current ecommerce offerings, understand opportunities and constraints and develop recommendations based on unique business needs. Use data management to track and forecast sales data, as well as logging the statuses and success rates ofpromotional offerings. Correspond with customers and/or promotional participants resolve any new or outstanding discrepancies, as well as answering any general inquiries pertaining to past, present, or future promotions. Coordinate with management and operations departments regarding quantity and timing of promotional initiatives. Additional day-to-day tasks may include: Creating copy for promotional emails, proactively researching new promotional outlets, creating accurate promotional discount codes across multiple storefronts, and coordinating with leadership to ensure revenue-building results.

Required Curriculum:
PrintED, administered by the Graphic Arts Education and Research Foundation (GAERF®) isa national accreditation program, based on industry standards, appropriate for secondary and postsecondary schools offering graphic communications curricula. Adobe Visual Design forms the foundations of Design and Print Production is a yearlong, project-based curriculum that develops career and communication skills in graphic design, illustration and print and digital media production, using Adobe tools. Visual Design develops four key skillareas: Project management and collaboration, Design, Research and communication, Professional digital photography, illustration, and page layout using Adobe tools. PLTW Computer Science courses are part of the AP + PLTW computer science pathway. The program's interdisciplinary courses engage students in compelling, real-world challenges. As students work together to design solutions, they learn computational thinking – not just how to code – and become better thinkers and communicators.

Expected industry credential(s) and /or certificate(s) granted upon successful completion of the program (if applicable): Typically hold a certificate (GAERF-PrintED, Adobe, Skillconnect, NOCTI, Autodesk, specialized proprietary software) or diploma in electronic prepress operations (Xerox) or printing prepress technology. Analternative is an associate degree in graphic arts and imaging technology or printing technology

Prerequisites for acquiring credential or certificate: Study graphic communications, computers, commercialprinting processes, math, lithography, and safety procedures.

Benefits of this level of achievement in the job market: More job opportunities, an increased pay scale, jobsecurity, and increased subject matter expertise. High school and postsecondary CTE programs that lead to associate degrees, certificates, and industry-recognized credentials can help young people find skilled employment and give them the option of returning to school for a higher degree. CTE programs that earn industry certification receive high-quality curricula and professional development opportunities for their instructors. In addition, employers benefit from a more highly skilled workforce with certifiable skills **http://www.nrccte.org/core-issues/industry-recognized-credentials**

Descriptive analyses document the extent of general education CTE course taking by students with LD and their engagement in a concentrated program ofoccupationally specific general education CTE, a level of course taking early research has linked to improved post–high school employment outcomes.

Bureau of Labor Statistics: Job Outlook:

Employment of advertising, promotions, and marketing managers isprojected to grow 9 percent from 2014 to 2024.

Pay:
The most recent Rhode Island Labor Market Information for this profession identified as Advertising/Marketing from May 2015 and the entry-level wage is $13/hr. for an intern on Indeed.com. The median annual pay rate $56,500 + in 2015.

USDOL Career Cluster: Arts / Audio Visual (AV) Technology /Communications
(Not a RI Governor's Workforce Board Priority Sector)

Career Field: Graphic Communications Technology: Sales/Support staff

Skills/knowledge needed to be prepared for entry-level work:
Upon completion of this high school Graphic Communications Technology training program, the candidate isexpected to know and be able to:

Duties:
Processing new sales leads. Managing the correspondence between the sales team and their client. Monitoringcustomer accounts. Providing data and reports to help the sales team. Keeping track of sales targets. Answeringphone calls. Scheduling diaries.

Required Curriculum: PrintED, administered by the Graphic Arts Education and Research Foundation (GAERF®) isa national accreditation program, based on industry standards, appropriate for secondary and postsecondary schools offering graphic communications curricula. Adobe Visual Design forms the foundations of Design and Print Production is a yearlong, project-based curriculum that develops career and communication skills in graphic design, illustration and print and digital media production, using Adobe tools. Visual Design develops four key skillareas: Project management and collaboration, Design, Research and communication, Professional digital photography, illustration, and page layout using Adobe tools. PLTW Computer Science courses are part of the AP + PLTW computer science pathway. The program's interdisciplinary courses engage students in compelling, real-world challenges. As students work together to design solutions, they learn computational thinking – not just how to code – and become better thinkers and communicators.

Expected industry credential(s) and /or certificate(s) granted upon successful completion of the program (if applicable): Typically hold a certificate (GAERF-PrintED, Adobe, Skillconnect, NOCTI, Autodesk, specialized proprietary software) or diploma in electronic prepress operations (Xerox) or printing prepress technology. An alternative is an associate degree in graphic arts and imaging technology or printing technology, college credits.

Prerequisites for acquiring credential or certificate: Study graphic communications, computers, commercialprinting processes, math, lithography, and safety procedures.

Benefits of this level of achievement in the job market: More job opportunities, an increased pay scale, job security, and increased subject matter expertise. High school and postsecondary CTE programs that lead to associate degrees, certificates, and industry-recognized credentials can help young people find skilled employment and give them the option of later returning to school for a higher degree. CTE programs that earn industry certification receive high-quality curricula and professional development opportunities for their instructors. And employers benefit from a more highly skilled workforce with certifiable skills. http://www.nrccte.org/core-issues/industry-recognized-credentials Descriptive analyses document the extent of gradeeducation CTE course taking by students with LD and their

engagement in a concentrated program of occupationally specific general education CTE, a level of course taking early research has linked to improved post–high school employment outcomes.

Bureau of Labor Statistics: Job Outlook: Employment of wholesale and manufacturing sales representatives isprojected to grow 7% from 2014 to 2024.

Pay:
The most recent Rhode Island Labor Market Information for this profession identified as the Sales/Supportstaff from May 2015 and the entry-level wage is $13/hr. The median annual pay rate $29000¬$59,000 in 2015.

USDOL Career Cluster: Arts / Audio Visual (AV) Technology /Communications
(Not a RI Governor's Workforce Board Priority Sector)

Career Field: Media Communications

Overall Career Information
This standard prepares students to graduate from high school prepared to enter a career in Arts, A/V Technology& Communications program at the post-secondary level, and to be 'job ready' in the field of media communications.

Skills/ knowledge needed to be prepared for entry-level work:
Apply effective and collaborative team communication and management skills to complete the video/writingprocess from pre-production script/story development through the production and capture of quality video image and audio and collection of information through various forms of media.

Overall Career Information

Pay:
The most recent Rhode Island Labor Market Information for this profession dates from May 2016 and the entry-level wage for Media & Communication Equipment Workers at that time was $63,252.80 ($30.41 per hour). Themedian annual wage for media and communication occupations was $54,780 in May 2016, which was higher than the median annual wage for all occupations of $37,040. Information based on RI Department of Labor & Training - Labor Market Information - Occupational Employment Statistics

Job Outlook:
Employment of media and communication occupations is projected to grow 6 percent from 2016 to 2026, aboutas fast as the average for all occupations, which will result in about 45,300 new jobs. Demand for media and communication occupations is expected to arise from the need to create, edit, translate, and disseminate information through a variety of different platforms. Information based on US Department of Labor - Bureau of Labor Statistics - Occupational Outlook Handbook.

How to Become a Media and Communications Specialist in Rhode Island

Benefits of This Level of Achievement in Job Market:
Completion of this pathway will equip students with the knowledge and skills to pursue a career in media communications and to obtain post-secondary degrees in journalism, broadcasting, video/audio production,marketing, and communications.

Rhode Island CTE Program Requirements:
The curriculum consists of a 3-course sequence and work-based learning experience(s) that develop several skills.Demonstrate the ability to plan and deliver a broadcast production to exhibit readiness for completing key production functions through: Filming, Film editing, Non-linear Editing, Studio

Production, News Writing, Editing, navigating Legal and Ethical Media Issues and Cultivating and Interviewing Sources.

Required Curriculum:

Requirements are summarized in the following table. Each column MUST be met to satisfy the requirements ofthe Rhode Island CTE Arts, A/V Technology & Communications.

Academic Requirements	+	**Mandatory Credential (s) Earned (At least One)**	+	**Work-Based Experience (s)** **+Career Readiness Skills**
Required Curriculum: • 3 course sequence that develops the following skills: Filming; Film Editing, Non-linear Editing, Studio Production, News Writing and Editing, Navigating Legal and Ethical Media Issues, and Cultivating and Interviewing Sources. **<u>Recommended experience/training in</u>** •Adobe Premiere •Final-Cut Pro •Sony Vegas / Sound Forge •Comparable video editing program.	+	• Expected industry credential(s) granted upon successful completion of the program will include **one or more** of the following: • National Occupational Testing Institute (NOCTI) Broadcasting and Journalism Pathway Assessment. **And/or** • Adobe premiere certification **And/or** • Final Cut Pro certification **And/or** • Sony Vegas/SoundForge certification **And/or** • Comportable video editing certification (ex. AVID certification)	+	• This standard adopts the work- based learning standards as developed and approved by theRI Governor's Workforce Board Work-based learning experience(s) at radio, TV, newspapers, marketing and communications companies andother appropriate businesses in which the skills emphasized by the pathway are used. • Essential skills training to increase marketability and employability of students.

Expected Industry Credential(s) and/or Certificate(s) granted upon successful completion of the CTE Program (if applicable):

National Occupational Testing Institute (NOCTI) Broadcasting and Journalism Pathway Assessment,

and/orcertification in one or more of the following: Adobe premiere certification, Final Cut Pro certification, SonyVegas/SoundForge certification, and Comportable video editing certification (ex. AVID certification)

Testing Methodology for Credential - National Occupational Testing Institute (NOCTI) Broadcasting and Journalism Pathway Assessment and/or certification in one or more of the following:

- Adobe premiere certification
- Final Cut Pro certification
- Sony Vegas / SoundForge certification
- Comportable video editing certificate (ex. AVID certification)

If software certification is available or chosen teachers of this pathway would receive certification from a software editing company. This certification is done regionally during the course of a given school year. This would allow teachers to become certified video editing instructors for that particular program. Teachers would then have the ability to become certified instructors and administer tests to students who would in turn receivecertification to be used in a potential job interview or career.

USDOL Career Cluster: Arts / Audio Visual (AV) Technology /Communications
(Not a RI Governor's Workforce Board Priority Sector)

Career Field: Multimedia Artist

Overall Career Information

This standard prepares students to graduate from high school prepared to enter a career in Arts, A/V Technology & Communications program at the postsecondary level, and to be 'job ready' as a Multimedia Artist.

Skills/ knowledge needed to be prepared for entry-level work:

Upon successful completion of a RIDE Approved Visual Arts Pathway, the candidate is expected to: have aworking knowledge of the following and be able to apply this knowledge in a variety of situations.

- Work with a team of artists, copywriters, designers, stylists, executives etc. to create multimedia designs
- Work with a wide range of media and use graphic design software
- Think creatively and develop new design concepts, graphics, and layouts.
- Research projects to help create realistic and innovative designs based upon the client's needs
- Prepare, present, amend, and edit designs based on client feedback and specifications within required timelines

Overall Career Information

Pay:

An associate's degree or higher is typically required to become a multimedia artist, according to the U.S. Bureau of Labor Statistics (BLS). Many employers may require a bachelor's degree or significant work experience inaddition to an associate's degree.

Entry Level:	**Two - Year Programs:**	**Four Year Programs:**
Sample Job Title/ Median Annual Wage • Artist's Assistant - $30,180 • Floral Designer - $31,360 • Gallery Assistant - $34,131 • Photographer - $30,000 Photographer Assistant - $19,000	Sample Job Title/ Median Annual Wage • Junior Art Director - $43,232 • Set Designer - $41,500 • Animator - $48,000	Sample Job Title/ Median Annual Wage • Illustrator - $44,613 • Animator - $68,000 • Video Game Designer - $85,000 • Fashion Designer - $65,170 • Art Director - $89,820 • Web Developer - $69,000 • Film Director - $70,000 • Producer - $70,000

Job Outlook:
Overall, employment of multimedia artists is projected to grow 10 percent from 2016-2026.

How to Become a Multimedia Artist in Rhode Island

Rhode Island CTE Program Requirements:
Requirements are summarized in the following table. Each columnMUST be met to satisfy the requirements of the Rhode Island CTE Arts, A/V Technology & Communications

Academic Requirements	**+**	**Mandatory Credential (s) Earned** **One or more of the following:**	**+**	**Work-Based Experience (s)** **+** **Career Readiness Skills**
• Three- Four consecutive years of Visual Arts Courses Recommended: •Art History •AP Art History	**+**	• Concurrent/ Dual EnrollmentCollege Level Course (EEP) • Advanced Placement in 2-D Design **And/or** • National Occupational Competency Testing Institute(NOCTI-Visual Arts) • Adobe Certification • Precision Exam (Visual Arts)	**+**	• Visual Arts work-based learning experience(s) and/or related mentoring program **and** • Career Readiness Skills Component • This standard adopts the work-based learning standards as developed and approved by RI Governor's WorkforceBoard

Expected Industry Credential(s) and/or Certificate(s) granted upon successful completion of the CTE Program (if applicable):

NOCTI (Visual Arts) and/or Adobe Certified Associate and/or Precision Exam (Visual Arts)

USDOL Career Cluster: Arts / Audio Visual (AV) Technology /Communications
(Not a RI Governor's Workforce Board Priority Sector)

Career Field: Music Technologist

Overall Career Information

Music Technologists use electronics and computers as tools to design, create, perform, teach, or record musicand sound. This standard is for a high school graduate who is both prepared to enter a Music Technology program at the postsecondary level and be "job ready" as an assistant audio technician.

Skills/ knowledge needed to be prepared for entry-level work:

Upon successful completion of a RIDE approved Music Technology Pathway, the candidate is expected to have aworking knowledge of the following and be able to apply this knowledge in a variety of situations.

- Audio Editing, Recording, Mixing, and Mastering
- Using MIDI and Virtual Instruments, Sound Design, Music Composition/Production, Creating VideoSoundtracks
- Assessing audio requirements, acquiring, editing, processing, mastering, exporting, and implementingaudio assets for video games
- Familiarity with the basics of middleware (FMOD or similar) and the basics of a video game editor (Unityor similar) for audio implementation
- Proficiency in using Avid's Pro Tools - industry standard audio software

Overall Career Information

Pay: According to the U.S. Bureau of Labor Statistics the median pay in 2016 was:

Broadcast and Sound Engineering Technicians	$20.46 per hour	($42,550 per year)
Music Directors and Composers	$25.14 per hour	($50,100 per year)
Musicians and Singers	$25.14 per hour	-
Software Developers-Applications	$49.17 per hour	($102,280 per year)
Web Developers	$31.79 per hour	($66,130 per year)
Post-Secondary Teachers	-	($75,430 per year)
High School Teachers	-	($58,030 per year)
Middle School Teachers	-	($56,720 per year)
Kindergarten and Elementary School Teachers	-	($55,490 per year)
Producers and Directors	$34.11 per hour	($70,950 per year)
Multimedia Artists and Animators	$31.40 per hour	($65,300 per year)
*Net Online classifies this occupation as a New & Emerging occupation in a high growth industry:		
Instructional Designers and Technologists	$30.03 per hour	($62,460 per year)

Job Outlook:

According to the U.S. Bureau of Labor Statistics the expected growth from 2014 to 2024 is:

Broadcast and Sound Engineering Technicians	7,700 new jobs	(7% growth)
Music Directors and Composers	2,600 new jobs	(3% growth)
Musicians and Singers	6,000 new jobs	(3% growth)
Software Developers-Applications	186,600 new jobs	(17% growth)
Web Developers	39,500 new jobs	(27% growth)
Post-Secondary Teachers	177,000 new jobs	(13% growth)
High School Teachers	55,900 new jobs	(6% growth)
Middle School Teachers	36,800 new jobs	(6% growth)
Kindergarten and Elementary School Teachers	87,800 new jobs	(6% growth)
Producers and Directors	11,100 new jobs	(9% growth)
Multimedia Artists and Animators	3,900 new jobs	(6% growth)
*Net Online classifies this occupation as a New & Emerging occupation in a high growth industry:		
Instructional Designers and Technologists	100,000 or more new jobs	(14% or more growth)

Similar Occupations: (List of similar or related occupations)

High School CTE PathwayCompletion	Postsecondary Two-Year Programs	Four-Year College and University Programs	Dual Degree and Postgraduate

• Musician in Rhode Island National Guard or other branch of the service • Intern at recording studio/broadcasting station • Freelance Sound Technician	**Associate in Applied Science programs include (examples):** • Music Technology • Video Game Design • Digital Media Production • Game Development & Simulation Programming • Graphics, Multimedia, and Web Design **Sample Job Titles** Assistant Sound Designer Composer/Arranger Assistant Sound Effects (SFX) Editor Assistant Foley Artist Assistant Recording Engineer Assistant Audio Editor	**Bachelor of Science disciplines include (examples):** • Music Technology • Video Game Design • Digital Media Production • Game Development & Simulation Programming • Graphics, Multimedia, and Web Design **Sample Job Titles** • Sound Designer • Composer/Arranger • Sound Effects (SFX) Editor • Foley Artist • Recording Engineer • Audio Editor • Audio Implementer (Audio Programmer) • Acoustical Consultant • Music Teacher • Music Therapist	**Music Technology and (examples):** • Computer Science • Video Game Design • Digital Media Production • Game Development • Programming • Graphics/Multimedia/ Web Design • Instructional Design **Sample Job Titles** • Software Developer • Computer Programmer • Web Developer • Multimedia Artist • Instructional Designer • Music Therapy

How to Become a Music Technologist in Rhode Island

Rhode Island CTE Program Requirements:

These requirements are summarized in the following table. Each column MUST be met to satisfy the requirements of the Rhode Island CTE Music Technology Standard.

Academic Requirements	+	Mandatory Credential(s) Earned	+	Work-Based Experience + Career Readiness Skills
• Three years (minimum) of core music performance class (Band, Chorus, Orchestra) + • Music Technology I + • Music Technology II + • Music Technology III **Recommended:** • Piano • Computer Science • Music Theory • Music History	+	• Concurrent enrollment inthe Music, Theatre, and Dance Department at RIC courses: • MUS 118 Advanced Digital Audio Production I • MUS 119 Advanced Digital Audio Production II (With a minimum grade of C)	+	• This standard adopts the work-based learning standards as developed and approved by RI Governor's Workforce Board Music Technology work-based learning experience and/or relatedmentoring program • Essential skills developed in large performing group classes relevantto career readiness: • The ability to work intenselyand very effectively both alone and with other people • Self-discipline anddetermination • The ability to delaygratification • The ability to admit mistakes and learn fromthem

Expected Industry Credential(s) and or Certificate(s) granted upon successful completion of the CTE Program (if applicable):

High school students interested in becoming a Music Technologist should enroll in a minimum of three and preferably four years of a core curriculum, large ensemble, performance music class (band, chorus, orchestra).Individuals in this pathway must also successfully complete the Music Technology sequence (Music Tech 1-3) which will earn them six college credits in an approved (EEP) Early Enrollment Program.

USDOL Career Cluster: Arts / Audio Visual (AV) Technology /Communications
(Not a RI Governor's Workforce Board Priority Sector)

Career Field: Musician / Music Educator

Overall Career Information

Skills/ knowledge needed to be prepared for entry-level work:

Upon successful completion of a RIDE approved Musician/Music Educator Pathway, the candidate is expected tohave a working knowledge of the following and be able to apply this knowledge in a variety of situations.

- Performance proficiency on primary instrument or voice performance proficiency
- Performance proficiency in a large performing ensemble (band, chorus, orchestra)
- Musical History and Literature
- Music Theory, Sight Singing, Ear Training, and Rhythmic Training

Overall Career Information

Pay:

According to the U.S. Bureau of Labor Statistics the median pay in 2016 was:

Music Directors and Composers	$25.14 per hour	($50,100 per year)
Musicians and Singers	$25.14 per hour	-
Post-Secondary Teachers	-	($75,430 per year)
High School Teachers	-	($58,030 per year)
Middle School Teachers	-	($56,720 per year)
Kindergarten and Elementary School Teachers	-	($55,490 per year)

Job Outlook:

According to the U.S. Bureau of Labor Statistics the expected growth from 2014 to 2024 is:

Music Directors and Composers	2,600 new jobs	(3% growth)
Musicians and Singers	6,000 new jobs	(3% growth)
Post-Secondary Teachers	177,000 new jobs	(13% growth)
High School Teachers	55,900 new jobs	(6% growth)
Middle School Teachers	36,800 new jobs	(6% growth)
Kindergarten and Elementary School Teachers	87,800 new jobs	(6% growth)

Similar Occupations: (List of similar or related occupations)

High School CTE PathwayCompletion	Post-Secondary Two-Year Programs	Four-Year College and University Programs	Dual Degree and Graduate School
● Musician in Rhode Island National Guardand other branches ofthe service ● Composer ● Arranger ● General Business musician	**Associate Degree programs include (examples):** Associate of Arts in Music **Sample Job Titles** Musician (Performance) Composer/Arranger Church Musician Accompanist Private Music Teacher	**Bachelor of Arts or Music programs include (examples):** Bachelor of Music in Performance Bachelor of Music in Music Education Bachelor of Music in Music Business **Sample Job Titles** Musician (Performance) Conductor Composer/Arranger Accompanist Church Musician Music Educator (K-12) Post-Secondary Music Educator Music Entrepreneur Arts Management	**Music/Music Education and (examples):** Conducting Medicine Law History Anthropology **Sample Job Titles** ● Conductor ● Music Therapist ● Copyright Lawyer ● Music Historian ● Musicologist

How to Become a Musician / Music Educator in Rhode Island

Rhode Island CTE Program Requirements:

These requirements are summarized in the following table. Each column MUST be met to satisfy the requirements of the Rhode Island CTE Music Technology Standard.

Academic Requirements	+	Mandatory Credential(s) Earned	+	Work-Based Experience +Career Readiness Skills

Three years (minimum – four preferred) of Core music performance class (Band, Chorus, Orchestra) **+** Private Lessons strongly recommended **+** AP/EEP Music Theory **+** EEP Music History **+** **<u>Recommended Coursework in:</u>** Music Technology Piano (Vocalists) Foreign Languages (Italian,French, German preferred) **<u>Recommended extra-curricular activities:</u>** All State, Solo & Ensemble Festival, Community and church ensembles andChamber Music, Jazz Band, Musical Theater, Rock Band, etc.	**+**	• Concurrent enrollment inthe Music, Theatre, and Dance Department at RIC courses: • MUS 203 Elementary Music Theory **+** • MUS 201 Survey of Music (With a minimum grade of C)	**+**	• This standard adopts thework-based learning standards as developed and approved by RI Governor's Workforce Board • Music Performance / Education work-based learning experience and/or related mentoring program • Essential skills developed in large performing group classes relevant to career reaches • The ability to work intensely and very effectively both alone and with other people • Self-discipline and determination • The ability to delay gratification • The ability to admitmistakes and learn from them • Personal time management

Expected Industry Credential(s) and/or Certificate(s) granted upon successful completion of the CTE Program (ifapplicable): High school students interested in becoming a Musician or a Music Educator should enroll in a minimum of three and preferably four years of a core curriculum, large ensemble, performance music class (band, chorus, orchestra). Individuals in this pathway must also successfully complete the Music Performance/Music Education college courses MUS 203 Elementary Music Theory (EEP Music Theory) and MUS 201 Survey of Music (EEP Music History) which will earn them eight college credits in an approved (EEP) Early Enrollment Program.

USDOL Career Cluster: Arts / Audio Visual (AV) Technology /Communications
(Not a RI Governor's Workforce Board Priority Sector)

Career Field: Sound Engineering Technician

Overall Career Information

An applicable Associate's or bachelor's degree is *typically* required for entry-level jobs in this growing field. Students will leave high school having completed pathway coursework that will ready them for college or careeropportunities that can lead to an applicable degree in this field. Students will be encouraged to take advantage of college-credit bearing coursework made available to them. Students will secure pathway exiting credentials and online micro-credentials that provide access to entry-level opportunities in the field.

Skills/ knowledge needed to be prepared for entry-level work:

Students will develop a broad understanding of the A/V technology and Film Production industry while acquiring specific skills and knowledge that will prove essential to postsecondary study and careers in this field. Skills that stress the understanding and demonstration of proficiency of many of aspects of entry-level careers within the industry such as: photography, sound, scriptwriting, scoring/composition, multi-track recording, musical notation, lighting design, direction, floor operation, audio, and video post-production, and editing.

Broad, Transferable Skills: Other, equally important skills relating to professionalism and employability, including communication, collaboration, creative problems solving and critical thinking, will also be developed. An ongoing commitment to improvement through constructive feedback is a key component of work in this field.

Overall Career Information

Pay: Entry Level

An applicable Associate's or bachelor's degree is *typically required* for entry-level jobs in this growing field. Themedian annual wage for a sound engineering technician is $42,550. The median annual wage for **camera operators for television, video, and motion picture** was $55,080 in May 2016. The median wage is the wage at which half the workers in an occupation earned more than that amount, and half earned less. The lowest 10 percent earned less than $26,940, and the highest 10 percent earned more than $109,200. The median annual wage for **film and video editors** was $62,760 in May 2016. The lowest 10 percent earned less than $27,640, andthe highest 10 percent earned more than $162,260.
In May 2016, the median annual wages for **camera operators for television, video, and motion picture** in the topindustries in which they worked were as follows:

Motion picture and video industries	$59,780
Professional, scientific, and technical services	$53,800
Government	$52,660
Radio and television broadcasting	$48,950

In May 2016, the median annual wages for **film and video editors** in the top industries in which they workedwere as follows:

Motion picture and video industries	$67,000
Professional, scientific, and technical services	$53,970
Government	$52,710

Work hours vary with the type of operator or editor, although most work full time. Those who work in broadcasting may put in long hours to meet a deadline. Those who work in the motion picture industry may havelong, irregular hours while filming, but go through a period of looking for work once a film is complete and beforethey are hired for their next job (*Bureau of Labor Statistics Occupational Outlook Handbook*).

Job Outlook:

This pathway prepares students for careers and/or postsecondary study in the audio/video and film industry. Jobtitles may include, but are not limited to, producer, camera operator*, director, technical producer, sound engineering technician *, videographer, video/sound editor**, broadcast graphic designer, webcast producer/director, composer for film, videogame developer, and/or visual media, sequencing programmer
* Indicates average growth according to Governor's Workforce Board
** indicates above average growth according to Governor's Workforce Board

How to Become a Sound Engineering Technician in Rhode Island

Rhode Island CTE Program Requirements:

Requirements are summarized in the following table. Each column MUST be met to satisfy the requirements ofthe Rhode Island CTE Arts, A/V Technology & Communications Career Cluster along with minimum high school graduation requirements, including mandatory state assessment PSAT and SAT.

Content Requirements for the Audio/Video Technology and Film Pathway	+	Safety Training	+	Work-Based Experience (s) + Career Readiness Skills
Mandatory pathway courses may be taken consecutively or concurrently asindividual schedules permit: One Year Digital and Video Communications One Year Music Theory One Year Audio/Video Production One Year Music Technology and Sound Engineering **+** Equivalent of two years study in the related electives such as: Digital and Video Communications Film and Literature Cultural Literacy Mass Media Theater Workshop Production English III and IV* **+** Completion of a Capstone Project	+	**Health and Safety** OSHA 10	+	**Work-Based Learning Experiences** This standard adopts the work-based learning standards as developed and approved by the RI Governor's Workforce Board **Capstone Project** Culminating in senior year of study will incorporate WBL experiences with industry professionals who serve as mentors during the Capstone Project process **Skills USA Competition** National Digital Cinema Competition Relevant State and Local Competitionsas available **Workplace Skills and Career Readiness** **NOCTI - Employability Skills Assessment** 21st Century Skills for Workplace Success Workplace Readiness

Expected Industry Credential(s) and/or Certificate(s) granted upon successful completion of the CTE Program (ifapplicable):

NOCTI Job Ready Assessments

- Audio/Visual Communication
- TV/Film Production

NOCTI - Employability Skills Assessment

- 21st Century Skills for Workplace Success
- Workplace Readiness

OSHA 10 for General Industry training

Optional:

Skills USA Career Essentials Assessments

- Audio-Radio Production

- TV Video Production

Recommended:

Udemy Online Courses (offering certificate of completion)
- Aligned courses may include Logic ProX, Pro Tools, Adobe Premiere, Final Cut Pro

Advanced Course Network (ACN) - 3 college credits
- Topics of study TBD and as available

Testing Methodology for Credential/Credentialing Organization

Students will participate in *online* NOCTI Job Ready Assessments and Employability Skills Assessments. Assessments will be administered in the junior and senior years during the first quarter window to serve as both formative and summative measures. Students will access OSHA 10 Training for General Industry through an online course provider (such as CareerSafe). The Udemy online courses are available for nominal fee. The costs for college credit bearing courses, either through articulation agreements for dual/concurrent enrollment or through state of RI's advanced course network, will be covered through these special agreements with colleges, the state department of education and the program/school budget.

US Dept. of Labor (USDOL) Career Cluster:

Business Management, Administration, Finance & Management

RI Career and Technical Education Board of Trustees Program Industry Standards	
GWB Priority Sector	Business Management, Administration, Finance & Management Approved by CTEBOT and adopted by RIDE on June 18, 2021; effective July 1, 2021
Career Field	Accounting Clerk, Entry-Level Banking

Career Pathway Plan of Study for > Learners > Parents > Counselors > Teacher/Faculty
Upon successful completion of a RIDE approved Business Management, Administration & Finance pathway, the candidate is expected to be financially literate and be able to continue the business training at a postsecondary level.

Work-Based Learning	Academic Content				CTE Content		
Work-Based Learning: (Total of 80 Hours)	**ELA**	**Math**	**Science**	**Social Studies, Sciences**	**Other Courses or Learning Activities**	**CTE Coursework**	**Primary Credential (Earned at least one of the following)**
80 hours of Internship, Service Learning, Industry-based project, or School-based enterprise in the four years	Four years of ELA aligned to the BEP and LEA graduation reqs	Four years of Math aligned to the BEP and LEA graduation reqs	At least three years of science aligned to the BEP and LEA graduation reqs, including Chemistry	At least three years aligned to the BEP and LEA graduation reqs	QuickBooks or National Retail Federation (NRF) Customer Service Certification, Junior Achievement, Certiport	3 consecutive full year of 1.0 credits of expected industry coursework (e.g., Finance, Entrepreneurship, Business Management, etc.).	Rhode Island Financial Scholars Program & At least one of the following: NOCTI, ASK, or NAFTrack Certifications, Precision Exams-business Management, Banking & Finance, Certiport, Professional Licensure by a 3rd party entity and/or transcribed postsecondary credit.

Salary Information:	**Projected Job Outlook:**
Typical Entry-Level Education: Bachelor's Degree / associate degree (small projects) RI Mean Wage: $65,000-$75,000	Job Outlook 2018-2028: 7% (faster than average). Financial industry expected to expand until 2028
**RI Department of Labor and Training; Labor Market Information; Occupational Employment Statistics*	**US Department of Labor; Bureau of Labor Statistics; Occupational Outlook Handbook*
Employability Skills/Knowledge for Entry Level:	**Occupations to this Pathway:**
Problem Solving Professionalism Collaboration	Entry-Level Banking Accounting Clerk Postsecondary Business Pathway

Critical Thinking Communication Creativity Flexibility Initiative Data Analytics		
Required Curriculum:		**Teacher(s), CTE Course(s), & Certification:**
EVERFI		Bachelor's Degree and RIDE Secondary Business certificate
Postsecondary Partnerships:		
Community College of Rhode Island		
Recommended Elements:		
Complementary Coursework (Chemistry, Geometry, Pre-Calculus, etc.): ELA – URI Writing, Math – Pre-Calculus, Accounting		
CTSO: DECA, SkillsUSA, FBLA		
Work-based learning – Type and Description		
Credential(s) Identify Course Alignment:		

US Dept. of Labor (USDOL) Career Cluster:

Architecture and Construction

RI Career and Technical Education Board of Trustees Program Industry Standards	
GWB Priority Sector	Architecture and Construction Approved by CTEBOT and adopted by RIDE on June 18, 2021; effective July 1, 2021
Career Field	Construction Manager

Career Pathway Plan of Study for > Learners > Parents > Counselors > Teacher/Faculty

This Career Pathway Plan of Study (based on the Design/Pre-Construction Pathway of the Architecture and Construction Career Cluster) can serve as a guide, along with other career planning materials, as learners continue on a career path. Courses listed within this plan are only recommended coursework and should be individualized to meet each learner's educational and career goals. This Plan of Study, used for learners at an educational institution, should be customized with course titles and appropriate high school graduation requirements as well as college entrance requirements.

Work-Based Learning	Academic Content				CTE Content		
Work-Based Learning: (Total of 80 Hours)	**ELA**	**Math**	**Science**	**Social Studies, Social Sciences**	**CTE Coursework**	**Other Courses or Learning Activities**	**Primary Credential (Earned at least one of the following)**
80 hours of Internship, Service Learning, Industry-based project, or School-based enterprise in the four years	Four years of ELA aligned to the BEP and LEA graduation reqs	Four years of Math aligned to the BEP and LEA graduation reqs	At least three years of Science aligned to the BEP and LEA graduation reqs	At least three years aligned to the BEP and LEA graduation reqs	At least three consecutive years of Architecture and Construction and HBI (Unit 1-5) and HBI Carpentry (Unit 6) At least three consecutive years of Architecture and Construction and R Core Technology	First Aid	OSHA 10 AND HBI Core and HBI Carpentry Certificate AND International Residential Code (IRC) Or NCCER Certificate for Core Technology and Construction Technology Specific NCCER Certification (Level 1) AND International Residential Code (IRC)

Salary Information:		Projected Job Outlook:
Typical Entry-Level Education: Bachelor's Degree / Associate's Degree (small projects)		Job Outlook 2018-2028: 10% (faster than average); Construction managers are expected to be needed as overall construction activity expands.

Median Pay 2018 with Bachelor's Degree- National - $93,370 ($44.89 per hour). Rhode Island - $54.74 per hour		
**RI Department of Labor and Training; Labor Market Information; Occupational Employment Statistics*		**US Department of Labor; Bureau of Labor Statistics; Occupational Outlook Handbook*
Employability Skills/Knowledge for Entry Level:		**Occupations to this Pathway:**
Problem Solving Professionalism Collaboration Critical Thinking Communication Creativity Flexibility Initiative Orientation to the trades Safety (OSHA 10) Related construction math and blueprint reading Construction issues and resolutions Construction materials and methods Construction technology related drawings Technology specific equipment and basic operational techniques Quality Control		Architect Architectural and Engineering Management Landscape Architect Civil Engineer Regional and Urban Planner/Designer Safety Director Specification Writer Cost Estimator
Approved Curricula:		**Related Teacher Certification:**
HBI Core and HBI Carpentry National Center for Construction Education Research (NCCER)		Associate degree +5 years minimum experience documented or Bachelor's Degree +3 years minimum experience documented and a CTE Certificate (or working towards one) in the related aligned field pursuant to RIDE regulations
Postsecondary Partnerships:		
NEIT (Articulation Agreement/HBI) and Roger Williams University -University College (Micro credential)		
Recommended Elements:		
Complementary Coursework (Chemistry, Geometry, Pre-Calculus, etc.): Technical Writing and Accounting		
CTSO: DECA, SkillsUSA		
Work-based learning – Type and Description: Internship, Service Learning, Industry Project (participation in RIBA Home show), School-based Enterprise		

RI Career and Technical Education Board of Trustees Program Industry Standards	
GWB Priority Sector	Architecture and Construction Approved by CTEBOT and adopted by RIDE on June 4, 2020; effective July 1, 2020
Career Field	Junior Carpenter Helper

Career Pathway Plan of Study for > Learners > Parents > Counselors > Teacher/Faculty
This Career Pathway Plan of Study (based on the Design/Pre-Construction Pathway of the Architecture and Construction Career Cluster) can serve as a guide, along with other career planning materials, as learners continue on a career path. Courses listed within this plan are only recommended coursework and should be individualized to meet each learner's educational and career goals. This Plan of Study, used for learners at an educational institution, should be customized with course titles and appropriate high school graduation requirements as well as college entrance requirements.

Work-Based Learning	Academic Content				CTE Content		
Work-Based Learning: (Total of 80 Hours)	**ELA**	**Math**	**Science**	**Social Studies, Social Sciences**	**CTE Coursework**	**Other Courses or Learning Activities**	**Primary Credential (Earned at least one of the following)**
80 hours of Internship, Service Learning, Industry-based project, or School-based enterprise in the four years	Four years of ELA aligned to the BEP and LEA graduation reqs	Four years of Math aligned to the BEP and LEA graduation reqs	At least three years of Science aligned to the BEP and LEA graduation reqs, including Chemistry	At least three years aligned to the BEP and LEA graduation reqs	At least three consecutive years of Architecture and Construction NCCER Core Technology Or National Center for Construction Education Research (NCCER) Or	First Aid	OSHA 10 AND NECTF Level 1, 2, and 3 (Equaling first year Carpenters union apprenticeship) Or NCCER Certificate for Core Technology (mandatory) and Construction Specific NCCER Certification (Level 1 and 2) HBI (Unit 1-5) and HBI (Unit 6)

					New England Carpenters Training Fund (NECTF) Or HBI (Unit 1-5) and HBI (Unit 6) Carpentry		

Salary Information:	**Projected Job Outlook:**
The most recent RI labor market information for this profession dates from May 2015 and the entry-level wage for Junior Carpenter Helper at that time was $30,888 ($14.85 per hour)	Employment of construction laborers and helpers is projected to grow 13% from 2014 to 2024, faster than the average for all occupations. Laborers and helpers work in all fields of construction, and demand for these workers will mirror the level of overall construction activity.
**RI Department of Labor and Training; Labor Market Information; Occupational Employment Statistics*	**US Department of Labor; Bureau of Labor Statistics; Occupational Outlook Handbook*
Employability Skills/Knowledge for Entry Level:	**Occupations to this Pathway:**
Problem Solving Professionalism Collaboration Critical Thinking Communication Creativity Flexibility Initiative Orientation to the trades. Safety (OSHA 10) Related construction math and blueprint reading Construction issues and resolutions. Construction materials and methods. Construction technology related drawings. Technology specific equipment and basic operational techniques Quality Control Internships	Industrial Engineer Interior Designer Landscape Architect Materials Engineer Mechanical Engineer Professional Carpenter Regional and Urban Planner/Designer Safety Director Specification Writer Structural Engineer Surveying and Mapping Technician
Approved Curricula:	**Related Teacher Certification:**

HBI Core and HBI Carpentry National Center for Construction Education Research (NCCER) New England Carpenters Training Fund (NECTF)		High school diploma + Five years minimum industry experience documented Bachelor's degree + 3 years minimum industry experience documented and a CTE Certificate (or working towards one) in the related aligned field pursuant to RIDE regulations (e.g., Carpentry)
Postsecondary Partnerships: New England Institute of Technology		
Recommended Elements:		
Complementary Coursework (Chemistry, Geometry, Pre-Calculus, etc.): Accounting 1, Technical Writing		
CTSO: Skills USA, DECA		
Work-based learning – Type and Description: Internship, Service Learning (Service projects in the community), Industry Project (participation in RIBA home show industry – lead instruction/projects, School-based Enterprise (WBL Example: Build a shed for a local elementary school), Apprenticeship		

RI Career and Technical Education Board of Trustees Program Industry Standards	
GWB Priority Sector	Architecture and Construction Approved by CTEBOT and adopted by RIDE on June 4, 2020; effective July 1, 2020
Career Field	Residential Construction

Career Pathway Plan of Study for > Learners > Parents > Counselors > Teacher/Faculty
This Career Pathway Plan of Study (based on the Design/Pre-Construction Pathway of the Architecture and Construction Career Cluster) can serve as a guide, along with other career planning materials, as learners continue on a career path. Courses listed within this plan are only recommended coursework and should be individualized to meet each learner's educational and career goals. *This Plan of Study, used for learners at an educational institution, should be customized with course titles and appropriate high school graduation requirements as well as college entrance requirements.

Work-Based Learning	Academic Content				CTE Content		
Work-Based Learning: (Total of 80 Hours)	**ELA**	**Math**	**Science**	**Social Studies, Social Sciences**	**CTE Coursework and Experiences**	**Other Courses or Learning Activities**	**Primary Credential (Earned at least one of the following)**
80 hours of Internship, Service Learning, Industry-based project, or School-based enterprise in the four years	Four years of ELA aligned to the BEP and LEA graduation reqs	Four years of Math aligned to the BEP and LEA graduation reqs	At least three years of Science aligned to the BEP and LEA graduation reqs, including two lab sciences	At least three years aligned to the BEP and LEA graduation reqs, with one year of US History	At Least three consecutive years of Construction Technology HBI (Unit 1-5) and (Unit 6) Carpentry. OR National Center for Construction Education Research (NCCER)	First Aid	OSHA 10 AND HBI certificate (Unit 1-5) (mandatory) and Construction Technology specific HBI (Unit 6) certification. Optional: International Residential Code (IRC)

Salary Information:	Projected Job Outlook:
The most recent Rhode Island Labor Market Information for this profession dates from January 2019 and the entry-level wage for Residential Construction at that time	Employment of construction laborers and helpers is projected to grow 13 percent from 2014 to 2024, faster than the average for all occupations. Laborers and helpers work in all fields of construction, and demand for these workers will mirror the level of overall construction activity.

was $59, 126 ($28.42 per hour) in RI, and nationally $55, 054.00 ($26.47 per hour).	
**RI Department of Labor and Training; Labor Market Information; Occupational Employment Statistics*	**US Department of Labor; Bureau of Labor Statistics; Occupational Outlook Handbook*
Employability Skills/Knowledge for Entry Level:	**Occupations to this Pathway:**
Problem Solving Professionalism Collaboration Critical Thinking Communication Creativity Flexibility Initiative Orientation to the trades. Safety (OSHA 10). Related construction math and blueprint reading. Construction practices and resolutions. Construction materials and methods. Construction technology related drawings. Technology specific equipment and basic operational techniques. Quality control. Internship;	Industrial Engineer Professional Carpenter Interior Designer Landscape Architect Materials Engineer Mechanical Engineer Regional and Urban Planner/ Designer Safety Director Specification Writer Structural Engineer Surveying and Mapping Technician
Approved Curricula:	**Related Teacher Certification:**
HBI Carpentry National Center for Construction Education Research (NCCER)	High School Diploma + 5 years min. industry experience documented, or Bachelor's Degree + 3 years min. industry experience documented and a CTE certificate (or working towards one) in the related aligned field pursuant to RIDE regulations (e.g., Building Construction Trades)
Postsecondary Partnerships: Articulation with CCRI, New England Institute of Technology	
Recommended Elements:	
Complementary Coursework (Chemistry, Geometry, Pre-Calculus, etc.): Geometry	
CTSO: Skills USA, DECA	
Work-based learning – Type and Description: Internship, Service Learning, Industry project (participation in RIBA home show), School Based Enterprise	

RI Career and Technical Education Board of Trustees Program Industry Standards	
GWB Priority Sector	Architecture and Construction Approved by CTEBOT and adopted by RIDE on June 18, 2021; effective July 1, 2021
Career Field	CAD Operator

Career Pathway Plan of Study for > Learners > Parents > Counselors > Teacher/Faculty
This Career Pathway Plan of Study (based on the Design/Pre-Construction Pathway of the Architecture and Construction Career Cluster) can serve as a guide, along with other career planning materials, as learners continue on a career path. Courses listed within this plan are only recommended coursework and should be individualized to meet each learner's educational and career goals. This Plan of Study, used for learners at an educational institution, should be customized with course titles and appropriate high school graduation requirements as well as college entrance requirements.

Work-Based Learning	Academic Content				CTE Content		
Work-Based Learning: (Total of 80 Hours)	**ELA**	**Math**	**Science**	**Social Studies, Sciences**	**CTE Coursework and Experiences**	**Primary Credential (one of the following)**	**One of the following software certifications**
80 hours of Internship, School-based Enterprise, and/or Industry Based Project in the program.	Four years of ELA aligned to the BEP and LEA graduation reqs	Four years of Math aligned to the BEP and LEA graduation reqs, including at least Pre-Calculus	At least three years of Science aligned to the BEP and LEA graduation reqs	At least three years aligned to the BEP and LEA graduation reqs	At least three consecutive years of Drafting & Design coursework with documented portfolio products	Precision Architectural Design 2 Or American Design Drafting Association (ADDA) Student Certification	Certified SOLIDWORKS Associate (CSWA) Or Autodesk Certified Associate (ex: AutoCAD, Civil 3D, Inventor, or Revit)

Salary Information:	Projected Job Outlook:
Median pay for Drafters in 2017 was $54,170 per year	Employment of drafters is projected to grow 7% from 2016 to 2026, about as fast as the average for all occupations. Increased construction activity is projected to drive demand for drafters, but this is expected to be tempered as Engineers and Architects increasingly perform some tasks previously done by drafters.
**RI Department of Labor and Training; Labor Market Information; Occupational Employment Statistics*	**US Department of Labor; Bureau of Labor Statistics; Occupational Outlook Handbook*
Employability Skills and Knowledge for	**Occupations to this Pathway:**

Entry Level:		
Problem Solving Professionalism Collaboration Critical Thinking Communication Creativity Flexibility Initiative Design plans using computer-aided design (CAD) software Work from rough sketches and specifications created by Engineers and Architects Design products with engineering and manufacturing techniques Add details to architectural plans from their knowledge of building techniques Specify dimensions, materials, and procedures for new products Work under the supervision of engineers or architects, creating rough sketches and work from those created by Engineers and Architects		CAD Operators Architects Civil Engineering Technicians Industrial Designers Surveying and Mapping Technicians Mechanical Engineering Technicians Landscape Architecture Civil and Structural Technician Mechanical and Electrical Technicians Building and Materials fabricators
Recommended Curriculum:		**Teacher(s), CTE Course(s), & Certification:**
ADDA Curriculum certification process Local curriculum reviewed by advisory board An agreement with a Postsecondary institution It is also recommended that an approved program utilizes the available curriculum provided by CAD software companies (i.e., Autodesk Design Academy, SOLIDWORKS curriculum)		Bachelor's +3 years of Construction industry experience and Registered Architect Or Passing the Architecture Drafting NOCTI assessment A CTE certificate in the related aligned field pursuant to RIDE regulations
Postsecondary Partnerships:		
Recommended (Architecture and/or CAD Operator) agreement with Roger Williams, RISD, or NEIT and others as appropriate		
Recommended Elements:		
Complementary Coursework (Chemistry, Geometry, Pre-Calculus, etc.): Mechanical and/or Architectural Content		
CTSO: SkillsUSA, DECA, FLBA		
Work-based learning – Type and Description: Internship, Industry Project, School-based Enterprise		
Credential(s) Identify Course Alignment:		

RI Career and Technical Education Board of Trustees Program Industry Standards	
GWB Priority Sector	Architecture and Construction Approved by CTEBOT and adopted by RIDE on June 4, 2020; effective July 1, 2020
Career Field	Residential Pre-Apprentice Electrical

Career Pathway Plan of Study for > Learners > Parents > Counselors > Teacher/Faculty

Electricians typically do the following: Read blueprints or technical diagrams, Install and maintain wiring, control, and lighting systems, Inspect electrical components, such as transformers and circuit breakers, Identify electrical problems using a variety of testing devices, Repair or replace wiring, equipment, or fixtures using hand tools and power tools, Follow state and local building regulations based on the National Electrical Code, Direct and train workers to install, maintain, or repair electrical wiring or equipment, Almost every building has an electrical power, communications, lighting, and control system that is installed during construction.

Work-Based Learning	Academic Content				CTE Content		
Work-Based Learning: (Total of 80 Hours)	**ELA**	**Math**	**Science**	**Social Studies, Sciences**	**CTE Course work**	**Other Courses or Learner Activities**	**Primary Credential (earned at least one of the following)**
80 Hours of Internship, Service Learning, Industry Based Project in the four years	Four years of ELA aligned to the BEP and LEA graduation reqs	Four years of Math aligned to the BEP and LEA graduation reqs	At least three years of Science aligned to the BEP and LEA graduation reqs, including Earth Science	At least three years aligned to the BEP and LEA graduation reqs	HBI (Unit 1-5) and HBI (Unit 7) or NCCER NCCER Core Levels1 and Level 2 or MC-3	First Aid	OSHA 10 AND Earned At Least One: Home Builders Institute (HBI) or NCCER (Core) Dual/Concurrent Enrollment; or Precision Exams;

Salary Information:	Projected Job Outlook:
The median annual wage for electricians was $55,190 in May 2018	Employment of electricians is projected to grow 10 percent from 2018 to 2028, faster than the average for all occupations. As homes and businesses require more wiring, electricians will be needed to install the necessary components.
**RI Department of Labor and Training; Labor Market Information; Occupational Employment Statistics*	**US Department of Labor; Bureau of Labor Statistics; Occupational Outlook Handbook*
Employability Skills and Knowledge for Entry Level:	**Occupations to this Pathway:**

Problem Solving Professionalism Collaboration Critical Thinking Communication Materials and methods Construction technology related drawings Technology specific equipment and basic operational techniques Quality control Human relations Communication skills Writing skills		Aircraft and Avionics Equipment Mechanics and Technicians Drafters Electrical and Electronics Engineering Technicians Electrical and Electronics Engineers Electrical and Electronics Installers and Repairers Elevator Installers and Repairers Heating, Air Conditioning, and Refrigeration Mechanics and Installers Line Installers and Repairers Power Plant Operators, Distributors, and Dispatchers Solar Photovoltaic Installers
Recommended Curriculum:		**Teacher(s), CTE Course(s), & Certification:**
HBI NCCER Core Curriculum MC-3		High School Diploma + 5 years min. industry experience documented, or Bachelor's Degree + 3 years min. industry experience documented and a CTE certificate (or working towards one) in the related aligned field pursuant to RIDE regulations (e.g., electrical installation)
Postsecondary Partnerships:		
Mass Bay CC - New England Institute of Technology - Central Maine CC. - UTI- MTTI - UNOH		
Recommended Elements:		
Complementary Coursework (Chemistry, Geometry, Pre-Calculus, etc.): Pre-Calculus		
CTSO: SkillsUSA, DECA, FLBA		
Work-based learning – Type and Description: Internship, Service Learning, Industry Project (Participation in RIBA home show), School-based Enterprise		
Credential(s) Identify Course Alignment:		

RI Career and Technical Education Board of Trustees Program Industry Standards	
GWB Priority Sector	Architecture and Construction Approved by CTEBOT and adopted by RIDE on June 4, 2020; effective July 1, 2020
Career Field	Residential Pre-Apprentice HVACR

Career Pathway Plan of Study for > Learners > Parents > Counselors > Teacher/Faculty

This Career Pathway Plan of Study (based on the Design/Pre-Construction Pathway of the Architecture and Construction Career Cluster) can serve as a guide, along with other career planning materials, as learners continue on a career path. Courses listed within this plan are only recommended coursework and should be individualized to meet each learner's educational and career goals. *This Plan of Study, used for learners at an educational institution, should be customized with course titles and appropriate high school graduation requirements as well as college entrance requirements.

Work-Based Learning	Academic Content				CTE Content		
Work-Based Learning: (Total of 80 Hours)	**ELA**	**Math**	**Science**	**Social Studies, Social Sciences**	**CTE Coursework and Experiences**	**Other Courses or Learning Activities**	**Primary Credential (Earned at least one of the following)**
80 hours of Internship, Service Learning, Industry-based project in the four years	Four years of ELA aligned to the BEP and LEA graduation reqs	Four years of Math aligned to the BEP and LEA graduation reqs	At least three years of Science aligned to the BEP and LEA graduation reqs, including Earth Science	At least three years aligned to the BEP and LEA graduation reqs	At Least three consecutive years of Heating Ventilation, Air Conditioning, & Refrigeration NCCER Core Technology. Required: Level 1, Level 2 HBI certificate for Units 1-5 (mandatory) and Electrical (Unit 6)	First Aid	OSHA 10 AND Earned At Least One: HBI certificate for Units 1-5 (mandatory) and Unit # 14 HVAC Construction Technology specific HBI certification.

Salary Information:	Projected Job Outlook:
The most recent Rhode Island Labor Market Information for this profession dates from May 2018 and the entry-level wage for HVAC/R Mechanics & Installers at that time was $16.52 per hour	Job Outlook: Employment of heating, air conditioning, and refrigeration mechanics and installers is projected to grow 14 percent from 2014 to 2024, much faster than the average for all occupations. Candidates familiar with computers and electronics and those with good troubleshooting skills will have the best job opportunities as employers continue to have difficulty finding qualified candidates.
**RI Department of Labor and Training; Labor Market Information; Occupational Employment Statistics*	**US Department of Labor; Bureau of Labor Statistics; Occupational Outlook Handbook*
Employability Skills/Knowledge for Entry Level:	**Occupations to this Pathway:**
Problem Solving Professionalism Collaboration Critical Thinking Communication Creativity Flexibility Initiative Orientation to the trades. Safety (OSHA 10). Related construction math and blueprint reading. Construction issues and resolutions. Construction materials and methods. Construction technology related drawings; Technology specific equipment and basic operational techniques. Quality control. Internship. Human relations and problem solving.	HVAC/R Mechanics and Installers Boilermakers Plumbers, Pipefitters, and Steamfitters Sheet Metal Workers Solar Photovoltaic Installers Stationary Engineers and Boiler Operators Wind Turbine Technicians
Approved Curricula:	**Related Teacher Certification:**
HBI	High School Diploma or GED + 5 years minimum industry experience documented or Bachelor's degree + 3 years minimum industry experience documented and a CTE Certificate (or working towards one) in the related aligned field pursuant to RIDE regulations (e.g. Air Conditioning and Refrigeration)

Postsecondary Partnerships: New England Institute of Technology

Recommended Elements:

Complementary Coursework (Chemistry, Geometry, Pre-Calculus, etc.): NCCER Core Technology Required: Level 3 and 4, Pre-Calculus

CTSO: Skills USA

Work-based learning – Type and Description: Internship, Service Learning (projects in the community), Industry Project (Participation in RIBA home show), School-based Enterprise, Apprenticeship

RI Career and Technical Education Board of Trustees Program Industry Standards	
GWB Priority Sector	Architecture and Construction Approved by CTEBOT and adopted by RIDE on June 4, 2020; effective July 1, 2020
Career Field	Residential Pre-Apprentice Plumber

Career Pathway Plan of Study for > Learners > Parents > Counselors > Teacher/Faculty
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Work-Based Learning	Academic Content				CTE Content		
Work-Based Learning: (Total of 80 Hours)	**ELA**	**Math**	**Science**	**Social Studies, Social Sciences**	**CTE Coursework and Experiences**	**Other Courses or Learning Activities**	**Primary Credential (Earned at least one of the following)**
80 hours of Internship, Service Learning, Industry-based project in the four years	Four years of ELA aligned to the BEP and LEA graduation reqs	Four years of Math aligned to the BEP and LEA graduation reqs	At least three years of Science aligned to the BEP and LEA graduation reqs,	At least three years aligned to the BEP and LEA graduation reqs	At Least three consecutive years of Plumbing Coursework HBI (Units 1-5) (mandatory) and (Unit 8) NCCER Core Plumbing Level 1 & 2	First Aid	OSHA 10 AND Earned At Least One: HBI certificate (Units 1-5) (mandatory) and (Unit 8) specific HBI certification. or NCCER Core Level

Salary Information:	Projected Job Outlook:
The most recent Rhode Island Labor Market Information for this profession dates from May 2015 and the entry-level wage for Plumbers at that time was $39,187.00 ($18.84 per hour).	Employment of plumbers, pipefitters, and steamfitters is projected to grow 12 percent from 2014 to 2024, faster than the average for all occupations. Construction of buildings which need new plumbing systems should drive demand for these workers. Overall job opportunities are expected to be good, with some employers continuing to report difficulty finding qualified workers.
**RI Department of Labor and Training; Labor Market Information; Occupational Employment Statistics*	**US Department of Labor; Bureau of Labor Statistics; Occupational Outlook Handbook*
Employability Skills/Knowledge for Entry Level:	**Occupations to this Pathway:**
Problem Solving	Pathway ►Problem Solving ►Professionalism

Professionalism Collaboration Critical Thinking Communication Creativity Flexibility Initiative Orientation to the trades. Safety (OSHA 10). Related construction math and blueprint reading. Construction issues and resolutions. Construction materials and methods. Construction technology related drawings. Technology specific equipment and basic operational techniques. Quality control. Internship. Human relations and problem solving		►Collaboration Boilermakers Pipefitters Construction & Building Inspectors Construction Laborers & Helpers Construction Managers General Maintenance and Repair Workers HVAC/R Mechanics & Installers Water Transportation Workers Welders, Cutters, Solderers, and Brazers
Approved Curricula:		**Related Teacher Certification:**
HBI		High School Diploma or GED + 5 years minimum industry experience documented, or Bachelor's degree + 3 years minimum industry experience documented and a CTE Certificate (or working towards one) in the related aligned field pursuant to RIDE regulations (e.g., Plumbing and Heating)
Postsecondary Partnerships:		
Recommended Elements:		
Complementary Coursework (Chemistry, Geometry, Pre-Calculus, etc.): NCCER Core Plumbing Level 3 & 4		
CTSO: Skills USA		
Work-based learning – Type and Description: Internship, Service Learning (projects in the community), Industry Project (Participation in RIBA home show), School-based Enterprise, Apprenticeship		

RI Career and Technical Education Board of Trustees Program Industry Standards	
GWB Priority Sector	Architecture and Construction Approved by CTEBOT and adopted by RIDE on June 4, 2020; effective July 1, 2020
Career Field	Construction Craft Laborer (Apprenticeship)

Career Pathway Plan of Study for > Learners > Parents > Counselors > Teacher/Faculty

This Career Pathway Plan of Study (based on the Design/Pre-Construction Pathway of the Architecture and Construction Career Cluster) can serve as a guide, along with other career planning materials, as learners continue on a career path. Courses listed within this plan are only recommended coursework and should be individualized to meet each learner's educational and career goals. This Plan of Study, used for learners at an educational institution, should be customized with course titles and appropriate high school graduation requirements as well as college entrance requirements.

Work-Based Learning	Academic Content				CTE Content		
Work-Based Learning: (Total of 80 Hours)	**ELA**	**Math**	**Science**	**Social Studies, Social Sciences**	**CTE Coursework and Experiences**	**Other Courses or Learning Activities**	**Primary Credential**
80 hours of Internship, Service Learning, Industry-based project in the four years	Four years of ELA aligned to the BEP and LEA graduation reqs	At least three years of Math, which must include Geometry, and aligned to the BEP and LEA graduation reqs	At least three years of Science, including Chemistry, aligned to the BEP and LEA graduation reqs	At least three years aligned to the BEP and LEA graduation reqs	At least three consecutive years Construction Craft Laborers Framework Safety: OSHA 30 Work-based learning experiences supported by: Local 271; Apprenticeship Coordinators and instructors for New England	Work Zone Safety Awareness certification Scaffold User certification CPR/First Aid Certification	Acceptance into: The New England Laborers Apprenticeship Training Secondary Credentials: Completion of MC3 (optional)

					Laborers Training Academy		

Salary Information:	**Projected Job Outlook:**
The most recent Rhode Island Labor Market Information for this profession dates from May 2019 and the entry-level wage for a Construction Craft Laborer is 46,300. /$22.26 per hour (60% of a journeyman's wage: $66,144. /31.80 per hour). *Apprentices, who graduate from the NEL/CPS Construction & Career Academy, have entry-level wages beginning at 70% of a journeyman's-$52,915 ($25.44 per hour)	Employment of construction craft laborers and helpers is projected to grow 13 percent from 2014 to 2024, faster than the average for all occupations. Construction Craft Laborers and helpers work in all fields of construction, and demand for these workers will mirror the level of overall construction activity.
**RI Department of Labor and Training; Labor Market Information; Occupational Employment Statistics*	**US Department of Labor; Bureau of Labor Statistics; Occupational Outlook Handbook*
Employability Skills/Knowledge for Entry Level:	**Occupations to this Pathway:**
Essential Skills: Problem Solving, professionalism, collaboration, critical thinking, communication, flexibility, and initiative Orientation to the trades. Safety (OSHA 30). Heavy/Highway Construction skills related to: Asphalt work, grade setting, pipe work, traffic control, and site work Building Construction skills related to: Concrete work, scaffolding, demolition work Construction materials and methods. Related construction math and blueprint reading. Construction issues and resolutions Technology specific equipment and basic operational techniques. Quality control	Heavy/Highway and Utility Industry: Asphalt Work, Grade Setter, Pipe Work, Traffic Control, Drilling/Blasting, Tunnel Work Building Industry: Concrete Work, Scaffolding Work, Masonry Work, Demolition Work Environmental Remediation Industry: Asbestos Abatement, Lead Abatement, Hazardous Waste Management, Radiation and Petro-Chemical Abatement Higher Education and/or Supervisor Training: Labor Foreman/Supervisor, Industry Training Instructor, Project Inspector, Certified Safety Professional, and Site Safety and Health Officer
Approved Curricula:	**Related Teacher Certification:**

Construction Craft Laborer Framework Curriculum from The Laborers International Union of North America (LIUNA) Training and Education Fund Supplemental Curriculum: MC3 (Optional)		Laborers International Program Credential or Documented Journeyman of related Federally Registered Apprenticeship Program
Postsecondary Partnerships: New England Laborers Training Academy: Apprenticeship Program and Local 271		
Recommended Elements:		
Complementary Coursework (Chemistry, Geometry, Pre-Calculus, etc.): Computer-aided Design and Drafting (CADD)		
CTSO:		
Work-based learning – Type and Description: Internship, Service Learning (community service projects sponsored by Local 271 and/or LIUNA), Industry Project (Industry -Lead instruction/projects through registered Apprenticeship program for LIUNA and/or Local 271), School-based Enterprise, Apprenticeship), School-based enterprise		

US Dept. of Labor (USDOL) Career Cluster:

Education, Training & Human Services

GWB Priority Sector: Education, Training & Human Services

Career Field: Education (Education, Child Care, Teacher Assistant)

This standard is for a high school graduate who is both prepared to enter a teacher preparation program at thepostsecondary level and be "job ready" as a teacher assistant or childcare employee.

Skills/ knowledge needed to be prepared for entry-level work: Upon successful completion of a RIDE approvedEducation, Training, and Human Services pathway, the candidate is expected to demonstrate the following:

Communication skills: Teacher assistants need to discuss students' progress with teachers and parents, so they need to be able to communicate well. Strong written and oral communication skills.

Interpersonal skills: Teacher assistants interact with a variety of people, including teachers, students, parents, and administrators. They need to develop good working relationships in their job.

Patience: Working with students of different abilities and backgrounds can be difficult. Teacher assistantsmust be patient with students who struggle with material.

Resourcefulness: To reinforce lessons, teacher assistants must explain information to students in a way that meets each student's learning style. Teacher assistants should be self-motivated, demonstrate problem-solving skills and demonstrate willingness to continually grow and learn as a professional.

Professional Skills: Teacher assistants should act in a professional manner at all times, be dependable, reliable, understand and demonstrate confidentiality, be able to pass a BCI check and maintain high levelof ethical behavior.

Expected industry credential (s) and/or certificate(s) granted upon successful completion of the program (if applicable): High school students interested in becoming a teacher, childcare employee, teacher assistant, or who are pursuing a career in human services should take, at a minimum, a standard high school curriculum andcomplete the CTE course sequence in the Education pathway. Students who are interested in pursuing a four- year college program should ensure they are completing the requirements for acceptance into those post- secondary programs.

These requirements are summarized in the following table *and* ***each column must be met to satisfy the requirements of the Rhode Island CTE Education Pathway****:*

Minimum Academic Requirement	Safety	Mandatory Credential Earned (at least one)	Optional Credentials	Work-based Experience

• 4 courses in English • 4 courses in Math • 3 courses in Science • 3 courses in S. Studies At least one course inboth technology and the arts	First Aid /CPR & AED Training	Completion of an approved TeacherAssistant Training program and/or Attain the minimum passing scoreon the RI Parapro Exam	Rhode Island Early Learning and Development Standards Certificate	Internship Experience • Placement in a K-12 educational setting shouldbe with a certified and tenured teacher • Early Childhood placement should be in a center with Bright Stars affiliation
At least a minimum of three consecutive years of coursework in Education Pathway (to include birth to 21 with embedded content in English Language Learners (ELL) and children withspecial needs) <u>Recommended Coursework in:</u> Psychology Sociology Ethical Issues • Financial Literacy			OSHA 10 Certificate Red Cross Babysitting & Child Care Certificate	

Other resources: Educators Rising (https://www.educatorsrising.org/**) Future Teachers of America (**http://futureteachers.org/), **Teacher Cadet Program (**https://www.teachercadets.com/teacher-cadets-overview.html**)** HYPERLINK "http://futureteachers.org/"

Job Outlook: Per the Rhode Island Department of Labor and Training Occupational Outlook 2024, demand for educational jobs is expected to grow 4% over the ten-year period from 2014-2024; in addition, growth in the related field of community and social services is expected to grow 7.6% over the same ten-year period. This is above the rate of both the Rhode Island (7.1%) and national (6.5%) projected labor market growth for the sameten-year period.

Immediate employment opportunities in the Education, Training, and Human Services field include PK-12 public school teacher assistant, Behavioral Assistant/Specialist, and Child Care teacher assistant (includes center based,school age and family childcare).

Post-Secondary employment opportunities include PK-12 teacher (early childhood, elementary, middle, highschool, dual language), Child Care Center head teacher, Behavioral Specialist, and Social Services employee.

Pay:
According to the RI Department of Labor and Training Labor Market Information, the median annual salaryfor all teachers and instructors, except substitute teacher, is from $79,550 to an experienced median wage of $101,900. The median entry-level annual salary for a PK-12 public school teacher assistant in Rhode Island isfrom $30,070 to an experienced median wage of $36,350.

http://www.dlt.ri.gov/lmi/oes/statealpha.htm

US Dept. of Labor (USDOL) Career Cluster:

Environmental Life Sciences

GWB Priority Sector: Environmental & Life Sciences - Bioscience

Career Field: Animal Science Veterinary Assistant / Lab Animal Caretaker

This standard prepares students: to graduate from high school prepared and ready to seek an entry-level position as a Veterinary Assistant, and to enter an Environmental and Life Sciences post-secondary program.

Skills/knowledge needed in order to be prepared for entry-level work:
Upon successful completion of a RIDE Approved Environmental and Life Sciences Pathway, the candidate is expected to have a working knowledge ofthe following and be able to apply this knowledge in a variety of situations.

- Animal management, husbandry, and handling
- Animal body systems, health, nutrition, genetics, and reproduction
- Animal production systems
- Companion animal care and management

Expected industry credential (s) and/or certificate (s) granted upon successful completion of the pathway (if applicable):
High school students interested in becoming a Veterinary Assistant should enroll in a three or four year Environmental and Life Sciences curriculum, along with four years of Math, and three years of Science, including Biology, and Chemistry. Anatomy and physiology are recommended. Students will be well versed in animal body systems, husbandry, and handling production. One of three choices for credentialing must be met,and students will complete OSHA 10 safety training.

Requirements are summarized in the following table. Each column MUST be met to satisfy the requirements ofthe Rhode Island CTE Environmental and Life Sciences Standard.

Academic Requirements		Safety Training		Mandatory Credential (s)Earned		Work-Based Experience (s) + Career Readiness Skills
Three / four consecutive years of Environmental & Life Sciences Coursework + Four years of Math	+	**OSHA 10**	+	**One or more of the following:** National Occupational Competency Testing Institute (NOCTI) Small Animal Science and Technology	+	**Environmental & Life Sciences work-based learning experience (s) and/or related mentoring program +**

+ **Three years of** **Science, to include Biology** **Recommended**				Canine and Feline CPR and First Aid Certification Concurrent Enrollment in the College of Environmental and Life Science at URI Course –		**Career Readiness Skills** **Component, such as:** • FFA LifeKnowledge • SkillsUSA Career Essential Suite

Job Outlook:

Per the US Bureau of Labor Statistics, the demand for Veterinary Assistants is expected to increase over 9% over the ten-year period from 2014-2024. In 2014, there were approximately 73,400 jobs.

Pay:

According to the US Bureau of Labor statistics, the average starting salary is approximately $25, 250.

Environmental and Life Sciences Post-Secondary Options

Two-Year Programs	Four-Year College and University Programs
Associate in Applied Science programs include(examples): • Animal Science Veterinary Assisting **Sample Job Titles** • Veterinary Technician • Veterinary Practice Manager • Veterinary Assistant • Laboratory Technician Livestock Manager • Equine Manager	**Bachelor of Science disciplines include (examples:** • Pre-Veterinary • MedicineAnimal • Science • Zoology **Sample Job Titles** • Zoologist • Wildlife Biologist • Agricultural EducatorNutritionist • USDA Animal and Plant Health Inspection Services • Geneticist

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GWB Priority Sector: Environmental & Life Sciences - Bioscience

Career Field: Aquaculture / Agricultural and Food Science Technician

This standard is for a high school graduate who is both prepared to enter a 2-4-year college program at thepost-secondary level and be "job ready" as a technician in the Aquaculture/ Environmental & Life Science Industry.
Skills/ knowledge needed to be prepared for entry-level work: Upon successful completion of a RIDE approvedAquaculture Pathway, the candidate is expected to know and be able to:

Possess the experience and background knowledge to assist in a variety of tasks such as tank maintenance, waterchemistry testing (titration and meter), small plant and animal aquatic husbandry, prepare and operate laboratory testing equipment, maintain a safe and sterile laboratory environment, set up experiments, run experiments, record data and observations, compile, analyze and summarize results, diagnose technical flaws in equipment, as well as conduct repairs.

Be prepared to run and maintain a fully functional greenhouse equipped with a hydroponic system. Germination,growth, and transition to soil are all part of the hydroponics system.

Expected industry credential (s) and/or certificate(s) granted upon successful completion of the program (if applicable): High school students interested in the Aquaculture Industry should enroll in a three-year Environmental and Life Sciences Aquaculture curriculum and take four years of Math. The student must have a strong foundation in Science, including Physical Science, Biology, and Chemistry. It is also recommended that thestudent take Applied Pre-Calculus and Statistics classes to prepare for continued studies in a 2–4-year post- secondary institution. The student will successfully complete a college-level course in this field of study.

Requirements are summarized in the following table. Each column must be met to satisfy the requirements ofthe Rhode Island CTE Aquaculture Standard.

Academic Requirements		Safety Training		Mandatory Credential (s) Earned		Work-Based Experience (s) + Career Readiness Skills
Three consecutive years of Environmental & Life SciencesAquaculture Coursework **+** **Four years of Math** (Minimum: Algebra II, Recommended Pre-Calculus and Statistics) **+** **Three years of Science** Recommended fourth year (Biology, Chemistry and Physical Science with recommended **Advanced Placement Science**)	+	**Safety Training Component is Required** Recommended: **OSHA 10**	+	**College Level Courses in Field of Study:** Concurrent | Dual Enrollment | EEP	+	**Environmental & Life Sciences Work-Based Learning experience(s) and/or related mentoring program.** **Career Readiness Skills Component such as:** SkillsUSA Career EssentialsSuite Naviance Junior Achievement

Job Outlook:

Employment of aquaculture/ agricultural and food science technicians is projected to grow 5 percent from 2014 to 2024, about as fast as the average for all occupations. Advances in technology and scientific knowledge relatedto food production will require greater control of production and processing activities, increasing demand for these positions.

Pay: The median annual wage for aquaculture/agricultural and food science technicians was $37,550 in May 2016($18.05 per hour).

Environmental & Life Sciences Post-Secondary Options:

Two-Year Programs	Four-Year College and University Programs
Sample Job Title/Median Annual Wage: • Chemical Technician ($45,840) • Agricultural Inspector ($42,800)	**Sample Job Titles/Median Annual Wage**: • Food Scientist and Technologist ($63,950) • Soil and Plant Scientist ($63,200) • Animal Scientist ($60,330) • Agricultural Engineer ($73,640) • Biological Technician ($42,520)

https://www.bls.gov/ooh/life-physical-and-social-science/agricultural-and-food-science-technicians.htm

GWB Priority Sector: Environmental & Life Sciences - Bioscience

Career Field: Aquaculture / Agricultural and Food Science Technician

This standard is for a high school graduate who is both prepared to enter a 2-4-year college program at thepost-secondary level and be "job ready" as a technician in the Aquaculture/ Environmental & Life Science Industry.

Skills/ knowledge needed to be prepared for entry-level work: Upon successful completion of a RIDE approvedAquaculture Pathway, the candidate is expected to know and be able to:

Possess the experience and background knowledge to assist in a variety of tasks such as tank maintenance, waterchemistry testing (titration and meter), small plant and animal aquatic husbandry, prepare and operate laboratory testing equipment, maintain a safe and sterile laboratory environment, set up experiments, run experiments, record data and observations, compile, analyze and summarize results, diagnose technical flaws in equipment, as well as conduct repairs.

Be prepared to run and maintain a fully functional greenhouse equipped with a hydroponic system. Germination,growth, and transition to soil are all part of the hydroponics system.

Expected industry credential (s) and/or certificate(s) granted upon successful completion of the program (if applicable): High school students interested in the Aquaculture Industry should enroll in a three-year Environmental and Life Sciences Aquaculture curriculum and take four years of Math. The student must have a strong foundation in Science, including Physical Science, Biology, and Chemistry. It is also recommended that thestudent take Applied Pre-Calculus and Statistics classes to prepare for continued studies in a 2–4-year post- secondary institution. The student will successfully complete a college-level course in this field of study.

Requirements are summarized in the following table. Each column must be met to satisfy the requirements ofthe Rhode Island CTE Aquaculture Standard.

Academic Requirements		Safety Training		Mandatory Credential (s) Earned		Work-Based Experience (s) + Career Readiness Skills
Three consecutive years of Environmental & Life Sciences Aquaculture Coursework **+** **Four years of Math** (Minimum: Algebra II, Recommended Pre-Calculusand Statistics) **+** **Three years of Science** Recommended fourth year (Biology, Chemistry and Physical Science with recommended **Advanced Placement Science**)	**+**	**Safety Training Component is Required** Recommended: **OSHA 10**	**+**	**College Level Courses in Field ofStudy:** Concurrent | Dual Enrollment | EEP	**+**	**Environmental & Life Sciences Work-Based Learning experience(s) and/or related mentoring program.** **Career Readiness Skills Component such as:** SkillsUSA Career EssentialsSuite Naviance Junior Achievement

Job Outlook:

Employment of aquaculture/ agricultural and food science technicians is projected to grow 5 percent from 2014 to 2024, about as fast as the average for all occupations. Advances in technology and scientific knowledge relatedto food production will require greater control of production and processing activities, increasing demand for these positions.

Pay:

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Environmental & Life Sciences Post-Secondary Options:

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Sample Job Title/Median Annual Wage: • Chemical Technician ($45,840) • Agricultural Inspector ($42,800)	**Sample Job Titles/Median Annual Wage**: • Food Scientist and Technologist ($63,950) • Soil and Plant Scientist ($63,200) • Animal Scientist ($60,330) • Agricultural Engineer ($73,640) • Biological Technician ($42,520)

https://www.bls.gov/ooh/life-physical-and-social-science/agricultural-and-food-science-technicians.htm

GWB Priority Sector: Environmental & Life Sciences - Bioscience

Career Field: Bioscience

This standard is for a high school graduate who is prepared to enter a certified, lab-based science program atthe secondary level and be 'job ready' as a Biomedical Science Technician/Technologist or Laboratory Technician/Assistant.

Skills / knowledge needed in preparation for entry-level work within the Biomedical / Biotechnical field:

Upon completion of a RIDE Approved Environmental and Life Sciences pathway, the candidate is expected to:

- Demonstrate a well-developed "laboratory sense" regarding Safety Protocols (MSDS), ID and SDS data, FDA Regulations, cGMP, GLP, SOP writing, Sterile Gowning, Documentation, Basic Laboratory Instrumentation, QualityControl Functions in Microbiology and Chemistry, Record Keeping, Aseptic Handling, and Solution.
- Have knowledge of Medical Terminology, Documentation, Basic Mathematics and Computer skills (i.e., Word Processing and Spreadsheet Analysis), Medical Testing Equipment Knowledge, Medical History and Review of Systems
- Documentation Knowledge, Bloodborne Pathogens and Universal Precautions Knowledge).
- Demonstrate Soft skills, including Interpersonal Communication, Teamwork and Collaboration, Critical Thinking,Conflict Resolution, Ethics, and Professional Demeanor.

Expected industry credential(s) and/or certificate(s) granted upon successful completion of the pathway (if applicable):

High school students interested in becoming a Biomedical Science Technician / Technologist OR Laboratory Technician / Assistant should enroll in a three or four year Environmental and Life Sciences curriculum, along with four years of math, and three years of science, with a recommended fourth year. A safetytraining component is required (OSHA 10 recommended), and one or more of the credentials listed below, work-based learning experiences, and a career readiness component are required.

Requirements are summarized in the table below. Each column MUST be met to satisfy the requirements of theRhode Island CTE Environmental and Life Sciences Standard

Academic Requirements		Safety Training		Mandatory Credential (s) Earned		Work-Based Experience (s) + Career Readiness Skills
Three to four consecutive years of Environmental & Life Sciences Coursework **+** **Four years of Math** (Minimum: Algebra II, Recommended Pre-Calculus and Statistics) **+** **Three years of Science** Recommended fourth year (Biology, Chemistry and Physical Science with Recommended **Advanced Placement Science**)	+	**Safety Training Component is Required** Recommended: **OSHA 10**	+	**<u>One or more of the following</u>:** **National Occupational Competency Testing Institute (NOCTI)** **Project Lead the Way (PLTW)** Three Project Lead the Way Course Completion Certificates **Precision Exams in Related Field** **College Level Courses in Field of Study:** Concurrent | Dual Enrollment | EEP	+	**Environmental & Life Sciences Work-Based Learning experience(s) and/or related mentoring program.** **Career Readiness Skills Component such as:** SkillsUSA Career Essentials Suite Naviance Junior Achievement

Job Outlook:

Entry-Level Careers within the Biomedical / Biotechnical field generally require 6 months of formal training, acurrent and valid license through the Department of Health to practice in Rhode Island, and additional certifications as needed.

Biomedical Science Technician- Career opportunities exist within various areas of focus (i.e., Cellular and Molecular Biology, Clinical Laboratory Science, Endoscopy, Equipment Maintenance, Pathology/Pathobiology, Bioinstrumentation, Biomaterials, Biomechanics, Pharmacy/Pharmacology, Biostatistics, Biology Sanitation, and Equipment Maintenance/Operation (within CT Scan, MRI, Radiology, Anesthesiology, Diagnostic Imaging, etc.)

Laboratory Technician- Career opportunities exist within various areas of focus (i.e., Biotechnology, Chemical Technician, Clinical Chemical Analysis, Biopharmaceuticals, Biological Technician, Biomanufacturing Associate, Hematology, Histology, Medical Device Testing, Microbiology, Pathology, Sterile Processing, Solution Preparation,etc. Technical Laboratory positions require a minimum of an Associate's Degree and demonstrated competence or experience in that field.

Pay- What to Expect:

Entry-Level Careers within the Biomedical / Biotechnical field (post - High School Diploma) generally start in the $12-$17/hour range.

Environmental and Life Sciences Postsecondary Options:

Two-Year Programs	Four-Year College and University Programs
Associates Degree programs include: (A.S.) Associate of Science Degree General Science, Biotechnology, Biology, Biological Sciences, Chemistry, Pharmacy, Physical Sciences, Radiology, etc. (A.A.S.) Associates Degree in Applied Science Applied Physics, Biology-Pre-Medicine, ChemicalTechnology, Molecular Biotechnology, Physical Sciences (Integrated Science) **Sample Job Titles**: Medical Lab Technician, Pharmacy Technician, Chemical Technician, Biomedical Technician, Laboratory Technician, Instrumentation Technician, Medical Technologist, Biopharmaceutical Technician, Clinical Data Analyst, Equipment Technician, Research Technician / Assistant, Water Quality Analyst, etc.	**Bachelor of Science Degree disciplines include**: (B.S.) Bachelor of Science Degree - Biological andBiomedical Sciences Biomedical Informatics, Biomedical Technology, Biological Science, Biotechnology, Biochemistry, Forensic Pathology, etc. (B.S.) Bachelor of Science Degree - Physical Sciences Mathematics and Physics, Chemistry, Physics, Forensic Chemistry, Statistics, Biochemistry, etc. **Sample Job Titles**: Biochemist, Bio-Informatician, Biophysicist, Biotechnology Laboratory Technician, Biological Technician, Biomedical Engineer, Chemical Engineer, Clinical Research Associate, Forensic Science Technician, Microbiologist, Pharmacologist, Quality Control, Research Scientist, Environmental Health and Safety Officer, Genetic Therapist, etc.

GWB Priority Sector: Environmental & Life Sciences - Bioscience

Career Field: Plant Science – Landscaper & Groundskeeper

This standard prepares students: to graduate from high school prepared and ready to seek an entry-level position as a Landscape Professional, and to enter an Environmental and Life Sciences post-secondary program.

Skills/knowledge needed in order to be prepared for entry-level work:

Upon successful completion of a RIDEApproved Environmental and Life Sciences Pathway, the candidate is expected to know and be able to:

- Identify plants used in the industry
- Identify and demonstrate safe use of toolsExplain plant life cycles
- Demonstrate methods of plant cultivation
- Identify landscape pests and determine management strategies
- Explain basic ecological cycles (nutrients, soil, and water)
- Possess professional workplace communication skills

Expected industry credential (s) and/or certificate (s) granted upon successful completion of the pathway (if applicable):

High school students interested in becoming a Landscaper or Groundskeeper should enroll in a three or four year Environmental and Life Sciences curriculum, along with four years of Math, and three to four years of Science. Students enrolled in this pathway will take the National Occupational Competency Exam (NOCTI) in Horticulture-Landscaping or other field related NOCTI assessment. OSHA 10 Safe Workplace training is required.

Requirements are summarized in the following table. Each column MUST be met to satisfy the requirements ofthe Rhode Island CTE Environmental and Life Sciences Standard.

Academic Requirements		Safety Training		Mandatory Credential (s) Earned		Work-Based Experience (s) + Career Readiness Skills
Three - four consecutive years ofEnvironmental & Life Sciences Coursework **+** **Four years of Math** **+** **Three - four years of Science**	+	**OSHA 10 Safe Workplace** **Recommended-** Pesticide Safe Worker	+	**National Occupational Competency Exam (NOCTI**): Horticulture-Landscaping or Other Field Related NOCTI Assessment	+	**Environment & LifeSciences work- based learning experience (s) and/or related mentoring program** **+** **Career Readiness Skills Component**such as: • FFA LifeKnowledge SkillsUSA Career Essential Suite

Job Outlook:

Bright, according to RI LMI Occupational Projections. The employment of landscaping and groundskeepers is projected to grow 6 percent from 2014 to 2024. More workers will be needed to meet the increasing demand for lawn care and landscaping services from large institutions and individual homeowners. Jobprospects should be very good (bls.gov).

Opportunities:

Entry-level placement; licensed professional.

Pay:

In Rhode Island, hourly median wages for Landscaping and Groundskeeping workers ($13.72) are below thenational mean ($18.77). Median wages for the more skilled jobs such as tree trimmers (arborists) ($20.75) and supervisors ($23.09) are above average. With a four-year post-secondary degree, Landscape Architects' median wages (2016) are $30.52 hourly and $63,480 annually.

Environmental and Life Sciences Post-Secondary Options

High School Degree Minimum	**Two & Four-Year College and University Programs**
Sample Job Titles • Retail /Wholesale Nursery- Field manager, • Greenhousemanager, • Sales manager • Landscape/Garden Construction Retail • Wholesale Florist • Landscape Designer • Landscape Maintenance/Contractor • Masonry andHardscape • Landscape lighting • Irrigation • Machine maintenance • Crew supervisor	**Bachelor of Science disciplines include (examples:Sample Job Titles)** • Entomologist • Agronomist • Soil Scientist • Soil Conservationist • Landscape Architect • Agricultural Educator

GWB Priority Sector: Environmental & Life Sciences - Bioscience

Career Field: Process Technician (Chemical Manufacturing, Research & Development)

This standard prepares students to graduate from high school prepared to enter an Environmental and LifeSciences program at the post-secondary level, and to be 'job ready' as a Process Technician.

Processing Technicians monitor the quality of products and processes at chemical and biological manufacturing facilities, as well as environmental, medical, and food service laboratories. Responsibilities may include adjustingprocessing equipment to improve production efficiency and output; collecting samples from production batches,which then are tested for impurities and other defects; and testing product packaging to ensure that it is well designed, durable, and will have a limited impact on the environment. Process Technician positions are found in several industries including pharmaceutical; environmental; food services/ manufacturing; plastics and chemical manufacturing; textile manufacturing; medical research and others.

The processing technician in manufacturing is involved in the execution of fully developed chemical processes to prepare marketed products; process robustness is expected, and the technician is trained and qualified to executethe process. By contrast, process technician in an R&D facility (pilot plant) is involved in the execution of the process as they are developed; process variability is routine. Each new campaign is a process introduction. The R&D technician trains and is qualified on processing equipment, process troubleshooting, and unit operations independent of a specific process. In both cases, technicians may be required to operate under current good manufacturing/laboratory practices, or cGxP, and to have a working knowledge of environmental health and safety (EHS) guidelines.

In practice, a well-defined and documented employee-training program is essential to ensuring compliance withprocedures and program expectations. An essential element of a good training program is the requirement for refresher training to ensure that the operating staff maintains a competent skill level and knowledge needed to be compliant with regulatory requirements.

Skills/knowledge needed in order to be prepared for entry-level work:

Upon completion of a RIDE ApprovedEnvironmental and Life Sciences pathway, the candidate is expected to know and be able to:

- Monitor chemical processes.
- Set up/ use and maintain chemical processing equipment and associate software platforms that maycontrol them.
- Troubleshoot production problems and/or malfunctioning instruments.
- Prepare chemical solutions.
- Conduct chemical/biological physical experiments related to research and development.
- Effectively use relevant technology/ instrumentation.

- Understand and follow Standard Operating Procedures (SOP).
- Practice Good Manufacturing Practices (GMP) and Good Lab Practices (GLP).
- Understand basic fluid mechanics and filtration.
- Work safely in a laboratory environment.
- Demonstrate analytical skills.
- Communicate effectively orally and in writing.
- Think critically.
- Interact with colleagues and team members appropriately.
- Observe and document processes
- Effectively manage their time.

Expected industry credential (s) and/or certificate (s) granted upon successful completion of the pathway (ifapplicable):

High school students interested in becoming a process technician should enroll in a three or four year Environmental and Life Sciences curriculum, along with four years of math, to include basic applied math, and three years of science, including Chemistry. For individuals working in this pathway in the manufacturing component both National Center for Construction Education Research (NCCER) HVAC & Plumbing (Levels 1 & 2)are credentials that support this pathway.

Requirements are summarized in the following table. Each column MUST be met to satisfy the requirements ofthe Rhode Island CTE Environmental and Life Sciences Standard.

Academic Requirements		Safety Training		Mandatory Credential (s) Earned		Work-Based Experience (s) + Career Readiness Skills
Three / four consecutive years of Environmental & Life Sciences Coursework **+** **Three years of Science**,to include Chemistry. **+** **Four years of Math** to include Basic Applied Mathematics **Recommended-** Mechanical, plumbing and HVAC or engineering coursework	**+**	**OSHA 10**	**+**	**<u>One or more of the following:</u>** **Project Lead the Way (PLTW)** Three Project Lead the Way Course Completion Certificate **College level courses in Field of Study:** Concurrent/Dual Enrollmentwith CCRI **For individuals working in this pathway in the manufacturing component,** both National Center for Construction Education Research (NCCER) HVAC & Plumbing (Levels 1 & 2)are eligible to support this pathway.	**+**	**Science, mechanical, or engineering work-based learning experience (s) and/or related mentoring program** **+** **Career Readiness Skills Component,**such as: FFA LifeKnowledge SkillsUSA Career Essential Suite Naviance Junior Achievement

Job Outlook:

As the instrumentation and techniques used in research, development, and production become more complex, employers will seek job candidates with highly developed technical skills. Job opportunities are expected to be best for graduates of applied science technology programs who are well trained in the latest technology and sophisticated equipment used in research and development or production facilities

Pay (Post-Secondary Program)

SOC Code	Occupational Title	US	RI	CT	MA	Typical Education	Job Training
17-3025	Env. Eng. Technicians	$23.64	$18.17	$24.09	$21.96	AD	None
17-3026	Industrial Engineering Technicians	$25.64	$26.44	$30.44	$26.68	AD	None
17-3027	Mechanical Engineering Technicians	$26.19	$27.97	$31.56	$27.17	AD	None
19-4031	Chemical Technicians	$22.04	$21.33	$23.12	$25.91	AD	MT OJT
19-4091	Environmental Science and Protection Technicians, Incl. Health	$21.25	$22.82	$18.94	$26	HSD	MT OJT

29-2011	Med & Clinical Lab. Technologists	$29.36	$36.26	$34.58	$35	HSD	MT OJT
29-2012	Medical & Clinical Laboratory Technicians	$18.73	$27.63	$21.38	$19.48	HSD	LT OJT
29-2012	Med. and Clinical Lab. Technicians	$18.73	$27.63	$21.38	$19	BD	None
50-8031	Water & Wastewater TreatmentPlant & System Operators	$22.00	$24.26	$30.43	$25.60	AD	None
51-6061	Textile Bleaching and Dyeing Machine Operators and Tenders	NA	NA	NA	$14	AD	ST OJT
51-9011	Chem. Equip. Operators & Tenders	$22.97	$17.40	$21.79	$24.47	HSD	ST OJT
51-9023	Mixing & Blending Machine Setters, Operators, & Tenders	$17.16	$18.20	$17.79	$18.25	HSD	ST OJT
Average for all occupations (variations of Process Technician)		$22.52	$24.37	$25.05	$24.51		

US Dept. of Labor (USDOL) Career Cluster:

Healthcare

GWB Priority Sector: Healthcare

Career Field: Certified Patient Care Technician (CPCT) *provisional license*

Skills/ knowledge needed to be prepared for entry-level work: Upon completion of this high school Patient Care Technicianprogram, the candidate is expected to know and be able to:

1. Respond to patient calls and requests.
2. Assist patients with personal hygiene tasks.
3. Tidy patients' rooms.
4. Serve meals and feed patients.
5. Monitor vital signs.
6. Draw laboratory specimens.
7. Perform EKGs and other clinical tasks.
8. Set up equipment.
9. Assist the physician or nurse with therapies.

Required Curriculum:

District decision

Expected industry credential (s) and/or certificate(s) granted upon successful completion of the program (if applicable):

Certified Patient Care Technician (Through the National Health Career Association NHA).
This is a PROVISIONAL license. Students have 12 months to graduate High School and perform a minimum of thirty (30) venipunctures, ten (10) capillary sticks, and ten (10) Electrocardiograms (EKG) on live individuals. Students will then gain full certification.

Prerequisites for acquiring credential or certificate: Candidate must:

- Obtain certification in CPR, AED, First Aid Certified (preferred through American Heart
  - Association: Basic Life Support (BLS) for Health Care Providers (HCP).
- Complete full accredited Nursing Assistant Training Program & obtain R.I. State CNA Licensure
  - Some states require CNA licensing prior to becoming certified as a Patient Care Technician*.
- Complete a full Patient Care Technician accredited program and successfully take the related exam (online/written)with an associated fee of $149.00.

Benefits of this level of achievement in job market:

Many CPCTs use their knowledge and training as a stepping-stone toward becoming a LPN or RN. The NHA's CPCT certification provides a foundation for future training, and it can lead toadditional

employment opportunities in the health care field (Example: CNA Level II at R.I. Hospital). This credential is authorized by the NHA and is nationally recognized.

Job Outlook –

Employment of nursing assistants and orderlies is projected to grow 17 percent from 2014 to 2024, much faster than the average for all occupations. Because of the growing elderly population, many nursing assistants and orderlieswill be needed to assist and care for these patients.

Pay –

The most recent Rhode Island Labor Market Information for this profession dates from May 2015 and the entry-levelwage for nursing assistants and orderlies at that time was $25,022.00 ($12.03 per hour).

The required minimum of total hours for the Patient Care Technician is 300. The number of hours for each topic isrecommended and can be adjusted to suit the needs of the specific program.

GWB Priority Sector: Healthcare

Career Field: Community Health Worker

Skills/knowledge needed to be prepared for entry-level work plus related administrative duties that may include but are not limited to:

1. Identify and document needs and health topics relevant to the priority population.
2. Adapt outreach strategies based on population, venue, behavior or identified risks that are appropriate to agiven population and its self-determined concerns.
3. Identify basic geographic and structural features that define, support, and inhibit outreach in the community.
4. Engage clients in ways that establish trust and rapport with them and their families.
5. Create a non-judgmental atmosphere in interactions with clients and their families.
6. Identify personal safety issues and possible responses to potentially dangerous situations.
7. Document and help create networks and establish partnerships and linkages with other community healthworkers and organizations for the purpose of care coordination and enhancing resources.

Required Curriculum:

District decision

Core Competency:

Outreach Methods and Strategies:

1. Individual and Community Assessment
2. Effective Communication
3. Cultural Responsiveness and Mediation
4. Education to Promote Healthy Behavior Change
5. Care Coordination and System Navigation
6. Use of Public Health Concepts and Approaches
7. Advocacy and Community Capacity Building
8. Documentation
9. Professional Skills and Conduct

Clinical Duties (may include, but not limited to):

- Helping individuals, families, groups, and communities develop their capacity and access to resources,including health insurance, food, housing, quality care and health information.
- Facilitating communication and client empowerment in interactions with health care/social servicesystems.
- Helping health care and social service systems become culturally relevant and responsive to their servicepopulation.

- Helping people understand their health condition(s) and develop strategies to improve their health andwell-being.
- Helping to build understanding and social capital to support healthier behaviors and lifestyle choices.
- Delivering health information using culturally appropriate terms and concepts.
- Linking people to health care/social service resources.
- Providing informal counseling, support, and follow-up.
- Advocating for local health needs.
- Providing health services, such as monitoring blood pressure and providing first aid.
- Making home visits to chronically ill patients, pregnant women and nursing mothers, individuals at high riskof health problems and the elderly.
- Translating and interpreting for clients and health care/social service providers

Expected industry credential(s) and /or certificate(s) granted upon successful completion of the program (if applicable): At this time there is voluntary certification. Eventually this position has potential be become a certified position to work with health care providers. The certification programs usually last 18 months and mayrequire additional postsecondary training.

Benefits of this level of achievement in the job market:

Throughout the United States, the community health worker field is growing, both in interest and demand, yetthe practice lacks definition, standards, and openly available training opportunities. The field is also rapidly expanding into new areas of health and community wellness.

Job Outlook –

Employment of health educators and community health workers is projected to grow 13 percent from 2014 to 2024, faster than the average for all occupations. Growth will be driven by efforts to improve healthoutcomes and to reduce healthcare costs by teaching people healthy habits and behaviors and explaining how to use available healthcare services.

Pay –

The most recent Rhode Island Labor Market Information for this profession dates from May 2015 and theentry-level wage for Community Health Workers at that time was $35,277.00 ($16.96 per hour).

GWB Priority Sector: Healthcare

Career Field: Dental Hygienist

Skills/knowledge needed to be prepared for entry-level work: **Administrative Duties** (may include, but not limited to):

Dental hygienists need to be adept at using both hand and power tools to remove tartar, stains, and plaque from teeth and to apply sealants, polishes, and fluoride treatments. This requires a certain level of hand-eye coordination to manipulate the instruments properly. It also requires a steady hand. In addition, hygienists must be familiar with the proper use of X-ray equipment to evaluate tooth or jaw problems.

Medicine and Dentistry - Knowledge of the information and techniques needed to diagnose and treat humaninjuries, diseases, and deformities. This includes symptoms, treatment alternatives, drug properties and interactions, and preventive health-care measures. See more occupations related to this knowledge.

Customer and Personal Service — Knowledge of principles and processes for providing customer and personalservices. This includes customer needs assessment, meeting quality standards for services, and evaluation of customer satisfaction. See more occupations related to this knowledge.

Required Curriculum:

Clinical Duties (may include, but not limited to):

- Clean calcareous deposits, accretions, and stains from teeth and beneath margins of gums, using dentalinstruments. See more occupations related to this task.
- Record and review patient medical histories. See more occupations related to this task.
- Examine gums, using probes, to locate periodontal recessed gums and signs of gum disease. See moreoccupations related to this task.
- Feel and visually examine gums for sores and signs of disease. See more occupations related to this task.
- Expose and develop x-ray films.

Expected industry credential(s) and /or certificate(s) granted upon successful completion of the program (ifapplicable):

Dental Hygiene License

Prerequisites for acquiring credential or certificate

Licensure is granted by each individual state. Dental hygienists practice in accordance with requirements of individual state dental practice acts.

In virtually every state, several steps are required before a license can be granted:

- Graduation from an accredited dental hygiene program.
- Successful completion of the written National Board Dental Hygiene Examination.
- Successful completion of a regional or state clinical board examination.

Once these steps have been completed, an applicant for licensure must then contact the state licensing authorityin the state where he/she wishes to practice. As licensing requirements vary from state to state, it is necessary tocontact each licensing authority in a given state for its specific application requirements and procedures.

Requirements for a dental hygienist license in Rhode Island include transcripts from an accredited institution(Associates @ CCRI) that proves the applicant has earned a degree in dental hygiene, a birth certificate, a passport-sized photograph, and passing scores in the National Board and regional board exams.

Benefits of this level of achievement in the job market:

Employment of dental hygienists is projected to grow 33 percent from 2012 to 2022, much faster than the average for all occupations. Ongoing research link oral health to general health will continue to spur demand for preventative dental services, which are often provided by dental hygienists.

Job Outlook –

Employment of dental hygienists is projected to grow 19 percent from 2014 to 2024, much faster than the average for all occupations. Ongoing research linking oral health to general health will continue to spurdemand for preventive dental services, which are provided by dental hygienists.

Pay –

The most recent Rhode Island Labor Market Information for this profession dates from May 2015 and theentry-level wage for Dental Hygienists at that time was $73,902.00 ($32.53 per hour).

GWB Priority Sector: Healthcare

Career Field: Emergency Medical Responder

Skills/ knowledge needed to be prepared for entry-level work:

1. Use knowledge of the EMS system, safety/well-being of the EMR, and medical/legal issues at the scene ofan emergency while awaiting a higher level of care.
2. Have awareness of local public health resources and the role of EMR personnel in public health emergencies.
3. Use simple medical and anatomical terms.
4. Use simple knowledge of the anatomy and function of the upper airway, heart, vessel, blood, lungs, skin,muscles and bones the foundation of emergency care.
5. Use simple knowledge of age-related differences to assess and care for patients.
6. Apply knowledge (fundamental depth, foundational breadth) of general anatomy and physiology to assure patent airway, adequate mechanical ventilation and respiration while awaiting additional EMSresponse for patients of all ages.
7. Use simple knowledge of shock and respiratory compromise to respond to life threats.
8. Use assessment information to recognize shock, respiratory failure or arrest, and cardiac arrest based onassessment findings, and manage the emergency while awaiting additional emergency response.
9. Conduct Patient assessment.
10. Conduct primary assessment.
11. Take history and vital signs.
12. Use scene information and simple patient assessment findings to identify and manage immediate lifethreats and injuries within the scope of practice of the EMR.
13. Practice principles of communicating with patients in a manner that achieves a positive relationship.
14. Recognize and manage life threats based on assessment findings of a patient with a medical emergencywhile awaiting additional emergency response.
15. Identify and categorize trauma patients and activate the appropriate trauma system approach.
16. Use knowledge of EMR systems to recognize and manage life threats related to trauma/shock, resuscitation, and trauma such as bleeding and shock, chest and abdominal emergencies, soft tissueinjuries, injuries to head and spine, musculoskeletal injuries, and environmental emergencies.
17. Recognize and manage life threats based on assessment findings for a patient with special needs such asobstetrics and neonatal care, pediatric emergencies, geriatric patients, and patients with special challenges and situations while awaiting additional emergency response.

18. Use knowledge of operational roles and responsibilities to ensure patient, public, and personal safety.

Expected industry credential (s) and/or certificate(s) granted upon successful completion of the program (if applicable):

Prerequisites for acquiring credential or certificate:

The students, who wish to become a skilled EMT in Rhode Island, have to go through an EMT training program and may have to provide a Bureau of Criminal Identification(BCI) report. Students must be 18 years old with a high school diploma.

Benefits of this level of achievement in job market:

This course is a preparatory course to the EMT course and instructs students in basic knowledge, application, and skills of an emergency medical responder. Students whosuccessfully complete this course would be able to volunteer as a medical responder and/or gain employment where CPR, First Aid, and/or AED certificates are required.

Job Outlook –

Employment of emergency medical technicians (EMTs) and paramedics is projected to grow 24 percent from 2014 to 2024, much faster than the average for all occupations. Emergencies, such as car crashes, natural disasters, and acts of violence, will continue to create demand for EMTs and paramedics.

Pay –

The most recent Rhode Island Labor Market Information for this profession dates from May 2015 and theentry-level wage for Emergency Medical Responder at that time was $28,662.00 ($13.78 per hour).

GWB Priority Sector: Healthcare

Career Field: Pharmacy Technician

Skills/ knowledge needed to be prepared for entry-level work: Upon completion of this high school PharmacyTechnician program, the candidate is expected to know and be able to:

Retail Pharmacy Technician duties*:*

1. Assist customers who are dropping off or picking up prescription orders.
2. Enter prescription orders into the computer.
3. Create a profile of the patient's health and insurance information in the computer or update the patient'sprofile.
4. Communicate with insurance carriers to obtain payment for prescription claims.
5. Complete weekly distribution center medication orders, place orders on shelves, and verify all associatedpaperwork.
6. Assist the pharmacist with filling and labeling prescriptions.
7. Prepare the pharmacy for inventory.
8. Screen telephone calls for the pharmacist.
9. Prepare bulk packages.
10. Compound oral solutions, ointments, and creams.

Hospital Pharmacy Technician duties:

1. Rotate through all work areas of the pharmacy.
2. Transport medications, drug-delivery devices, and other pharmacy equipment from the pharmacy tonursing units and clinics.
3. Pick up copies of automated medication administration records, and unused medications from thenursing units and return them to the pharmacy.
4. Fill patient medication cassettes and nursing unit automated pyxis systems.
5. Prepare medications and supplies for dispensing, including prepackaged bulk medications, compoundingointments, creams, oral solutions, and other medications, preparing chemotherapy agents, compoundingtotal parenteral nutrition solutions, compounding large volume intravenous.
6. Prepare inventories, order drugs and supplies from the storeroom; receive drugs, and stock shelves invarious pharmacy locations.
7. Screen telephone calls.
8. Assist in training new employees.
9. Assist other pharmacy technicians.

Required Curriculum:

District decision

Expected industry credential (s) and/or certificate(s) granted upon successful completion of the program (ifapplicable): Certified Pharmacy Technician (CPhT)

Prerequisites for acquiring credential or certificate:

Upon COMPLETION of high school/or GED equivalent, over age of 18, a candidate is eligible to sit for the certification examination. *(Post high school eligible).* Candidate must also obtain state/federal background checks. *At this time, there are no required theory/clinical hours to sit for examination*. Candidate must meet the above criteria to apply and take the examination. However, it is recommended that candidates have exposure in the pharmacy area or training to gain knowledge needed to passthe examination.

Benefits of this level of achievement in job market:
Obtaining the Pharmacy Technician licensure allows the candidate to succeed in entry level retail or hospital pharmacies. The candidate often continues their educationwithin the Pharmacy sector becoming a Pharmacist while working as a Pharmacy Technician. This credential is authorized by the NHA (National Health Career Association) and Pharmacy Technician Certification Board (PTCB)and is recognized nationally.

Job Outlook –

Employment of pharmacy technicians is projected to grow 9 percent from 2014 to 2024, faster than the average for all occupations. Increased demand for prescription medications will lead to more demandfor pharmaceutical services.

Pay –
The most recent Rhode Island Labor Market Information for this profession dates from May 2015 and theentry-level wage for Medical Assistant at that time was $25,459.00 ($12.24per hour).

US Dept. of Labor (USDOL) Career Cluster:

Hospitality & Tourism

GWB Priority Sector: Hospitality & Tourism

Career Field: Culinary – Line Cook

Skills/Knowledge needed to be prepared for entry-level work:

- Knife Skills
- Customer Service
- Food Safety Management
    - Proper food storage and handling techniques
    - Clean food preparation areas, facilities, or equipment
- Cost Control
- Culinary Techniques
- Purchasing and inventory
- Marketing and the menu
    - Knowledge of raw materials
    - Techniques for maximizing the effective manufacture and distribution of goods
    - Planning menu options
- Accountability
- Dependability and presentation
- Communication Skills
- Use of computers, POS systems, cash registers
- Teamwork Skills

Expected industry credential(s) or certificate(s) granted upon career and technical education program completion (if applicable):

- American Culinary Federation (ACF) accreditation for culinary education (ACF)
- ProStart National Certificate of Achievement (COA)
- ServSafe Food Safety Manager Certification
- ServSafe Allergen Training Certification

Prerequisites for acquiring a ProStart COA credential or certificate:

Successful completion of Year One and YearTwo Exams. Students must obtain a paid or un-paid internship and complete 400 hours of work experience and demonstrate proficiency on more than 50 workplace competencies.

Prerequisite for acquiring a ServSafe Food Safety Manager Certification and ServSafe Allergen Training: State of RI Requirements.

Successful completion of 15 hours of classroom training. Students must receive a 75% or higher on the

exam to become certified. Once the student is certified, they must register with the state of RhodeIsland Department of Health. This certification is valid for 3 years, statewide. Every 3 years, the student must re-certify by taking a 6-hour refresher course and then resubmit with the DOH. If the student would like to maintaintheir national certification, the student must take the course and exam every 5 years. The state of RI recognizes the allergen training covered in the ServSafe Food Safety Manager Training as being certified. Other states, however, require a separate online Allergen Training.

Benefits of this level of achievement in job market:

The ProStart Program was developed by The National Restaurant Association to meet industry needs. It is offered in all 50 states and U.S. Military bases around the world. ProStart Certification prepares graduates with the necessary skills to attain entry-level employment in the foodservice/culinary industry. Also, the postsecondary benefit is that top post-secondary schools in the nation recognize the ProStart COA and award students with college credits, advanced placement and/or credit for work experience.

Job Outlook* -

Overall employment of cooks is projected to grow 4 percent from 2014 to 2024, slower than theaverage for all occupations. Job opportunities will result from the combination of employment growth and the need to replace workers who leave the occupation.

Pay –**

The most recent Rhode Island Labor Market Information for this profession dates from May 2015 andthe entry-level wage for Line Cook at that time was $20,821.00 ($10.01 per hour).

Sources:

National Restaurant Association, **www.onetonline.org**

* US Department of Labor; Bureau of Labor Statistics; *Occupational Outlook Handbook*
** RI Department of Labor & Training; Labor Market Information; Occupational Employment Statistics

GWB Priority Sector: Hospitality & Tourism

Career Field: Restaurant Operations - Server

Skills/Knowledge needed to be prepared for entry-level work:

- Customer and Personal Service
  - Assessing customer needs
  - Meeting quality standards for services
  - Evaluating customer satisfaction
- Food Safety Management
  - Proper food handling techniques
- Cost Control
- Marketing
- Accountability
- Dependability and presentation
- Communication Skills
  - Active Listening
  - Service Orientation
  - Social Perceptiveness
- Use of computers, POS systems, cash registers
- Teamwork Skills

Expected industry credential(s) or certificate(s) granted upon career and technical education program completion (if applicable):

- American Culinary Federation (ACF) accreditation for culinary education (ACF)
- ProStart National Certificate of Achievement (COA)
- ServSafe Food Safety Manager Certification
- ServSafe Allergen Training Certification
- ServSafe Alcohol Training & Certification

Prerequisites for acquiring ProStart COA credential or certificate:

Successful completion of Year One and Year Two Exams. Students must obtain a paid or un-paid internship and complete 400 hours of work experience anddemonstrate proficiency on more than 50 workplace competencies.

Prerequisite for acquiring a ServSafe Food Safety Manager Certification and ServSafe Allergen Training: State of RI Requirements.
Successful completion of 15 hours of classroom training. Students must receive a 75% or higher on the exam to become certified. Once the student is certified, they must register with the state of RhodeIsland

Department of Health. This certification is valid for 3 years, statewide. Every 3 years, the student must re-certify by taking a 6-hour refresher course and then resubmit with the DOH. If the student would like to maintaintheir national certification, the student must take the course and exam every 5 years. The state of RI recognizes the allergen training covered in the ServSafe Food Safety Manager Training as being certified. Other states, however, require a separate online Allergen Training.

Prerequisite for acquiring a ServSafe Alcohol Training and Certification:

Successful completion of 2-hour training in ServSafe Alcohol Training. Students must obtain a 75% on the exam to obtain their certification. Any person in the state of RI who sells or serves alcoholic beverages, valet workers, and supervisors overseeing such persons, shall be certified in Alcohol Training within 60 days of beginning their employment. Certifications mustbe renewed every 3 years.

Benefits of this level of achievement in job market:
The ProStart Program was developed by The National Restaurant Association to meet industry needs. It is offered in all 50 states and U.S. Military bases around the world. ProStart Certification prepares graduates with the necessary skills to attain entry-level employment in thefoodservice/culinary industry. Also, the postsecondary benefit is that top post-secondary schools in the nation recognize the ProStart COA and award students with college credits, advanced placement and/or credit for work experience.

Sources: National Restaurant Association, www.onetonline.org

GWB Priority Sector: Hospitality & Tourism

Career Field: Hotel Operations – Hotel Phone Operator

Skills/Knowledge needed to be prepared for entry-level work:

- Customer and Personal Service
  - Assessing customer needs
  - Meeting quality standards for service
  - Active Listening
- Operating Property Management Systems
- Problem resolution skills
- Sales and Marketing Skills
  - Knowledge of principles and methods for showing, promoting, and selling products and services
  - Sales techniques and control systems
- Effective Communication Skills
  - Oral Expression
  - Speech Clarity
  - Persuasion
- Multi-Tasking Skills
- Administration and Management
  - Strategic Planning, resource allocation, and coordination of people and resources
- Proper Appearance
- Accountability and Reliability
- Teamwork
  - The ability to work with various departments throughout the property

Expected industry credential(s) or certificate(s) granted upon career and technical education program completion (if applicable):

- Certified Hospitality & Tourism Management Professional Certification (CHTMP)
- Certified Guest Service Professional (CGSP)

Prerequisites for acquiring credential or certificate:

Successful completion of both HTMP Year 1 and HTMP Year2 final exams. Students must complete 100 hours of work experience in a qualifying position within the hospitality industry, paid or unpaid.

Prerequisites for acquiring Guest Service professional credential:

Students must complete a three-hour online training. Upon completion of the online training, students will be able to take the exam. There is no on-site workplace requirement.

Benefits of this level of achievement in job market:

The HTMP program was developed by the American Hotel Lodging Association based upon industry needs. CHTMP certification prepares graduates with the necessary skillsto attain entry-level

employment in the hospitality industry. Also, the postsecondary benefit is that the learning objectives can be compared to hospitality management courses at four-year and two-year post-secondary schools. Upon successful completion of both year-end exams, the student will be able to articulate into a school that teaches Education Institute courses or uses Educational Institute textbooks. This encompasses over 1,500 schools around the world.

Sources: National Restaurant Association, www.onetonline.org

GWB Priority Sector: Hospitality & Tourism

Career Field: Tourism –Amusement and Recreation Attendant

Skills/Knowledge needed to be prepared for entry-level work:

- Customer and Personal Service
  - Assessing customer needs
  - Meeting quality standards for service
  - Active Listening
  - Service Orientation
  - Social Perceptiveness
- Problem resolution skills
- Computer Skills
- Ability to complete administrative and clerical procedures and systems
- Effective Communication Skills
  - Oral Expression
  - Speech Clarity
  - Persuasion
- Multi-Tasking Skills
- Administration and Management
  - Strategic Planning, resource allocation, and coordination of people and resources
- Proper Appearance
- Accountability and Reliability

Expected industry credential(s) or certificate(s) granted upon career and technical education program completion (if applicable):

- Certified Hospitality & Tourism Management Professional Certification (CHTMP)
- Certified Guest Service Professional (CGSP)
- Certified Front Desk Representative

Prerequisites for acquiring credential or certificate:

Successful completion of both HTMP Year 1 and HTMP Year2 final exams. Students must complete 100 hours of work experience in a qualifying position within the hospitality industry, paid or unpaid.

Prerequisites for acquiring Guest Service Professional credential:

Students must complete a three-hour onlinetraining. Upon completion of the online training, students will be able to take the exam. There is no on-site workplace requirement.

Prerequisites for acquiring Front Desk Representative credential:

Students must complete 4-8 hours of online

GWB Priority Sector: Hospitality & Tourism

Career Field: Tourism – Tour Guide

Skills/Knowledge needed to be prepared for entry-level work:

- Customer and Personal Service
  - Assessing customer needs
  - Meeting quality standards for service
  - Active Listening
  - Service Orientation
  - Social Perceptiveness
- Problem resolution skills
- Effective Communication Skills
  - Oral Expression
  - Speech Clarity
  - Persuasion
- Multi-Tasking Skills
- Administration and Management
  - Strategic Planning, resource allocation, and coordination of people and resources
- Proper Appearance
- Accountability and Reliability

Expected industry credential(s) or certificate(s) granted upon career and technical education program completion (if applicable):

- Certified Hospitality & Tourism Management Professional Certification (CHTMP)
- Certified Guest Service Professional (CGSP)
- Certified Front Desk Representative (CFDR)

Prerequisites for acquiring credential or certificate:

Successful completion of both HTMP Year 1 and HTMP Year2 final exams. Students must complete 100 hours of work experience in a qualifying position within the hospitality industry, paid or unpaid.

Prerequisites for acquiring Guest Service Professional credential:

Students must complete a three-hour onlinetraining. Upon completion of the online training, students will be able to take the exam. There is no on-site workplace requirement.

Prerequisites for acquiring Front Desk Representative credential:

Students must complete 4-8 hours of onlinetraining. Upon completion of the online training, students will be able to take the exam. There is no on-site workplace requirement.

Benefits of this level of achievement in job market:

The HTMP program was developed by the American Hotel Lodging Association based upon industry needs. CHTMP certification prepares graduates with the necessary skillsto attain entry-level employment in the hospitality industry. Also, the postsecondary benefit is that the learning objectives can be compared to hospitality management courses at four-year and two-year post-secondary schools. Upon successful completion of both year-end exams, the student will be able to articulate into a school that teaches Education Institute courses or uses Educational Institute textbooks. This encompasses over 1,500 schools around the world.

Sources: National Restaurant Association, www.onetonline.org

Priority Sector: Hospitality & Tourism

Career Field: Culinary – Prep Cook

Skills/Knowledge needed to be prepared for entry-level work:

- Knife Skills
- Customer Service
- Food Safety Management
    - Proper food storage and handling techniques
    - Clean food preparation areas, facilities, or equipment
- Cost Control
- Culinary Techniques
- Purchasing and inventory
- Marketing and the menu
    - Knowledge of raw materials
    - Techniques for maximizing the effective manufacture and distribution of goods
    - Planning menu options
- Accountability
- Dependability and presentation
- Communication Skills
- Use of computers, POS systems, cash registers
- Teamwork Skills

Expected industry credential(s) or certificate(s) granted upon career and technical education program completion (if applicable):

- American Culinary Federation (ACF) accreditation for culinary education (ACF)
- ProStart National Certificate of Achievement (COA)
- ServSafe Food Safety Manager Certification
- ServSafe Allergen Training Certification

Prerequisites for acquiring ProStart COA credential or certificate:

Successful completion of Year One and Year Two Exams. Students must obtain a paid or un-paid internship and complete 400 hours of work experience anddemonstrate proficiency on more than 50 workplace competencies.

Prerequisite for acquiring a ServSafe Food Safety Manager Certification and ServSafe Allergen Training: State of RI Requirements.
Successful completion of 15 hours of classroom training. Students must receive a 75% or higher on the

exam to become certified. Once the student is certified, they must register with the state of RhodeIsland Department of Health. This certification is valid for 3 years, statewide. Every 3 years, the student must re-certify by taking a 6-hour refresher course and then resubmit with the DOH. If the student would like to maintaintheir national certification, the student must take the course and exam every 5 years. The state of RI recognizes the allergen training covered in the ServSafe Food Safety Manager Training as being certified. Other states, however, require a separate online Allergen Training.

Benefits of this level of achievement in job market:

The ProStart Program was developed by The National Restaurant Association to meet industry needs. It is offered in all 50 states and U.S. Military bases around the world. ProStart Certification prepares graduates with the necessary skills to attain entry-level employment in thefoodservice/culinary industry. Also, the postsecondary benefit is that top post-secondary schools in the nation recognize the ProStart COA and award students with college credits, advanced placement and/or credit for work experience.

Sources: National Restaurant Association, www.onetonline.org

GWB Priority Sector: Hospitality & Tourism

Career Field: Hotel Operations – Room Attendant

Skills/Knowledge needed to be prepared for entry-level work:

- Customer and Personal Service
  - Assessing customer needs
  - Meeting quality standards for service
  - Active Listening
  - Provide quality and timely service
- Respond to emergencies
  - Security policies and procedures; proper reporting
- Problem resolution skills
  - Respond and resolve requests and complaints by guests.
- Effective Communication Skills
  - Oral Expression
  - Oral Comprehension
  - Speech Clarity
  - Ensure security of guest belongings
- Industry Terminology
- Proper Appearance
- Accountability and Reliability
  - Attention to detail
  - Organization and time management skills
- Understanding proper cleaning techniques and procedures
- Teamwork
  - The ability to remain flexible in job duties and assignments

Expected industry credential(s) or certificate(s) granted upon career and technical education program completion (if applicable):

- Certified Hospitality & Tourism Management Professional Certification (CHTMP)
- Certified Guest Service Professional (CGSP)
- Certified Guestroom Attendant (CGA)

Prerequisites for acquiring CHTMP credential or certificate:

Successful completion of both HTMP Year 1 and HTMP Year 2 final exams. Students must complete 100 hours of work experience in a qualifying position withinthe hospitality industry, paid or unpaid.

Prerequisites for acquiring Guest Service Professional credential:

Students must complete a three-hour onlinetraining. Upon completion of the online training, students will be able to take the exam. There is no on-site workplace requirement.

Prerequisites for acquiring Guestroom Attendant credential:

Students must complete 4-8 hours of 4-8 hours of online training. Upon completion of the online training, students will be able to take the exam. There is no on-site workplace requirement.

Benefits of this level of achievement in job market:

The HTMP program was developed by the American Hotel Lodging Association based upon industry needs. CHTMP certification prepares graduates with the necessary skillsto attain entry-level employment in the hospitality industry. Also, the postsecondary benefit is that the learning objectives can be compared to hospitality management courses at four-year and two-year post-secondary schools. Upon successful completion of both year-end exams, the student will be able to articulate into a school that teaches Education Institute courses or uses Educational Institute textbooks. This encompasses over 1,500 schools around the world.

Sources: American Hotel and Lodging Association, TPG job descriptions; www.onetonline.org

GWB Priority Sector: Hospitality & Tourism

Career Field: Hotel Operations – Laundry Attendant

Skills/Knowledge needed to be prepared for entry-level work:

- Customer and Personal Service
  - Assessing customer needs
  - Meeting quality standards for service
  - Active Listening
  - Provide quality and timely service
- Respond to emergencies
  - Security policies and procedures; proper reporting
- Problem resolution skills
  - Respond and resolve requests and complaints by guests.
- Effective Communication Skills
  - Oral Expression
  - Oral Comprehension
  - Speech Clarity
- Industry Terminology
- Proper Appearance
- Accountability and Reliability
  - Attention to detail
  - Organization and time management skills
- Understanding proper cleaning techniques and procedures
- Teamwork
  - The ability to remain flexible in job duties and assignments

Expected industry credential(s) or certificate(s) granted upon career and technical education program completion (if applicable):

- Certified Hospitality & Tourism Management Professional Certification (CHTMP)
- Certified Guest Service Professional (CGSP)

Prerequisites for acquiring CHTMP credential or certificate:

Successful completion of both HTMP Year 1 and HTMP Year 2 final exams. Students must complete 100 hours of work experience in a qualifying position withinthe hospitality industry, paid or unpaid.

Prerequisites for acquiring Guest Service Professional credential:

Students must complete a three-hour onlinetraining. Upon completion of the online training, students will be able to take the exam. There is no on-site workplace requirement.

Benefits of this level of achievement in job market:

The HTMP program was developed by the American Hotel Lodging Association based upon industry needs. CHTMP certification prepares graduates with the necessary skillsto attain entry-level employment in the hospitality industry. Also, the postsecondary benefit is that the learning objectives can be compared to hospitality management courses at four-year and two-year post-secondary schools. Upon successful completion of both year-end exams, the student will be able to articulate into a school that teaches Education Institute courses or uses Educational Institute textbooks. This encompasses over 1,500 schools around the world.

Sources: American Hotel and Lodging Association, TPG job descriptions, www.onetonline.org

GWB Priority Sector: Hospitality & Tourism

Career Field: Hotel Operations – Guest Room Service Agent

Skills/Knowledge needed to be prepared for entry-level work:

- Customer and Personal Service
  - Assessing customer needs, problem resolution
  - Meeting quality standards for service
  - Active Listening
  - Positive and Professional Attitude
- Operating phone system and computer systems
  - The ability to answer guest calls
  - Operating fax, email, and Property Management Systems
- Respond to emergencies
  - Security policies and procedures
  - Be the liaison between the hotel and emergency services
- Effective Communication Skills
  - Oral Expression
  - Oral Comprehension
  - Speech Clarity
- Multi-Tasking Skills
- Industry Terminology
- Proper Appearance
- Accountability and Reliability
- Teamwork
  - The ability to work with various departments throughout the property

Expected industry credential(s) or certificate(s) granted upon career and technical education program completion (if applicable):

- Certified Hospitality & Tourism Management Professional Certification (CHTMP)
- Certified Guest Service Professional (CGSP)
- Certified Front Desk Representative

Prerequisites for acquiring CHTMP credential or certificate:

Successful completion of both HTMP Year 1 and HTMP Year 2 final exams. Students must complete 100 hours of work experience in a qualifying position withinthe hospitality industry, paid or unpaid.

Prerequisites for acquiring Guest Service Professional credential:

Students must complete a three-hour onlinetraining. Upon completion of the online training, students will be able to take the exam. There is no on-site workplace requirement.

Prerequisites for acquiring Front Desk Representative credential:

Students must complete 4-8 hours of onlinetraining. Upon completion of the online training, students will be able to take the exam. There is no on-site workplace requirement.

Benefits of this level of achievement in job market: The HTMP program was developed by the American Hotel Lodging Association based upon industry needs. CHTMP certification prepares graduates with the necessary skillsto attain entry-level employment in the hospitality industry. Also, the postsecondary benefit is that the learning objectives can be compared to hospitality management courses at four-year and two-year post-secondary schools. Upon successful completion of both year-end exams, the student will be able to articulate into a school that teaches Education Institute courses or uses Educational Institute textbooks. This encompasses over 1,500 schools around the world.

Sources: American Hotel and Lodging Association, www.onetonline.org

GWB Priority Sector: Hospitality & Tourism

Career Field: Tourism – Travel Agent

Skills/Knowledge needed to be prepared for entry-level work:

- Customer and Personal Service
  - Assessing customer needs
  - Meeting quality standards for service
  - Active Listening
  - Service Orientation
  - Social Perceptiveness
- Problem resolution skills
- Effective Communication Skills
  - Oral Expression
  - Speech Clarity
  - Persuasion
- Multi-Tasking Skills
- Geography knowledge
- Knowledge of principles and methods for moving people or goods by air, rail, sea, or road
- Administration and Management
  - Strategic Planning, resource allocation, and coordination of people and resources
- Proper Appearance
- Accountability and Reliability

Expected industry credential(s) or certificate(s) granted upon career and technical education program completion (if applicable):

- Certified Hospitality & Tourism Management Professional Certification (CHTMP)
- Certified Guest Service Professional (CGSP)
- Certified Front Desk Representative

Prerequisites for acquiring CHTMP credential or certificate:

Successful completion of both HTMP Year 1 and HTMP Year 2 final exams. Students must complete 100 hours of work experience in a qualifying position withinthe hospitality industry, paid or unpaid.

Prerequisites for acquiring Guest Service Professional credential:

Students must complete a three-hour onlinetraining. Upon completion of the online training, students will be able to take the exam. There is no on-site workplace requirement.

Prerequisites for acquiring Front Desk Representative credential:

Students must complete 4-8 hours of onlinetraining. Upon completion of the online training, students will be able to take the exam. There is no on-site workplace requirement.

Benefits of this level of achievement in job market:

The HTMP program was developed by the American Hotel Lodging Association based upon industry needs. CHTMP certification prepares graduates with the necessary skillsto attain entry-level employment in the hospitality industry. Also, the postsecondary benefit is that the learning objectives can be compared to hospitality management courses at four-year and two-year post-secondary schools. Upon successful completion of both year-end exams, the student will be able to articulate into a school that teaches Education Institute courses or uses Educational Institute textbooks. This encompasses over 1,500 schools around the world.

Sources: National Restaurant Association, www.onetonline.org

GWB Priority Sector: Hospitality & Tourism

Career Field: Culinary – Baker

Skills/Knowledge needed to be prepared for entry-level work:

- Knife Skills
  - Use of cutlery, molds, commercial ovens and forming machines
- Customer Service
- Food Safety Management
  - Proper food storage and handling techniques
  - Clean food preparation areas, facilities, or equipment
- Cost Control
- Culinary Techniques
- Purchasing and inventory
- Marketing and the menu
  - Knowledge of raw materials
  - Techniques for maximizing the effective manufacture and distribution of goods
  - Planning menu options
- Accountability
- Dependability and presentation
- Communication Skills
- Use of computers, POS systems, cash registers
- Teamwork Skills

Expected industry credential(s) or certificate(s) granted upon career and technical education program completion (if applicable):

- ProStart National Certificate of Achievement (COA)
- ServSafe Food Safety Manager Certification
- ServSafe Allergen Training Certification

Prerequisites for acquiring ProStart COA credential or certificate:

Successful completion of Year One and YearTwo Exams. Students must obtain a paid or un-paid internship and complete 400 hours of work experience and demonstrate proficiency on more than 50 workplace competencies.

Prerequisite for acquiring a ServSafe Food Safety Manager Certification and ServSafe Allergen Training: State of RI Requirements.

Successful completion of 15 hours of classroom training. Students must receive a 75% or higher on the exam to become certified. Once the student is certified, they must register with the state of RhodeIsland Department of Health. This certification is valid for 3 years,

statewide. Every 3 years, the student must re-certify by taking a 6-hour refresher course and then resubmit with the DOH. If the student would like to maintaintheir national certification, the student must take the course and exam every 5 years. The state of RI recognizes the allergen training covered in the ServSafe Food Safety Manager Training as being certified. Other states, however, require a separate online Allergen Training.

Benefits of this level of achievement in job market: The ProStart Program was developed by The National Restaurant Association to meet industry needs. It is offered in all 50 states and U.S. Military bases around the foodservice/culinary industry. Also, the postsecondary benefit is that top post-secondary schools in the nation recognize the ProStart COA and award students with college credits, advanced placement and/or credit for work experience.

Sources: National Restaurant Association, www.onetoneline.org

US Dept. of Labor (USDOL) Career Cluster:

Information Technology

GWB Priority Sector: Information Technology

Career Field: Entry-level Networking (Cisco Certified Network Associate – CCNA)

Technical Skills:

- Understand how different network technologies and tools interact to form a secure IT network.
- Explain how a computer network works and how it interacts with networked devices.
- Configure, verify, and troubleshoot a switch with VLAN & inters witch communications.
- Implement an IP addressing scheme and IP Services to meet specific network requirements.
- Configure, verify, and troubleshoot routing and router operations on current Cisco devices.
- Describe, setup, verify, and execute appropriate tasks for wireless local area networks (WLAN)
- Implement & support Network Address Translation (NAT) and Access Control Lists (ACLs) in variousenvironments.
- Identify network security threats and describe threat mitigation methods & countermeasures.

Work readiness Skills:

- Excellent customer service and interpersonal skills; telephone etiquette.
- Strong oral and written communication skills (both technical and non-technical)
- Highly effective active listening skills, questioning, and issue management
- Demonstrated problem-solving skills
- Demonstrate excellent follow-through
- Team player
- Self-motivated
- Highly organized
- Commitment and willingness to continually learn new products and technologies

Expected industry credential(s) and/or certificate(s) granted upon successful completion of the program (ifapplicable):

Cisco Certified Network Associate (CCNA) Certification; Bachelor's Degree; and/or Associates Degree. 12-18 months' work experience preferred.

Benefits of this level of achievement in job market:

While this is an entry point for employment for job seekersin the Computer Networking pathway, a successful candidate is better prepared if applicant resume demonstrates a long-term internship/work experience plus some postsecondary training in computers or engineering.

Job Outlook –

Employment opportunities for Information Technology show high growth (validated by the Bureauof Labor Statistics) and as of June 2016 incorporates an expanded definition of Information Technology occupations by using NAICS codes to identify high-tech industries in Rhode Island. In 2013 total employment across these more than 2,200 high-tech industry establishments was more than 20,700 workers accounting for 5.2% of Rhode Island private sector employment. * Employers are stating that Information Technology positions are difficult to fill, and Labor Market Information projections demonstrate employment growth of 17% between 2012 – 2022**.

Pay –

The entry-level median annual wage for CCNA is $45,550.00 ($21.90 per hour) in January 2016.

** Enter IT RI, An analysis and report of in-demand IT skill sets, Bridge Technical Talent & Tech Collective.*

*** RI Department of Labor and Training Labor Market Information 2022 Occupational Outlook.*

GWB Priority Sector: Information Technology

Career Field: Entry Level Software / Web Developer Overall Career Information

Skills/ knowledge needed to be prepared for entry-level work/postsecondary education preparation:

Able to create applications on multiple platforms and/or websites for an end-user. Needs to be versed in multipleprogramming languages. Skills in designing, developing, troubleshooting, documenting, and debugging softwaresolutions are required. Web development students should understand front-end web development and back-endmanagement and programming.

Important Qualities:

- **Collaboration skills:** Developers must be able to work in teams of two or more to accomplish a commongoal/task.
- **Customer-service skills:** Developers must be patient and empathetic. Their customers will often experience unwanted behavior or request features. The developer must work with the customerthroughout the entire design process.
- **Listening skills:** Developers must be able to understand the problems that their customers are describingand use that information to implement a solution.
- **Problem-solving skills:** Developers must be able to test, troubleshoot, and debug syntax and semanticerrors in software.
- **Speaking skills:** Developers must describe their solutions to their customers in a way that a nontechnicalperson can understand.
- **Writing skills:** Strong writing skills are useful to developers while preparing instructions, generatingdesign documentation and end-user documentation, and emailing responses to colleagues and customers.
- **Creativity:** Computing is a creative activity, thus developers should be creative. Creativity and computingare prominent forces in innovation; the innovations enabled by computing have had and will continue tohave far-reaching impact.

What Software Developers / Web Designers Do:

Software/Web Developers write code to generate applications and web pages for an end-user; access databases and business logic servers; work with customers, designers, and content producers; test and document software;write, modify, and debug software.

Work Environment:

Most Software/Web Developers have full-time work schedules; however, many do not work typical 9-to-5 jobs.Some are on call 24 hours a day, may work nights or weekends, or work from home.

Pay:

The entry level wage for a Software/Web Developer Specialist was $39,083.00 as of May 2015 and the top pay is

$80,000. Current information can be found in the RI Department of Labor and Training Labor Market InformationOccupational Outlook.

Job Outlook:

Visit the US Bureau of Labor Statistics for the most current job outlook information.

State & Area Data:

Current Rhode Island information; Additional resources can be found at http://www.dlt.ri.gov/lmi/

How to Become a Software / Web Developer in Rhode Island

Rhode Island CTE Program Requirements:

Students must have a work-based learning experience documented. The requirements in this table support the information outlined above.

Earn one of the following Credentials		Plus	The following minimum academics	Plus	Work-Based Learning
NOCTI: IT Workforce Ready Credential OR	Precision Exam OR Web Development		4 Math		**This standard acknowledges and adopts the work-based learning standardsas developed by the Governor's Workforce Board** and Professional/Workplace Skills (i.e., SkillsUSA Connect Curriculum)
			4 English		
College Board's AP Computer Science Principles and AP Computer	Associate Android Developer Exam		3 Science		

ScienceA 3 or better on exams					
Project Lead the Way Three consecutive Course Certificates with proficient EoC	Unity Certified Developer		3 Social Studies		
Oracle Java Foundations Certified Junior Associate Foundations	**Oracle Database 12c Administrator Certified Associate** (Pass One SQL Exam:1Z0-071, 1Z0-061, or		IT Pathway Courses		
Microsoft Technology Associate – (MTA) Certification (Examples: Exam 98-380, 98-381, 98-383)	Node.js Certified Developer (NCD) Exam ISCET Electronics Systems Associate (ESA) Levels 1-4				

Expected Industry Credential(s) and/or Certificate(s) granted upon successful completion of the CTE Program (if applicable):

Due to the wide range of skills and knowledge used in different programming situations, there are many paths into this occupation. A bachelor's degree is required for some software developer and web developerpositions; however, some employers will consider an associate's degree or postsecondary classes and certifications. Additionally, students can enhance their skills with related coursework, primary certifications,

College Board's AP Computer Science courses, dual/concurrent enrollment, and taking advantage of availableinternships. Fundamental certifications in programming language and development environment will help students demonstrate mastery of skills to employers.

GWB Priority Sector: Information Technology

Career Field: Information Technology Specialist

What IT Specialists Do:

IT specialists provide solutions to people and organizations who use technology. IT specialists are also responsible for the design, maintenance, and installation of computer systems, networks,servers, and other technology.

- Test and evaluate existing network systems
- Perform regular maintenance to ensure that networks operate correctly
- Troubleshoot local area networks (LANs), wide area networks (WANs), and Internet systems

Network support specialists may assist computer users through phone, email, or in-person visits. They oftenwork under network and computer systems administrators, who handle tasks that are more complex.

Work Environment:

Most IT specialists have full-time work schedules; however, some may not work typical 9-to-5 jobs. Because IT is essential for businesses, some IT specialists must be available 24 hours a day. For additional work environment information, visit the Bureau of Labor and Statistics.

Skills/ knowledge needed to be prepared for entry-level work/postsecondary education preparation:

Provides technical assistance to computer users plus answers questions or resolve computer problems for clients in person, or via telephone or electronically, maintain, manage, troubleshoot, and upgrade computer systems and servers for performance and security related issues. Further, the work may include providing assistance concerning the use of computer hardware and software, including printing, installation, word- processing, electronic mail, minor networking and operating systems. Provide end-user support for a variety ofweb applications.

Work Readiness Skills:

- **Collaboration skills:** Demonstration of the ability to work in teams of two or more to accomplish acommon goal/task.
- **Customer-service skills:** IT specialists must be empathetic and compassionate. They must often assist people who are frustrated with the software or hardware they are trying to use.
- **Listening skills:** IT Specialists must be able to understand the problems that their customers are describing and know when to ask questions to clarify the situation.
- **Problem-solving skills:** IT Specialists must identify both simple and complex technology issues, analyze them, and resolve them.
- **Communication skills:** IT Specialists must describe solutions to technology problems in a mannerthat both technical and nontechnical people can understand.
- **Writing skill:** Strong writing skills are essential in this career field. IT Specialists must be able to
- communicate effectively using multiple means of communication.

Expected industry credential (s) and/or certificate(s) granted upon successful completion of the program (ifapplicable):

Because of the wide range of skills needed for IT Specialist roles, there are many paths into this occupation. While a bachelor's degree may be required for some IT Specialist positions, an associate's degreeand/or postsecondary classes may be enough for others. Additionally, students can enhance their skills with related coursework, dual/concurrent enrollment and by taking advantage of internship opportunities.

CTE Program Requirements:

Prepare for and earn *ONE* of the following Credentials:	**+**	**The following minimum academics:**	**+**	**Work Based LearningExperience**
NOCTI Computer Networking Fundamentals **or** **Precision Exams:** IT Support andNetwork **or** **CompTIA IT Fundamentals and** **CompTIA A+**		4 Math		This standard acknowledges and adopts the work-based learning standards as developed by the Governor'sWorkforce Board And Professional/Workplace Skills (i.e., SkillsUSA ConnectCurriculum
CISCO CCENT (Certified Cisco Entry Network Technician) Certificate or End of Course validation letter and certificate provided by CISCO	+	4 English	+	
		3 Science		
College Board AP Computer Science Principles or AP Computer Science A (3 or better on exams)		3 Social Studies		
Project Lead the Way Three consecutive Course Certificates with proficient End of Course		IT Pathway Courses		
Dual/Concurrent Enrollment (Example: CCRI Cisco **OR** **P-TECH**)				

Job Outlook:

Employment in the IT pathway is projected to grow 11% from 2016 – 2026, faster than the average for all occupations. The IT pathway is expected to add about 88,500 new jobs, in the next 8 years in part due to a greater emphasis on cloud computing, the collection and storage of big data, more everyday items becoming connected to the Internet in what is commonly referred to as the "Internet of things" and the continued demand for mobile computing.

Job prospects should be favorable. There are usually clear advancement possibilities for IT support specialists, creating new job openings. Applicants with a bachelor's degree and a strong technical background should havethe best job opportunities.

Pay:

The entry-level annual median salary for an IT Specialist was $52,160 in 2016 according to the U.S. Bureauof Labor Statistics.

State & Area Data:

Additional resources can be found at the US Bureau of Labor and Statistics,http://www.dlt.ri.gov/lmi/ and http://WayToGoRI.org.

Similar Occupations: Desktop Support Technician; Help Desk Technician; Computer Technician; Network Technician; IT Support Analyst; Systems Administrator; Systems Analyst; IT manager; Programmer

GWB Priority Sector: Information Technology

Career Field: Service Desk Specialist

Technical Skills:

- Provide a single point of contact for all users of the company's infrastructure computing environment
- Understand support model and respond to questions or issues in accordance with standards andservice levels
- Monitor, manage, and escalate all incidents from start to finish according to Service Level Agreements
- Receive and record all calls from users
- Directly address common requests/issues
- Provide initial assessment of all incidents
- Resolve basic incidents and requests
- Make first attempt at incident resolution and/or effectively determine when incident should beescalated to 2nd level support staff based on standards and guidelines in place
- Consult more senior members of staff before providing "ad hoc" information regarding a service incident
- Keep users informed of status and progress of incidents
- Ensure calls are properly entered into call tracking systems in timely manner
- Thorough understanding of Service Desk telephone system and call trouble ticket process
- Strong understanding of the PC client computing infrastructure
- Knowledge of Windows operating systems, MS Office products, PC configurations, PC hardware, andnetworking.

Work readiness Skills:

- Excellent customer service and interpersonal skills; telephone etiquette.
- Strong oral and written communication skills (both technical and non-technical)
- Highly effective active listening skills, questioning, and issue management
- Demonstrated problem-solving skills
- Demonstrate excellent follow-through
- Team player
- Self-motivated
- Highly organized
- Commitment and willingness to continually learn new products and technologies

Expected industry credential(s) and/or certificate(s) granted upon successful completion of the program (if applicable): Bachelor's Degree; and/or Associate's Degree. 12-18 months' work experience preferred.

Benefits of this level of achievement in job market: While this is an entry point for employment for job seekers in the Information Technology pathway, a successful applicant is better prepared if applicant resume demonstrates a long-term internship/work experience plus some postsecondary training in Computer Studiesand General Information Processing.

Job Outlook: Employment opportunities for Information Technology show high growth (validated by the Bureau of Labor Statistics) and as of June 2016 incorporates an expanded definition of Information Technology occupations by using NAICS codes to identify high-tech industries in Rhode Island. In 2013 total employment across these more than 2,200 high-tech industry establishments was more than 20,700 workers accounting for 5.2% of Rhode Island private sector employment. * Employers are stating that Information Technology positions are difficult to fill, and Labor Market Information projections demonstrate employment growth of 17% between 2012 – 2022**.

Pay – The entry-level median annual wage for Help Desk Specialist is $26,499.00 ($12.74 per hour) in May 2016.

** Enter IT RI, An analysis and report of in-demand IT skill sets, Bridge Technical Talent & Tech Collective.*

*** RI Department of Labor and Training Labor Market Information 2022 Occupational Outlook.*

US Dept. of Labor (USDOL) Career Cluster:

Law, Public Safety & Government

US Dept. of Labor (USDOL) Career Cluster: Law, Public Safety &Government

(Not a RI Governor's Workforce Board Priority Sector)

Career Field: Law Enforcement

Skills/ knowledge needed to be prepared for entry-level work:

1. Knowledge of the law
2. Community relations
3. Departmental procedures
4. Leadership skills
5. Physical Stamina/Physical Strength
6. Communication Skills - Report Writing

Required curriculum: Roger Williams University, a Rhode Island Department of Education approved curriculumconsists of a three/four course sequence: Introduction to Criminal Justice; Law & Society; Forensics Science. Optional Courses: Sociology and/or Psychology.

Expected industry credential (s) and/or certificate(s) granted upon successful completion of the program (if applicable):

1. National Incident Management System Training (NIMS)
2. First Aid/CPR
3. OSHA 10-General Standards
4. NOCTI – Criminal Justice
5. Certificate of Completion (meeting all standards)

Prerequisites for acquiring credential or certificate: Candidates must be U.S. citizens, usually at least 21 yearsold, and able to meet rigorous physical and personal qualifications.

Benefits of this level of achievement in job market: Prepares student with entry-level skills to obtain employment with certain specific Criminal Justice (Police and Corrections) agencies within Rhode Island.

Job Outlook: Employment of police and detectives is projected to grow 4 percent from 2014 to 2024, slower thanthe average for all occupations. The continued desire for public safety is expected to lead to new openings for officers, although demand may vary by location.

Pay: The median annual wage the profession of a police officer was $43742.40 ($21.03 per hour) in May 2016. The median annual wage for the profession of Correctional Officers/Bailiffs was $42,820.00 ($20.59 per hour) in May 2016.

GWB Priority Sector: Law, Public Safety & Government

(Governor's Workforce Board Priority – Healthcare)

Career Field: Emergency Medical Responder*

Skills/ knowledge needed to be prepared for entry-level work:

1. Use knowledge of the EMS system, safety/well-being of the EMR, and medical/legal issues at the scene ofan emergency while awaiting a higher level of care.
2. Have awareness of local public health resources and the role of EMR personnel in public health emergencies.
3. Use simple medical and anatomical terms.
4. Use simple knowledge of the anatomy and function of the upper airway, heart, vessel, blood, lungs, skin,muscles and bones the foundation of emergency care.
5. Use simple knowledge of age-related differences to assess and care for patients.
6. Apply knowledge (fundamental depth, foundational breadth) of general anatomy and physiology to assure patent airway, adequate mechanical ventilation and respiration while awaiting additional EMSresponse for patients of all ages.
7. Use simple knowledge of shock and respiratory compromise to respond to life threats.
8. Use assessment information to recognize shock, respiratory failure or arrest, and cardiac arrest based onassessment findings, and manage the emergency while awaiting additional emergency response.
9. Conduct Patient assessment.
10. Conduct primary assessment.
11. Take history and vital signs.
12. Use scene information and simple patient assessment findings to identify and manage immediate lifethreats and injuries within the scope of practice of the EMR.
13. Practice principles of communicating with patients in a manner that achieves a positive relationship.
14. Recognize and manage life threats based on assessment findings of a patient with a medical emergencywhile awaiting additional emergency response.
15. Identify and categorize trauma patients and activate the appropriate trauma system approach.
16. Use knowledge of EMR systems to recognize and manage life threats related to trauma/shock, resuscitation, and trauma such as bleeding and shock, chest and abdominal emergencies, soft tissueinjuries, injuries to head and spine, musculoskeletal injuries, and environmental emergencies.
17. Recognize and manage life threats based on assessment findings for a patient with special needs such asobstetrics and neonatal care, pediatric emergencies, geriatric patients, and patients with special challenges and situations while awaiting additional emergency response.
18. Use knowledge of operational roles and responsibilities to ensure patient, public, and personal safety.

Expected industry credential (s) and/or certificate(s) granted upon successful completion of the program (if applicable):

1. First Aid
2. CPR/AED
3. Certificate of Completion (meeting all standards)

Prerequisites for acquiring credential or certificate: The students, who wish to become a skilled EMT in Rhode Island, have to go through an EMT training program and may have to provide a Bureau of Criminal Identification(BCI) report. Student must be 18 years old with a high school diploma.

Benefits of this level of achievement in job market: This course is a preparatory course to the EMT course and instructs students in basic knowledge, application, and skills of an emergency medical responder. Students whosuccessfully complete this course would be able to volunteer as a medical responder and/or gain employment where CPR, First Aid, and/or AED certificates are required.

Job Outlook - Employment of emergency medical technicians (EMTs) and paramedics is projected to grow 24 percent from 2014 to 2024, much faster than the average for all occupations. Emergencies, such as car crashes,natural disasters, and acts of violence, will continue to create demand for EMTs and paramedics.

Pay – The most recent Rhode Island Labor Market Information for this profession dates from May 2017 and theentry-level wage for Emergency Medical Responder at that time was $36,254.40.00 ($17.43 per hour).

***Approved standard under the Health Careers/Medical Pathways**

US Dept. of Labor (USDOL) Career Cluster: Law, Public Safety &Government

(Not a RI Governor's Workforce Board Priority Sector)

Career Field: Legal Services, Paralegal

Skills/ knowledge needed to be prepared for entry-level work:

1. Community relations
2. Departmental procedures/Organizational skills
    a. Examine statues, articles, constitutions, codes, etc. for the preparation of documents
    b. Maintain files and preparing affidavits
    c. Oversee the organization of legal volumes and ensure volumes are accurate/up to date
3. Leadership skills
4. Communication Skills - Report Writing
    a. Serve as an arbitrator or mediator between parties in dispute
    b. Investigate facts and laws to determine causes of action for case preparation purposes

Required Curriculum: Roger Williams University, a Rhode Island Department of Education approved curriculumconsists of a three/four course sequence: Introduction to Criminal Justice; Law & Society; Forensics Science. Optional Courses: Sociology and/or Psychology.

Expected industry credential (s) and/or certificate(s) granted upon successful completion of the program (if applicable): NOCTI Legal Services

Prerequisites for acquiring credential or certificate: Most paralegals and legal assistants have an associate's degree or a certificate in paralegal studies. In some cases, employers may hire college graduates with a bachelor'sdegree but no legal experience or specialized education and train them on the job.

Benefits of this level of achievement in job market: Employment of paralegals and legal assistants is projected togrow 8 percent from 2014 to 2024, about as fast as the average for all occupations. This occupation attracts manyapplicants, and competition for jobs will be strong. Experienced, formally trained paralegals with strong computer and database management skills should have the best job prospects.

Job Outlook - Employment of paralegals and legal assistants is projected to grow 8 percent from 2014 to 2024,about as fast as the average for all occupations. This occupation attracts many applicants, and competition for jobs will be strong. Experienced, formally trained paralegals with strong computer and database management skills should have the best job prospects.

Pay – The median annual wage for paralegals and legal assistants was $49,500 ($23.80) in May 2016.

GWB Priority Sector: Law, Public Safety & Government
(Governor's Workforce Board Priority – Defense)

Career Field: Military

Skills/ knowledge needed to be prepared for entry-level work:

Students should be exposed to the following skills or knowledge in order to prepare for entry-level work as enlisted personnel

- Personal management skills. Students will learn how to manage and organize their time and learn how tomaintain a healthy balance so they can assess and respond to varied situations
- Communication skills. Students will learn how to interact with others, present information to varied audiences and respond in an appropriate manner
- Teamwork skills. Students will learn how to work collaboratively with a diverse group to solve problems,plan, and achieve the mission and vision of the organization
- Physical fitness skills. Students must engage in and be exposed to varied and multiple physical fitness activity\ies in order to participate in or support situations that may involve challenging or difficult topography.
- Healthy lifestyle skills: Students must achieve and maintain a healthy lifestyle in order to be prepared foremergency and non-emergency situations
- Critical thinking skills: Students must learn to solve problems and handle stressful situations that mayarise in a combat or crisis situation
- Leadership skills. Students must develop l skills in order to plan, organize, and lead others to maintainorder, respond to problematic situations and resolve crises during challenging situations.

Required Curriculum: The curriculum is dictated by the specific branch of service: Naval Science; Army Service,Marines; and Airforce.

Expected industry credential (s) and/or certificate(s) granted upon successful completion of the program (if applicable):

Students who complete a JROTC program are eligible to receive scholarship awards at ROTC participating colleges. Students who complete a JROTC program are eligible for advanced rank and pay when enlisting in a branch of the service. Students may receive training for and certification from a variety of licenses depending on the branch of ROTC.For example, students in the Air Force JROTC program can receive training and be eligible for the pilot exam.

Prerequisites for acquiring credential or certificate: Students may opt to participate in an ROTC

program at thepostsecondary level if they plan to pursue an Officer pathway. Students who participate in college ROTC may receive full financial scholarship in exchange for a service commitment upon graduation.

Benefits of this level of achievement in job market: Each year, the service establishes recruiting goals to replace people completing their term of service or who are leaving the military through retirement or others for other reasons. In May of 2015, more than 2.3 million people served in the Armed Forces.

Job Outlook:
According to the U.S. Bureau of Labor and Statistics Occupational Outlook Handbook, opportunities for qualified individuals to fill entry-level and professional positions as members of the Armed Forces are very good as individuals move up through the ranks, leave the service, and or retire. Individuals who enlist in the service selectfrom a variety of career fields. These fields are Accounting, Budget and Finance; Arts, Communications, Media and Design; Aviation; Business Administration and Operations; Combat Operations, Communications Equipment Technicians, Construction, Building and Extraction; Counseling, Social Work and Human Services, Education and Training; Engineering and Scientific Research, Environmental Health and Safety and Health Care Practitioners.

Within each of these fields are a variety of positions for both enlisted personnel and officers.

Pay: Basic pay is based on rank and time in service. Students who complete a JROTC program will receive advanced rank and pay when enlisting in the service. This results in an increase of approximately $2400 a yearfor entry-level enlisted personnel plus the advancement in rank:

- Entry-Level as enlisted personnel…. $21,520 (E2-w/less than 2 yrs.)
- Mid-level as enlisted personnel…$38,563.20 (E-5 w/10 yrs.)
- Mid-level as a warrant officer… $55,123.20 (W-2 w/10 yrs.)
- Midlevel as an officer…$87,116.40 (O-5 w/10yrs)

In addition, enlisted personnel and officers receive free housing for an on base residence and a housing allowance for off base residence. There are other benefits to the service such as education credit, and health coverage provided by the U.S.Veterans program.

US Dept. of Labor (USDOL) Career Cluster:

Manufacturing

GWB Priority Sector: Manufacturing

Career field: Electronics Assembly Technician

Knowledge needed to be prepared for entry-level work:

- Electronic component recognition
- Hand soldering of electronic components
- Test and calibrate electronic devices using instrumentation
- Maintain documentation for work orders
- 21st Century Work Readiness Skills (Professionalism, Communication, Critical Thinking, and Collaboration)

Expected industry credentials granted upon successful completion of the program:
IPC Training and Certifications in the following areas:

- Overview of Electronics Assembly (153C)
- Safety in Electronics Assembly (66C)
- ESD Control for Electronics Assembly (74C)
- Component Identification (64C)
- Soldering Terminals (18C)
- Through Hole Solder Joint Quality Standards (PTH-F)
- Introduction to Hand Soldering (142C)
- Surface Mount Solder Joint Quality Standards (SMT-F)
- Hand Soldering - SMT Component Installation (144C)

Job Outlook:
Employment of solderers is projected to grow 6 percent from 2016 to 2026, about as fast as the average for all occupations.

Pay : The median annual wage for Electronic Equipment Assemblers is $39,000

What Electronics Assembly Technician Do:
Read and interpret schematic drawings, diagrams, blueprints, specifications, work orders, or reports to determine materials requirements or assembly instructions. Assemble electrical or electronic systems or support structures and install components, units, subassemblies, wiring, or assembly casings, using rivets, bolts, soldering equipment. Adjust, repair, or replace electrical or electronic component parts to correct defects and to ensure conformance to specifications. Position, align, or adjust workpieces or electrical parts to facilitate wiring or assembly. Explain assembly procedures or techniques to other workers.

Work Environment:
Indoors, Environmentally Controlled

Similar Occupations:
Electromechanical Engineering Technologist

Industrial Engineering Technologist
Manufacturing Engineering Technologist

State & Area Data : Additional resources can be found at http://www.dlt.ri.gov/lmi/

Instructor Certification Requirements: Under advisement by RIDE Certification Team.
** RI Department of Labor and Training Labor Market Information Occupational Outlook.*

GWB Priority Sector: Manufacturing

Career Field: Entry-level Manufacturing

Skills: Essential foundational skills needed for success in jobs across a variety of industries and occupations. Students must be able to successfully complete three assessments: Applied Mathematics, Locating Information,and Reading for Information.

Knowledge needed to be prepared for entry-level work: These measure a range of essential work skills, including the ability to:

- Perform basic mathematic operations relevant to the workplace.
- Read and understand documents commonly found in the workplace.
- Find information presented in common workplace graphics.
- Set up and solve complex work-related math problems.
- Determine the relevance of written information to work-related tasks.
- Apply information derived from graphics to work-related problems.

Required Curriculum:

Expected industry credential(s) or certificate(s) granted upon career and technical education program completion (if applicable): National Career Readiness Certificate (ACT NCRC). Students must successfully complete the three ACT WorkKeys assessments: Applied Mathematics, Locating Information, and Reading forInformation. Student must achieve silver, gold, or platinum score to demonstrate that they have the requisitebaseline skills to enter workforce.

Entry-Level Education: High school diploma or equivalent

Prerequisites for acquiring credential or certificate: None

Benefits of this level of achievement in the job market: Manufacturing has opportunities for workers with arange of backgrounds. Some qualities and skills are often required. Workers also need a combination of education and training, which varies by occupation. For example, electrical and electronic equipment assemblers typically need a high school diploma or the equivalent plus on-the-job training of 1 month or less.

Job Outlook*: Employment of machinists and tool and die makers is projected to grow 6 percent from 2014 to 2024, about as fast as the average for all occupations. Workers familiar with computer software applications andwho can perform multiple tasks in a machine shop will have the best job opportunities.

Pay:** The most recent Rhode Island Labor Market Information for this profession dates from May 2015 and theentry-level wage for Manufacturing at that time was $35,048.00 ($16.85 per hour).

* US Department of Labor; Bureau of Labor Statistics; Occupational Outlook Handbook
** RI Department of Labor & Training; Labor Market Information; Occupational Employment Statistics

GWB Priority Sector: Manufacturing

Career Field: Entry-level Manufacturing and above (Machinists and Tool & Die Makers)

Skills: Essential technical skills needed for success in jobs across a variety of advanced manufacturing occupations. Students need to demonstrate mastery of the core competencies of manufacturing production atthe front-line (entry-level through front-line supervisor).

Knowledge needed to be prepared for entry-level work:

- Safety
- Quality Practices & Measurement
- Manufacturing Processes & Production
- Maintenance Awareness
- Green Production (optional)

Required Curriculum: The key activities for the four critical functions (as well as the Green certificate) are foundon page 3.

Expected industry credential(s) or certificate(s) granted upon career and technical education program completion (if applicable): Manufacturing Standards Skills Council (MSSC) Certified Production Technician (CPT)program. Students must earn the first four certificates to receive the full CPT certification (Note: Green Production is not presently required for full-CPT). A student can earn a Certificate if they pass one or more assessments. However, they must pass all four assessments to earn the full CPT certification.

Entry-Level Education: High School diploma or equivalent

Prerequisites for acquiring credential or certificate: National Career Readiness Certificate (ACT NCRC); studentmust achieve at least a silver level score.

Benefits of this level of achievement in job market: The goal of the CPT certification program is to raise the levelof performance of production workers both to assist the individuals in finding higher-wage jobs and to help employers ensure their workforce increases the company's productivity and competitiveness.

Job Outlook*: Employment of machinists and tool and die makers is projected to grow 6 percent from 2014 to 2024, about as fast as the average for all occupations. Workers familiar with computer software applications andwho can perform multiple tasks in a machine shop will have the best job opportunities.

Pay:** The most recent Rhode Island Labor Market Information for this profession dates from May 2015 and theentry-level wage for Manufacturing entry-level and above was $24,960.00 ($12.00 per hour).

MSSC CRITICAL PRODUCTION FUNCTIONS SAFETY

1. Work in a Safe and Productive Manufacturing Workplace
2. Perform safety and environmental inspections
3. Perform emergency drills and participate in emergency teams
4. Identify unsafe conditions and take corrective action
5. Provide safety orientation for all employees
6. Train personnel to use equipment safely
7. Suggest processes and procedures that support safety of work environment
8. Fulfill safety and health requirements for maintenance, installation, and repair
9. Monitor safe equipment and operator performance
10. Utilize effective, safety-enhancing workplace practices

QUALITY PRACTICES & MEASUREMENT

1. Participate in periodic internal quality audit activities
2. Check calibration of gages and other data collection equipment
3. Suggest continuous improvements
4. Inspect materials and product/process at all stages to ensure they meet specifications
5. Document the results of quality tests
6. Communicate quality problems.
7. Take corrective actions to restore or maintain quality
8. Record process outcomes and trends
9. Identify fundamentals of blueprint reading
10. Use common measurement systems and precision measurement tools

MANUFACTURING PROCESSES & PRODUCTION

1. Identify customer needs
2. Determine resources available for the production process
3. Set up equipment for the production process
4. Set team production goals
5. Make job assignments
6. Coordinate workflow with team members and other work groups
7. Communicate production and material requirements and product specifications
8. Perform and monitor the process to make the product
9. Document product and process compliance with customer requirements
10. Prepare final product for shipping or distribution

MSSC CRITICAL PRODUCTION FUNCTIONS

MAINTENANCE AWARENESS

1. Perform preventive maintenance and routine repair
2. Monitor indicators to ensure correct operations
3. Perform all housekeeping to maintain production schedule
4. Recognize potential maintenance issues with basic production systems,

including knowledge of when toinform maintenance personnel about problems with:

- Electrical systems
- Pneumatic systems
- Hydraulic systems
- Machine automation systems
- Lubrication processes
- Bearings and couplings
- Belts and chain drives

GREEN PRODUCTION (optional)

1. Train Workers in Environmental Issues
2. Implement & Promote Environmental Program, Projects, Policies or Procedures
3. Conduct Environmental Incident and Hazard Investigations
4. Conduct Preventive Environmental Inspections
5. Monitor Environmental Aspects at Each Stage of Production
6. Implement Continuous Improvement in Environmental Assurance
7. Using Advanced Material in Production to Reduce Waste
8. Reprocess Materials by Recycling and Reuse

* US Department of Labor; Bureau of Labor Statistics; Occupational Outlook Handbook
** RI Department of Labor & Training; Labor Market Information; Occupational Employment Statistics

RI Career and Technical Education Board of Trustees Program Industry Standards	
GWB Priority Sector	Manufacturing - Defense Approved by CTEBOT and adopted by RIDE on June 18, 2021; effective July 1, 2021
Career Field	Entry-Level Machinist

Career Pathway Plan of Study for > Learners > Parents > Counselors > Teacher/Faculty
This Career Pathway Plan of Study (based on the Manufacturing-Defense Career Cluster can serve as a guide, along with other career planning materials, as learners continue on a career path. Courses listed within this plan are only recommended coursework and should be individualized to meet each learner's educational and career goals. This Plan of Study, used for learners at an educational institution, should be customized with course titles and appropriate high school graduation requirements as well as college entrance requirements.

Work-Based Learning	Academic Content				CTE Content	
Work-Based Learning: (Total of 80 Hours)	**ELA**	**Math**	**Science**	**Social Studies, Sciences**	**CTE Coursework**	**Primary Credential**
80 hours of Internship, Service Learning, Industry-based Project, or School-based Enterprise in the four years	Four years of ELA aligned to the BEP and LEA graduation reqs	Four years of Math aligned to the BEP and LEA graduation reqs	At least three years of Science aligned to the BEP and LEA graduation reqs, including Chemistry	At least three years aligned to the BEP and LEA graduation reqs	At least three consecutive years of Manufacturing: Machine Technology 1 Machine Technology 2 Machine Technology 3	Completers would need the following: -NIMS Measurement, Materials and Safety (Modules 1-6) -OSHA10 And one of the following: -NIMS: Milling 1 (Modules 11, 18, &19) -NIMS: Turning 1: Turning Between Centers (Modules 11,13, &14) -NIMS: Turning 1: Chucking (Modules 11, 15, & 16) AND one of the following:

						-NIMS: CNC turning: Programming Setup & Operations (Modules 11 & 26) -NIMS: CNC Milling: Programming, Setup & Operations (Modules 11 & 26)

Salary Information:		**Projected Job Outlook:**
The median annual wage for Machinists was $45,840 in May 2020. The median annual wage for tool and die makers was $54,760 in May 2020.		Overall employment of machinists and tool and die makers is projected to grow 4% from 2019 to 2029, about as fast as average for all occupation. Many job opportunities are expected to arise from the need to replace workers who leave the occupation each year.
**RI Department of Labor and Training; Labor Market Information; Occupational Employment Statistics*		**US Department of Labor; Bureau of Labor Statistics; Occupational Outlook Handbook*
Employability Skills and Knowledge for Entry Level:		**Occupations to this Pathway:**
Problem Solving Professionalism Collaboration Critical Thinking Communication Creativity Flexibility Initiative Orientation to the trades Read blueprints, sketches, or computer-aided design (CAD) and computer-aided manufacturing (CAM) files Set up, operate, and disassemble manual, automatic, and computer numerically controlled (CNC) machine tools Align, secure, and adjust cutting tools and workpieces Monitor the feed and speed of machines Turn, mill, drill, shape, and grind machine parts to specifications Measure, examine, and test completed		Industrial machinery mechanics Machinery maintenance Sheet metal Machinery Maintenance Tool Die Makers

products for defects Smooth the surfaces of parts or products Present finished workpieces to customers and make modifications if needed		
Required Curricula:		**Teacher(s), CTE Course(s), & Certification:**
National Institute for Metalworking Skills (NIMS) -Module 1: Identify & Demonstrate use of Machine Safety & PPE Competency-Based Apprenticeship System for Machinist -Module 2: Demonstrate Compliance with Lock-out/Tag-out Procedures Competency-Based Apprenticeship System for Machinist -Module 3: Hazardous Material Handling and Storage Competency-Based Apprenticeship System for Machinist -Module 4: Part Inspection Competency-Based Apprenticeship System for Machinist -Module 5 &6: Process Control and Process Adjustment Competency-Based Apprenticeship System for Machinist -Module 11: Job Process Planning Competency-Based Apprenticeship System for Machinist -Module 13 & 14: Turning between Centers Level I & II Competency-Based Apprenticeship System for Machinist -Modules 15 &16: Turning Operations: Chucking Competency-Based Apprenticeship System for Machinist -Module 17: Milling: Square Up a Block Competency-Based Apprenticeship System for Machinist -Modules 18 & 19: Manual Milling: Vertical and Horizontal Competency-Based Apprenticeship System for Machinist -Module 26: CNC Basic Programming Competency-Based Apprenticeship System for Machinist		Manufacturing: Machine Trades (High school Diploma + 5 years min. industry experience documented) Secondary Grades career and Technical Education Teacher, grades 7-12 Machine Trades NOCTI 5176 Precision Machining
Postsecondary Partnerships:		
CCRI, CMCC, NEIT		
Recommended Elements:		
Complementary Coursework (Chemistry, Geometry, Pre-Calculus, etc.) Physics		

CTSO: SkillsUSA
Work-based learning – Type and Description: Internship, Service Learning, Industry Project, School-based Enterprise, Apprenticeship
Credential(s) Identify Course Alignment:

RI Career and Technical Education Board of Trustees Program Industry Standards	
GWB Priority Sector	Manufacturing - Defense Approved by CTEBOT and adopted by RIDE on June 18, 2021; effective July 1, 2021
Career Field	Sheet Metal Worker

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Work-Based Learning	Academic Content				CTE Content		
Work-Based Learning: (Total of 80 Hours)	**ELA**	**Math**	**Science**	**Social Studies, Sciences**	**CTE Coursework**	**Other Courses or Learning Activities**	**Primary Credential (Earned at least one of the following)**
80 hours of Internship, School-based Enterprise, and/or Industry Based Project in the program.	Four years of ELA aligned to the BEP and LEA graduation reqs	Four years of Math aligned to the BEP and LEA graduation reqs	At least three years of Science aligned to the BEP and LEA graduation reqs	At least three years aligned to the BEP and LEA graduation reqs	At least three consecutive years of Sheet Metal Coursework NCCER Core & Level 1, 2, & 3 (Module 4 – Louvers, Dampers, and Access Doors) Sheet Metal 3	First Aid	Completers would need the following: -OSHA 10; HBI Certificate (Units 1-5) mandatory and Unit #14 HVAC Construction Technology (specific HBI) See specific required modules below
Salary Information:				**Projected Job Outlook:**			

The median annual wage for sheet metal workers was $51,370 in May 2020. The median wage is the wage at which half the workers in an occupation earned more than that amount, and half earned less. The lowest 10% earned less than $30,460, and the highest 10% earned more than $87,470.	The projected percent change in employment from 2019 to 2029. The average growth rate for all occupations is 4%.
**RI Department of Labor and Training; Labor Market Information; Occupational Employment Statistics*	**US Department of Labor; Bureau of Labor Statistics; Occupational Outlook Handbook*
Employability Skills and Knowledge for Entry Level:	**Occupations to this Pathway:**
Problem Solving Professionalism Collaboration Critical Thinking Communication Creativity Flexibility Initiative Relevant Math Basic Operational Techniques	Assemblers and Fabricators Metal and Plastic Machine Workers Sheet metal Boilermakers Glaziers Heating, Air Conditioning, and Refrigeration Mechanics and Installers Insulation workers
Required Curricula:	**Related Teacher Certification:**
NCCER Level 1: Module 1 – Introduction to the Sheet Metal Trade Module 2 – Tools of the Trade Module 3 – Introduction to the Sheet metal Layout and Processes Module 4 – Trade Math One NCCER Level 2: Module 1 – Trade Math Two Module 6 – Bend Allowance NCCER Level 3: Module 4 – Louvers, Dampers, and Access Doors	High School Diploma +5 years minimum industry experience documented Bachelor's Degree +3 years minimum industry experience documented and a CTE certificate (or working towards one) in the related aligned field pursuant to RIDE regulations
Postsecondary Partnerships:	
Recommended Elements:	
Complementary Coursework (Chemistry, Geometry, Pre-Calculus, etc.):	

CTSO: SkillsUSA
Work-based learning – Type and Description: Internship, Industry Project, School-based Enterprise, Service Learning, Apprenticeship

RI Career and Technical Education Board of Trustees Program Industry Standards	
GWB Priority Sector	Manufacturing - Defense Approved by CTEBOT and adopted by RIDE on June 18, 2021; effective July 1, 2021
Career Field	Welder – Entry Level

Career Pathway Plan of Study for > Learners > Parents > Counselors > Teacher/Faculty
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Work-Based Learning	Academic Content				CTE Content	
Work-Based Learning: (Total of 80 Hours)	**ELA**	**Math**	**Science**	**Social Studies, Sciences**	**CTE Coursework and Experiences**	**Primary Credential**
80 hours of Internship, School-based Enterprise, and/or Industry Based Project in the program.	Four years of ELA aligned to the BEP and LEA graduation reqs	Four years of Math aligned to the BEP and LEA graduation reqs	At least three years of Science aligned to the BEP and LEA graduation reqs	At least three years aligned to the BEP and LEA graduation reqs	At least three consecutive years of Welding coursework NCCER Core and Level 1 and 2 or AWS Sense curriculum See curriculum modules below	Completers would need the following: -OSHA10 Maritime AND -American Welding Society Sense (AWS) -Level 1 GMAW Cert (optional) -EB GMAW-Pulse -SENSE Level 1 SMAW -SENSE Level 1 FCAW See specific modules below

Salary Information:		Projected Job Outlook:
The median annual wage for welders, cutters, solderers, and brazers was		Employment of welders, cutters, solderers, and brazers is projected to grow 4% from 2014-2024,

$44,190 in May 2020		slower than the average for all occupations. Despite slower than average employment growth, skilled welders with up-to-date training should have good job opportunities.
**RI Department of Labor and Training; Labor Market Information; Occupational Employment Statistics*		**US Department of Labor; Bureau of Labor Statistics; Occupational Outlook Handbook*
Employability Skills and Knowledge for Entry Level:		**Occupations to this Pathway:**
Problem Solving Professionalism Collaboration Critical Thinking Communication Creativity Flexibility Initiative Safety Relevant Math Basic Operational Techniques Quality Control Human Relations		Welders Assemblers & Fabricators Shipfitters Boilermakers Plumbers, Pipefitters, and Steamfitters Sheet metal workers
Approved Curricula:		**Related Teacher Certification:**
National Center for Construction Education Research (NCCER) or AWS All schools have to do the minimum instruction required to attain AWS SENSE Level 1 Certification (Minimum estimated instructional hours: 135) NCCER Core Model #7 Communication Skills & #8 Employability Skills NCCER Level 1: Module 1 – Safety Module 2 – Oxy Fuel Module 3 – Plasma Module 6 – Weld Quality NCCER Level 2: Modules 1 & 2 – Symbols and Drawings Modules 5 & 6 – GMAW and GMAW-Plate (Short and Spray) (Minimum estimated instructional hours: 140)		High School Diploma + 5 years minimum industry experience documented Bachelor's Degree + 3 years minimum industry experience documented and a CTE certificate (or working towards one) in the related aligned field pursuant to RIDE regulations (e.g., Welding)

Add on to the AWS curriculum for additional credentials NCCER Level 1: Module 4 Carbon Arc Module 5 Mechanical Oxy Fuel Modules 7, 8, 9, and 11 SMAW NCCER Level 2: Modules 5 and 7 – FCAW Modules 5 & 6 GMAW Plate (Pulse) = EB Credential Modules 8 & 9 – GTAW (Minimum estimated instructional hours: 270)		
Postsecondary Partnerships:		
General Dynamics Electric Boat, New England Institute of Technology, Community College of Rhode Island		
Recommended Elements:		
Complementary Coursework (Chemistry, Geometry, Pre-Calculus, etc.): Physics		
CTSO: SkillsUSA		
Work-based learning – Type and Description: Internship, Industry Project, School-based Enterprise		
Credential(s) Identify Course Alignment:		

GWB Priority Sector: Manufacturing

Career Field: Entry-level and above Production Manufacturing Specialist

Skills / knowledge needed to be prepared for entry-level work: Core industry-wide skills required for skilled production occupations in all sectors of advanced manufacturing. Students need to demonstrate competency inthe following areas: (1) Math and Measurement, (2) Spatial Reasoning and Manufacturing Technology, and (3) Business Acumen and Quality.

Required Curriculum:

Expected industry credential(s) or certificate(s) granted upon career and technical education program completion (if applicable): Manufacturing Skills Institute (MSI) Manufacturing Technician 1 (MT1) certification. Students must earn the first four certificates to receive the full CPT certification (Note: Green Production is not presently required for full-CPT). A student can earn a Certificate if they pass one or more assessments. However,they must pass all four assessments to earn the full CPT certification.

Entry-Level Education: High school diploma or equivalent

Prerequisites for acquiring credential or certificate: National Career Readiness Certificate (ACT NCRC; student must achieve at least a silver level score) and Manufacturing Standards Skills Council (MSSC) Certified ProductionTechnician (CPT) program certificates ('Green Production' not required).

Benefits of this level of achievement in job market:

The goal of the MT1 certification program is to:

- Develop a workforce pipeline capable of meeting the requirements of existing and emerging employersin advanced technology industries such as manufacturing
- Provide a customized fast track, pathway to stackable credentials for 21st Century advanced technologycareers in industry
- Provide online and instructor-led training to address identified technical skill gaps
- Provide a pathway to advanced level training and specialized training based on industry requirements forpotential new hires and incumbent workers.

Job Outlook*: Employment of machinists and tool and die makers is projected to grow 6 percent from 2014 to 2024, about as fast as the average for all occupations. Workers familiar with computer software applications andwho can perform multiple tasks in a machine shop will have the best job opportunities.

Pay:** The most recent Rhode Island Labor Market Information for this profession dates from May 2015 and theentry-level wage for Manufacturing entry-level and above was $35,048.00 ($16.85 per hour).

* US Department of Labor; Bureau of Labor Statistics; Occupational Outlook Handbook

** RI Department of Labor & Training; Labor Market Information; Occupational Employment Statistics

GWB Priority Sector: Manufacturing

Career Field: Entry-level and above for any logistical function

Skills: Essential technical skills needed for success in jobs across a variety of advanced manufacturing occupations. Students demonstrate their understanding of the core skills and knowledge of logistics through twoprograms.

Knowledge needed to be prepared for entry-level work: The key activities for the two programs are attached.

Expected industry credential(s) or certificate(s) granted upon career and technical education program completion (if applicable): Manufacturing Standards Skills Council (MSSC) Certified Logistics Technician (CLT) program. Students must earn the foundational-level Certified Logistics Associate (CLA) Certificate and the mid-level technical CLT Certification. Before sitting for the CLT assessment, candidates must have a CLA Certificate.

Prerequisites for acquiring credential or certificate: National Career Readiness Certificate (ACT NCRC; student must achieve at least a silver level score) and Manufacturing Standards Skills Council (MSSC) Certified ProductionTechnician (CPT) program certificates ('Green Production' not required).

Benefits of this level of achievement in job market: The goal of the CLT certification program is to raise the levelof performance of logistics workers both to assist the individuals in finding higher-wage jobs and to help
employers ensure their workforce increases the company's productivity and competitiveness.

Job Outlook*: The U.S. Department of Labor predicts employment to hold steady, with better trained workersreceiving more opportunities.

Pay:** The most recent Rhode Island Labor Market Information for this profession dates from May 2015 and theentry-level wage for Certified Logistics Technician entry-level was $28,038.00 ($13.48 per hour).

* US Department of Labor; Bureau of Labor Statistics; Occupational Outlook Handbook
** RI Department of Labor & Training; Labor Market Information; Occupational Employment Statistics

MSSC LOGISTICS PROGRAMS

CERTIFIED LOGISTICS ASSOCIATE (CLA)

1. Global supply chain logistics life cycle
2. Logistics environment
3. Material handling equipment
4. Safety principles
5. Safe material handling and equipment operation

6. Quality control principles
7. Workplace communications
8. Teamwork and workplace behavior to solve problems
9. Using computers

CERTIFIED LOGISTICS TECHNICIAN (CLT)

1. Product receiving
2. Product storage
3. Order processing
4. Packaging and shipment
5. Inventory control
6. Safe handling of hazmat materials
7. Evaluation of transportation modes
8. Dispatch and tracking
9. Measurements and metric conversions

GWB Priority Sector: Manufacturing

Career Field: Entry-level and above in metalworking industry or function

Skills: Skills in the metalworking industry are validated through the National Institute for Metalworking Skills (NIMS) machining and metal-forming certifications. The certifications are earned through secondary, postsecondary, and work-based curricula that include both "hands-on" performance and theory tests. 52 NIMScredentials allow employers to hone their credentialing requirements and choose only those certifications that are applicable to the needs of the company.

Knowledge needed to be prepared for entry-level work:

- Measurement, Materials & Safety
- Job Planning, Benchwork & Layout
- Manual Milling Skills I
- Turning Operations: Turning Between Centers
- Turning Operations: Turning Chucking Skills
- Grinding Skills, I
- Drill Press Skills I
- CNC Turning: Programming Setup & Operations
- CNC Milling: Programming Setup & Operations

Required Curriculum:

Expected industry credential(s) or certificate(s) granted upon career and technical education program completion (if applicable): National Institute for Metalworking Skills (NIMS) machining and metal-formingMachining Level I certification.
Entry-Level Education: High school diploma or equivalent

Prerequisites for acquiring credential or certificate: National Career Readiness Certificate (ACT NCRC; student must achieve at least a silver level score) and Manufacturing Standards Skills Council (MSSC) Certified ProductionTechnician (CPT) program certificates ('Green Production' not required).

Benefits of this level of achievement in job market: With NIMS performance measures, the students know clearly what is expected of them whether it is for graduation, hiring or advancement. The NIMS credential clearlydemonstrates that the credential holder met the industry benchmark for that competency. Metalworking companies use the credentials as a basis for recruiting, hiring, placement and promotion. The guesswork is removed from the human resource process. Companies can advertise for specific NIMS credentialed skills, preferring or requiring certain credentials.

Job Outlook*: Employment of machinists and tool and die makers is projected to grow 6% from 2014 to 2024, about as fast as the average for all occupations. Workers familiar with computer software applications and who can perform multiple tasks in a machine shop will have the best job opportunities.

Pay:** The most recent Rhode Island Labor Market Information for this profession dates from May 2015 and theentry-level wage for Manufacturing entry-level and above was $35,048.00 ($16.85 per hour).

* US Department of Labor; Bureau of Labor Statistics; Occupational Outlook Handbook
** RI Department of Labor & Training; Labor Market Information; Occupational Employment Statistics.

US Dept. of Labor (USDOL) Career Cluster:

Marine Trades

GWB Priority Sector: Marine Trades

Career Field: Boat Building

Skills/ knowledge needed to be prepared for entry-level work:

1. Orientation to the Marine Trades
2. OSHA 10 Safety (Maritime, Construction and/or General)
3. Basic Woodworking and mechanical skills
4. Boatbuilding terminology, materials, and methods
5. Related industry math and boat plans and/or blueprint reading
6. Technology specific equipment and basic operational techniques
7. Quality control
8. Work-based learning opportunities
9. Human relations, collaboration and problem solving (see 21st Century Work-readiness Rubric)

Required Curriculum: The primary curriculum is American Boat and Yacht Council (ABYC) with integrated units from the NCCER Construction Technology. The three/four courses are: Marine Technology 1; Marine Technology2; Marine Technology 3; and Marine Technology 4 (where applicable).

Expected industry credential (s) and/or certificate(s) granted upon successful completion of the program (if applicable): OSHA-10 (Maritime, Construction and/or General); Rhode Island Marine Trades Association (RIMTA)Certificate of Completion.

Benefits of this level of achievement in job market: Prepares student with entry-level skills to obtain employment in the boatbuilding industry.

Job Outlook: Using 2014 Marine Trades Skills Gap Study Data, the Rhode Island Marine Trades Association & theirthird-party consultant, Planning Decisions, defined “the Marine Trades” as encompassing 659 business establishments that employed 6000 people who earned $268.9 million in wages in seven separate “industries.”

Pay: The median annual wage for a boat builder pay is $37,440.00 ($18.00 per hour)

GWB Priority Sector: Marine Trades

Career Field: Composites

Skills/ knowledge needed to be prepared for entry-level work:

1. Orientation to the Composite Applications & Processes
2. OSHA 10 Safety ((Maritime, Construction and/or General))
3. Composite terminology, materials, and methods
4. Related industry math and blueprint reading
a. Strong analytical and problem-solving skills
5. Technology specific equipment and basic operational techniques
a. General skills with hand tools, such as grinders, jig saw, and sanders
6. Quality control
7. Work-based learning opportunities
8. Human relations, collaboration and problem solving (see 21st Century Work-readiness Rubric)
9. Strong organizational and time management skills

Required Curriculum: The primary curriculum is American Composite Manufacturers Association (ACMA). The instructor must hold the American Composite Manufacturers Association (ACMA) Certification. The three/four courses are: Marine Technology 1; Marine Technology 2; Marine Technology 3; and Marine Technology 4 (whereapplicable).

Expected industry credential (s) and/or certificate(s) granted upon successful completion of the program (ifapplicable): American Composite Manufacturers Association (ACMA) Certification - Certified Composites Technician (CCT); OSHA10 (Maritime, Construction and/or General); and RIMTA Certificate of Completion

Benefits of this level of achievement in job market: Prepares students with the skills to obtain employment asan entry-level Composite Technician.

Job Outlook: Composites Technician - Using 2014 Marine Trades Skills Gap Study Data, the Rhode Island MarineTrades Association & their third-party consultant, Planning Decisions, defined “the Marine Trades” as encompassing 659 business establishments that employed 6000 people who earned $268.9 million in wages in seven separate “industries.”

Pay: The median annual wage for entry-level composite technicians is $36,940.80 ($17.76 per hour)

GWB Priority Sector: Marine Trades

Career Field: Systems

Skills/ knowledge needed to be prepared for entry-level work:

1. Orientation to onboard Electrical, plumbing and propulsion systems
2. OSHA 10 Safety (Maritime, Construction and/or General)
3. Systems terminology, materials, and methods
4. Related industry math and schematics reading
5. Technology specific equipment and basic operational techniques
6. Quality control
7. Work-based learning opportunities
8. Human relations, collaboration and problem solving (see 21st Century Work-readiness Rubric)

Required curriculum: The primary curriculum is American Boat and Yacht Council (ABYC). The three/four courses are: Marine Technology 1; Marine Technology 2; Marine Technology 3; and MarineTechnology 4 (where applicable).

Expected industry credential (s) and/or certificate(s) granted upon successful completion of theprogram (if applicable): OSHA-10; SkillsUSA Marine Service Technology Proficiency Assessment

Benefits of this level of achievement in job market: Prepares students with the skills to obtain employment as an entry-level Systems Technician in the Marine Technology trades.

Job Outlook: Using 2014 Marine Trades Skills Gap Study Data, e the Rhode Island Marine Trades Association & their third-party consultant, Planning Decisions, defined “the Marine Trades” as encompassing 659 business establishments that employed 6000 people who earned $268.9 million inwages in seven separate “industries.” According to the US Bureau of Labor Statistics, employment ofsmall engine mechanics is projected to grow 4 percent from 2014 to 2024.

Pay: The median annual wage for entry-level service technicians was $35,280.00 ($16.96 per hour) in May 2016.

US Dept. of Labor (USDOL) Career Cluster:

Pre-Engineering

GWB Priority Sector: Pre-Engineering

(Governor's Workforce Board Priority – Defense)

Career Field: Technician

This standard is for a high school graduate who is both prepared to enter an engineering program at the post-secondary level and be "job ready" as a technician.

Skills/ knowledge needed to be prepared for entry-level work: Upon successful completion of a RIDE approved Pre-Engineering pathway, the candidate is expected to know and be able to:

- Assist engineers or scientists in creative tasks such as aiding in product or tool design, setting up experiments, running experiments, recording data and observations, summarizing results, diagnosing flaws, conducting testing,conducting repairs, programming equipment, setting up production equipment and processes, designing tooling, assessing, and controlling quality, etc.

Expected industry credential (s) and/or certificate(s) granted upon successful completion of the program (if applicable): High school students interested in becoming a technician supporting engineers should take a standard pre-engineering curriculum of four years of math, plus chemistry, physics and three consecutive years of engineering technology coursework.As a supplement, students can enhance their skills with courses that help develop skills working with their hands, basic information technology (IT) courses, and courses in data analytics such as Microsoft Excel, and Microsoft Access.

These requirements are summarized in the following table
Each column must be met to satisfy the requirements of the Rhode Island CTE Pre Engineering Technology Standard

Minimum Academic Requirement		**Safety**		**Mandatory Credential Earned (at least one)**		**Work basedExperience**
Three consecutive years of engineering technology coursework **AND** Four years of math, including at least pre-calculus AND Chemistry and Physics	+	Safety training content equivalent to OSHA 10 hour General Industry training	+	**National Occupational Competency Testing Institute** **(NOCTI)** Pre-Engineering **International Society of Certified Electronics Technicians** **(ISCET)** AC, DC, Semiconductor & Digital **Electronic Technician Association** AC, DC, Analog, Digital & Comprehensive	+	Engineering/industry work-based learning experience and/or related mentor program

				Project Lead the Way Three consecutive PLTW Course certificates (including Intro to Engineering design, and Principles of Engineering)	

Job Outlook: Per the Rhode Island Department of Labor and Training Occupational Outlook 2024, demand for Architects and Engineers is expected to grow 7.7% over the ten-year period from 2014-2024; a greater rate thanRhode Island job growth overall during the same period (7.1%). Further, there are many other industries that benefit from people with engineering background and skills.

Technician openings are more difficult to measure; as of 2015, there were about three engineering techniciansper 1,000 Rhode Island jobs (per US Department of Labor Statistics). Engineering technician job openings typically require an associate's degree and experience. Nonetheless, a high school graduate with these credentials will be very valuable to employers looking to recruit engineers. Such a high school graduate couldwork as a technician or intern while completing a four-year engineering degree.

Pay: Salary depends on the specific technician field entered. Salaries range from $49,000 a year as a civil engineer technician to Aerospace technician making $87,000 per year, with the average wage of $56,000 per theUS Department of Labor statistics.

GWB Priority Sector: Pre-Engineering

(Governor's Workforce Board Priority – Defense)

Career Field: Engineer

This standard is for a high school graduate who is prepared to enter a four-year baccalaureate engineering program at the post-secondary level.

Skills/ knowledge needed to be prepared for entry-level work: Upon successful completion of a RIDE approved Pre-Engineering pathway, the candidate is expected to know and be able to:

- apply knowledge of mathematics, science, and engineering
- design and conduct experiments, as well as to analyze and interpret data
- design a system, component, or process to meet desired needs within realistic constraints such as economic, environmental, social, political, ethical, health and safety, manufacturability, and sustainability
- function on multidisciplinary teams
- identify, formulate, and solve engineering problems
- understand professional and ethical responsibility
- communicate effectively
- understand the impact of engineering solutions in a global, economic, environmental, and societal context
- recognize the need for, and an ability to engage in life-long learning
- use the techniques, skills, and modern engineering tools necessary for engineering practice.

These core skills and principles are applicable across all engineering disciplines and will form the foundation of a strong engineering capability. This pathway is structured to prepare students for pursuit of an engineering degree in the discipline of their choosing at the post-secondary level. Entry-level work as an engineer across all disciplines requires candidates to possess a bachelor's level engineering degree.

Expected industry credential (s) and/or certificate(s) granted upon successful completion of the program (if applicable):

High school students interested in becoming engineers should take a pre-engineering curriculum of four years of math including pre-calculus, chemistry, physics and three consecutive years of pre-engineering coursework. Students are also expected earn one of three accepted mandatory credentials, as well as a certification demonstrating aptitude in an industry-relevant computer-aided design tool.

As a supplement, students are encouraged to accelerate their education and better prepare for their post-secondary engineering pursuits by actively participating in project-based learning opportunities such as science and engineering competitions including FIRST Robotics and the Rhode Island Science and Engineering Fair.

These requirements are summarized in the following table:

Each column must be met to satisfy the requirements of the Rhode Island CTE Pre-Engineering Standard

Minimum Academic Requirement	Mandatory Credential Earned (at least one)	Computer-Aided Engineering Certification Earned	Work-Based Experience
Three consecutive years of pre-engineering coursework **AND** Four years of math, including at least pre-calculus[1] **AND** Chemistry & Physics	**National Occupational Competency Testing Institute (NOCTI)** Pre-Engineering	**Mechanical CAD (MCAD)** such as AutoDesk Inventor or SolidWorks or **Electrical CAD (ECAD)** such as Altium or SolidWorks PCB or **Engineering Programming** such as MATLAB or Python or **Systems Modelling** such as Simulink or LabVIEW	Engineering/ industry work-based learning experience and/or related mentor program Soft and professional skills development

1: Pre-calculus curriculums should be aimed to prepare students for college-level calculus during their first year of post-secondary education. Programs are encouraged to provide students with access to AP Calculus AB and/or BC as is appropriate.

Job Outlook: Per the Rhode Island Department of Labor and Training Occupational Outlook 2024, demand for Architects and Engineers is expected to grow 7.7% over the ten-year period from 2014-2024; a greater rate than Rhode Island job growth overall during the same period (7.1%). Further, there are many other industries that benefit from people with engineering background and skills.

Pay: The following 2016 national wage data was provided by the US Bureau of Labor Statistics:

Occupation	Median Pay
Aerospace Engineers	$115,220
Agricultural Engineers	$77,110
Biomedical Engineers	$88,550
Chemical Engineers	$104,910
Civil Engineers	$86,640
Computer Hardware Engineers	$114,600
Electrical and Electronic Engineers	$99,070
Environmental Engineers	$87,620
Health and Safety Engineers	$89,130
Industrial Engineers	$87,040
Marine Engineers and Naval Architects	$92,560
Materials Engineers	$92,390

Mechanical Engineers	$87,370
Mining and Geological Engineers	$92,250
Nuclear Engineers	$107,600
Petroleum Engineers	$137,170

US Dept. of Labor (USDOL) Career Cluster:

Transportation, Distribution, and Logistics

RI Career and Technical Education Board of Trustees Program Industry Standards	
GWB Priority Sector	Transportation, Distribution, and Logistics Approved by CTEBOT and adopted by RIDE on April 30, 2021; effective July 1, 2021
Career Field	Automotive Body Repair Technician

Career Pathway Plan of Study for > Learners > Parents > Counselors > Teacher/Faculty
This Career Pathway Plan of Study (based on the Transportation, Distribution, and Logistics Career Cluster) can serve as a guide, along with other career planning materials, as learners continue on a career path. Courses listed within this plan are only recommended coursework and should be individualized to meet each learner's educational and career goals. This Plan of Study, used for learners at an educational institution, should be customized with course titles and appropriate high school graduation requirements as well as college entrance requirements.

Work-Based Learning	Academic Content				CTE Content		
Work-Based Learning: (Total of 80 Hours)	**ELA**	**Math**	**Science**	**Social Studies, Sciences**	**CTE Coursework & Experiences**	**Primary Credential Required**	**Secondary Certifications Recommended**
80 hours of Internship, School-based Enterprise, and/or Industry Based Project in the program.	Four years of ELA aligned to the BEP and LEA graduation reqs	Four years of Math aligned to the BEP and LEA graduation reqs	At least three years of Science aligned to the BEP and LEA graduation reqs	At least three years aligned to the BEP and LEA graduation reqs	Automotive Collision coursework consisting of: Automotive Collision 1 Automotive Collision 2 Automotive Collision 3	I-Car Level 1: I-Car Pro Level 1 Refinish I-Car Pro Level 1 Non-Structural	Sp2 and/or OSHA 10 And/or Any industry credentials approved by program advisory board

Salary Information:	**Projected Job Outlook:**
The median annual wage for automotive body and related repairers was $43,850 in May 2019.	Employment of automotive body is projected to grow 9% from 2014 to 2024.
**RI Department of Labor and Training; Labor Market Information; Occupational Employment Statistics*	**US Department of Labor; Bureau of Labor Statistics; Occupational Outlook Handbook*
Employability Skills and Knowledge for Entry Level:	**Occupations to this Pathway:**
Problem Solving Professionalism Collaboration	Non-structural body repair technician Refinish technician: -Prepper

Critical Thinking Communication Creativity Flexibility Initiative Review damage reports, prepare cost estimates, and plan work Adaptability; specifically with techniques, products, timeline, requests, and technology Knowledge of and be able to perform panel removal, installation, and alignment of non-structural mechanically fastened body panels, bolted on, such as fenders, bumpers, hoods, doors, trunk lids, and various trim located on the vehicle body. Inspect and diagnose cars for structural damage Knowledge of and be able to perform the repairing of dents using various repair methods, including using hammers and dollies, weld on dent removal tolls, adhesive dent removal tools, and body picks Fit, attach, and weld replacement parts using proper procedures Knowing how to and be able to apply refinishing materials, which includes repairing damaged coatings, applying, and sanding primers, and masking panels for refinishing Know what refinish materials should be applied depending on the stage of the repair process and how to mix refinish materials for application Knowing how to create and read a paper and an electronic estimate Following proper masking and prepping procedures before refinishing of body panels Following proper welding personal safety procedures Know how to and be able to perform welder set up to show proper		-Refinish technician Welders: -Steel and aluminum Estimator: -In collision repair shop -Licensed Insurance adjuster -Independent or specific insurance company Detailer Auto recycling center dismantler Automotive Air Conditioning Mechanic Collision specific supply salesperson -Jobber- supplies and stocks paint and body repair materials -Part distributor -Oem Part -Aftermarket Parts Collision Repair Educator -Postsecondary -Secondary -Manufacturer Trainer

welding procedures Know how to perform the three most common welds used in the collision repair industry: Lap, plug, and butt with backing Know how to prevent corrosion and application of anti-corrosive materials after repairs Know how to and be able to properly maintain refinishing equipment such as spray guns, panel stands, and spray booths		
Recommended Curriculum:		**Related Teacher Certification:**
I-Car – Collision Repair Curriculum for Career and Technical Schools. The curriculum is aligned 376 hours ASE standards		RIDE Certification: Automotive Body Repair; -High School Diploma/GED + 5 years' experience; NOCTI-5266 Collision Repair/Refinishing
Postsecondary Partnerships:		
Mass Bay CC, New England Institute of Technology, Central Maine CC, UTI, MTTI, UNOH, Lincoln Tech		
Recommended Elements:		
Complementary Coursework (Chemistry, Geometry, Pre-Calculus, etc.): SP2 collision safety and pollution prevention, I-CAR Professional Development Program Non-Structural and Refinishing, Mitchell 1: Automotive Repair Software/Estimating		
CTSO: SkillsUSA		
Work-based learning – Type and Description: Internship, Industry Project, School-based Enterprise		
Credential(s) Identify Course Alignment: SP2 collision safety and pollution prevention, ASE, I-CAR Refinish and Non-Structural ProLevel 1, MACS 609		

RI Career and Technical Education Board of Trustees Program Industry Standards	
GWB Priority Sector	Transportation, Distribution, and Logistics Approved by CTEBOT and adopted by RIDE on April 30, 2021; effective July 1, 2021
Career Field	Automotive Service Technician

Career Pathway Plan of Study for > Learners > Parents > Counselors > Teacher/Faculty
This Career Pathway Plan of Study (based on the Transportation, Distribution, and Logistics Career Cluster) can serve as a guide, along with other career planning materials, as learners continue on a career path. Courses listed within this plan are only recommended coursework and should be individualized to meet each learner's educational and career goals. This Plan of Study, used for learners at an educational institution, should be customized with course titles and appropriate high school graduation requirements as well as college entrance requirements.

Work-Based Learning	Academic Content				CTE Content		
Work-Based Learning: (Total of 80 Hours)	**ELA**	**Math**	**Science**	**Social Studies, Sciences**	**CTE Coursework and Experiences**	**Primary Credential Required**	**Secondary Industry Credentials Recommended**
80 hours of Internship, School-based Enterprise, and/or Industry Based Project in the program.	Four years of ELA aligned to the BEP and LEA graduation reqs	Four years of Math aligned to the BEP and LEA graduation reqs	At least three years of Science aligned to the BEP and LEA graduation reqs	At least three years aligned to the BEP and LEA graduation reqs	Automotive coursework completed in succession, consisting of at least three years in the auto program. Automotive program consists of: Level 1, 2, and 3 (and 4) depending on school schedule Optional: Diesel and Hybrid	ASE Entry Level Certification	SP2 Safety/Pollution ALI Lift Certification 609 Certification OSHA 10 (optional) And/or any industry credentials approved by program advisory

					Technology		board

Salary Information:		**Projected Job Outlook:**
The median annual wage for automotive service technicians and mechanics was $42,090 in May 2019.		Employment of diesel service technicians and automotive specialty technicians is projected to grow 5% from 2016 to 2028, about as fast as average for all occupations. Job prospects should be best for those who have completed postsecondary training in automotive, diesel engine and hybrid vehicle repair.
**RI Department of Labor and Training; Labor Market Information; Occupational Employment Statistics*		**US Department of Labor; Bureau of Labor Statistics; Occupational Outlook Handbook*
Employability Skills and Knowledge for Entry Level:		**Occupations to this Pathway:**
Problem Solving Professionalism Collaboration, Works well in teams Critical Thinking Detail oriented Communication skills; specifically with service staff, parts staff, and customers Writing, Research and Data Skills Creativity Knows and follows OSHA and EPA guidelines for environmental and shop safety Knows how to safely use shop equipment such as vehicle lifts, jacks, tire machines, and major shop equipment as it pertains to the automotive field Performs work as outlined on repair order with efficiency and accuracy, in accordance with dealer, shop and factory standards including the ability to perform but not limited to basic vehicle services such as oil changes, tire rotations, brake flush, coolant flush, perform tire inspection, repair or replacement, inspect vehicles for safety concerns and worn components, able to inspect and replace common wear items such as filters, belts and hoses, braking system repairs, steering and suspension		Aircraft and Avionics Equipment Mechanics and Technicians Customer service representatives Motorcycle equipment mechanics and technicians Diesel Service Technicians and Mechanics Heavy Vehicle Equipment Service Technicians Mobile Equipment Service Technicians Small Engine Mechanics Welding Tow Truck Operator Automotive Educator/Trainer Industry Recognized “A” Level Automotive Technician -RI Certified Inspection Repair Technician -ASE Master Technician -OE Factory Senior Technician -Engine Performance Specialist -Engine Machinist -Diesel Mechanic -Fleet Mechanic -Electrical Specialist/Transmission Specialist Industry Recognized “B” Level Automotive Technician -Undercar Mechanic -Wheel Alignments -Brake Repairs -Suspension Service and Repair -Steering Service and Repair – battery/alternator Technician -Auto and Truck Equipment Installer -RI Safety & Emissions Inspector Industry Recognized “C” Level Automotive

repairs, basic engine repairs, basic electrical diagnosis and repair, have an understanding of on board diagnostic, emission, fuel and ignition system operation and basic repairs, able to repair common drive train components Adaptability Knowledge of looking up service information, technical bulletins, and updated service		Technician -Pre-delivery Inspection Technician -Lube Technician- Tire Technician -Multi-point Inspection Technician -Vehicle Accessory Installer Marine Equipment Mechanics Shop Foreman Service Manager Service Advisor
Required Curriculum: One of the Following		**Related Teacher Certification:**
CDX (Jones and Bartlett) Electude Today's Class or a curriculum that is aligned to ASE standards for program cert level and contact hours		RIDE Certification: Automotive Mechanics; High School Diploma/GED, 5 years' experience; NOCTI-5262
Postsecondary Partnerships:		
Mass Bay CC, New England Institute of Technology, Central Maine CC, UTI, MTTI, UNOH, Lincoln Tech		
Recommended Elements:		
Complementary Coursework (Chemistry, Geometry, Pre-Calculus, etc.): SP2 Safety/Pollution, AllData Service Information, Mitchell 1: Automotive Repair Software, Ford ACE Program		
CTSO: Skills USA		
Work-based learning – Type and Description: Internship, Industry Project, School-based Enterprise		
Credential(s) Identify Course Alignment: OSHA 10, SP2, NOCTI, 609 Cert, ASE		

RI Career and Technical Education Board of Trustees Program Industry Standards	
GWB Priority Sector	Transportation, Distribution, and Logistics Approved by CTEBOT and adopted by RIDE on April 30, 2021; effective July 1, 2021
Career Field	Parts Specialist

Career Pathway Plan of Study for > Learners > Parents > Counselors > Teacher/Faculty
This Career Pathway Plan of Study (based on the Transportation, Distribution, and Logistics Career Cluster) can serve as a guide, along with other career planning materials, as learners continue on a career path. Courses listed within this plan are only recommended coursework and should be individualized to meet each learner's educational and career goals. This Plan of Study, used for learners at an educational institution, should be customized with course titles and appropriate high school graduation requirements as well as college entrance requirements.

Work-Based Learning	Academic Content				CTE Content		
Work-Based Learning: (Total of 80 Hours)	**ELA**	**Math**	**Science**	**Social Studies, Sciences**	**Other Courses or Learning Activities**	**CTE Course work**	**Primary Credential (Earned at least one of the following)**
80 hours of Internship, School-based Enterprise, and/or Industry Based Project in the program.	Four years of ELA aligned to the BEP and LEA graduation reqs	Four years of Math aligned to the BEP and LEA graduation reqs	At least three years of Science aligned to the BEP and LEA graduation reqs	At least three years aligned to the BEP and LEA graduation reqs	Automotive coursework completed in succession, consisting of at least three years in the auto program. Automotive program consists of: Level 1, 2, and 3 (and 4) depending on school schedule	ASE Entry Level Certification	SP2 Safety/Pollution ALI Lift Certification 609 Certification OSHA 10 (optional) And/or any industry credentials approved by program advisory

							board

Salary Information:		**Projected Job Outlook:**
The median annual wage for parts specialists and/or consultant was $33,680 in May 2019. This does not include overtime and/or incentive benefits.		Overall employment of parts specialists is projected to grow by 2% from 2019 to 2029. Job prospects should be best for those who have completed training in the automotive industry or postsecondary coursework with a financial background.
**RI Department of Labor and Training; Labor Market Information; Occupational Employment Statistics*		**US Department of Labor; Bureau of Labor Statistics; Occupational Outlook Handbook*
Employability Skills and Knowledge for Entry Level:		**Occupations to this Pathway:**
Problem Solving Professionalism Collaboration Critical Thinking Communication Creativity Flexibility Initiative Computer Skills Handles counter for retail customers as well as technicians Promptly and professionally answers phone inquiries Ensures accurate and appropriate inventory and billing controls through transactions Demonstrates a positive, helpful attitude as well as professional conduct and appearance at all times Strong verbal communication skills Experience in Microsoft Office Strong work ethic and an ability to work independently Strong time management and organizational skills Point of sale/financial skills		Wholesale Parts Manager Distribution Warehouse Manager Aftermarket Parts Sales Representative Internet Parts Sales Representative Parts Sales/District Manager Parts Counter Sales Representative Automotive Recycler (salvage yard) Clerk Operator Shipping and Receiving Clerk Parts Delivery Driver Parts Warehouse Attendant Parts/Sales Trainer
Recommended Curriculum:		**Teacher(s), CTE Course(s), & Certification:**
CDX (Jones and Bartlett) Electude Today's Class or a curriculum that is aligned to ASE standards for program certification level and contact hours		RIDE Certification: Automotive Mechanics; High School Diploma/GED, 5 years' experience; NOCTI-5262
Postsecondary Partnerships:		

Mass Bay CC, New England Institute of Technology, Central Maine CC, UTI, MTTI, UNOH, Lincoln Tech
Recommended Elements:
Complementary Coursework (Chemistry, Geometry, Pre-Calculus, etc.): Ford ACE, SP2, AllDATA
CTSO: Skills USA
Work-based learning – Type and Description: Internship, Industry Project, School-based Enterprise
Credential(s) Identify Course Alignment: OSHA 10, SP2, NOCTI, 609 Cert, ASE

RI Career and Technical Education Board of Trustees Program Industry Standards	
GWB Priority Sector	Transportation, Distribution, and Logistics Approved by CTEBOT and adopted by RIDE on April 30, 2021; effective July 1, 2021
Career Field	Service Advisor

Career Pathway Plan of Study for > Learners > Parents > Counselors > Teacher/Faculty
This Career Pathway Plan of Study (based on the Transportation, Distribution, and Logistics Career Cluster) can serve as a guide, along with other career planning materials, as learners continue on a career path. Courses listed within this plan are only recommended coursework and should be individualized to meet each learner's educational and career goals. This Plan of Study, used for learners at an educational institution, should be customized with course titles and appropriate high school graduation requirements as well as college entrance requirements.

Work-Based Learning	Academic Content				CTE Content		
Work-Based Learning: (Total of 80 Hours)	**ELA**	**Math**	**Science**	**Social Studies, Sciences**	**CTE Coursework and Experiences**	**Primary Credential (one of the following)**	**Secondary industry credentials recommended**
80 hours of Internship, School-based Enterprise, and/or Industry Based Project in the program.	Four years of ELA aligned to the BEP and LEA graduation reqs	Four years of Math aligned to the BEP and LEA graduation reqs	At least three years of Science aligned to the BEP and LEA graduation reqs	At least three years aligned to the BEP and LEA graduation reqs	Automotive coursework completed in succession, consisting of at least three years in the auto program. Automotive program consists of: Level 1, 2, and 3 (and 4) depending on school schedule	ASE Entry Level Certification	SP2 Safety/Pollution ALI Lift Certification 609 Certification OSHA 10 (optional) And/or any industry credentials approved by program

							advisory board

Salary Information:		**Projected Job Outlook:**
The median annual wage for service advisor and/or representative was $40,190 in May 2019. This does not include overtime and/or incentive benefits.		Employment of service/sales representatives is projected to grow at 1% from 2018 to 2028, average for all occupations
**RI Department of Labor and Training; Labor Market Information; Occupational Employment Statistics*		**US Department of Labor; Bureau of Labor Statistics; Occupational Outlook Handbook*
Employability Skills and Knowledge for Entry Level:		**Occupations to this Pathway:**
Problem Solving Professionalism Collaboration Critical Thinking Communication Creativity Flexibility Initiative Computer Skills Point of sale/Financial/Estimates Broad knowledge of vehicle technology Excellent customer service skills Ability to be analytical and multi-task Ability to work with little supervision Self-motivated enthusiastic presence in a team environment Strong written and communication skills Valid driver's license and clean driving record Professional appearance and work ethic		Service Manager Service Operations Manager Automotive Sales Consultant Automotive Product and Technology Consultant Warranty Claim Administrator Automotive Insurance Adjuster Finance and Insurance Manager Internet Marketing Director Social Media Coordinator
Recommended Curriculum:		**Related Teacher Certification:**
CDX (Jones and Bartlett) Electude Today's Class or a curriculum that is aligned to ASE standards for program certification level and contact hours.		CTE Teacher Certification – RIDE Certification: Automotive Mechanics; High School Diploma +5 years' experience; NOCTI-5262
Postsecondary Partnerships:		
Mass Bay CC, New England Institute of Technology, Central Maine CC, UTI, MTTI, UNOH, Lincoln Tech		
Recommended Elements:		

Complementary Coursework (Chemistry, Geometry, Pre-Calculus, etc.): Ford ACE, SP2, AllDATA
CTSO: Skills USA
Work-based learning – Type and Description: Internship, Industry Project, School-based Enterprise
Credential(s) Identify Course Alignment: OSHA 10, SP2, NOCTI, 609 Cert, ASE

P-Tech Standards

RI Career and Technical Education Board of Trustees Program Industry Standards	
GWB Priority Sector	P-TECH – Information Technology Approved by CTEBOT and adopted by RIDE on July 24, 2020; effective July 1, 2021
Career Field	CyberSecurity (Newport)

Career Pathway Plan of Study for > Learners > Parents > Counselors > Teacher/Faculty

Work-Based Learning	Academic Content				CTE Content		
Work-Based Learning: (Total of 80 Hours)	**ELA**	**Math**	**Science**	**Social Studies, Social Sciences**	**CTE Coursework**	**Other Courses or Learning Activities**	**Primary Credential (Earned at least one of the following)**
Project, in the four years	English 10 English 11 English 12	Geometry Algebra 2 Pre Calc or Calc	Biology Chemistry Physics	History US History 1 US History 2	COMP 1200, COMI 1150, COMI 2037	Language Personal Finance Internship Independent study	College Credit

Salary Information:

The median annual wage for security analysts was $99,730 per year $47.95 per hour in 2019.

**RI Department of Labor and Training; Labor Market Information; Occupational Employment Statistics*

Projected Job Outlook:

Professionals skillful in the area of cybersecurity are in demand, and it doesn't appear that it will change in the near future. Cyber Defense Magazine states that about 1.8 million cyber security professionals will be needed to fill the demand by 2022. One of the top cybersecurity jobs is that of the information security analyst. U.S. News & World Report ranked information security analyst No. 2 in Best Technology Jobs, No. 6 in Best STEM Jobs and No. 32 in the 100 Best Jobs. Information security analysts are expected to see a job growth of 28 percent between 2016 and 2026 as reported.

**US Department of Labor; Bureau of Labor Statistics; Occupational Outlook Handbook*

Employability Skills/Knowledge for Entry Level:

Problem Solving
Professionalism
Collaboration
Critical Thinking
Communication
Understand how different network
technologies and tools

Occupations to this Pathway:

Cyber Security Analyst
Cyber Security Engineer
Security Architect
Security Administrator
Security Software Developer
Security Consultant
Information and Security Analyst
Junior Penetration Tester

Interact to form a secure IT network Configure, verify, and troubleshoot a switch with VLAN & interswitch		
Required Curriculum:		**Related Teacher Certification:**
CCRI CyberSecurity Curriculum		CCRI Instructors CCRI Curriculum
Postsecondary Partnerships: Community College of Rhode Island		
Recommended Elements:		
Complementary Coursework (Chemistry, Geometry, Pre-Calculus, etc.):		
CTSO: Skills USA		
Work-based learning – Type and Description: Students in this program have the opportunity to participate in an internship associated with their pathway.		
Credential(s) Identify Course Alignment: CCRI Cybersecurity Curriculum, Associate's Degree		

RI Career and Technical Education Board of Trustees Program Industry Standards							
GWB Priority Sector	P-TECH – Health Careers Approved by CTEBOT and adopted by RIDE on September 25, 2020; effective July 1, 2021						
Career Field	Innovation (North Providence)						
Career Pathway Plan of Study for > Learners > Parents > Counselors > Teacher/Faculty							
Work-Based Learning	**Academic Content**				**CTE Content**		
Work-Based Learning: (Total of 80 Hours)	**ELA**	**Math**	**Science**	**Social Studies, Social Sciences**	**CTE Coursework**	**Other Courses or Learning Activities**	**Primary Credential (Earned at least one of the following)**
Internships and Industry-Based Projects	Four classes of ELA aligned to the BEP and LEA graduation requirements	Four classes of ELA aligned to the BEP and LEA graduation requirements	At least three classes of Science aligned to the BEP and LEA graduation requirements	At least three classes aligned to the BEP and LEA graduation requirements	Biology, Chemistry, and Human Anatomy. For the advanced student, instead of Human Anatomy, CHEM 103 & 104 where (8) collegiate credits would be earned through our Early Enrollment Program as well as replacing (8) Free Elective College Credits as part of their scope and sequence for Associate Degree in Health	Up to a minimum of (6) elective courses which may include Visual Arts, Technology, (2) years of a Foreign Language. In addition, CNA and EMT courses if the student opts to receive as part of their high school experience.	Any course identified in the scope & sequence for the Associate Degree in Health Science. For example, ENGL 1010, PSYCH 2010, BIOL 2201 & 2202. In addition, EEP Collegiate Credit (RIC) in ELA, social studies, science, visual arts, and foreign language, AP Collegiate Credit if a student

					Science through CCRI.		receives a (3) or higher on specified exam. CNA and EMT courses and certifications as well through Industry Partnerships.

Salary Information:		**Projected Job Outlook:**
The NPHS PTECH Healthcare Pathway has been designed for students entering the (5) clusters of Health Science which includes Diagnostic Services, Therapeutic Services, Health Informatics, Support Services, and Biotechnology Research & Development. The high school and collegiate scope and sequences has been designed for a general studies degree, providing students many choices in the healthcare industry. The salaries will depend on the health occupation the students select. Students in the PTECH Program will have the opportunity to earn both CNA and EMT Certifications through NPHS PTECH Healthcare Partners in which the average salary for a CNA is $26,590.00 and Emit is $31,890.00.		Employment of healthcare occupations is projected to grow 14 percent from 2018 to 2028, much faster than the average for all occupations, adding about 1.9 million new jobs. Healthcare occupations are projected to add more jobs than any of the other occupational groups
**RI Department of Labor and Training; Labor Market Information; Occupational Employment Statistics*		**US Department of Labor; Bureau of Labor Statistics; Occupational Outlook Handbook*
Employability Skills/Knowledge for Entry Level:		**Occupations to this Pathway:**
►Problem Solving ►Professionalism ►Collaboration ►Critical Thinking ►Communication ►Creativity ►Flexibility ►Initiative All of these skills would apply to any health science career cluster. Regardless of the specific occupation, 21st century skills and		Health Science clusters can include Physician, Surgeon, Nurse, Dentist, Hospital administrator, Nutritionist, Dietician, Epidemiologist, Pharmacy Technician, Healthcare Communications, Medical Laboratory Technician, Occupational Therapists, Respiratory Therapists, Physical Therapists, Athletic Trainers, Audiologists, CNA's, EMT's, Chiropractors, Laboratory Technicians, Genetic Counselors, Medical Assistants, Phlebotomists, Radiation Therapists, Veterinarians, and more.

competencies would center on improving a patient's life, collaborating with families and other medical occupations, providing care, support, and service to patients in need of healthcare providership. All healthcare occupations promote wellness and develop and implement strategies to improve the health of individuals and communities.		
Required Curriculum:		**Related Teacher Certification:**
District Approved Curriculum, AP and EEP Curriculums, &CCRI Health Science Curriculum		Certified High School teachers across disciplines, CCRI Instructors, and Certified Health Instructors for CNA and EMT coursework.
Postsecondary Partnerships: CCRI and Industry Partnerships		
Recommended Elements:		
Complementary Coursework (Chemistry, Geometry, Pre-Calculus, etc.): CCRI Scope and Sequence for Health Science		
CTSO: None		
Work-based learning – Type and Description: Internships and Industry Based Projects through Mentoring		
Credential(s) Identify Course Alignment: CCRI Scope and Sequence in Health Science as well as CNA and EMT Certifications		

RI Career and Technical Education Board of Trustees Program Industry Standards	
GWB Priority Sector	P-TECH – Multiple – Across Career Clusters Approved by CTEBOT and adopted by RIDE on July 24, 2020; effective July 1, 2021
Career Field	Innovation (PPSD)

Career Pathway Plan of Study for > Learners > Parents > Counselors > Teacher/Faculty

Work-Based Learning	Academic Content				CTE Content		
Work-Based Learning: (Total of 80 Hours)	**ELA**	**Math**	**Science**	**Social Studies, Social Sciences**	**CTE Coursework**	**Other Courses or Learning Activities**	**Primary Credential (Earned at least one of the following)**
Internship, Service Learning, Industry Project in the four years	Intro to Lit World Literature American Lit British Lit	Algebra 1 Geometry Algebra 2 Pre-Calculus	Biology Chemistry Physics	World History US History 1 US History 2	COMI 1420 COMI 1430 COMI 2015	Required: Required Safety Training specific to content Suggested: CTSO"	•Work readiness assessment, such as Precision Exams 21st Century Success Skills • College Credits • Mentor Assessment of Internship and Project work College Board AP* Computer Science Principles Project Lead The Way

Salary Information:		Projected Job Outlook:
The entry-level annual median salary for an IT Specialist was $52,160 in 2016 according to the U.S. Bureau of Labor Statistics		Employment in the IT pathway is projected to grow 11% from 2016 – 2026, faster than the average for all occupations. The IT pathway is expected to add about 88,500 new jobs, in the next 8 years in part due to a greater emphasis on cloud computing, the collection and storage of big data. CTE Program Industry Specific Standards becoming connected to the Internet in what is commonly referred to as the “Internet of things,” and the continued demand for mobile computing. Job prospects should be

		favorable. There are usually clear advancement possibilities for IT support specialists, creating new job openings. Applicants with a bachelor's degree and a strong technical background should have the best job opportunities.
**RI Department of Labor and Training; Labor Market Information; Occupational Employment Statistics*		**US Department of Labor; Bureau of Labor Statistics; Occupational Outlook Handbook*
Employability Skills/Knowledge for Entry Level:		**Occupations to this Pathway:**
Collaboration skills Customer-service skills Listening skills Problem-solving skills Communication skills Writing skill		Information Technology Project managers Computer and information Systems Managers Computer systems analysts Computer programmers Software developers, applications Computer user support specialists Computer network support specialists
Required Curriculum:		**Advisor Certification:**
Project Lead The Way Other Networking Coursework approved by CTE_BOT IT Advisory CCRI Computer Programming Degree (CPRD) or Networking Requirements		High School Diploma + 5 years min. industry experience documented or Bachelor's Degree + 3 years min. industry experience documented and a CTE certificate (or working towards one)
Postsecondary Partnerships: Community College of Rhode Island (CCRI)		
Recommended Elements:		
Complementary Coursework (Chemistry, Geometry, Pre-Calculus, etc.): Grades 9-12-CCRI Computer Programming Courses: Intro to Computers CCRI (3 credits), Intro to Database Software CCRI (1 credit), Intro to Spreadsheet CCRI (1 credit) Intro to Microsoft Project (1 credit) Grades 13-14 CCRI Computer Programming Degree (CPRD)		
CTSO: Skills USA		
Work-based learning – Type and Description: Students in this program have the opportunity to participate in an internship associated with their CTE program. Students in this program have the opportunity to complete industry projects that address real world problems.		
Credential(s) Identify Course Alignment: CCRI Computer Programming or Networking, Associate Degree		

RI Career and Technical Education Board of Trustees Program Industry Standards	
GWB Priority Sector	P-TECH – Manufacturing Approved by CTEBOT and adopted by RIDE on June 26, 2020; effective July 1, 2020
Career Field	Innovation (Westerly)

Career Pathway Plan of Study for > Learners > Parents > Counselors > Teacher/Faculty

Work-Based Learning	Academic Content				CTE Content		
Work-Based Learning: (Total of 80 Hours)	**ELA**	**Math**	**Science**	**Social Studies, Social Sciences**	**CTE Coursework**	**Other Courses or Learning Activities**	**Primary Credential (Earned at least one of the following)**
Internship, School based Enterprise, Industry project over the four years	English 9 English 10 English 11 English 12	Algebra 1 Geometry Algebra 2 Pre Calc or Calc	Biology Chemistry Physics	World History US History Citizenship	PTECH AutoCad (ENGT 1060) Introduction to Manufacturing Process (ETME 1020) Advanced Solid Modeling (ENGT 2090)	Required: Required Safety Training specific to content	College Credits

Salary Information:	**Projected Job Outlook:**
The median annual wage for machinists was $47,881.60 in May 2018. The median annual wage for computer-controlled machine tool operators, metal and plastic was $43,243.20 in May 2018.	Employment of machinists is projected to grow 16% from 2016 to 2026. Employment of computer-controlled machine operators, metal and plastic is projected to grow 6% from 2016 to 2026. Employment of computer-controlled machine programmers, metal and plastic is projected to grow 19% from 2016 to 2026.
**RI Department of Labor and Training; Labor Market Information; Occupational Employment Statistics*	**US Department of Labor; Bureau of Labor Statistics; Occupational Outlook Handbook*
Employability Skills/Knowledge for Entry Level:	**Occupations to this Pathway:**
Effort and Engagement	Machinists

Problem Solving Professionalism Collaboration Critical Thinking Communication Collaboration Creativity Flexibility Initiative Technology issues and resolution Lifelong Learner		Computer controlled Machine Tool Operators CNC Controlled Machine Tool Programmers Material Services Pipe Design/HVAC Mechanical Designer Electrical Designer Structural Designer
Required Curriculum:		**Advisor Certification:**
Completion of a Senior Project Connection of Career exploration and preparation in a pathway area		Secondary grades teaching certificates must meet RI certification requirements. Articulation agreement with the Community College of Rhode Island.
Postsecondary Partnerships:		
Dual/Concurrent Enrollment with CCRI		
Recommended Elements:		
Complementary Coursework (Chemistry, Geometry, Pre-Calculus, etc.):		
CTSO: Skills USA		
Work-based learning – Type and Description: Internships, Partnerships, Industry Based Projects, Service Learning, School Based Enterprise		
Credential(s) Identify Course alignment: CCRI College Credits		

RI Career and Technical Education Board of Trustees Program Industry Standards	
GWB Priority Sector	P-TECH – Computer Science Approved by CTEBOT and adopted by RIDE on July 24, 2020; effective July 1, 2021
Career Field	Innovation (Woonsocket)

Career Pathway Plan of Study for > Learners > Parents > Counselors > Teacher/Faculty

Work-Based Learning	Academic Content				CTE Content		
Work-Based Learning: (Total of 80 Hours)	**ELA**	**Math**	**Science**	**Social Studies, Social Sciences**	**CTE Coursework**	**Other Courses or Learning Activities**	**Primary Credential (Earned at least one of the following)**
10 Hours Industry Project 20 Hours Industry Project 20 Hours Industry Project Internship 30 Hours Internship or Industry Project	ELA I ELA II ELA III ELA IV/Technical Reading	Algebra I or Geometry Geometry or Algebra II Algebra II Pre-Calculus (Optional)	Biology Chemistry 3rd year Science – LEA approved Elective	World History 1 US History 3rd year History – LEA approved Elective	Yr 1 [URI CSC106 = CCRI (COMI-1150] Yr 2 [URI CSC101 = CCRI COMI-1100] Yr 3 [URI CSF102 = CCRI CNVT-1810] and/or Yr 1 PLTW Essentials Yr 2 PLTW Principles Yr 3 PLTW Cyber	Required: Required Safety Training specific to content Suggested: CTSO	Earned At Least One: Dual/Concurrent Enrollment CCRI COMI-1420; COMI-1422; COMI-1430

Salary Information:	Projected Job Outlook:
The median annual wage for computer network support specialists was $62,770 in May 2018. The median annual wage for computer user support specialists was $50,980 in May 2018.	Employment of computer support specialists is projected to grow 10 percent from 2018 to 2028, faster than the average for all occupations. More support services will be needed as organizations upgrade their computer equipment and software.
**RI Department of Labor and Training; Labor Market Information; Occupational Employment Statistics*	**US Department of Labor; Bureau of Labor Statistics; Occupational Outlook Handbook*
Employability Skills/Knowledge for Entry Level:	**Occupations to this Pathway:**

Problem Solving Professionalism Collaboration Critical Thinking Communication Understand how different network technologies and tools Interact to form a secure IT network Configure, verify, and troubleshoot a switch with VLAN & interswitch Implement an IP addressing scheme and IP Services Identify network security threats Communication skills Writing skills		Computer Network Architects Computer and Information Systems Managers Computer Hardware Engineers Customer service representatives Database administrators Network and computer systems administrators Web developers Computer and information systems managers Help Desk Computer Support Specialists Information Security Analysts Computer Support Specialists
Required Curricula:		**Advisor Certification:**
PLTW and Specific College Coursework Connection of career exploration and preparation in a pathway area Experience in a community-based Internship		Associate's Degree; 3 years industry experience; Pass NOCTI Exam 5910: Computer Networking Fundamental RIDE Computer Science Cert. Requirements
Postsecondary Partnerships: Concurrent/Dual Enrollment with CCRI/URI/RIC/CMCC		
Recommended Elements:		
Complementary Coursework (Chemistry, Geometry, Pre-Calculus (optional), College academic classwork.)		
CTSO: Skills USA or Technology Student Association		
Work-based learning – Type and Description: Internships, Partnerships, Industry Based Projects, Service Learning, School Based Enterprise		
Credential(s) Identify Course Alignment: P-TECH Woonsocket 4-5-6 Year Scope and Sequence		