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

Updated July 7, 2022

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 November 2, 2021.
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US Dept. of Labor (USDOL) Career Cluster:
Arts / Audio Visual (AV) Technology / Communications
This Career Pathway Plan of Study (based on the Arts/AV Technology & Communications 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.

<table>
<thead>
<tr>
<th>Work-Based Learning</th>
<th>Academic Content</th>
<th>CTE Content</th>
</tr>
</thead>
<tbody>
<tr>
<td>Work-Based Learning: (Total of <strong>80 Hours</strong>)</td>
<td>ELA</td>
<td>Math</td>
</tr>
<tr>
<td>Four years of ELA aligned to the BEP and LEA graduation requirements</td>
<td>Four years of Math aligned to the BEP and LEA graduation requirements</td>
<td>At least three years of Science aligned to the BEP and LEA</td>
</tr>
<tr>
<td><strong>80 Hours of Internship, Service Learning, Industry Based Project or School-Based Enterprise in the four years</strong></td>
<td>Four years of Math aligned to the BEP and LEA graduation requirements</td>
<td>At least three years aligned to the BEP and LEA graduation requirements</td>
</tr>
<tr>
<td><strong>Primary Credential (Earned at Least One of the Following)</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>One of the Following: • RI State Council on the Arts Credential • Adobe Certification • Post Secondary Credit in Career Cluster •</td>
<td>At Least Three years of sequential theatre arts coursework (Specialized - optional Year 3)</td>
<td>Required: NA</td>
</tr>
</tbody>
</table>
### Salary Information:

<table>
<thead>
<tr>
<th>Occupation</th>
<th>Median Hourly Wage</th>
<th>Annual Wage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Actors</td>
<td>$23.48</td>
<td></td>
</tr>
<tr>
<td>Producers and Directors</td>
<td></td>
<td>$79,000</td>
</tr>
<tr>
<td>Music Directors and Composers</td>
<td></td>
<td>$49,130</td>
</tr>
<tr>
<td>Musicians and Singers</td>
<td></td>
<td>$30.49</td>
</tr>
<tr>
<td>Teachers</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Projected Job Outlook**

<table>
<thead>
<tr>
<th>Occupation</th>
<th>Projected Growth</th>
</tr>
</thead>
<tbody>
<tr>
<td>Actors</td>
<td>32% from 2020 to 2030</td>
</tr>
<tr>
<td>Producers and Directors</td>
<td>24% from 2020 to 2030</td>
</tr>
<tr>
<td>Music Directors and Composers</td>
<td>6% from 2020 to 2030</td>
</tr>
<tr>
<td>Musicians and Singers</td>
<td>6% from 2020 to 2030</td>
</tr>
<tr>
<td>Teachers</td>
<td>8% from 2020 to 2030</td>
</tr>
</tbody>
</table>

**Employability Skills & Knowledge for Entry Level**

- Problem Solving
- Professionalism

**Occupations In This Pathway**

- Actor
- Director

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

**RI Department of Labor & Training; Labor Market Information;**

**CTE Updated Salaries Cover Sheet - Arts and A/V & GCT**
<table>
<thead>
<tr>
<th>Required Curriculum:</th>
<th>Related Teacher Certification:</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="https://www.nationalartsstandards.org/sites/default/files/Theatre%20at%20a%20Glance%20-%20new%20copyright%20info.pdf" alt="Image" /></td>
<td><img src="https://www.ride.ri.gov/StudentsFamilies/EducationPrograms/CareerTechnicalEducation.aspx#12211324-cte-teacher-certification" alt="Image" /> All Grades Theater (Non-CTE Certification); High School Diploma + 5 years min. industry experience documented or Associates/Bachelor's Degree + 3 years min. industry experience documented and a CTE certificate (or working towards one)</td>
</tr>
</tbody>
</table>

**Post-Secondary Partnerships**

| Rhode Island College-EEP |  |

**Recommended Elements:**

<table>
<thead>
<tr>
<th>Coursework:</th>
<th>ELA- Public Speaking/Speech</th>
<th>Foreign Languages-Italian, French, Social Studies/Social Scienc</th>
<th>Math</th>
<th>Science</th>
</tr>
</thead>
<tbody>
<tr>
<td>Work-Based Learning:</td>
<td>German Preferred</td>
<td>es-Greek and Roman History</td>
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<tr>
<td>CTSO: SKills USA</td>
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<tr>
<td>Apprenticeship</td>
<td></td>
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</tr>
<tr>
<td>Optional Credential:</td>
<td>RI State Council on the Arts Credential</td>
<td></td>
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</tr>
<tr>
<td>School Based Enterprise Participation in performing arts productions.</td>
<td></td>
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<td></td>
</tr>
<tr>
<td>Apprenticeship</td>
<td></td>
<td></td>
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</tr>
</tbody>
</table>
RI Career & Technical Education Board of Trustees Program Industry Standards

<table>
<thead>
<tr>
<th>GWB Priority Sector:</th>
<th>Arts/AV Technology &amp; Communications</th>
<th>Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>Career Field:</td>
<td>Education</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Arts Educator - Visual/Music/Theater/Dance/Media REVISED! In effect 7/1/22!</td>
<td></td>
</tr>
</tbody>
</table>

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

This Career Pathway Plan of Study (based on the Arts/AV Technology & Communications 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.

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</tbody>
</table>
| 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 requirements | Four years of Math aligned to the BEP and LEA graduation requirements | At least three years of Science aligned to the BEP and LEA graduation requirements | At least three years aligned to the BEP and LEA graduation requirements | CTE Coursework | One of the Following: • RI State Council on the Arts Credential • Adobe Certifica
### Salary Information:

The median annual wage for high school teachers was **$62,870** in May 2020 CTE Updated Salaries Cover Sheet - Arts and A/V & GCT

Employment of teachers is projected to grow 8 percent from 2020 to 2030, about as fast as the average for all occupations.

**RI Department of Labor & Training; Labor Market**

*US Department of Labor; Bureau of Labor Statistics*;
### Employability Skills & Knowledge for Entry Level:

- **Problem Solving**
- **Professionalism**
- **Collaboration**
- **Critical Thinking**
- **Communication**
- **Creativity**
- **Flexibility**
- **Initiative**
- **Demonstrate their skill and talent through a portfolio of work**
- **Exhibit creativity through unique visual problem solving**
- **Display their work through traditional methods and a web portfolio**
- **Possess customer service/interpersonal skills**
- **Utilize a variety of materials such as pencil, charcoal, collage, paint and print-making**
- **Be prepared for a highly competitive environment.**

### Occupations In This Pathway:

- Junior Art Director
- Art Director
- Art Historian/Archivist
- Museum/Gallery Curator
- Museum Education Director
- Visual Arts Educator
- Art Therapist
- Music, Theater, Arts, Dance Educator, College Professor

### Required Curriculum:


### Related Teacher Certification:

- [https://www.ride.ri.gov/StudentsFamilies/EducationPrograms/CareerTechnicalEducation.aspx#12211324-cte-teacher-certification](https://www.ride.ri.gov/StudentsFamilies/EducationPrograms/CareerTechnicalEducation.aspx#12211324-cte-teacher-certification)

All Grades Art (Non-CTE Certification); High School Diploma + 5 years min. industry experience documented or Associates/Bachelor's Degree + 3 years min.
industry experience documented and a CTE certificate (or working towards one) or RIDE K-12 Certification

<table>
<thead>
<tr>
<th>Post-Secondary Partnerships</th>
</tr>
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<tbody>
<tr>
<td>Rhode Island College- EEP</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Recommended Elements:</th>
</tr>
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<tbody>
<tr>
<td>Coursework: ELA, Foreign Languages, Social Studies/Social Sciences-Art History, AP Art History, Science, Math</td>
</tr>
<tr>
<td>CTSO: SKills USA</td>
</tr>
<tr>
<td>Work-Based Learning: Internship, Service Learning, Industry Project, School Based Enterprise, Apprenticeship</td>
</tr>
<tr>
<td>Optional Credential: RI State Council on the Arts Credential</td>
</tr>
</tbody>
</table>
RI Career & Technical Education Board of Trustees Program Industry Standards

<table>
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<tr>
<th>GWB Priority Sector: No</th>
<th>Arts/AV Technology &amp; Communications</th>
</tr>
</thead>
<tbody>
<tr>
<td>Career Field: Arts/Design</td>
<td><a href="#">Craft and Fine Artist REVISED! In effect 7/1/22!</a></td>
</tr>
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Career Pathway Plan of Study for ▶ Learners ▶ Parents ▶ Counselors ▶ Teacher/Faculty

This Career Pathway Plan of Study (based on the Arts/AV Technology & Communications 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.*

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| Required: NA | |

| |
| |

| |
| |
### Employability Skills & Knowledge for Entry Level:

- **Problem Solving**
- **Professionalism**
- **Collaboration**
- **Critical Thinking**
- **Communication**
- **Creativity**
- **Flexibility**
- **Initiative**
- **Demonstrate their skill and talent through a portfolio of work**

### Occupations In This Pathway:

- Junior Art Director
- Set Designer
- Art Director
- Industrial Designer
- Illustrator
- Jewelry/Metal Worker
- Woodworker
- Fashion Designer

### Salary Information:

**The median annual wage for Craft and Fine Artists was $49,960 in May 2021. CTE Updated Salaries Cover Sheet - Arts and A/V & GCT**

**Projected Job Outlook**

Craft and Fine Artists is projected to grow 14 percent from 2020 to 2030

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**RI Department of Labor & Training; Labor Market Information;**

* US Department of Labor; Bureau of Labor Statistics; Occupational Outlook Handbook**
- Exhibit creativity through unique visual problem solving
- Display their work through traditional methods and a web portfolio
- Possess customer service/interpersonal skills
- Utilize a variety of materials such as pencil, charcoal, collage, paint and print-making
- Be prepared for a highly competitive environment.

### Museum/Gallery Curator

**Required Curriculum:**


**Related Teacher Certification:**

- [https://www.ride.ri.gov/StudentsFamilies/EducationPrograms/CareerTechnicalEducation.aspx#12211324-cte-teacher-certification](https://www.ride.ri.gov/StudentsFamilies/EducationPrograms/CareerTechnicalEducation.aspx#12211324-cte-teacher-certification)

**All Grades Art (Non-CTE Certification) ; High School Diploma + 5 years min. industry experience documented or Associates/Bachelor's Degree + 3 years min. industry experience documented and a CTE certificate (or working towards one)**

### Post-Secondary Partnerships

- Rhode Island College- EEP

**Recommended Elements:**

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<thead>
<tr>
<th>Coursework</th>
<th>ELA</th>
<th>Foreign Languages</th>
<th>Social Studies/Social Sciences Art History AP</th>
<th>Science</th>
<th>Math</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
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<td>CTSO:</td>
<td>SKills USA</td>
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</tr>
<tr>
<td>Work-Based Learning:</td>
<td>Internship</td>
<td>Service Learning</td>
<td>Industry Project</td>
<td>School Based Enterprise-</td>
<td></td>
</tr>
<tr>
<td>Optional Credential:</td>
<td>Adobe Certification</td>
<td>Or RI State Council on the Arts Credential</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Art History</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Apprenticeship</td>
<td></td>
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<td>ELA</td>
<td>Math</td>
</tr>
<tr>
<td>80 Hours of Internship, Service</td>
<td>Four years of ELA aligned</td>
<td>Four years of Math aligned</td>
</tr>
<tr>
<td>Learning, Industry Based Project or School-Based Enterprise in the four years</td>
<td>to the BEP and LEA graduation requirements</td>
<td>to the BEP and LEA graduation requirements</td>
</tr>
<tr>
<td>---</td>
<td>---</td>
<td>---</td>
</tr>
<tr>
<td>State Council on the Arts Credential • Post Secondary Credit in Career Cluster • Concurrent enrollment (EEP) in the Music, Theatre, and Dance Department at Rhode Island College</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Salary Information:

The median hourly wage for choreographers was $20.53 in May 2021

### Projected Job Outlook

Employment of dancers and choreographers is projected to grow 31 percent from 2020 to 2030
<table>
<thead>
<tr>
<th>Employability Skills &amp; Knowledge for Entry Level:</th>
<th>Occupations In This Pathway</th>
</tr>
</thead>
<tbody>
<tr>
<td>► Problem Solving</td>
<td>Dancers Choreographers</td>
</tr>
<tr>
<td>► Professionalism</td>
<td>Entertainers and performers</td>
</tr>
<tr>
<td>► Collaboration</td>
<td>Sports and related workers</td>
</tr>
<tr>
<td>► Critical Thinking</td>
<td>Teaching Artist</td>
</tr>
<tr>
<td>► Communication</td>
<td>Postsecondary Teachers</td>
</tr>
<tr>
<td>► Creativity</td>
<td>Public Education Dance Teacher</td>
</tr>
<tr>
<td>► Flexibility</td>
<td>Studio owner Teachers</td>
</tr>
<tr>
<td>► Initiative</td>
<td>Producers and Directors</td>
</tr>
<tr>
<td>► Demonstrate their skill and talent through a portfolio of work</td>
<td></td>
</tr>
<tr>
<td>► Exhibit creativity</td>
<td>* US Department of Labor; Bureau of Labor Statistics; Occupational Outlook Handbook</td>
</tr>
<tr>
<td>► Meet the minimum of Proficient Level in the National Core Arts Standards for Dance</td>
<td></td>
</tr>
<tr>
<td>► Be prepared for a highly competitive environment.</td>
<td></td>
</tr>
</tbody>
</table>

** RI Department of Labor & Training; Labor Market Information;**

** Required Curriculum:**

** Related Teacher Certification:**
Theater, All Grades Dance; High School Diploma + 5 years min. industry experience documented or Associates/Bachelor's Degree + 3 years min. industry experience documented and a CTE certificate (or working towards one)

<table>
<thead>
<tr>
<th>Post-Secondary Partnerships</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Recommended Elements:</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Coursework:</th>
<th>ELA</th>
<th>Foreign Languages</th>
<th>Social Studies/Social Sciences</th>
<th>Science</th>
<th>Math</th>
</tr>
</thead>
<tbody>
<tr>
<td>CTSO:</td>
<td>Skills USA</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Work-Based Learning:</td>
<td>National Honor Society for Dance</td>
<td></td>
<td></td>
<td></td>
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</tr>
</tbody>
</table>
RI Career & Technical Education Board of Trustees Program Industry Standards

<table>
<thead>
<tr>
<th>GWB Priority Sector:Yes</th>
<th>Arts/AV Technology &amp; Communications</th>
</tr>
</thead>
<tbody>
<tr>
<td>Career Field:AV Technology/IT</td>
<td>Music Technologist REVISED! In effect 7/1/22</td>
</tr>
</tbody>
</table>

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

This Career Pathway Plan of Study (based on the Arts/AV Technology & Communications 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.

<table>
<thead>
<tr>
<th>Work-Based Learning</th>
<th>Academic Content</th>
<th>CTE Content</th>
</tr>
</thead>
<tbody>
<tr>
<td>Work-Based Learning: (Total of 80 Hours)</td>
<td>ELA</td>
<td>Math</td>
</tr>
<tr>
<td>80 Hours of Internship, Service Learning, Industry Based Project or School-Based Enterprise in the four years</td>
<td>Four years of ELA aligned to the BEP and LEA graduation requirements</td>
<td>Four years of Math aligned to the BEP and LEA graduation requirements</td>
</tr>
</tbody>
</table>
**Employability Skills & Knowledge for Entry Level:**

- Problem Solving
- Professionalism
- Collaboration

**Occupations In This Pathway:**

- High School Diploma-
  Intern at recording studio/broadcasting
<table>
<thead>
<tr>
<th>Critical Thinking</th>
<th>Communication</th>
<th>Creativity</th>
<th>Flexibility</th>
<th>Initiative</th>
</tr>
</thead>
<tbody>
<tr>
<td>Skills in Audio Editing, Recording, Mixing, and Mastering</td>
<td>Ability to use MIDI and Virtual Instruments, Sound Design, Music Composition/Production, Creating Video Soundtracks</td>
<td>Ability to assess audio requirements, acquiring, editing, processing, mastering, exporting, and implementing audio assets for video games</td>
<td>Familiarity with the basics of middleware (FMOD or similar) and the basics of a video game editor (Unity or similar) for audio implementation</td>
<td>Proficiency in using Avid's Pro Tools</td>
</tr>
</tbody>
</table>

| Freelance Sound Technician | Associate's Degree-Assistant Sound Designer | Composer/Arranger Assistant Sound Effects (SFX) Editor Assistant Foley Artist Assistant Recording Engineer Assistant Audio Editor Bachelor's Degree-Sound Designer; Composer/Arranger; Sound Effects (SFX) Editor; Foley Artist; Recording Engineer; Audio Editor; Audio Implementer (Audio Programmer); Acoustical Consultant; Music Teacher; Music Therapist |

**Required Curriculum:**

**Related Teacher Certification:**
https://www.ride.ri.gov/StudentsFamilies/CareerTechnicalEducationPrograms/CareerTechnicalEducation.aspx#12211324-cte-teacher-certification

CTE Certification- Audio Visual Comm and Tech/Technicians or Valid Music Certification from the Rhode Island Department of Education: ALL GRADES MUSIC CERTIFICATE (11506) High School Diploma + 5 years min. industry experience documented or Associates/Bachelor's Degree + 3 years min.
industry experience documented and a CTE certificate (or working towards one)

<table>
<thead>
<tr>
<th>Post-Secondary Partnerships</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rhode Island College EEP</td>
</tr>
</tbody>
</table>

**Recommended Elements:**

<table>
<thead>
<tr>
<th>Coursework:</th>
<th>ELA</th>
<th>Foreign Languages</th>
<th>Social Studies/Social Sciences</th>
<th>Science-Computer Science</th>
<th>Math</th>
<th>Music</th>
<th>Piano</th>
<th>Music Theory</th>
<th>Music History</th>
</tr>
</thead>
<tbody>
<tr>
<td>CTSO:</td>
<td>SKills USA</td>
<td></td>
<td></td>
<td></td>
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<td></td>
<td></td>
<td></td>
</tr>
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<td>Work-Based Learning:</td>
<td>Internship</td>
<td>Service Learning</td>
<td>Industry Project</td>
<td>School Based Enterprise-Apprenticeship</td>
<td></td>
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</tr>
<tr>
<td>Optional Credential:</td>
<td></td>
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<td></td>
</tr>
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</table>

27
RI Career & Technical Education Board of Trustees Program Industry Standards

<table>
<thead>
<tr>
<th>GWB Priority Sector: No</th>
<th>Arts/AV Technology &amp; Communications</th>
</tr>
</thead>
<tbody>
<tr>
<td>Career Field: Arts, Hospitality</td>
<td>Musician (Music Educator - title change) REVISED! In effect 7/1/22</td>
</tr>
</tbody>
</table>

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

This Career Pathway Plan of Study (based on the Arts/AV Technology & Communications 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.

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<th>Work-Based Learning</th>
<th>Academic Content</th>
<th>CTE Content</th>
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<td>Math</td>
</tr>
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<td>Four years of ELA aligned to the BEP and LEA graduation requirements</td>
<td>Four years of Math aligned to the BEP and LEA graduation requirements</td>
</tr>
</tbody>
</table>
### Employability Skills & Knowledge for Entry Level:

- **Problem Solving**
- **Professionalism**

### Requirements

- ensembles and Chamber Music, Jazz Band, Musical Theater, Rock Band, etc.

### Projected Job Outlook

According to the U.S. Bureau of Labor Statistics, the expected growth 2020 to 2030:

- Music Directors and Composers (6% growth)
- Musicians and Singers (11% growth)
- Post-Secondary Teachers (12% growth)
- High School Teachers (8% growth)
- Middle School Teachers (7% growth)
- Kindergarten and Elementary School Teachers (7% growth)

### Salary Information:

<table>
<thead>
<tr>
<th>Post-Secondary Teachers</th>
<th>Median annual wage was $79,64, May 2021</th>
</tr>
</thead>
<tbody>
<tr>
<td>High School Teachers</td>
<td>Median annual wage was $61,820 in May 2021</td>
</tr>
<tr>
<td>Middle School Teachers, Kindergarten and Elementary School Teachers</td>
<td>Median annual wage for Middle &amp; Elementary school teachers was $61,320-$60,900 in May 2021</td>
</tr>
</tbody>
</table>

*RI Department of Labor & Training; Labor Market Information;

**CTE Updated Salaries Cover Sheet - Arts and A/V & GCT**

---

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

**Employments in This Pathway**

- **High School Diploma**
- **Musician in Rhode**
**Collaboration**
**Critical Thinking**
**Communication**
**Creativity**
**Flexibility**
**Initiative**
**Performance proficiency on primary instrument or voice performance proficiency**
**Performance proficiency in a large performing ensemble (band, chorus, orchestra)**
**Knowledge of musical history and literature**
**Knowledge of music theory, sight singing, ear training, and rhythmic training**

| Island National Guard and other branches of the service |
| Composer/Arranger |
| General Business musician |
| Music Directors and Composers |
| Musicians and Singers Post-Secondary Teachers High School, Middle School and Kindergarten and Elementary School Teachers Music Entrepreneur Arts Management Conductor Music Therapist Private Music Teacher |

**Required Curriculum:**


**Related Teacher Certification:**

1. [https://www.ride.ri.gov/StudentsFamilies/EducationPrograms/CareerTechnicalEducation.asp](https://www.ride.ri.gov/StudentsFamilies/EducationPrograms/CareerTechnicalEducation.asp#12211324-cte-teacher-certification) All Grades Music; High School Diploma + 5 years min. industry experience documented or Associates/Bachelor’s Degree + 3 years min. industry experience documented and a CTE certificate (or working towards one) or RIDE K-12 Certification

**Post-Secondary Partnerships**

| Rhode Island College EEP |

**Recommended Elements:**
<table>
<thead>
<tr>
<th>Coursework</th>
<th>ELA</th>
<th>Foreign Languages - Italian, French, German preferred (Voice)</th>
<th>Social Studies/Science</th>
<th>Math</th>
<th>Private Lessons strongly recommended AP/EEP Music Theory</th>
<th>EEP Music History</th>
</tr>
</thead>
<tbody>
<tr>
<td>CTSO:</td>
<td>Skills USA</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Work-Based Learning:</td>
<td>Internship</td>
<td>Service Learning</td>
<td>Industry Project</td>
<td></td>
<td></td>
<td>Apprenticeship</td>
</tr>
<tr>
<td>Optional Credential:</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
# Career Pathway Plan of Study for Learners, Parents, Counselors, and Teacher/Faculty

This Career Pathway Plan of Study (based on the Arts/AV Technology & Communications 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.

<table>
<thead>
<tr>
<th>Work-Based Learning</th>
<th>Academic Content</th>
<th>CTE Content</th>
<th>Primary Credential (Earned at Least One of the Following)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Work-Based Learning: (Total of 80 Hours)</td>
<td>ELA</td>
<td>Math</td>
<td>Science</td>
</tr>
<tr>
<td>80 Hours of Internship, Service Learning, Industry Based Project or School-Based Enterprise in the four years</td>
<td>Four years of ELA aligned to the BEP and LEA graduation requirements</td>
<td>Four years of Math aligned to the BEP and LEA graduation requirements</td>
<td>At least three years of Science aligned to the BEP and LEA graduation requirements</td>
</tr>
<tr>
<td>Salary Information:</td>
<td>Projected Job Outlook</td>
<td></td>
<td></td>
</tr>
<tr>
<td>---------------------</td>
<td>-----------------------</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Sound engineering technician</strong> The median annual wage for broadcast, sound, and video technicians was $49,050 in May 2021.</td>
<td>Employment of broadcast, sound, and video technicians is projected to grow 21 percent from 2020 to 2030</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**RI Department of Labor & Training; Labor Market Information;**

**Employability Skills & Knowledge for Entry Level:**

- Problem Solving
- Professionalism
- Collaboration
- Critical Thinking
- Communication
- Creativity
- Flexibility
- Initiative
- Proficiency in a variety of skills including:

  - Producer, Camera operator, Director, Sound engineering technician, Videographer, Video/sound editor, Composer for film,
### Required Curriculum:


### Related Teacher Certification:

- [https://www.ride.ri.gov/StudentsFamilies/EducationPrograms/CareerTechnicalEducation.aspx#12211324-cte-teacher-certification](https://www.ride.ri.gov/StudentsFamilies/EducationPrograms/CareerTechnicalEducation.aspx#12211324-cte-teacher-certification)

### Post-Secondary Partnerships

### Recommended Elements:

<table>
<thead>
<tr>
<th>Coursework:</th>
<th>ELA Production</th>
<th>Foreign Languages</th>
<th>Social Studies/Social Sciences Cultural Literacy</th>
<th>Science</th>
<th>Math</th>
<th>Electives Digital and Video Communications Film and Literature; Mass Media; Theater Workshop</th>
</tr>
</thead>
<tbody>
<tr>
<td>CTSO:</td>
<td>SKills USA</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Work-Based Learning:</td>
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<td>Apprenticeship</td>
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<td></td>
</tr>
<tr>
<td>Optional Credential:</td>
<td>Skills USA Career Essentials Assessments Audio-Radio Production; TV Video Production</td>
<td>Udemy Online Courses- May include Logic ProX, Pro Tools, Adobe Premiere, Final Cut Pro</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Editors arrange footage shot by camera operators and collaborate with producers and directors to create the final content.

GWB Priority Sector: Yes
Arts/AV Technology/Communications AND Graphic Communications Technology

Career Field: Audio/Video/Film Production REVISED! In effect 7/1/22!

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

Film and video editors and camera operators manipulate images that entertain or inform an audience. Camera operators capture a wide range of material for TV shows, movies, and other media. 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.

<table>
<thead>
<tr>
<th>Workplace Learning</th>
<th>Academic Content</th>
<th>CTE Content</th>
</tr>
</thead>
<tbody>
<tr>
<td>Work-Based Learning:</td>
<td>ELA</td>
<td>Math</td>
</tr>
</tbody>
</table>

36
<table>
<thead>
<tr>
<th>(Total of 80 Hours)</th>
<th>Learning Activities</th>
<th>One of the Following)</th>
</tr>
</thead>
<tbody>
<tr>
<td>80 Hours of Internship, Service Learning, Industry Based Project or School-Based Enterprise in the four years</td>
<td>At least three years aligned to the BEP</td>
<td>One of the Following: • PrintED • Adobe Certification • Post Secondary Credit in Career Cluster • NOCTI • YouScience (formerly Precision Exam)</td>
</tr>
<tr>
<td>Four years of ELA aligned to the BEP</td>
<td>Four years of Math Aligned to the BEP</td>
<td>At Least Three years of sequential Audio/Video coursework (Specialized - optional Year 3)</td>
</tr>
<tr>
<td>At least three years aligned to the BEP</td>
<td>Required Safety Training specific to content</td>
<td></td>
</tr>
</tbody>
</table>

Salary Information:

** Pay: The median annual wage for camera operators, television, video, and film was $57,200 in May 2020. [CTE Updated Salaries Cover Sheet - Arts and A/V & GCT](#) **

** RI Department of Labor; Bureau of Labor Statistics; **

** Projected Job Outlook **

** Outlook: Overall employment of film and video editors and camera operators is projected to grow 29 percent from 2020 to 2030 **

* US Department of Labor; Bureau of Labor Statistics; **
<table>
<thead>
<tr>
<th>Labor &amp; Training; Labor Market Information;</th>
<th><strong>Occupational Outlook Handbook</strong></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Employability Skills &amp; Knowledge for Entry Level:</td>
<td>Occupations to this Pathway</td>
<td></td>
</tr>
<tr>
<td>► Problem Solving</td>
<td>► <strong>Broadcast and Sound Engineering Technicians</strong></td>
<td></td>
</tr>
<tr>
<td>► Professionalism</td>
<td>► <strong>Editors</strong></td>
<td></td>
</tr>
<tr>
<td>► Collaboration</td>
<td>► <strong>Multimedia Artists and Animators</strong></td>
<td></td>
</tr>
<tr>
<td>► Critical Thinking</td>
<td>► <strong>Graphic Designers</strong></td>
<td></td>
</tr>
<tr>
<td>► Communication</td>
<td>► <strong>Photographers</strong></td>
<td></td>
</tr>
<tr>
<td>► Creativity</td>
<td>► <strong>Commercial Artists, Illustrators, Artists all Media</strong></td>
<td></td>
</tr>
<tr>
<td>► Flexibility</td>
<td>► <strong>Commercial Photographers Digital, Still, Video, Film</strong></td>
<td></td>
</tr>
<tr>
<td>► Initiative Orientation to the trades</td>
<td>► <strong>Producers and Directors</strong></td>
<td></td>
</tr>
<tr>
<td>► Technology specific equipment and basic operational techniques</td>
<td>► <strong>Reporters, Correspondents, and Broadcast News Analysts</strong></td>
<td></td>
</tr>
<tr>
<td>► Quality control</td>
<td></td>
<td></td>
</tr>
<tr>
<td>► Artistic ability</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Required Curriculum: One of the Following</td>
<td>Related Teacher Certification:</td>
<td></td>
</tr>
<tr>
<td>► Autodesk</td>
<td></td>
<td></td>
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<tr>
<td>► Adobe</td>
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<tr>
<td>► You Science (formerly</td>
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<td></td>
</tr>
<tr>
<td></td>
<td><a href="https://www.ride.ri.gov/StudentsFamilies/EducationPrograms/CareerTechnicalEducation.aspx#12211324-cte-teacher-certification">https://www.ride.ri.gov/StudentsFamilies/EducationPrograms/CareerTechnicalEducation.aspx#12211324-cte-teacher-certification</a></td>
<td></td>
</tr>
<tr>
<td></td>
<td>High School Diploma + 5 years min. industry experience</td>
<td></td>
</tr>
<tr>
<td>Precision Exams) ► Goodheart-Willcox ► Other Graphic Communications Coursework approved by CTE_BOT GCT Advisory</td>
<td>documented or Associates/Bachelor's Degree + 3 years min. industry experience documented and a CTE certificate (or working towards one)</td>
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</tr>
<tr>
<td>Post-Secondary Partnerships</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Central Maine CC. - Johnson &amp; Wales - New England Institute of Technology -</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Recommended Elements</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Course work CTSO SkillsUSA - DECA - FBLA....</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Work-Based Learning Participation</td>
<td>Year 1 - 10 Hours</td>
<td>Year 2 - 20 Hours</td>
</tr>
</tbody>
</table>
RI Career & Technical Education Board of Trustees Program Industry Standards

<table>
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<th>GWB Priority Sector: No</th>
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</tr>
</thead>
<tbody>
<tr>
<td>Career Field:</td>
<td>Media Communications REVISED! In effect 7/1/22!</td>
</tr>
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Career Pathway Plan of Study for ► Learners ► Parents ► Counselors ► Teacher/Faculty

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<td>Four years of Math aligned to the BEP and LEA graduation requirements</td>
</tr>
</tbody>
</table>
### Salary Information:

**Salary** The median annual wage for camera operators, television, video, and film was $49,230 in May 2021 CTE Updated Salaries Cover Sheet - Arts and A/V & GCT

**Projected Job Outlook**

**Outlook** Overall employment of film and video editors and camera operators is projected to grow 29 percent from 2020 to 2030, much faster than the average for all occupations.

**RI Department of Labor & Training; Labor Market Information;**

*US Department of Labor; Bureau of Labor Statistics; Occupational Outlook Handbook*
**Employability Skills & Knowledge for Entry Level:**

- Problem Solving
- Professionalism
- Critical Thinking
- Communication
- Creativity
- Flexibility
- Initiative
- Apply effective and collaborative team communication and management skills
- Complete the video/writing process 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.

**Occupations In This Pathway:**

- Motion Picture and Video Industries
- Promoters of Performing Arts, Sports, and Similar Events
- Radio and Television Broadcasting
- Independent Artists, Writers, and Performers
- Performing Arts Companies

**Required Curriculum:**


**Related Teacher Certification:**

- [https://www.ride.ri.gov/StudentsFamilies/EducationPrograms/CareerTechnicalEducation.aspx#12211324-cte-teacher-certification CTE Teacher Certification- Marketing, Marketing Management; High School Diploma + 5 years min. industry experience documented or Associates/Bachelor’s Degree + 3 years min. industry experience documented and a CTE certificate (or working towards one)](https://www.ride.ri.gov/StudentsFamilies/EducationPrograms/CareerTechnicalEducation.aspx#12211324-cte-teacher-certification)

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<tr>
<td><strong>CTSO:</strong></td>
<td>SkillsUSA</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Work-Based Learning:</strong></td>
<td>Internship with partnering theatre</td>
<td>Service Learning</td>
<td>Industry Project</td>
<td>School Based Enterprise - Participation in performing arts productions.</td>
</tr>
<tr>
<td></td>
<td>Internship with partnering theatre</td>
<td>Service Learning</td>
<td>Industry Project</td>
<td>Apprenticeship</td>
</tr>
<tr>
<td><strong>Optional Credential:</strong></td>
<td>Adobe Premiere Pro</td>
<td>Final Cut Pro</td>
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</table>
RI Career & Technical Education Board of Trustees Program Industry Standards

<table>
<thead>
<tr>
<th>GWB Priority Sector:Yes</th>
<th>Arts/AV Technology &amp; Communications AND Graphic Communications Technology</th>
</tr>
</thead>
<tbody>
<tr>
<td>Career Field:</td>
<td>Multimedia Artist REVISED! In effect 7/1/22</td>
</tr>
</tbody>
</table>

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

This Career Pathway Plan of Study (based on the Arts/AV Technology & Communications 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.

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<td>At Least Three years of sequential Media Communications/Visual Arts coursework (Specialized - optional Year 3)</td>
<td>One of the Following: • PrintED • Adobe Certification • Post Secondary Credit</td>
<td></td>
</tr>
</tbody>
</table>
### Projected Job Outlook

**Salary** The median annual wage for special effects artists and animators was $78,790 in May 2021. CTE Updated Salaries Cover Sheet - Arts and A/V & GCT

**Outlook** Employment of special effects artists and animators is projected to grow 16 percent from 2020 to 2030

**Employability Skills & Knowledge for Entry Level:**
- Problem Solving
- Professionalism

**Occupations In This Pathway:**
- Illustrator
- Animator

**Note:**
- *US Department of Labor; Bureau of Labor Statistics; Occupational Outlook Handbook*
- **RI Department of Labor & Training; Labor Market Information;**
<table>
<thead>
<tr>
<th>Collaboration</th>
<th></th>
<th>Video Game</th>
<th>Designer</th>
<th>Art Director</th>
<th>Web Developer</th>
<th>Film Director</th>
<th>Producer</th>
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</thead>
<tbody>
<tr>
<td>Critical Thinking</td>
<td></td>
<td>Fashion Designer</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Communication</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Creativity</td>
<td></td>
<td></td>
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<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Flexibility</td>
<td></td>
<td></td>
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<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Initiative</td>
<td></td>
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<td></td>
</tr>
<tr>
<td>Work with a team of artists, copywriters, designers, stylists, executives etc. to create multimedia designs</td>
<td></td>
<td></td>
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<td></td>
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</tr>
<tr>
<td>Work with a wide range of media and use graphic design software</td>
<td></td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Think creatively and develop new design concepts, graphics and layouts</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Research projects to help create realistic and innovative designs based upon the client’s needs</td>
<td></td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Prepare, present, amend, and edit designs based on client feedback and specifications within required timelines</td>
<td></td>
<td></td>
<td></td>
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<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Required Curriculum:**


**Related Teacher Certification:**

https://www.ride.ri.gov/StudentsFamilies/EducationPrograms/CareerTechnicalEducation.aspx#12211324-cte-teacher-certification

All Grades Art (Non-CTE Certification), CTE Graphic Artist ; High School Diploma + 5 years min. industry experience documented or Associates/Bachelor’s Degree + 3 years min. industry experience documented and a CTE certificate (or working towards one)

**Post-Secondary Partnerships**

Rhode Island College- EEP
<table>
<thead>
<tr>
<th>Recommended Elements:</th>
<th>Coursework:</th>
<th>ELA</th>
<th>Foreign Languages</th>
<th>Social Studies/Social Sciences-Art History</th>
<th>Science</th>
<th>Math</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>CTSO:</td>
<td>SkillsUSA</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Work-Based Learning:</td>
<td>Internship</td>
<td>Service Learning</td>
<td>Industry Project</td>
<td>School Based Enterprise-</td>
<td>Apprenticeship</td>
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<tr>
<td></td>
<td>Optional Credential:</td>
<td>Adobe Certification</td>
<td>Or RI State Council on the Arts Credential</td>
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## RI Career & Technical Education Board of Trustees Program Industry Standards

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<th>GWB Priority Sector: Yes</th>
<th>Arts/AV Technology &amp; Communications Approval Date: Version:4/22</th>
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<tbody>
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<td>Career Field: Designer</td>
<td>Career Pathway Plan of Study for ► Learners ► Parents ► Counselors ► Teacher/Faculty</td>
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### Arts/AV Technology & Communications

This Career Pathway Plan of Study (based on the Arts/AV Technology & Communications 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.*

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<td>Four years of ELA aligned to the BEP</td>
<td>Four years of Math aligned to the BEP</td>
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</tbody>
</table>
### Salary Information:

**Salary** The median annual wage for graphic designers was $53,380 in May 2020. The median annual wage for special effects artists and animators was $77,000 in May 2020.

**Outlook** Employment of special effects artists and animators is projected to grow 16 percent from 2020 to 2030. Employment of graphic designers is projected to grow 3 percent from 2020 to 2030.

**Employability Skills & Knowledge for Entry Level:**

- Problem Solving
- Professionalism
- Collaboration

**Occupations In This Pathway:**

- Architectural Designer
- Graphic Designer
- Fashion Designer Floral

---

**RI State Council on the Arts Credential**
<table>
<thead>
<tr>
<th>Critical Thinking</th>
<th>Communication</th>
<th>Creativity</th>
<th>Flexibility</th>
<th>Initiative</th>
<th>Demonstrate their skill and talent through a portfolio of work</th>
<th>Exhibit creativity through unique visual problem solving</th>
<th>Display their work through traditional methods and a web portfolio</th>
<th>Possess customer service/interpersonal skills</th>
<th>Possess basic art and design skills</th>
<th>Be prepared for a highly competitive environment.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Designer Graphic</td>
<td>Design Assistant</td>
<td>Industrial Design Assistant</td>
<td>Associate's Degree: Web Developer</td>
<td>Drafters</td>
<td>Desktop Publisher</td>
<td>Architect</td>
<td>Interior Designer</td>
<td></td>
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<td></td>
</tr>
</tbody>
</table>


Related Teacher Certification: https://www.ride.ri.gov/StudentsFamilies/EducationPrograms/CareerTechnicalEducation.asp\#12211324-cte-teacher-certification

All Grades Art (Non-CTE Certification); High School Diploma + 5 years min. industry experience documented or Associates/Bachelor's Degree + 3 years min. industry experience documented and a CTE certificate (or working towards one)

Post-Secondary Partnerships

| Rhode Island College- EEP |

Recommended Elements:

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51
This Career Pathway Plan of Study is based on the Printing Technology Pathway of the Arts, Audio/Video Technology and Communications Career Cluster and 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.

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</table>
Salary Information:

**Salary** The median annual wage for graphic designers was $53,380 in May 2020, CTE Updated Salaries Cover Sheet - Arts and A/V & GCT

Projected Job Outlook

**Outlook** Overall employment of Graphic Designers is projected to grow 3 percent from 2020 to 2030

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

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

Employability Skills & Knowledge for Entry Level:

- Problem Solving
- Professionalism
- Collaboration

Occupations to this Pathway

- Prepress Technical Technician
- Production Artist
- Desktop Publishing Specialists
<table>
<thead>
<tr>
<th>Critical Thinking</th>
<th>CAD Technicians</th>
</tr>
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<tbody>
<tr>
<td>Communication</td>
<td>Industrial designers</td>
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<tr>
<td>Creativity</td>
<td>Graphic Designers</td>
</tr>
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<td>Commercial Photographers Digital, Still, Video, Film</td>
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<td>Web developers/designers</td>
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<td>Artistic ability</td>
<td>Multimedia artists and animators</td>
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<tr>
<td></td>
<td>Printing and Related Support Activities</td>
</tr>
</tbody>
</table>

Required Curriculum: One of the Following

- MAVCC/Print[ED]  
- Adobe  
- Precision  
- Goodheart Willcox - Graphic Communications: Digital Design and Print  
- Other Graphic Communications Coursework approved by CTE_BOT GCT Advisory  

Related Teacher Certification:

- High School Diploma + 5 years min. industry experience documented or Associates/Bachelor's Degree + 3 years min. industry experience documented and a CTE certificate (or working towards one)

Post-Secondary Partnerships

- Roger Williams University - New England Institute of Technology - Central Maine CC. - Johnson & Wales

Recommended Elements
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<th>Coursework</th>
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## Workplace Learning  
### Academic Content  
### CTE Content  
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## Salary Information:

**Salary** The median annual wage for graphic printers was $47,560 in May 2020 CTE Updated Salaries Cover Sheet - Arts and A/V & GCT

## Projected Job Outlook

**Outlook** Overall employment of graphic printers is projected to grow 8 percent from 2020 to 2030

**RI Department of Labor & Training; Labor Market Information;**

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

## Employability Skills & Knowledge for Entry Level:

- Problem Solving
- Professionalism
- Collaboration
- Critical Thinking
- Communication
- Creativity

## Occupations to this Pathway:

- Digital and Printing Press operators
- Print Binding and Finishing Workers
- Printing and Related Support Activities
- Desktop Publishing Specialists
- CAD Technicians
- Industrial designers
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**Required Curriculum: One of the Following**

- MAVCC/Print[ED]
- Adobe
- Precision
- Goodheart Willcox - Graphic Communications: Digital Design and Print
- Other Graphic Communications Coursework approved by CTE_BOT GCT Advisory

[https://www.nationalartsstandards.org/sites/default/files/Media%20at%20a%20Glance%20new%20copyright%20info.pdf](https://www.nationalartsstandards.org/sites/default/files/Media%20at%20a%20Glance%20new%20copyright%20info.pdf)

**Related Teacher Certification:**

- [https://www.ride.ri.gov/StudentsFamilies/EducationPrograms/CareerTechnicalEducation.aspx#12211324-cte-teacher-certification](https://www.ride.ri.gov/StudentsFamilies/EducationPrograms/CareerTechnicalEducation.aspx#12211324-cte-teacher-certification) Related Teacher Certification:
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**Post-Secondary Partnerships**

- Roger Williams University - New England Institute of Technology - Central Maine CC. - Johnson & Wales

**Recommended Elements**

- Coursework
<table>
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<th>CTSO</th>
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</table>
At Least Three years of sequential Graphic Communications coursework (Specialized - optional Year 3)

GWB Priority Sector: Yes

Career Field: Graphic Communications Technology

Approval Date: Version:4/22

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

This Career Pathway Plan of Study (based on the Printing Technology Pathway of the Arts, Audio/Video Technology and Communications 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.

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REVISED! In effect 7/1/22
80 Hours of Internship, Service Learning, Industry Based Project or School-Based Enterprise in the four years

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<td></td>
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<td>Required Safety Training specific to content</td>
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Salary Information:

**Salary** The median annual wage for graphic designers was $53,380 in May 2020. CTE Updated Salaries Cover Sheet - Arts and A/V & GCT

**Projected Job Outlook**

**Outlook** Employment of graphic designers is projected to grow 3 percent from 2020 to 2030

* US Department of Labor; Bureau of Labor Statistics; Occupation

** RI Department of Labor & Training; Labor Market Information;
### Employability Skills & Knowledge for Entry Level:

- Problem Solving
- Professionalism
- Collaboration
- Critical Thinking
- Communication
- Creativity
- Flexibility
- Initiative Orientation to the trades
- Technology specific equipment and basic operational techniques
- Quality control
- Artistic ability

### Occupations to this Pathway:

- Desktop Publishing Specialists
- CAD Technicians
- Industrial designers
- Graphic Designers
- Interior Designers, Commercial/Residential
- Commercial Artists, Illustrators, Artists all Media
- Commercial Photographers Digital, Still, Video, Film
- Web developers/designers
- Multimedia artists and animators

### Required Curriculum: One of the Following

- MAVCC/Print[ED]
- Adobe
- Precision
- Goodheart Willcox - Graphic Communications: Digital Design and Print
- Other Graphic Communications Coursework approved by CTE_BOT GCT Advisory

### Related Teacher Certification:

Visit the following link for more information on the CTE_BOT GCT Advisory:


[https://www.ride.ri.gov/StudentsFamilies/EducationPrograms/CareerTechnicalEducation.aspx#12211324-cte-teacher-certification](https://www.ride.ri.gov/StudentsFamilies/EducationPrograms/CareerTechnicalEducation.aspx#12211324-cte-teacher-certification)

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<td><strong>Recommended Elements</strong></td>
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RI Career & Technical Education Board of Trustees Program Industry Standards

GWB Priority Sector: Yes

Graphic Communications Technology Approval Date: Version: 4/22

Career Field: Advertising, Promotions and Marketing REVISED! In effect 7/1/22

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

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 of promotional offerings.

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<td>Other Courses or Learner Activities</td>
</tr>
<tr>
<td>At Least Three years of sequential Graphic Communications coursework (Specialized - optional Year 3)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>PrintED or • Adobe Certification • Xerox/Konica Minolta or • Post Secondary Credit in Career Cluster • Precision Exams •</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Salary Information:</td>
<td>Projected Job Outlook</td>
<td></td>
</tr>
<tr>
<td>---------------------</td>
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<td></td>
</tr>
<tr>
<td><strong>Salary</strong> The median annual wage for advertising and promotions managers was $127,150 in May 2021. <strong>CTE Updated Salaries Cover Sheet - Arts and A/V &amp; GCT</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Outlook</strong> Overall employment of advertising, promotions, and marketing managers is projected to grow 10 percent from 2020 to 2030, about as fast as the average for all occupations</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**RI Department of Labor & Training; Labor Market Information;**

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

<table>
<thead>
<tr>
<th>Employability Skills &amp; Knowledge for Entry Level:</th>
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<tbody>
<tr>
<td>► Problem Solving</td>
</tr>
<tr>
<td>► Professionalism</td>
</tr>
<tr>
<td>► Collaboration</td>
</tr>
<tr>
<td>► Critical Thinking</td>
</tr>
<tr>
<td>► Communication</td>
</tr>
</tbody>
</table>

<p>| Occupations to this Pathway |
|----------------------------|---|
| ► Desktop Publishing Specialists |
| ► CAD Technicians |
| ► Industrial designers |
| ► Graphic Designers |
| ► Interior Designers, Commercial/Residential |</p>
<table>
<thead>
<tr>
<th>Creativity</th>
<th>Commercial Artists, Illustrators, Artists all Media</th>
</tr>
</thead>
<tbody>
<tr>
<td>Flexibility</td>
<td>Commercial Photographers Digital, Still, Video, Film</td>
</tr>
<tr>
<td>Initiative Orientation to the trades</td>
<td>Advertising Sales Agents</td>
</tr>
<tr>
<td>Technology specific equipment and basic operational techniques</td>
<td>Editors</td>
</tr>
<tr>
<td>Quality control</td>
<td>Market Research Analysts</td>
</tr>
<tr>
<td>Artistic ability</td>
<td>Public Relations and Fundraising Managers</td>
</tr>
<tr>
<td></td>
<td>Public Relations Specialists</td>
</tr>
</tbody>
</table>

**Required Curriculum: One of the Following**

- MAVCC/Print[ED]
- Adobe
- Precision
- Goodheart Willcox - Marketing
- Other Graphic Communications Coursework approved by CTE_BOT GCT Advisory

https://www.nationalartsstandards.org/sites/default/files/Media%20Arts%20at%20a%20Glance%20new%20copyright%20info.pdf

**Related Teacher Certification:**

https://www.ride.ri.gov/StudentsFamilies/EducationPrograms/CareerTechnicalEducation.aspx#12211324-cte-teacher-certification

High School Diploma + 5 years min. industry experience documented or Associates/Bachelor’s Degree + 3 years min. industry experience documented and a CTE certificate (or working towards one)

**Post-Secondary Partnerships**

- Central Maine CC. - Johnson & Wales - New England Institute of Technology -

**Recommended Elements**

<table>
<thead>
<tr>
<th>Coursework</th>
</tr>
</thead>
<tbody>
<tr>
<td>CTSO SkillsUSA -</td>
</tr>
</tbody>
</table>

66
<table>
<thead>
<tr>
<th>Work-Based Learning Participation</th>
<th>Year 1 - 10 Hours</th>
<th>Year 2 - 20 Hours</th>
<th>Year 3 - 20 Hours</th>
<th>Year 4 - 30 Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>DECA - FBLA</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
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-
SUNSETTING 7/1/22

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

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

Required Curriculum: PrintED, administered by the Graphic Arts Education and Research Foundation
(GAERF®) is a 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 skill areas: 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,
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 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
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.

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

**Pay:**
The most recent Rhode Island Labor Market Information for this profession identified as the Sales/Support staff from May 2015 and the entry-level wage is $13/hr. The median annual pay rate is $29,000–$59,000 in 2015.
US Dept. of Labor (USDOL) Career Cluster:
Business Management, Administration, Finance & Management
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.

<table>
<thead>
<tr>
<th>Work-Based Learning</th>
<th>Academic Content</th>
<th>CTE Content</th>
</tr>
</thead>
<tbody>
<tr>
<td>ELA</td>
<td>Math</td>
<td>Social Studies, Sciences</td>
</tr>
<tr>
<td>Four years of ELA aligned to the BEP and LEA graduatio reqs</td>
<td>Four years of Math aligned to the BEP and LEA graduatio reqs</td>
<td>At least three years of science aligned to the BEP and LEA graduatio reqs, including Chemistry</td>
</tr>
</tbody>
</table>

80 hours of Internship, Service Learning, Industry-based project, or School-based enterprise in the four years

Salary Information:

Typical Entry-Level Education: Bachelor's Degree / associate degree (small projects)

RI Mean Wage: $65,000-$75,000

Projected Job Outlook:

Job Outlook 2018-2028: 7% (faster than average). Financial industry expected to expand until 2028

Employability Skills/Knowledge for Entry Level:

Problem Solving
Professionalism

Occupations to this Pathway:

Entry-Level Banking
Accounting Clerk

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

*US Department of Labor; Bureau of Labor Statistics; Occupational Outlook Handbook
<table>
<thead>
<tr>
<th>Collaboration</th>
<th>Critical Thinking</th>
<th>Communication</th>
<th>Creativity</th>
<th>Flexibility</th>
<th>Initiative</th>
<th>Data Analytics</th>
</tr>
</thead>
<tbody>
<tr>
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<td></td>
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</tr>
<tr>
<td><strong>Postsecondary Business Pathway</strong></td>
<td></td>
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</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Required Curriculum:</strong></th>
<th><strong>Teacher(s), CTE Course(s), &amp; Certification:</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>EVERFI</td>
<td>Bachelor’s Degree and RIDE Secondary Business certificate</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Postsecondary Partnerships:</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>Community College of Rhode Island</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Recommended Elements:</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Complementary Coursework (Chemistry, Geometry, Pre-Calculus, etc.):</strong> ELA – URI Writing, Math – Pre-Calculus, Accounting</td>
</tr>
<tr>
<td><strong>CTSO:</strong> DECA, SkillsUSA, FBLA</td>
</tr>
<tr>
<td><strong>Work-based learning – Type and Description</strong></td>
</tr>
<tr>
<td><strong>Credential(s) Identify Course Alignment:</strong></td>
</tr>
</tbody>
</table>
US Dept. of Labor (USDOL) Career Cluster:

Architecture and Construction
## RI Career and Technical Education Board of Trustees Program Industry Standards

<table>
<thead>
<tr>
<th>GWB Priority Sector</th>
<th>Architecture and Construction Approved by CTEBOT and adopted by RIDE on June 18, 2021; effective July 1, 2021</th>
</tr>
</thead>
<tbody>
<tr>
<td>Career Field</td>
<td>Construction Manager</td>
</tr>
</tbody>
</table>

### 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.

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<td><strong>Work-Based Learning:</strong> (Total of 80 Hours)</td>
<td>ELA</td>
<td>Math</td>
</tr>
<tr>
<td>80 hours of Internship, Service Learning, Industry-based project, or School-based enterprise in the four years</td>
<td>Four years of ELA aligned to the BEP and LEA graduation reqs</td>
<td>Four years of Math aligned to the BEP and LEA graduation reqs</td>
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</tbody>
</table>

### Salary Information:

<table>
<thead>
<tr>
<th>Typical Entry-Level Education: Bachelor’s Degree / Associate’s Degree (small projects)</th>
<th>Projected Job Outlook:</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Job Outlook 2018-2028: 10% (faster than average); Construction managers are expected to be needed as overall construction activity</td>
</tr>
</tbody>
</table>
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:
- 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

Occupations to this Pathway:
- Architect
- Architectural and Engineering Management
- Landscape Architect
- Civil Engineer
- Regional and Urban Planner/Designer
- Safety Director
- Specification Writer
- Cost Estimator

Approved Curricula:
- HBI Core and HBI Carpentry
- National Center for Construction Education Research (NCCER)

Related Teacher Certification:
- 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

<table>
<thead>
<tr>
<th>GWB Priority Sector</th>
<th>Architecture and Construction</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Approved by CTEBOT and adopted by RIDE on June 4, 2020; effective July 1, 2020</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Career Field</th>
<th>Junior Carpenter Helper</th>
</tr>
</thead>
</table>

**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.

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</tbody>
</table>

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**Salary Information:**
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)

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

**Projected Job Outlook:**
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.

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

**Occupations to this Pathway:**
- 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

**Employability Skills/Knowledge for Entry Level:**
- 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
<table>
<thead>
<tr>
<th>Approved Curricula:</th>
<th>Related Teacher Certification:</th>
</tr>
</thead>
<tbody>
<tr>
<td>HBI Core and HBI Carpentry</td>
<td>High school diploma + Five years minimum industry experience documented</td>
</tr>
<tr>
<td>National Center for Construction Education Research (NCCER)</td>
<td>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)</td>
</tr>
<tr>
<td>New England Carpenters Training Fund (NECTF)</td>
<td></td>
</tr>
</tbody>
</table>

**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

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.*

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</tbody>
</table>

### Salary Information:

<table>
<thead>
<tr>
<th>The most recent Rhode Island Labor Market Information for this</th>
</tr>
</thead>
</table>

**Projected Job Outlook:**

Employment of construction laborers and helpers is projected to grow 13 percent from 2014 to 2024, faster
profession dates from January 2019 and the entry-level wage for Residential Construction at that time 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

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.

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

### Employability Skills/Knowledge for Entry Level:

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<th>Professionalism</th>
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<tr>
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<td>Critical Thinking</td>
</tr>
<tr>
<td>Communication</td>
<td>Creativity</td>
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<td>Flexibility</td>
<td>Initiative</td>
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<tr>
<td>Orientation to the trades.</td>
<td>Safety (OSHA 10).</td>
</tr>
<tr>
<td>Related construction math and blueprint reading.</td>
<td>Construction practices and resolutions.</td>
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<tr>
<td>Construction materials and methods.</td>
<td>Construction technology related drawings.</td>
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<tr>
<td>Technology specific equipment and basic operational techniques.</td>
<td>Quality control.</td>
</tr>
<tr>
<td>Internship;</td>
<td></td>
</tr>
</tbody>
</table>

### Occupations to this Pathway:

- 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:

- HBI Carpentry
- National Center for Construction Education Research (NCCER)

### Related Teacher Certification:

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.

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<td><strong>Math</strong></td>
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<tr>
<td>80 hours of Internship, School-based Enterprise, and/or Industry Based Project in the program.</td>
<td>Four years of ELA aligned to the BEP and LEA graduation reqs</td>
<td>Four years of Math aligned to the BEP and LEA graduation reqs, including at least Pre-Calculus</td>
</tr>
</tbody>
</table>

Salary Information:
Projected Job Outlook:

- **Salary Information:** Median pay for Drafters in 2017 was $54,170 per year  
- **Projected Job Outlook:** 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
<table>
<thead>
<tr>
<th>Employability Skills and Knowledge for Entry Level:</th>
<th>Occupations to this Pathway:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Problem Solving</td>
<td>CAD Operators</td>
</tr>
<tr>
<td>Professionalism</td>
<td>Architects</td>
</tr>
<tr>
<td>Collaboration</td>
<td>Civil Engineering Technicians</td>
</tr>
<tr>
<td>Critical Thinking</td>
<td>Industrial Designers</td>
</tr>
<tr>
<td>Communication</td>
<td>Surveying and Mapping Technicians</td>
</tr>
<tr>
<td>Creativity</td>
<td>Mechanical Engineering Technicians</td>
</tr>
<tr>
<td>Flexibility</td>
<td>Landscape Architecture</td>
</tr>
<tr>
<td>Initiative</td>
<td>Civil and Structural Technician</td>
</tr>
<tr>
<td>Design plans using computer-aided design (CAD) software</td>
<td>Mechanical and Electrical Technicians</td>
</tr>
<tr>
<td>Work from rough sketches and specifications created by Engineers and Architects</td>
<td>Building and Materials fabricators</td>
</tr>
<tr>
<td>Design products with engineering and manufacturing techniques</td>
<td></td>
</tr>
<tr>
<td>Add details to architectural plans from their knowledge of building techniques</td>
<td></td>
</tr>
<tr>
<td>Specify dimensions, materials, and procedures for new products</td>
<td></td>
</tr>
<tr>
<td>Work under the supervision of engineers or architects, creating rough sketches and work from those created by Engineers and Architects</td>
<td></td>
</tr>
</tbody>
</table>

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<thead>
<tr>
<th>Recommended Curriculum:</th>
<th>Teacher(s), CTE Course(s), &amp; Certification:</th>
</tr>
</thead>
<tbody>
<tr>
<td>ADDA Curriculum certification process</td>
<td>Bachelor’s +3 years of Construction industry experience and Registered Architect</td>
</tr>
<tr>
<td>Local curriculum reviewed by advisory board</td>
<td>Or</td>
</tr>
<tr>
<td>An agreement with a Postsecondary institution</td>
<td>Passing the Architecture Drafting NOCTI assessment</td>
</tr>
<tr>
<td>It is also recommended that an approved program utilizes the available curriculum provided by CAD software companies (i.e., Autodesk Design Academy, SOLIDWORKS curriculum)</td>
<td>A CTE certificate in the related aligned field pursuant to RIDE regulations</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Postsecondary Partnerships:</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Recommended (Architecture and/or CAD Operator) agreement with Roger Williams, RISD, or NEIT and others as appropriate</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Recommended Elements:</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Complementary Coursework (Chemistry, Geometry, Pre-Calculus, etc.): Mechanical and/or Architectural Content</td>
<td></td>
</tr>
<tr>
<td>CTSO: SkillsUSA, DECA, FLBA</td>
<td></td>
</tr>
</tbody>
</table>
**Work-based learning – Type and Description:** Internship, Industry Project, School-based Enterprise

**Credential(s) Identify Course Alignment:**

<table>
<thead>
<tr>
<th>RI Career and Technical Education Board of Trustees Program Industry Standards</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>GWB Priority Sector</strong></td>
</tr>
<tr>
<td>Approved by CTEBOT and adopted by RIDE on June 4, 2020; effective July 1, 2020</td>
</tr>
</tbody>
</table>

**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.

<table>
<thead>
<tr>
<th>Work-Based Learning</th>
<th>Academic Content</th>
<th>CTE Content</th>
<th>Primary Credential (earned at least one of the following)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Work-Based Learning:</strong> (Total of 80 Hours)</td>
<td><strong>ELA</strong></td>
<td><strong>Math</strong></td>
<td><strong>Science</strong></td>
</tr>
<tr>
<td>80 Hours of Internship, Service Learning, Industry Based Project in the four years</td>
<td>Four years of ELA aligned to the BEP and LEA graduation reqs</td>
<td>Four years of Math aligned to the BEP and LEA graduation reqs</td>
<td>At least three years of Science aligned to the BEP and LEA graduation reqs, including Earth Science</td>
</tr>
</tbody>
</table>

**Salary Information:**

The median annual wage for electricians was $55,190 in May 2018

**Projected Job Outlook:**

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.
### Employability Skills and Knowledge for Entry Level:
- 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

### Occupations to this Pathway:
- 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:
- HBI
- NCCER Core Curriculum
- MC-3

### 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.*

<table>
<thead>
<tr>
<th>Work-Based Learning</th>
<th>Academic Content</th>
<th>CTE Content</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Work-Based Learning:</strong> (Total of 80 Hours)</td>
<td><strong>ELA</strong></td>
<td><strong>Math</strong></td>
</tr>
<tr>
<td>80 hours of Internship, Service Learning, Industry-based project in the four years</td>
<td>Four years of ELA aligned to the BEP and LEA graduation reqs</td>
<td>Four years of Math aligned to the BEP and LEA graduation nums</td>
</tr>
</tbody>
</table>

This Career Pathway Plan of Study 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.*
### Salary Information:
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.

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

### Projected Job Outlook:
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.

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

### Employability Skills/Knowledge for Entry Level:
- 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.

### Occupations to this Pathway:
- 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:
- HBI

### Related Teacher Certification:
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
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.

<table>
<thead>
<tr>
<th>Work-Based Learning</th>
<th>Academic Content</th>
<th>CTE Content</th>
<th>Other Courses or Learning Activities</th>
<th>Primary Credential (Earned at least one of the following)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Work-Based Learning: (Total of 80 Hours)</td>
<td>ELA</td>
<td>Math</td>
<td>Science</td>
<td>Social Studies, Social Sciences</td>
</tr>
<tr>
<td>80 hours of Internship, Service Learning, Industry-based project in the four years</td>
<td>Four years of ELA aligned to the BEP and LEA graduatino reqs</td>
<td>Four years of Math aligned to the BEP and LEA graduation reqs</td>
<td>At least three years of Science aligned to the BEP and LEA graduation reqs,</td>
<td>At Least three consecutive years of Plumbing Coursework HBI (Units 1-5) (mandatory) and (Unit 8) NCCER Core Plumbing Level 1 &amp; 2</td>
</tr>
</tbody>
</table>

Salary Information:
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).

Projected Job Outlook:
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.

Employability Skills/Knowledge for Entry Level:

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

Occupations to this Pathway:
<table>
<thead>
<tr>
<th>Problem Solving</th>
<th>Pathway</th>
<th>Problem Solving</th>
<th>Professionalism</th>
</tr>
</thead>
<tbody>
<tr>
<td>Professionalism</td>
<td>Collaboration Boilermakers</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Collaboration</td>
<td>Pipefitters</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Critical Thinking</td>
<td>Construction &amp; Building Inspectors</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Communication</td>
<td>Construction Laborers &amp; Helpers</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Creativity</td>
<td>Construction Managers</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Flexibility</td>
<td>General Maintenance and Repair Workers</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Initiative</td>
<td>HVAC/R Mechanics &amp; Installers</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Orientation to the trades.</td>
<td>Water Transportation Workers</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Safety (OSHA 10)</td>
<td>Welders, Cutters, Solderers, and Brazers</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Approved Curricula:**

- HBI

**Related Teacher Certification:**

- 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.

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<tbody>
<tr>
<td><strong>Work-Based Learning: (Total of 80 Hours)</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ELA</td>
<td>Math</td>
<td>Science</td>
</tr>
<tr>
<td>Four years of ELA aligned to the BEP and LEA graduation reqs</td>
<td>At least three years of Math, which must include Geometry, and aligned to the BEP and LEA graduation reqs</td>
<td>At least three years of Science, including Chemistry, aligned to the BEP and LEA graduation reqs</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>80 hours of Internship, Service Learning, Industry-based project in the four years</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
### Salary Information:
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).  

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

### Projected Job Outlook:
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.

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

### Employability Skills/Knowledge for Entry Level:

**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**

### Occupations to this Pathway:

- **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
<table>
<thead>
<tr>
<th><strong>Approved Curricula:</strong></th>
<th><strong>Related Teacher Certification:</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>Construction Craft Laborer Framework Curriculum from The Laborers International Union of North America (LIUNA) Training and Education Fund Supplemental Curriculum: MC3 (Optional)</td>
<td>Laborers International Program Credential or Documented Journeyman of related Federally Registered Apprenticeship Program</td>
</tr>
</tbody>
</table>

**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 the postsecondary 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 approved Education, 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 assistants must 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 level of 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 and complete 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:

<table>
<thead>
<tr>
<th>Minimum Academic Requirement</th>
<th>Safety</th>
<th>Mandatory Credential Earned (at least one)</th>
<th>Optional Credentials</th>
<th>Work-based Experience</th>
</tr>
</thead>
</table>

94
• 4 courses in English
• 4 courses in Math
• 3 courses in Science
• 3 courses in S. Studies
At least one course in both technology and the arts

| First Aid / CPR & AED Training | Completion of an approved Teacher Assistant Training program and/or Attain the minimum passing score on the RI Parapro Exam | Rhode Island Early Learning and Development Standards Certificate | Internship Experience
Placement in a K-12 educational setting should be 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 with special needs) | OSHA 10 Certificate | Red Cross Babysitting & Child Care Certificate |
Recommended Coursework in:
• Psychology
• Sociology
• Ethical Issues
• Financial Literacy | | |

Other resources: Educators Rising [link](https://www.educatorsrising.org/) Future Teachers of America [link](http://futureteachers.org/), Teacher Cadet Program [link](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 same ten-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, high school, 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 salary for 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 is from $30,070 to an experienced median wage of $36,350.

[http://www.dlt.ri.gov/lmi/oes/statealpha.htm](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 of the 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 of the Rhode Island CTE Environmental and Life Sciences Standard.

<table>
<thead>
<tr>
<th>Academic Requirements</th>
<th>Safety Training</th>
<th>Mandatory Credential (s) Earned</th>
<th>Work-Based Experience (s) + Career Readiness Skills</th>
</tr>
</thead>
<tbody>
<tr>
<td>Three / four consecutive years of Environmental &amp; Life Sciences Coursework +</td>
<td>+ <strong>OSHA 10</strong></td>
<td><strong>One or more of the following:</strong> National Occupational Competency Testing Institute (NOCTI)</td>
<td><strong>Environmental &amp; Life Sciences work-based learning experience (s) and/or related mentoring program</strong></td>
</tr>
<tr>
<td></td>
<td></td>
<td>+ Small Animal Science and</td>
<td></td>
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</tr>
</tbody>
</table>

98
Four years of Math
+ Three years of Science, to include Biology

Recommended

Technology 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

<table>
<thead>
<tr>
<th>Two-Year Programs</th>
<th>Four-Year College and University Programs</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Associate in Applied Science programs include(examples):</strong></td>
<td><strong>Bachelor of Science disciplines include examples:</strong></td>
</tr>
<tr>
<td>• Animal Science Veterinary Assisting</td>
<td>• Pre-Veterinary MedicineAnimal Science Zoology</td>
</tr>
<tr>
<td><strong>Sample Job Titles</strong></td>
<td><strong>Sample Job Titles</strong></td>
</tr>
<tr>
<td>• Veterinary Technician</td>
<td>• Zoologist Wildlife Biologist Agricultural EducatorNutritionist USDA Animal and Plant Health Inspection Services Geneticist</td>
</tr>
<tr>
<td>• Veterinary Practice Manager</td>
<td>• Veterinary Assistant Laboratory Technician Livestock Manager Equine Manager</td>
</tr>
</tbody>
</table>
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 the post-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 approved Aquaculture 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, water chemistry 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 the student 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 of the Rhode Island CTE Aquaculture Standard.
### Academic Requirements

| Three consecutive years of Environmental & Life Sciences Aquaculture Coursework | Safety Training Component is Required | Mandatory Credential (s) Earned: College Level Courses in Field of Study: Concurrent | Work-Based Experience (s) + Career Readiness Skills Component such as: |
| + Four years of Math (Minimum: Algebra II, Recommended Pre-Calculus and Statistics) | OSHA 10 | Concurrent | OSHA 10 | Environmental & Life Sciences Work-Based Learning experience(s) and/or related Mentoring program.
SkillsUSA Career Essentials Suite 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 related to 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:

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

**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 the post-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 approved Aquaculture 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, water chemistry 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 the student 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 of the Rhode Island CTE Aquaculture Standard.*
Academic Requirements

| Three consecutive years of Environmental & Life Sciences Aquaculture Coursework | Safety Training Component is Required | College Level Courses in Field of Study: Concurrent | Dual Enrollment | EEP |
| + Four years of Math (Minimum: Algebra II, Recommended Pre-Calculus and Statistics) | + Safety Training Component is Required | + Recommended: OSHA 10 |
| + Three years of Science Recommended fourth year Biology, Chemistry and Physical Science with recommended Advanced Placement Science | + | + |

Safety Training

Mandatory Credential(s) Earned

Work-Based Experience(s) + Career Readiness Skills

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:

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 related to 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:

<table>
<thead>
<tr>
<th>Two-Year Programs</th>
<th>Four-Year College and University Programs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sample Job Title/Median Annual Wage:</td>
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<td>• Animal Scientist ($60,330)</td>
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<td></td>
<td>• Agricultural Engineer ($73,640)</td>
</tr>
<tr>
<td></td>
<td>• Biological Technician ($42,520)</td>
</tr>
</tbody>
</table>

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 at the 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, Quality Control 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 safety training 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 the Rhode Island CTE Environmental and Life Sciences Standard.
<table>
<thead>
<tr>
<th>Academic Requirements</th>
<th>Safety Training</th>
<th>Mandatory Credential(s) Earned</th>
<th>Work-Based Experience(s) + Career Readiness Skills</th>
</tr>
</thead>
<tbody>
<tr>
<td>Three to four consecutive years of Environmental &amp; 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)</td>
<td>Safety Training Component is Required Recommended: OSHA 10</td>
<td>One or more of the following: 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</td>
<td>Environmental &amp; Life Sciences Work-Based Learning experience(s) and/or related mentoring program. Career Readiness Skills Component such as: SkillsUSA Career Essentials Suite Navyiance Junior Achievement</td>
</tr>
</tbody>
</table>

**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:

<table>
<thead>
<tr>
<th>Two-Year Programs</th>
<th>Four-Year College and University Programs</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Associates Degree programs include:</strong></td>
<td><strong>Bachelor of Science Degree disciplines include:</strong> (B.S.)</td>
</tr>
<tr>
<td>(A.S.) Associate of Science Degree</td>
<td>Bachelor of Science Degree - Biological and Biomedical Sciences</td>
</tr>
<tr>
<td>General Science, Biotechnology, Biology, Biological Sciences, Chemistry, Pharmacy,</td>
<td>Biomedical Informatics, Biomedical Technology, Biological Science, Biotechnology, Biochemistry, Forensic Pathology, etc.</td>
</tr>
<tr>
<td>Physical Sciences, Radiology, etc.</td>
<td>(B.A.A.S.) Bachelor of Science Degree - Physical Sciences</td>
</tr>
<tr>
<td>(A.A.S.) Associates Degree in Applied Science</td>
<td>Mathematics and Physics, Chemistry, Physics, Forensic Chemistry, Statistics,</td>
</tr>
<tr>
<td>Applied Physics, Biology-Pre-Medicine, Chemical Technology, Molecular Biotechnology,</td>
<td>Biochemistry, etc.</td>
</tr>
<tr>
<td>Physical Sciences (Integrated Science)</td>
<td></td>
</tr>
<tr>
<td><strong>Sample Job Titles:</strong></td>
<td><strong>Sample Job Titles:</strong></td>
</tr>
<tr>
<td>Medical Lab Technician, Pharmacy Technician, Chemical Technician, Biomedical</td>
<td>Biochemist, Bio-Informatician, Biophysicist, Biotechnology Laboratory Technician, Biological</td>
</tr>
<tr>
<td>Technician, Laboratory Technician, Instrumentation Technician, Medical Technologist,</td>
<td>Engineer, Chemical Engineer, Clinical Research Associate, Forensic Science</td>
</tr>
<tr>
<td>Biopharmaceutical Technician, Clinical Data Analyst, Equipment Technician, Research</td>
<td>Technician, Microbiologist, Pharmacologist, Quality Control, Research Scientist,</td>
</tr>
<tr>
<td>Technician / Assistant, Water Quality Analyst, etc.</td>
<td>Environmental Health and Safety Officer, Genetic Therapist, etc.</td>
</tr>
</tbody>
</table>
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 RIDE Approved 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 tools
- Explain 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 of the Rhode Island CTE Environmental and Life Sciences Standard.
Academic Requirements

<table>
<thead>
<tr>
<th>Mandatory Credential (s) + Career Readiness Skills</th>
</tr>
</thead>
<tbody>
<tr>
<td>Work-Based Experience (s) + Career Readiness Skills</td>
</tr>
<tr>
<td>Three - four consecutive years of Environmental &amp; Life Sciences Coursework + Four years of Math + Three - four years of Science</td>
</tr>
<tr>
<td>OSHA 10 Safe Workplace Recommended-Pesticide Safe Worker</td>
</tr>
<tr>
<td>National Occupational Competency Exam (NOCTI): Horticulture-Landscaping or Other Field Related NOCTI Assessment</td>
</tr>
<tr>
<td>Environment &amp; Life Sciences work-based learning experience (s) and/or related mentoring program + Career Readiness Skills Component such as: FFA LifeKnowledge SkillsUSA Career Essential Suite</td>
</tr>
</tbody>
</table>

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. Job prospects 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 the national 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

<table>
<thead>
<tr>
<th>High School Degree Minimum</th>
<th>Two &amp; Four-Year College and University Programs</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Sample Job Titles</strong></td>
<td><strong>Bachelor of Science disciplines include</strong></td>
</tr>
<tr>
<td>• Retail/Wholesale Nursery- Field manager,</td>
<td>(examples: Sample Job Titles)</td>
</tr>
<tr>
<td>• Greenhouse manager,</td>
<td>• Entomologist</td>
</tr>
<tr>
<td>• Sales manager</td>
<td>• Agronomist</td>
</tr>
<tr>
<td>• Landscape/Garden Construction Retail</td>
<td>• Soil Scientist</td>
</tr>
<tr>
<td>• Wholesale Florist</td>
<td>• Soil Conservationist</td>
</tr>
<tr>
<td>• Landscape Designer</td>
<td>• Landscape Architect</td>
</tr>
<tr>
<td>• Landscape Maintenance/Contractor</td>
<td>• Agricultural Educator</td>
</tr>
<tr>
<td>• Masonry and Hardscape</td>
<td></td>
</tr>
<tr>
<td>• Landscape lighting</td>
<td></td>
</tr>
<tr>
<td>• Irrigation</td>
<td></td>
</tr>
<tr>
<td>• Machine maintenance</td>
<td></td>
</tr>
<tr>
<td>• Crew supervisor</td>
<td></td>
</tr>
</tbody>
</table>
**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 Life Sciences 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 adjusting processing 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 execute the 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 with procedures 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 Approved Environmental 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 may control 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 (if applicable):

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 of the Rhode Island CTE Environmental and Life Sciences Standard.
Academic Requirements

| Mandatory Credential (s) Earned | Safety Training | | | | | 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 | OSHA 10 | One or more of the following: Project Lead the Way (PLTW) Three Project Lead the Way Course Completion Certificate College level courses in Field of Study: Concurrent/Dual Enrollment with 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)

<table>
<thead>
<tr>
<th>SOC Code</th>
<th>Occupational Title</th>
<th>US</th>
<th>RI</th>
<th>CT</th>
<th>MA</th>
<th>Typical Education</th>
<th>Job Training</th>
</tr>
</thead>
<tbody>
<tr>
<td>17-3025</td>
<td>Env. Eng. Technicians</td>
<td>$23.64</td>
<td>$18.17</td>
<td>$24.09</td>
<td>$21.96</td>
<td>AD</td>
<td>None</td>
</tr>
<tr>
<td>17-3026</td>
<td>Industrial Engineering Technicians</td>
<td>$25.64</td>
<td>$26.44</td>
<td>$30.44</td>
<td>$26.68</td>
<td>AD</td>
<td>None</td>
</tr>
<tr>
<td>17-3027</td>
<td>Mechanical Engineering Technicians</td>
<td>$26.19</td>
<td>$27.97</td>
<td>$31.56</td>
<td>$27.17</td>
<td>AD</td>
<td>None</td>
</tr>
<tr>
<td>19-4031</td>
<td>Chemical Technicians</td>
<td>$22.04</td>
<td>$21.33</td>
<td>$23.12</td>
<td>$25.91</td>
<td>AD</td>
<td>MT OJT</td>
</tr>
<tr>
<td>Code</td>
<td>Occupation</td>
<td>2011</td>
<td>2012</td>
<td>2013</td>
<td>2014</td>
<td>Degree</td>
<td>OJT</td>
</tr>
<tr>
<td>---------</td>
<td>-----------------------------------------------------</td>
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<td>------------</td>
<td>--------</td>
<td>-------</td>
</tr>
<tr>
<td>19-4091</td>
<td>Environmental Science and Protection Technicians, Incl. Health</td>
<td>$21.25</td>
<td>$22.82</td>
<td>$18.94</td>
<td>$26</td>
<td>HSD</td>
<td>MT OJT</td>
</tr>
<tr>
<td>29-2011</td>
<td>Med &amp; Clinical Lab. Technologists</td>
<td>$29.30</td>
<td>$36.26</td>
<td>$34.58</td>
<td>$35</td>
<td>HSD</td>
<td>MT OJT</td>
</tr>
<tr>
<td>29-2012</td>
<td>Medical &amp; Clinical Laboratory Technicians</td>
<td>$18.73</td>
<td>$27.63</td>
<td>$21.38</td>
<td>$19.48</td>
<td>HSD</td>
<td>LT OJT</td>
</tr>
<tr>
<td>29-2012</td>
<td>Med. and Clinical Lab. Technicians</td>
<td>$18.73</td>
<td>$27.63</td>
<td>$21.38</td>
<td>$19</td>
<td>BD</td>
<td>None</td>
</tr>
<tr>
<td>50-8031</td>
<td>Water &amp; Wastewater Treatment Plant &amp; System Operators</td>
<td>$22.00</td>
<td>$24.26</td>
<td>$30.43</td>
<td>$25.60</td>
<td>AD</td>
<td>None</td>
</tr>
<tr>
<td>51-6061</td>
<td>Textile Bleaching and Dyeing Machine Operators and Tenders</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td>$14</td>
<td>AD</td>
<td>ST OJT</td>
</tr>
<tr>
<td>51-9023</td>
<td>Mixing &amp; Blending Machine Setters, Operators, &amp; Tenders</td>
<td>$17.16</td>
<td>$18.20</td>
<td>$17.79</td>
<td>$18.25</td>
<td>HSD</td>
<td>ST OJT</td>
</tr>
<tr>
<td>Average for all occupations (variations of Process Technician)</td>
<td>$22.52</td>
<td>$24.37</td>
<td>$25.05</td>
<td>$24.51</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
US Dept. of Labor (USDOL) Career Cluster: Healthcare
**GWB Priority Sector:** Healthcare

**Career Field:** Certified Nursing Assistant (CNA) REVISED! IN EFFECT 7/1/2022

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### GWB Priority Sector: Healthcare

### Career Field: Certified Nursing Assistant (CNA)

**Career Pathway Plan of Study for**

<table>
<thead>
<tr>
<th>Work-Based Learning</th>
<th>Academic Content</th>
<th>CTE Content</th>
</tr>
</thead>
<tbody>
<tr>
<td>80 Hours of Internship, Service Learning, Industry Based Project in the four years</td>
<td>Courses and experiences aligned to the BEP and LEA graduation requirements</td>
<td>Rhode Island Nursing Assistant License</td>
</tr>
</tbody>
</table>

**Salary Information:**

The average salary for a nursing assistant is $37.89 per hour in Rhode Island and $5,236 overtime per year updated at February 15, 2022. Median wage data are from the BLS Occupational Employment and Wage Statistics survey. In May 2020, the median annual wage for all workers was $41,990.

### Projected 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 orderlies will be needed to assist and care for those patients.


### Occupations to this Pathway:

- Certified Nursing Assistant
- Medical Assistant
- Health Unit Coordinator/Unit Clerk
- Patient Care Assistant
- Patient Care Technician
- Surgical Technician
- Emergency Medical Responder
- Emergency Medical Technician
- EKG Technician
- Registered Nurse
- DPT Technician
- Respiratory Therapist
- Radiology Technician
- Paramedic
- EMT
- Sonography Technician
- Registered Nurse
- Nurse Educator
- Health Care Administrator
- Nursing Home Administrator

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### Skills and Knowledge for Entry Level for Entry Level:

- Problem Solving
- Professionalism
- Collaboration
- Critical Thinking
- Communication
- Creativity
- Flexibility
- Initiative, Assist patients/residents with Activities of Daily Living (ADLs) including personal hygiene, dressing and grooming, nutrition and hydration, elimination, rest/sleep, comfort.
- Perform basic nursing skills including, following infection control and safety/emergency procedures/practices, therapeutic/technical procedures, data collection and reporting.
- Assist patients/residents with restorative care skills.
- Assist patients/residents with emotional and Mental Health needs.
- Communicate with medical, personal and patients.
- Abide by client’s rights, legal and ethical behaviors;
- Be an active member of the healthcare team.
- Provide care that meets spiritual and cultural needs.
Required Curriculum:
District decision - RI DOH Approved - According to Section 216-RCR-40-05-22.7 - Effective until 2/1/2022

H. Curriculum
1. The objectives of the nursing assistant training program shall be consistent with 42 C.F.R. § 483.652 incorporated at § 22.2 of this Part and the curriculum outline of § 22.12.2 of this Part and shall promote the provision of quality health care services by nursing assistants who are able to perform competently the duties listed in § 22.12.1 of this Part.

American Heart Association (AHA) or American Red Cross (ARC) CPR/PRR and First Aid

Related Teacher Certification:
Required a CTE minimum of an Associate Degree in Nursing; RN
American Heart Association (AHA) Basic Life Support for Healthcare Providers (BLS) instructor license or American Red Cross (ARC) First Aid Infant-Child-Adult Instructor License
According to Section 216-RCR-40-05-22.7 - Effective until 2/1/2022

Program Coordinator Requirements:
a. Each nursing assistant training program shall have a coordinator who shall be responsible for the management of the instructional and practical portions of the program. The program coordinator must be a registered nurse with a minimum of two (2) years of nursing experience, one (1) of which must be in the provision of long-term care services; and must have documented evidence of teaching and/or appropriate supervisory experience. Directors of nursing in nursing facilities are prohibited from performing actual training, but may supervise clinical training.

Post-Secondary Partnerships
CCRI URI CMCC

Recommended

<table>
<thead>
<tr>
<th>Coursework</th>
<th>Science</th>
<th>Anatomy &amp; Physiology</th>
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CTSO: SkillsUSA HOSA

Work-Based Learning:

<table>
<thead>
<tr>
<th>Internship</th>
<th>Service Learning</th>
<th>Industry</th>
<th>School-Based</th>
<th>Apprenticeship</th>
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<tr>
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<td>Project</td>
<td>Enterprise</td>
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</tbody>
</table>

Credentialed 40 Clinical Hours
**GWB Priority Sector:** Healthcare

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

**REVISED! IN EFFECT 7/1/2022**

### Career Pathway Plan of Study for Healthcare Certified Patient Care Technician (CPCT) provisional license

This Career Cluster Plan of Study is an example to 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.

<table>
<thead>
<tr>
<th>Work-Based Learning: (Total of 88 Hours)</th>
<th>Academics Content</th>
<th>CTE Coursework and Experiences</th>
<th>Primary Credential</th>
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<tbody>
<tr>
<td>Required</td>
<td>ELA</td>
<td>Math</td>
<td>Foundations of Healthcare Professions</td>
</tr>
<tr>
<td></td>
<td>Four years of ELA aligned to the BEP and LEA graduation requirements including</td>
<td>Four years of Math aligned to the BEP and LEA graduation requirements</td>
<td>Theory and Practical Patient Care Technician Skills</td>
</tr>
<tr>
<td></td>
<td>At least three years aligned to the BEP and LEA graduation requirements</td>
<td>At least three years aligned to the BEP and LEA graduation requirements</td>
<td>National Health Career Association (NHA) Certified Visional License (See specific required modules below under Required Curriculum)</td>
</tr>
</tbody>
</table>

**CTE Content**

- **CTE Five (5) Required Domains (See below)**
- **National Health Career Association (NHA) Certified Visional License**

**Salary Information:**

The most recent Rhode Island Labor Market Information for this profession dates from the Rhode Island Occupational Wage Report 2019: the entry-level wage for Medical Assistants at that time was $27,976 ($13.34/hr).

**Projected 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 orderlies will be needed to assist and care for these patients.

**Skills and Knowledge for Entry Level for Entry Level:**

- Problem Solving
- Professionalism
- Collaboration
- Critical Thinking
- Communication
- Creativity
- Flexibility
- Initiative
- Respond to patient calls and requests
- Assist patients with personal hygiene tasks
- Tidy patients’ rooms
- Serve meals and feed patients
- Monitor vital signs
- Draw laboratory specimens
- Perform EKGs and other clinical tasks
- Set up equipment
- Assist the physician or nurse with therapies

**Occupations to this Pathway**

- Certified Nursing Assistant
- Medical Assistant
- Health Unit Coordinator/Unit Clerk
- Patient Care Assistant
- Patient Care Technician
- Surgical Technologist
- Emergency Medical Responder
- Emergency Medical Technician
- EKG Technician
- Registered Nurse
- EKG Technician
- Respiratory Therapist
- Radiology Technician
- Paramedic
- EMT

- Sonography Technician
- Registered Nurse
- Nurse Educator
- Health Care Administrator
- Nursing Home Administrator
### Required Curriculum:
There are 5 Domains (All weighted differently out of 100%) which students are tested on for proficiency. Passing Score: 390 out of 500
- Domain 1: General Patient Care (45%)
- Domain 2: Compliance, Safety, and Professional Responsibilities (20%)
- Domain 3: Infection Control (11%)
- Domain 4: Phlebotomy (includes specimen collection as well) (14%)
- Domain 5: Electrocardiograms (EKG) (10%)

### Related Teacher Certification:
- Required a CTE minimum of an Associate Degree in Nursing. RN License and AHA Basic Life Support for Healthcare Providers (BLS) Instructor License.
- To be eligible to teach in a Health Occupations - Certified Patient Care Technician (CPCT) assignment an educator must hold a Secondary Grades Career and Technical Education Teacher, Grades 7-12 Health Occupations - Certified Patient Care Technician (CPCT) certificate.

### Post-Secondary Partnerships
(CCR)

#### Recommended Coursework:
- Science
  - Anatomy & Physiology

#### CTSO:
- SKILLS USA
- HOSA

#### Work-Based Learning:
- Internship
- Service Industry
- School Based
- Apprenticeship

#### Credential:
GWB Priority Sector: Healthcare

| Career Field: Community Health Worker REVISED! IN EFFECT 7/1/2022 |

<table>
<thead>
<tr>
<th>RI Career &amp; Technical Education Board of Trustees Program Industry Standards</th>
</tr>
</thead>
<tbody>
<tr>
<td>GWB Priority Sector: Healthcare</td>
</tr>
<tr>
<td>Career Field: Healthcare</td>
</tr>
</tbody>
</table>

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

This Career Cluster Plan of Study (based on the Health Science 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.

<table>
<thead>
<tr>
<th>Work-Based Learning</th>
<th>Academic Content</th>
<th>Social Studies/Sciences</th>
<th>CTE Content</th>
<th>Primary Credentials</th>
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<tbody>
<tr>
<td>Required</td>
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</tr>
<tr>
<td>80 Hours of Internship, Service Learning, Industry Based Project in the four years</td>
<td>Four years of ELA aligned to the BEP and LEA graduation requirements including</td>
<td>Four years of Math aligned to the BEP and LEA graduation requirements including</td>
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Salary Information:
The median annual wage for community health workers was $42,000 in May 2020.

Projected Job Outlook:
DLI RI Occupational Outlook 2028: Healthcare Support Occupations 10,737 (2018) 19,851 (2028) 6.0% Increase
Community & Social Service Occupations 8,907 (2018) 9,376 (2028) 5.3% Increase

Overall employment of health education specialists and community health workers is projected to grow 17 percent from 2020 to 2030, much faster than the average for all occupations.

About 16,100 openings for health education specialists and community health workers are projected each year, on average, over the decade. Many of those openings are expected to result from the need to replace workers who transfer to different occupations or exit the labor force, such as to retire.
District Curriculum must include competency in nine domains of CHW:

Skills and Knowledge for Entry Level

- Problem Solving
- Professionalism
- Collaboration
- Critical Thinking
- Communication
- Creativity
- Flexibility
- Initiative
- Public Speaking
- Learn about roles and responsibilities of a CHW
- Engage clients in ways that establish trust and rapport with them and their families
- Engage in cultural competency
- Identify language access and healthcare access for clients and their families
- Identify and document needs and health topics relevant to the priority population
- Be familiar with health literacy and medical terminology
- Adapt outreach strategies based on population, venue, behavior or identified risks that are appropriate to a given population and its self-determined concerns
- Identify basic geographic and structural features that define, support and inhibit outreach in the community
- Create a non-judgmental atmosphere in interactions with clients and their families
- Identify personal safety issues and possible responses to potentially dangerous situations
- Document and help create networks and establish partnerships and linkages with other community health workers and organizations for the purpose of care coordination and enhancing resources.

Occupations to this Pathway

- Occupations Requiring Less than Baccalaureate Degree
  - Community Health Worker
  - Medical Assistant
  - Social and Human Service Assistant
  - Medical Translators
  - EMT/Paramedic
  - Health Information Coder
  - Home Health Aide
  - Lab Technician
  - Phlebotomist

- Occupations Requiring Baccalaureate Degree
  - Social Worker
  - Public Health Educator
  - Radiographer
  - Registered Nurse
  - Athletic Trainer
  - Industrial Hygienist
  - Nutritionist
  - Occupational Therapist
  - Physician's Assistant
  - Psychologist
  - Radiologist
  - Research Scientist
  - Speech/Language Pathologist
  - Toxicologist

Required Curriculum: District Curriculum (must include competencies in nine domains of CHW—see below)

Related Teacher Certification:

Required a CTE minimum of an Associate Degree in Nursing; RN OR

Certified Social Worker/Psychologist (5 plus years experience in the field)
1. Engagement Methods and Strategies
2. Individual and Community Assessment
3. Culturally and Linguistically Appropriate Responsiveness
4. Promote Health and Well-Being
5. Care Coordination and System Navigation
6. Public Health Concepts and Approaches
7. Advocacy and Community Capacity Building
8. Safety and Self-Care
9. Ethical Responsibilities and Professional Skills

Upon graduation, students are required to enroll in a CHW Certification Program (Must be 18)

<table>
<thead>
<tr>
<th>Post-Secondary Partnerships</th>
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<tr>
<td>CCR</td>
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<table>
<thead>
<tr>
<th>Recommended</th>
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<tbody>
<tr>
<td>Coursework: Public Speaking; Spanish or Portuguese; Psychology; Human Anatomy; First Aid &amp; CPR; Sign Language; Student to begin work on CHW Portfolio</td>
</tr>
<tr>
<td>CTSO: Skills USA</td>
</tr>
<tr>
<td>Work-Based Learning:</td>
</tr>
<tr>
<td>Contact Hours and WBL Supervised on-site hours</td>
</tr>
</tbody>
</table>

Credential
Credential:
GWB Priority Sector: Healthcare

Career Field: Dental Hygienist SUNSETTING 7/1/22

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 human injuries, 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 personal services. 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 dental instruments. 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 more occupations 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 (if applicable):

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 authority in the state where he/she wishes to practice. As licensing requirements vary from state to state, it is necessary to contact 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 linking 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 spur demand for preventative 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 the entry-level wage for Dental Hygienists at that time was $73,902.00 ($32.53 per hour).
GWB Priority Sector: Healthcare

Career Field: Dental Assistant NEW, in effect 7/1/22

<table>
<thead>
<tr>
<th>GWB Priority Sector: Healthcare</th>
<th>Approval Date:</th>
<th>Version:</th>
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<tbody>
<tr>
<td>Career Field: Dental Assistant</td>
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</table>

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

This Career Cluster Plan of Study (based on the Dental Assistant of the Healthcare 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 as well as college entrance requirements.

<table>
<thead>
<tr>
<th>Work-Based Learning</th>
<th>Academic Content</th>
<th>Social Studies/Sciences</th>
<th>CTE Coursework</th>
<th>Mandatory Credential and Expected Course Outcomes</th>
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<td>80 Hours of Internship, Service Learning, Industry Based Project in the four years</td>
<td>Courses and experiences aligned to the BEP and LEA graduation requirements</td>
<td>Courses and experiences aligned to the BEP and LEA graduation requirements</td>
<td>Four years of Science Aligned to the BEP and LEA graduation requirements</td>
<td>Foundations of Dental Professions/BLS for Healthcare Care Providers</td>
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<td>Infection Control (Related to Dental Training)</td>
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<td>Radiation Training (See below for Clinical Training)</td>
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<td>RIDOH State Radiography Certification</td>
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</tbody>
</table>

Salary Information:
According to the RI DLT 2020 Wage Booklet: Dental Assistant - Hourly Range (Upper Entry $19.47; Median $22.37; and Experienced $35.21)
Median wage data are from the BLS Occupational Employment and Wage Statistics survey. In May 2020, the median annual wage for all workers was $41,950.

Employability Skills and Knowledge for Entry Level:
- Problem Solving
- Professionalism
- Collaboration
- Critical Thinking
- Communication

- Orientation to the trades
- Ensure that patients are comfortable in the dental chair
- Prepare patients and the work area for treatments and procedures
- Sterilize dental instruments
- Hand instruments to dentists during procedures
- Dry patients’ mouths using suction hoses and other equipment
- Instruct patients in proper oral hygiene
- Produce dental images and complete lab tasks, under the direction of a dentist
- Keep records of dental treatments
- Schedule patient appointments
- Work with patients on billing and payment

Projected Job Outlook
Employment of dental assistants is projected to grow 11 percent from 2020 to 2030, faster than the average for all occupations. The aging population and ongoing research linking oral health and overall health will continue to increase the demand for preventive dental services. (US Department of Labor; Bureau of Labor Statistics; Occupational Outlook Handbook)

Occupations to this Pathway
- Certified dental assistants
- Expanded functions dental assistants
- Orthodontic assistants
- Registered dental assistants
- Surgical dental assistants
### Required Curriculum:

**District Decision**
- Textbooks: Modern Dental Assisting and The Administrative Dental Assistant
- High School Teachers can teach BLS
- CPRI Dent 1000 must be taught by a CPRI Instructor in order to have DENT 1000 transfer
  (Must be taught by RDH)
- **RECOMMENDED CURRICULUM**: Radiation Health and Safety Theory (For additional
  credential this requires clinical training at CPRI)

**Related Teacher Certification:**
- To be eligible to teach in a Health Occupations- Dental Assistant assignment an educator must hold a Secondary Grades Career and Technical Education Teacher, Grades 7-12 Health Occupations- DANB Certified Dental Assistant
- CTE certificates that require a degree requirement of an associate or bachelor degree requires 3 years of experience in the CTE certification area.

### Post-Secondary Partnerships

CCRI - Students are only allowed to take this course at a Commission of Dental Association (CODA) Accredited school. CODA does not accredit secondary schools.

<table>
<thead>
<tr>
<th>Recommended</th>
<th>Coursework:</th>
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<tbody>
<tr>
<td>Anatomy &amp; Physiology</td>
<td>Biology</td>
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<td>Skills USA</td>
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<tr>
<td>Work-Based</td>
<td>Internship</td>
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</table>
GWB Priority Sector: Healthcare

Career Field: Emergency Medical Technician REVISED! IN EFFECT 7/1/2022

### RI Career & Technical Education Board of Trustees Program Industry Standards

<table>
<thead>
<tr>
<th>GWB Priority Sector:</th>
<th>Healthcare</th>
<th>Approval Date:</th>
<th>Version:</th>
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<tbody>
<tr>
<td>Career Field:</td>
<td>Emergency Medical Technician</td>
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</table>

This Career Cluster Plan of Study (based on the Health Science 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.*

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</tr>
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<tbody>
<tr>
<td>Work-Based Learning: (Total of 39)</td>
<td>ELA</td>
<td>Math</td>
</tr>
<tr>
<td>Required</td>
<td>Four years of ELA aligned to the BEP and LEA graduation requirements</td>
<td>Four years of Math aligned to the BEP and LEA graduation requirements</td>
</tr>
</tbody>
</table>

Salary Information:
According to the US BLS for May, 2020, the median annual wage for EMTs and paramedics was $36,650.

**RI Department of Labor & Training: Labor Market Information:**

Occupational Employment Statistics

Skills and Knowledge for Entry Level for Entry Level:
- Respond to 911 calls for emergency medical assistance, such as cardiopulmonary resuscitation (CPR) or bandaging a wound
- Assess a patient’s condition and determine a course of treatment
- Provide first-aid treatment or life support care to sick or injured patients
- Transport patients safely in an ambulance
- Transfer patients to the emergency department of a hospital or other healthcare facility
- Report their observations and treatment to physicians, nurses, or other healthcare facility staff
- Document medical care given to patients
- Inventory, replace, and clean supplies and equipment after use

Projected Job Outlook:
Employment of EMTs and paramedics is projected to grow 11 percent from 2020 to 2030.

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

Occupations to This Pathway:
- Paramedic
- Firefighter
- Medical Assistant
- Physician’s Assistant
- Police Officer
- Nurse
- Emergency Management Officer
### Recommended Curriculum:
National Standard Curriculum for EMT

### Related Teacher Certification:
Related Teacher Certification: Required a minimum of an EMS Instructor Coordinator License (RI EMT License is a required pre-requisite). CTE certificates that require a degree requirement of an associate or bachelor degree require 3 years of experience in the CTE certification area.

### Post-Secondary Partnerships
CCC

#### Recommended

<table>
<thead>
<tr>
<th>Coursework:</th>
<th>Science</th>
<th>Sociology</th>
<th>Psychology</th>
</tr>
</thead>
<tbody>
<tr>
<td>CTE:</td>
<td>Skills USA</td>
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<tr>
<td>Work-Based Learning:</td>
<td>Internship</td>
<td>Service Learning</td>
<td>Industry Project</td>
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<table>
<thead>
<tr>
<th>Credential:</th>
<th>CPR/First Aid</th>
<th>National Certification for EMT</th>
<th>RI License</th>
</tr>
</thead>
</table>
GWB Priority Sector: Healthcare

Career Field: Pharmacy Technician

Skills/ knowledge needed to be prepared for entry-level work: Upon completion of this high school Pharmacy Technician 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’s profile.
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 associated paperwork.
6. Assist the pharmacist with filling and labeling prescriptions.
7. Screen telephone calls for the pharmacist.
8. Prepare the pharmacy for inventory.
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 to nursing units and clinics.
3. Pick up copies of automated medication administration records, and unused medications from nursing 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, compounding total parenteral nutrition solutions, compounding large volume intravenous.
6. Prepare inventories, order drugs and supplies from the storeroom; receive drugs, and stock shelves in various 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 (if applicable): 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 pass the 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 education within 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 demand for pharmaceutical services.

Pay –
The most recent Rhode Island Labor Market Information for this profession dates from May 2015 and the entry-level wage for Medical Assistant at that time was $25,459.00 ($12.24 per hour).
US Dept. of Labor (USDOL) Career Cluster:
Hospitality & Tourism
GWB Priority Sector: Hospitality & Tourism

Career Field: Culinary – Line Cook SUNSETTING 7/1/22

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 Year Two 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 Rhode Island 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 maintain their 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 the average 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 and the entry-level wage for Line Cook at that time was $20,821.00 ($10.01 per hour).

**Sources:**

National Restaurant Association, [www.onetonline.org](http://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 SUNSETTING 7/1/22

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

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 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 Rhode Island 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 maintain their 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 must be 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 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.onetonline.org
GWB Priority Sector: Hospitality & Tourism

Career Field: Hotel Operations – Hotel Phone Operator SUNSETTING 7/1/22

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 Year 2 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 skills to 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
SUNSETTING 7/1/22

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 Year 2 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.

**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 SUNSETTING 7/1/22

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 Year 2 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 skills to 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 SUNSETTING 7/1/22

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 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 Rhode Island 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 maintain their 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.

Sources: National Restaurant Association, www.onetonline.org
GWB Priority Sector: Hospitality & Tourism

Career Field: Hotel Operations – Room Attendant SUNSETTING 7/1/22

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 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.

Prerequisites for acquiring Guestroom Attendant credential:

Students must complete 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 skills to 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 SUNSETTING 7/1/22

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 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 skills to 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](http://www.onetonline.org)
GWB Priority Sector: Hospitality & Tourism

Career Field: Hotel Operations – Guest Room Service Agent SUNSETTING 7/1/22

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 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.

Prerequisites for acquiring Front Desk Representative credential:
Students must complete 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 skills to 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](http://www.onetonline.org)
GWB Priority Sector: Hospitality & Tourism

Career Field: Tourism – Travel Agent SUNSETTING 7/1/22

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 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.

Prerequisites for acquiring Front Desk Representative credential:
Students must complete 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 skills to 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 SUNSETTING 7/1/22

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 Year Two Exams. Students must obtain a paid or unpaid 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 Rhode Island 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 maintain their 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](http://www.onetoneline.org)
### RI Career and Technical Education Board of Trustees Program Industry Standards

#### GWB Priority Sector
Hospitality & Tourism

#### Career Field
ACF Culinary Artist—NEW! IN EFFECT 7/1/2022

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

This Career Cluster Plan of Study (based on the Hospitality and Tourism 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.

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### Salary Information:

The most recent Rhode Island Labor Market Information for this profession dates from May 2018 and the entry-level wage for Line Cook at that time was $25,200 ($12.12 per hour).  

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

### Projected Job Outlook:

Overall employment of cooks is projected to grow 4 percent from 2018 to 2024, 11% increase. Job opportunities will result from the combination of employment growth and the need to replace workers who leave the occupation.  

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

### Employability Skills and Knowledge for Entry Level:

- Problem Solving
- Professionalism
- Collaboration
- Critical Thinking
- Communication
- Creativity
- Flexibility
- Initiative

### Occupations to this Pathway:

- Line Cook
- Prep Cook
- Chefs
- Head Cooks
- Bakers
- Food Service Managers
- Barista
| Orientation to the trades  |  
| Quality control  |  
| Customer Service  |  
| Food Safety Management Proper food storage and handling techniques  |  
| 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  |  
| Accountability  |  
| Dependability and presentation  |

**Required Curriculum:**
- ProStart - National Restaurant Association
- American Culinary Federation (ACF) Accreditation
- Culinary Fundamentals by The American Culinary Federation

**Teacher(s), CTE Course(s), & Certification:**
- RIDE Teacher Certification in Vocational Baking or Quality Food Preparation
- AND
- High School Diploma and 5 years industry experience
- All new educators must pass the NOCTI in Retail Commercial Baking OR Commercial Foods

**Postsecondary Partnerships:**
- A concurrent partnership with Johnson & Wales or a local post-secondary institution is recommended

**Recommended Elements:**
- Complementary Coursework (Chemistry, Geometry, Pre-Calculus, etc.): Nutrition & Customer Service
- CTSO: SkillsUSA, DECA, FLBA
- Work-based learning – Type and Description: Internship or School Based Enterprise
- Credential(s) Identify Course Alignment: MISSING
### RI Career and Technical Education Board of Trustees Program Industry Standards

**GWB Priority Sector**  
Hospitality & Tourism

**Career Field**  
Prostart Culinary Artist NEW! IN EFFECT 7/1/2022

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

This Career Cluster Plan of Study (based on the Hospitality and Tourism 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.

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**Salary Information:**

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Overall employment of cooks is projected to grow 4 percent from 2018 to 2024, 11% increase. Job opportunities will result from the combination of employment growth and the need to replace workers who leave the occupation.

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**Employability Skills and Knowledge for Entry Level:**

- Problem Solving
- Professionalism
- Collaboration
- Critical Thinking

**Occupations to this Pathway:**

- Line Cook
- Prep Cook
- Chefs
- Head Cooks
| Communication ► | Bakers  
| Creativity ► | Food Service Managers  
| Flexibility ► | Barista  
| Initiative ► |  
| Orientation to the trades ► |  
| Quality control ► |  
| Customer Service ► |  
| Food Safety Management Proper food storage and handling techniques ► |  
| 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 ► |  
| Accountability ► |  
| Dependability and presentation ► |  

**Required Curriculum:**

- ProStart
- National Restaurant Association
- American Culinary Federation (ACF) Accreditation

**Teacher(s), CTE Course(s), & Certification:**

- RIDE Teacher Certification in Vocational Baking or Quality Food Preparation
- AND
- High School Diploma and 5 years industry experience

All new educators must pass the NOCTI in Retail Commercial Baking OR Commercial Foods

**Postsecondary Partnerships:**

A concurrent partnership with Johnson & Wales or a local post-secondary institution is recommended

**Recommended Elements:**

- Complementary Coursework (Chemistry, Geometry, Pre-Calculus, etc.: Nutrition & Customer Service
- CTSO: SkillsUSA, DECA, FLBA

**Work-based learning – Type and Description:** Internship or School Based Enterprise

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RI Career and Technical Education Board of Trustees Program Industry Standards

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<tr>
<td>Career Field</td>
<td>Customer Service Representative / Event Planner NEW! IN EFFECT 7/1/2022</td>
</tr>
</tbody>
</table>

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

This Career Cluster Plan of Study (based on the Hospitality and Tourism 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.

<table>
<thead>
<tr>
<th>Work-Based Learning</th>
<th>Academic Content</th>
<th>CTE Content</th>
</tr>
</thead>
<tbody>
<tr>
<td>Work-Based Learning: (Total of 80 Hours)</td>
<td><strong>ELA</strong></td>
<td><strong>Math</strong></td>
</tr>
<tr>
<td>80 Hours of Internship or school based enterprise</td>
<td>Four years of ELA</td>
<td>Four years of Math</td>
</tr>
</tbody>
</table>

**Salary Information:**

The wage at which half of the workers in the occupation earned more than that amount and half earned less. Median wage data are from the BLS Occupational Employment Statistics survey. In May 2018, the median annual wage for all workers was $38,640.

**Projected Job Outlook:**

Outlook, 2018-28, the projected percent change in employment from 2018 to 2028. The average growth rate for all occupations is 5 percent.

**Employability Skills and Knowledge for Entry Level:**

Customer and Personal Service
Assessing customer needs

**Occupations to this Pathway:**

Customer Service Representative
Hospitality Service Representative
| Meeting quality standards for services | Front Desk Agent |
| Evaluating customer satisfaction | Guest Service Agent |
| Cost Control | Host |
| Marketing | Event Coordinator |
| Accountability | Retail Ticket Sales Representative |
| Dependability and Presentation | Entry Level Hotel Maintenance |
| Communication Skills | Entry Level Technician |
| Active Listening | Concierge |
| Service Orientation | Reservationist |
| Social Perceptiveness | Cashier |
| Technology | Housekeeping Operations |
| Teamwork Skills | Gaming Service Worker |
| Time Management | |

**Required Curriculum:**

| American Hotel & Lodging Educational Institute: Hospitality, Tourism Management Program Year 1 and 2 | Teacher(s), CTE Course(s), & Certification: |
| | RIDE Teacher Certification in Hotel/Hospitality Management AND High School Diploma and 5 years industry experience |
| | All new educators must pass the NOCTI in Hospitality Management - Lodging |

**Postsecondary Partnerships:**

A concurrent partnership with Johnson & Wales or a local post-secondary institution is recommended

**Recommended Elements:**

**Complementary Coursework (Chemistry, Geometry, Pre-Calculus, etc.):** Customer Service, Event Management & Public Speaking

**CTSO:** SkillsUSA, DECA, FLBA

**Work-based learning – Type and Description:** Internship, School Based Enterprise or School Based Projects

**Credential(s) Identify Course Alignment:** MISSING
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 & interwitch 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 various environments.
- 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 (if applicable):

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 seekers in 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 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 CCNA is $45,550.00 ($21.90 per hour) in January 2016.


** 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 multiple programming languages. Skills in designing, developing, troubleshooting, documenting, and debugging software solutions are required. Web development students should understand front-end web development and back-end management and programming.

Important Qualities:

- **Collaboration skills**: Developers must be able to work in teams of two or more to accomplish a common goal/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 customer throughout the entire design process.
- **Listening skills**: Developers must be able to understand the problems that their customers are describing and use that information to implement a solution.
- **Problem-solving skills**: Developers must be able to test, troubleshoot, and debug syntax and semantic errors in software.
- **Speaking skills**: Developers must describe their solutions to their customers in a way that a nontechnical person can understand.
- **Writing skills**: Strong writing skills are useful to developers while preparing instructions, generating design 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 computing are prominent forces in innovation; the innovations enabled by computing have had and will continue to have 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 Information Occupational 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.

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

4 English
<table>
<thead>
<tr>
<th>Expected Industry Credential(s) and/or Certificate(s) granted upon successful completion of the CTE Program (if applicable):</th>
</tr>
</thead>
</table>

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 developer positions; 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 available internships. 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 often work 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](https://www.bls.gov).

**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 of web applications.

**Work Readiness Skills:**

- **Collaboration skills:** Demonstration of the ability to work in teams of two or more to accomplish a common 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 manner that 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 (if applicable):

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 degree and/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:**

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

Pay:

The entry-level annual median salary for an IT Specialist was $52,160 in 2016 according to the U.S. Bureau of 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 and service 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 be escalated 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, and networking.

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 Studies and 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.


** RI Department of Labor and Training Labor Market Information 2022 Occupational Outlook.
US Dept. of Labor (USDOL) Career Cluster:
Law, Public Safety & Government
**Career Field: Fire Fighter NEW, in effect 7/1/22**

<table>
<thead>
<tr>
<th>GWB Priority Sector</th>
<th>Law, Public Safety &amp; Government</th>
<th>DRAFT 3/16/22</th>
<th>Version: 1</th>
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</thead>
</table>

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

<table>
<thead>
<tr>
<th>Work-Based Learning</th>
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<th>Primary Credential (one of the following)</th>
<th>Other Credentials</th>
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<tbody>
<tr>
<td>80 Hours of Internship, Service Learning or Industry Based Project in the four years</td>
<td>Four years of ELA aligned to the BSEP and LEA graduation requirements, Four years of Math aligned to the BSEP and LEA graduation requirements, At least three years of Science aligned to the BSEP and LEA graduation requirements</td>
<td>Introduction to Fire Services, Firefighter Level I, OR Firefighter Level I EMT Certification, NFPA 1001 Certification Exam (Written and Physical Component) and training, NIMS</td>
<td>CPR &amp; First Aid</td>
<td></td>
</tr>
</tbody>
</table>

**Salary Information:**
According to the US BLS, the median wage for a firefighter in 2020 was $52,500 with the lowest 10% earning approximately $26,940 and the highest 10% earning more than $93,790.

**Projected Job Outlook:**
According to the US BLS job outlook data, the projected job outlook until 2030 the employment of firefighters is projected to grow 8% which is as fast as the average for all occupations. Projected employment openings up to 2030, is 344,100 openings.

**Skills and Knowledge for Entry Level:**
- Communication: FF must be able to explain conditions at an emergency
- Compassion: FF need to provide emotional support to those in emergency situations
- Decision Making Skills: FF must be able to make difficult choices quickly
- Mental Preparedness: FF must be able to handle the

**Occupations to this Pathway:**
- Emergency Medical Technician
- Paramedic
- Fire Inspector
- Forest and Conservation Workers
- Hazardous Materials Removal Workers
- Park Ranger
- Wildland Firefighters
**Recommended Curriculum**

Curriculum should include the following standards:

1. Fire Dept. and Fire Service Orientations & Organizations
2. Fire Behavior
3. Building Construction (Different Structures)
4. Safety
5. Communications
6. SCBA: Self Contained Breathing Apparatus
7. Extinguishers
8. Ladders
9. Hose & Appliances
10. Nozzles & Streams
11. Water Supply

**US Bureau of Labor and Statistics**

**Recommended Teacher Certification**

- NFPA 1041: Fire Instructor Level I (Course through RI Fire Academy) with exam
- Secondary CTE Teacher Certification
- Five years experience in Firefighting (career or volunteer)
- High School Diploma or GED

**Post Secondary Partner**

**Industry Partner**

<table>
<thead>
<tr>
<th>Coursework:</th>
<th>Recommended</th>
</tr>
</thead>
<tbody>
<tr>
<td>Public Speaking</td>
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</tr>
<tr>
<td>ENGL 2100: Technical Writing</td>
<td>Sociology</td>
</tr>
<tr>
<td>Principles of Fire and Emergency Services</td>
<td>Psychology</td>
</tr>
<tr>
<td>FIRE 1010: Principles of Fire and Emergency Services</td>
<td>First Aid &amp; CPR</td>
</tr>
<tr>
<td>FIRE 1030: Intro. to Fire Science &amp; Officership</td>
<td>Environmental Science</td>
</tr>
<tr>
<td>RI State Association of Firefighters</td>
<td>Introduction to Public Safety</td>
</tr>
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<table>
<thead>
<tr>
<th>CTSO:</th>
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<tbody>
<tr>
<td>SkillsUSA</td>
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<table>
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<tr>
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<td>Internship</td>
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<tr>
<td>Service Learning</td>
</tr>
<tr>
<td>Industry Project</td>
</tr>
<tr>
<td>School Based Enterprise</td>
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<tr>
<td>Apprenticeship</td>
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</tbody>
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<table>
<thead>
<tr>
<th>Texts:</th>
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<tbody>
<tr>
<td>Essentials of Fire Fighting (IFSTA) w/ Workbook and Exam Prep OR RI Fire Academy Text</td>
</tr>
</tbody>
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<table>
<thead>
<tr>
<th>Secondary Credentials:</th>
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<tbody>
<tr>
<td>CCRI</td>
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**Post Secondary Partner**

**Industry Partner**

CRI

<table>
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<td>RI State Association of Firefighters</td>
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Girls Future Firefighters Camp
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 curriculum consists 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 years old, 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 than the 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 $43,742.40 ($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.
RI Career and Technical Education Board of Trustees Program Industry Standards

<table>
<thead>
<tr>
<th>GWB Priority Sector</th>
<th>Law, Public Safety &amp; Government</th>
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</thead>
<tbody>
<tr>
<td>Career Field</td>
<td>Law Enforcement &amp; Corrections Officer—REVISED! IN EFFECT 7/1/2022</td>
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<td><strong>Science</strong></td>
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<tr>
<td>80 Hours of Internship, Service Learning or Industry Based Project in the four years</td>
<td>Four years of ELA aligned to the BEP and LEA graduation requirements</td>
<td>Four years of Math aligned to the BEP and LEA graduation requirements</td>
<td>At least three years of Science and LEA graduation requirements</td>
</tr>
</tbody>
</table>

**Salary Information:**

According to the 2019 US BLS, the median wage for a police and sheriff patrol officer is $65,170 or $31.33 per hour. RI LMI Occupational Wage reports correctional officers earning a median wage of $34/29/hour and police and sheriff earning a median wage of $30.52/hour.

**Projected Job Outlook:**

According to the US BLS job outlook data, the projected job outlook until 2029 for protective services such as police is growing at a rate of 5% which is faster than the average. According to ONET, police and sheriff's patrol officers are projected to grow faster than the average with at least 100,000 or more job openings nationwide over the next 8 years.

**Employability Skills and Knowledge for Entry Level:**

- Respond to emergency and non-emergency calls

**Occupations to this Pathway:**

- Corrections Officer
- Court Reporter

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

*US Department of Labor; Bureau of Labor Statistics; Occupational Outlook Handbook
<table>
<thead>
<tr>
<th>Patrol assigned areas</th>
<th>Court Staff</th>
</tr>
</thead>
<tbody>
<tr>
<td>Conduct traffic stops and issue citations</td>
<td>Criminal Investigator</td>
</tr>
<tr>
<td>Search for vehicle records and warrants using computers in the field</td>
<td>Federal Law Enforcement</td>
</tr>
<tr>
<td>Obtain warrants and arrest suspects</td>
<td>Park Ranger</td>
</tr>
<tr>
<td>Collect and secure evidence from crime scenes</td>
<td>Police and Patrol Officer</td>
</tr>
<tr>
<td>Observe the activities of suspects</td>
<td>Probation/Parole Officer</td>
</tr>
<tr>
<td>Write detailed reports and fill out forms</td>
<td>Youth Services Worker</td>
</tr>
<tr>
<td>Prepare cases and testify in court</td>
<td>Victim Advocate</td>
</tr>
<tr>
<td>Possess knowledge of the law</td>
<td></td>
</tr>
<tr>
<td>Knowledge of community relations</td>
<td></td>
</tr>
<tr>
<td>Possess good communication skills</td>
<td></td>
</tr>
<tr>
<td>General knowledge of mental health calls to service in law enforcement</td>
<td></td>
</tr>
<tr>
<td>Knowledge of mental health resources available in the community</td>
<td></td>
</tr>
</tbody>
</table>

**Required Curriculum:**

The curriculum being used by schools is either from Roger Williams University or the New England Institute of Technology which can result in college credits. Other college-level curricula can be used but the sequence of courses should include content/concepts in at least three of the following: Criminal Justice System, Law and Society, Court Systems (included in Law and Society), Corrections (included in Law and Society), and Forensic Science. RWU curriculum: Introduction to Criminal Justice, Law and Society, and Forensics Science. NEIT Curriculum: Introduction to Criminal Justice, Law and Society, and Forensics Science.

**Teacher(s), CTE Course(s), & Certification:**

Secondary grades career and technical education teacher Criminal Justice, minimum Bachelor's Degree, and NOCTI exam required. Applicants applying for teaching certificates must meet RI certification requirements.

**Postsecondary Partnerships:**

Roger Williams University or New England Institute of Technology

**Recommended Elements:**

**Complementary Coursework (Chemistry, Geometry, Pre-Calculus, etc.):** Sociology, Psychology, Fitness & Conditioning (to prepare for academy fitness tests)

**CTSO: SkillsUSA**

**Work-based learning – Type and Description:** Internship: Internship at local, state or government agency; Industry Project: Projects working w/local police, URI forensics lab, etc.; School Based Enterprise; Apprenticeship

**Credential(s) Identify Course Alignment:** CPR Certification
GWB Priority Sector: Law, Public Safety & Government
(Governor’s Workforce Board Priority – Healthcare)

Career Field: Emergency Medical Responder* SUNSETTING 7/1/22

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 of an 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 EMS response 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 on assessment findings, and manage the emergency while awaiting additional emergency response.
11. Take history and vital signs.
12. Use scene information and simple patient assessment findings to identify and manage immediate life threats 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 emergency while 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 tissue injuries, 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 as obstetrics 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 who successfully 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 the entry-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
   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 curriculum consists 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's degree 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 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.

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)
## RI Career and Technical Education Board of Trustees Program Industry Standards

**GWB Priority Sector**: Law, Public Safety & Government

**Career Field**: Paralegal/Legal Assistant — REVISED! IN EFFECT 7/1/2022

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

<table>
<thead>
<tr>
<th>Work-Based Learning</th>
<th>Academic Content</th>
<th>CTE Content</th>
</tr>
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<tbody>
<tr>
<td>Work-Based Learning: (Total of 80 Hours)</td>
<td>ELA</td>
<td>Math</td>
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<tr>
<td>80 Hours of Internship, Service Learning, Industry Based Project in the four years</td>
<td>Four years of ELA aligned to the BEP and LEA graduation requirements including</td>
<td>Four years of Math aligned to the BEP and LEA graduation requirements including</td>
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</table>

### Salary Information:

According to the US BLS May, 2020 Occupational Outlook Handbook, the median wage for a paralegal/legal assistant is $52,920 year or $24.87 per hour. According to RI LMI, Occupational Wage Report of 2019, paralegals and legal assistants are expected to earn a median wage of $22.74

### Projected Job Outlook:

According to the US BLS 2020-2030 projected data, employment of paralegals and legal assistants is projected to grow 12% in the next 10 years which is much faster than the average for all occupations which is only 4%. According to the RI LMI Industry and Occupational Projections paralegals and legal assistants are among one of the fastest growing fields in RI with an expected 14.24% growth in the next 7 years and up to 1500 job openings. This career field, Paralegals and Legal assistants, is listed in the top 50 high growth occupations in RI LMI. This data demonstrates an increasing demand for trained paralegal and legal assistants.

### Employability Skills and Knowledge for Entry

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

### Occupations to this Pathway:

*US Department of Labor; Bureau of Labor Statistics; Occupational Outlook Handbook*
### Level:

- Investigate and gather the facts of a case
- Conduct research on relevant laws, regulations, and legal articles
- Organize and maintain documents in paper or electronic filing systems
- Gather and arrange evidence and other legal documents for attorney review and case preparation
- Write or summarize reports to help lawyers prepare for trials
- Draft correspondence and legal documents, such as contracts and mortgages
- Get affidavits and other formal statements that may be used as evidence in court
- Help lawyers during trials by handling exhibits, taking notes, or reviewing trial transcripts
- File exhibits, briefs, appeals and other legal documents with the court or opposing counsel
- Call clients, witnesses, lawyers, and outside vendors to schedule interviews, meetings, and depose
- Use technology and computer software for managing and organizing the increasing amount of documents and data collected during a case.
- Interpersonal and communication skills (Written and Oral)

### Required Curriculum:

Roger Williams University curriculum for Paralegal Studies. At least 3 Sequences of courses, RWU:
- PLS 100 Intro to Law
- PLS 110 Emerging Technologies in the Legal Environment
- PLS 210 Legal Research & Writing
- PLS 400 Legal Ethics

### Teacher(s), CTE Course(s), & Certification:

Secondary grades CTE Teacher grades 7-12- Criminal Justice Minimum Degree with certification/licensure as a Paralegal or a Licensed Attorney, minimum 3 years as a Paralegal or Attorney and the NOCTI Exam. (Unless passed the Bar exam)

### Postsecondary Partnerships:

Roger Williams University

### Recommended Elements:
<table>
<thead>
<tr>
<th><strong>Complementary Coursework (Chemistry, Geometry, Pre-Calculus, etc.):</strong> Conflict Resolution, Microsoft Certification, Psychology</th>
</tr>
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<td><strong>CTSO:</strong> Skills USA</td>
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<tr>
<td><strong>Work-based learning – Type and Description:</strong> Internship: Internship at local, state or government agencies, court, or other related agencies; Service Learning; Industry Project: Projects working with advocacy groups, community agencies, and/or college of legal studies; School Based Enterprise; Apprenticeship</td>
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<tr>
<td><strong>Credential(s) Identify Course Alignment:</strong> Conflict Resolution (40 hour certification course) (If adding Conflict Resolution, Instructor must have Mediator Certification); Microsoft Certificate</td>
</tr>
</tbody>
</table>
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 to maintain 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 activities 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 for emergency and non-emergency situations.
- **Critical thinking skills:** Students must learn to solve problems and handle stressful situations that may arise in a combat or crisis situation.
- **Leadership skills.** Students must develop skills in order to plan, organize, and lead others to maintain order, 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 the postsecondary 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 select from 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 year for 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.
## RI Career and Technical Education Board of Trustees Program Industry Standards

**GWB Priority Sector**: Law, Public Safety & Government

**Career Field**: Military

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

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**Salary Information:**

According to the US BLS, basic pay is based on rank and time in service. Military salaries have a broad range and are dependent upon rank, experience, and education and training.

**Projected Job Outlook:**

According to the US BLS Occupational Outlook Handbook, opportunities for job prospects should be very good for qualified individuals in all branches of the Armed Forces through 2028. All services have needs to fill entry-level and professional positions as current members of the Armed Forces move up through the ranks, leave the service, or retire.

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

*US Department of Labor; Bureau of Labor Statistics; Occupational Outlook Handbook*
### Entry Level:

<table>
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<th>Enlisted personnel typically do the following:</th>
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<tbody>
<tr>
<td>► Participate in, or support, military operations, such as combat or training operations, or humanitarian or disaster relief</td>
</tr>
<tr>
<td>► Operate, maintain, and repair equipment</td>
</tr>
<tr>
<td>► Perform technical and support activities</td>
</tr>
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</table>

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<th>Officers typically do the following:</th>
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<tr>
<td>► Plan, organize, and lead troops and activities in military operations</td>
</tr>
<tr>
<td>► Manage enlisted personnel</td>
</tr>
<tr>
<td>► Operate and command aircraft, ships, or armored vehicles</td>
</tr>
<tr>
<td>► Provide medical, legal, engineering, and support</td>
</tr>
</tbody>
</table>

### Required Curriculum:

- Required curriculum as prescribed by the specific military branch hosting the JROTC program

### Teacher(s), CTE Course(s), & Certification:

- Military Branch Certification Requirements as stated by the Naval Defense Program

### Postsecondary Partnerships:

- Colleges w/participating ROTC programs and/or National Guard, Active Duty, or Reserve Affiliation

### Recommended Elements:

- **Complementary Coursework (Chemistry, Geometry, Pre-Calculus, etc.):** MISSING

### CTSO: SkillsUSA

### Work-based learning – Type and Description:

- Internship
- Service Learning: Community outreach projects, military activities
- Industry Project
- School Based Enterprise
- Apprenticeship

### Credential(s) Identify Course Alignment:

- MISSING
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.
### RI Career and Technical Education Board of Trustees Program Industry Standards

**GWB Priority Sector**  
Manufacturing

**Career Field**  
Electronics Technician  
**REVISED! IN EFFECT 7/1/2022**

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

This Career Pathway Plan of Study (based on the Manufacturing 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.*

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  - ISCEET DC Electronics Certification (Module ESA 1)  
  - ETA (Module EM1)  
  - IPC Overview of Electronics Manufacturing Assembly (Module 153C)  
  - And Any Two of the Following:  
    - IPC Soldering Terminals (Module 18C)  
    - IPC Through Hole Solder Joint Quality Standards (Module PTH-F)  
    - IPC Introduction to Hand Soldering (Module 142C)  
    - IPC Surface... |
### Mount Solder Joint Quality Standards (Module SMT-F)
- IPC Hand Soldering - SMT Component Installation (Module 144C)

<table>
<thead>
<tr>
<th>Salary Information:</th>
<th>Projected Job Outlook:</th>
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<tbody>
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<td>In May 2020, the median annual wage for all workers was $41,950.</td>
<td>Employment of solderers is projected to grow 6 percent from 2016 to 2026, about as fast as the average for all occupations.</td>
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*RI Department of Labor and Training; Labor Market Information; Occupational Employment Statistics*

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

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<tr>
<th>Employability Skills and Knowledge for Entry Level:</th>
<th>Occupations to this Pathway:</th>
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<tbody>
<tr>
<td>► Problem Solving</td>
<td></td>
</tr>
<tr>
<td>► Professionalism</td>
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<tr>
<td>► Electronics Technician Association (ETA)</td>
<td>Manufacturing: Electronics Manufacturing Trades (High School Diploma + 5 years min. industry experience documented) Secondary Grades Career And Technical Education Teacher, Grades 7-12 - Electronics Technology</td>
</tr>
<tr>
<td>► International Society of Certified Electronics Technicians (ISCET)</td>
<td></td>
</tr>
</tbody>
</table>

**Postsecondary Partnerships:**
- NEIT

**Recommended Elements:**

**Complementary Coursework (Chemistry, Geometry, Pre-Calculus, etc.):** Pre-Calculus, Physics

**CTSO:** Skills USA

**Work-based learning – Type and Description:** Internship, Service Learning, Industry Project School Based
<table>
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<tr>
<th>Enterprise</th>
<th>Apprenticeship</th>
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<tr>
<td><strong>Credential(s) Identify Course Alignment:</strong></td>
<td>IPC Safety in Electronics Manufacturing</td>
</tr>
</tbody>
</table>
GWB Priority Sector: Manufacturing

Career Field: Entry-level Manufacturing SUNSETTING 7/1/22

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 math 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 for Information. Student must achieve silver, gold, or platinum score to demonstrate that they have the requisite baseline 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 a range 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 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 the entry-level wage for Manufacturing at that time was $35,048.00 ($16.85 per hour).
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 at the 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 found on 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); student must 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 level of 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 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 the entry-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 to inform 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
## Career Pathway Plan of Study for > Learners > Parents > Counselors > Teacher/Faculty

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*RI Career and Technical Education Board of Trustees Program Industry Standards*

**GWB Priority Sector:** Manufacturing  
**Career Field:** Entry-level Machinist (Option: Tool & Die Makers) — REVISED! IN EFFECT 7/1/2022

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### Salary Information:

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.

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

### Projected Job Outlook:

Overall employment of machinists and tool and die makers is projected to grow 4 percent from 2019 to 2029, about as fast as the average for all occupations. Many job opportunities are expected to arise from the need to replace workers who leave the occupation each year.

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

### Employability Skills and Knowledge for Entry Level:

- Problem Solving
- Professionalism
- Collaboration
- Critical Thinking
- Communication
- Creativity
- Flexibility
- Industrial machinery mechanics
- Machinery maintenance
- Sheet metal
- Machinery Maintenance
- Tool Die Makers
- Initiative
- Orientation to the trades
- Safety (OSHA 10)
- 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

### Occupations to this Pathway:

- Industrial machinery mechanics
- Machinery maintenance
- Sheet metal
- Machinery Maintenance
- Tool Die Makers
- 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 products for defects
- Smooth the surfaces of parts or products
- Present finished workpieces to customers and make modifications if needed

**Required Curriculum:**
- National Institute for Metalworking Skills (NIMS)
- Approved PTECH

**NIMS Modules:**
- 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 or Machinist
- Module 15 & 16: Turning Operations: Chucking Competency-Based Apprenticeship System for Machinist
- Module 17: Milling: Square Up a Block Competency-Based Apprenticeship System for Machinist

**Teacher(s), CTE Course(s), & Certification:**
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
| 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 |

**Postsecondary Partnerships:**
CCRI; CMCC; NEIT

**Recommended Elements:**
Complementary Coursework (Chemistry, Geometry, Pre-Calculus, etc.): MISSING

**CTSO:** Skills USA

**Work-based learning – Type and Description:**
- Internship
- Service Learning
- Industry Project
- School Based Apprenticeship

**Credential(s) Identify Course Alignment:** MISSING
### RI Career and Technical Education Board of Trustees Program Industry Standards

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

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## Employability Skills and Knowledge for Entry Level:

- Problem Solving
- Professionalism
- Collaboration
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- Creativity
- Flexibility
- Initiative
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- Turn, mill, drill, shape, and grind machine

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Smooth the surfaces of parts or products  
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NOCTI 5176 Precision Machining |

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<td><strong>CTSO:</strong> SkillsUSA</td>
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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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| | | | | | | | |
| | | | | | | | |
**Salary Information:**
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.

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**Projected Job Outlook:**
The projected percent change in employment from 2019 to 2029.

The average growth rate for all occupations is 4%.

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**Employability Skills and Knowledge for Entry Level:**
- Problem Solving
- Professionalism
- Collaboration
- Critical Thinking
- Communication
- Creativity
- Flexibility
- Initiative
- Relevant Math
- Basic Operational Techniques

**Occupations to this Pathway:**
- Assemblers and Fabricators
- Metal and Plastic Machine Workers
- Sheet metal
- Boilermakers
- Glaziers
- Heating, Air Conditioning, and Refrigeration Mechanics and Installers
- Insulation workers

**Related Teacher Certification:**
- 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

**Required Curricula:**

<table>
<thead>
<tr>
<th>NCCER Level 1:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Module 1 – Introduction to the Sheet Metal Trade</td>
</tr>
<tr>
<td>Module 2 – Tools of the Trade</td>
</tr>
<tr>
<td>Module 3 – Introduction to the Sheet metal Layout and Processes</td>
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<tr>
<td>Module 4 – Trade Math One</td>
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<table>
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<tr>
<th>NCCER Level 2:</th>
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<tbody>
<tr>
<td>Module 1 – Trade Math Two</td>
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<tr>
<td>Module 6 – Bend Allowance</td>
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<tr>
<th>NCCER Level 3:</th>
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<tr>
<td>Module 4 – Louvers, Dampers, and Access Doors</td>
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GWB Priority Sector: Manufacturing

Career Field: Technician (MOVED FROM PRE-ENGINEERING)

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*

<table>
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<tr>
<th>Minimum Academic Requirement</th>
<th>Safety</th>
<th>Mandatory Credential Earned (at least one)</th>
<th>Work based Experience</th>
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<td>Three consecutive years of engineering technology coursework AND Four years of math, including at least pre-calculus AND Chemistry and Physics</td>
<td>Safety training content equivalent to OSHA 10 hour General Industry training</td>
<td>National Occupational Competency Testing Institute (NOCTI): Pre-Engineering International Society of Certified Electronics Technicians (ISCET): AC, DC, Semiconductor &amp; Digital Electronic Technician Association: AC, DC, Analog, Digital &amp; Comprehensive Project Lead the Way: Three consecutive PLTW Course certificates (including Intro to Engineering design, and Principles)</td>
<td>Engineering/industry work-based learning experience and/or related mentor program</td>
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</table>
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.

Technician openings are more difficult to measure; as of 2015, there were about three engineering technicians per 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 could work 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 the US Department of Labor statistics.

GWB Priority Sector: Pre-Engineering

(Governor’s Workforce Board Priority – Defense)
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<td>At least three years of Science aligned to the BEP and LEA graduation reqs</td>
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**Salary Information:**

**Projected Job Outlook:**

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The median annual wage for welders, cutters, solderers, and brazers was $44,190 in May 2020.

Employment of welders, cutters, solderers, and brazers is projected to grow 4% from 2014-2024, 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.

Employability Skills and Knowledge for Entry Level:
- Problem Solving
- Professionalism
- Collaboration
- Critical Thinking
- Communication
- Creativity
- Flexibility
- Initiative
- Safety
- Relevant Math
- Basic Operational Techniques
- Quality Control
- Human Relations

Occupations to this Pathway:
- Welders
- Assemblers & Fabricators
- Shipfitters
- Boilermakers
- Plumbers, Pipefitters, and Steamfitters
- Sheet metal workers

Approved Curricula:
- 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)

Related Teacher Certification:
- 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

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

Credential(s) Identify Course Alignment:

GWB Priority Sector: Manufacturing
Career Field: Entry-level and above Production Manufacturing Specialist
SUNSETTING 7/1/22

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 in the 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 Production Technician (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 employers in advanced technology industries such as manufacturing
- Provide a customized fast track, pathway to stackable credentials for 21st Century advanced technology careers 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 for potential 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 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 the entry-level wage for Manufacturing entry-level and above was $35,048.00 ($16.85 per hour).

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* 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 two programs.

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 Production Technician (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 level of 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 workers receiving more opportunities.

Pay**: The most recent Rhode Island Labor Market Information for this profession dates from May 2015 and the entry-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
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</table>

**Salary Information:**

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

**Employability Skills and Knowledge for Entry Level:**

- Problem Solving
- Professionalism

**Projected Job Outlook:**

- The U.S. Department of Labor predicts employment to hold steady, with better trained workers receiving more opportunities.

**Occupations to this Pathway:**

- MISSING
<table>
<thead>
<tr>
<th>Required Curriculum:</th>
<th>Teacher(s), CTE Course(s), &amp; Certification:</th>
</tr>
</thead>
<tbody>
<tr>
<td>District Decision</td>
<td>MISSING</td>
</tr>
</tbody>
</table>

**Postsecondary Partnerships:**
MISSING

**Recommended Elements:**

**Complementary Coursework (Chemistry, Geometry, Pre-Calculus, etc.):** MISSING

**CTSO:** Skills USA

**Work-based learning – Type and Description:** Internship  Service Learning  Industry Project  School Based  Apprenticeship

**Credential(s) Identify Course Alignment:** MISSING
GWB Priority Sector: Manufacturing

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

SUNSETTING 7/1/22

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 NIMS credentials 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-forming Machining 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 Production Technician (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 clearly demonstrates 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 the entry-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-Defense

Career Field: Maritime Electrical - New in effect 7/1/22

| RI Career & Technical Education Board of Trustees Program Industry Standards |
|---|---|---|---|
| GWB Priority Sector: | Yes | Manufacturing - Defense | DRAFT Approval Date: |
| Career Field: | Maritime Electrical | Version: |

Career Pathway Plan of Study for > Learners > Parents > Counselors > Teachers/Instructors

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.

<table>
<thead>
<tr>
<th>Work-Based Learning</th>
<th>Academic Content</th>
<th>CTE Content</th>
</tr>
</thead>
<tbody>
<tr>
<td>Work-Based Learning: (Total of 10 Hours)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>80 Hours of Internship, Service Learning, Industry-Based Project, or School-Based Enterprise in the four years</td>
<td>Four years of ELA aligned to the BEP and LEA graduation requirements</td>
<td>Four years of Math aligned to the BEP and LEA graduation requirements</td>
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<tr>
<td></td>
<td>At least three years of Science aligned to the BEP and LEA graduation requirements</td>
<td>At least three years aligned to the BEP and LEA graduation requirements</td>
</tr>
<tr>
<td></td>
<td>CTE Coursework</td>
<td>Maritime CTEA &amp; Defense Industry Credential (Must complete all NCCER Modules Below)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Salary Information:</th>
<th>Projected Job Outlook</th>
</tr>
</thead>
<tbody>
<tr>
<td>As of June 2022, the average annual pay for a Marine Electrician in Rhode Island is $48,709 a year. (Approximately $23.42 an hour.) Rhode Island ranks number 24 out of 50 states nationwide for Marine Electrician salaries.</td>
<td>Employment of electricians is projected to grow 9 percent from 2020 to 2030</td>
</tr>
</tbody>
</table>
**Employability Skills & Knowledge for Entry Level:**

- Problem Solving
- Professionalism
- Collaboration
- Critical Thinking
- Communication
- Creativity
- Flexibility
- Initiative
- Orientation to the Trades
- Safety (OSHA 10)

**Occupations In This Pathway:**

- Electrical
- Electronic Engineering
- Technologist
- Aircraft and Avionics Equipment Mechanics and Technician
- Electrical and Electronic Engineers
- Electrical and Electronic Repairers

**Required Curricula:**

<table>
<thead>
<tr>
<th>Maritime Electrical Level 1 167.5 Hours</th>
<th>Related Teacher Certification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Module ID 26101:17 Orientation to the Electrical Trade (2.5 Hours)</td>
<td>Secondary Grades CTE Teacher, Grades 7-12 Electrical Installation Teacher Certification, High School Diploma + 5 years min. industry experience documented as a tradesperson.</td>
</tr>
<tr>
<td>Module ID 26102: 7/Electrical Safety (10 Hours)</td>
<td></td>
</tr>
<tr>
<td>Module ID 26104: 17/Electrical Theory (7.5 Hours)</td>
<td></td>
</tr>
<tr>
<td>Module ID 26103:17 Introduction to Electrical Circuits (7.5 Hours)</td>
<td></td>
</tr>
<tr>
<td>Module ID 26110: 1 Basic Electrical Construction Drawings (7.5 Hours)</td>
<td></td>
</tr>
<tr>
<td>Maritime Electrical Level 2 210 Hours</td>
<td></td>
</tr>
<tr>
<td>Module ID 26201:17/Alternating Current (17.5 Hours)</td>
<td></td>
</tr>
<tr>
<td>Module ID 26209: 7/Grounding and Bending (15 Hours)</td>
<td></td>
</tr>
<tr>
<td>Module ID 26109: 7 Conductors and Cables (10 Hours)</td>
<td></td>
</tr>
<tr>
<td>Module ID 26206: 7 Conductor Installations (10 Hours)</td>
<td></td>
</tr>
<tr>
<td>Module ID 26208:17 Conductor Terminations and Splices (7.5 Hours)</td>
<td></td>
</tr>
<tr>
<td>Module ID 26305:17 Pull and Junction Boxes (12.5 Hours)</td>
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</tr>
<tr>
<td>Module ID</td>
<td>26210</td>
</tr>
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<tr>
<td>Module ID</td>
<td>26263</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Post-Secondary Partnerships</th>
<th>Industry Partners</th>
</tr>
</thead>
<tbody>
<tr>
<td>CCHT</td>
<td>NEET</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Recommended Elements:</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Coursework:</strong></td>
</tr>
<tr>
<td>Chemistry</td>
</tr>
<tr>
<td>CTSO:</td>
</tr>
<tr>
<td><strong>Work-Based Learning:</strong></td>
</tr>
<tr>
<td><strong>Credential:</strong></td>
</tr>
</tbody>
</table>

**Level 1:**
- Orientation to the Electrical Trade (2.5 Hours)
- Electrical Safety (10 Hours)
- Electrical Theory
- Introduction to Electrical Circuits
- Basic Electrical Construction Drawings
GWB Priority Sector: Manufacturing-Defense

Career Field: Pipefitting – New in effect 7/1/2022

<table>
<thead>
<tr>
<th>RI Career &amp; Technical Education Board of Trustees Program Industry Standards</th>
</tr>
</thead>
<tbody>
<tr>
<td>GWB Priority Sector: Manufacturing-Defense</td>
</tr>
<tr>
<td>Career Field: Pipefitting</td>
</tr>
</tbody>
</table>

Career Pathway Plan of Study for Learners, Parents, Counselors, and Teachers:

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 needs. Coursework 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.

<table>
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<tr>
<th>Work-Based Learning</th>
<th>Academic Content</th>
<th>CTE Content</th>
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</thead>
<tbody>
<tr>
<td></td>
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</table>

<table>
<thead>
<tr>
<th>Work-Based Learning (Total of 10 Hours)</th>
<th>ELA</th>
<th>Math</th>
<th>Science</th>
<th>Social Studies/Sciences</th>
<th>Primary Credential</th>
</tr>
</thead>
<tbody>
<tr>
<td>Required</td>
<td>80 Hours of Internship, Service Learning, Industry-Based Project in the four years</td>
<td>Four years of ELA aligned to the EBP and LEA graduation requirements</td>
<td>Four years of Math aligned to the EBP and LEA graduation requirements</td>
<td>All least three years of Science aligned to the EBP and LEA graduation requirements</td>
<td>Defense Industry Credential (Based on completing approved NOCER Readiness Credit, Maritime OSHA)</td>
</tr>
</tbody>
</table>

Salary Information:
The median annual wage for plumbers, pipefitters, and steamfitters was $58,377 in May 2020.

** Projected Job Outlook

Employment of plumbers, pipefitters, and steamfitters is projected to grow 5 percent from 2020 to 2030, slower than the average for all occupations.

Employability Skills & Knowledge for Entry Level:

- Problem Solving
- Professionalism
- Collaboration
- Critical Thinking
- Communication

Occupations to this Pathway:

- Plumbers
- Pipefitters
- Steamfitters
- Boilermakers
<table>
<thead>
<tr>
<th>Approved Curricula:</th>
<th>Related Teacher Certification:</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Maritime Pipelining NCCER Level I IBS Hrs (c)2019</strong></td>
<td>Secondary Grades CTE Teacher, Grades 7-12: Plumbing and Heating Certification: High School Diploma + 5 years min. industry experience documented as a tradesperson or Bachelor's Degree + 3 years min. Industry experience documented as a tradesperson</td>
</tr>
<tr>
<td>Module ID 85101-13 Orientation to the Maritime Pipelining Trade (5 hours)</td>
<td></td>
</tr>
<tr>
<td>Module ID 85102-13 Maritime Pipelining Trade 1 Math (15 hours)</td>
<td></td>
</tr>
<tr>
<td>Module ID 85103-13 Pipelining Hand Tools (20 hours)</td>
<td></td>
</tr>
<tr>
<td>Module ID 85104-13 Pipelining Power Tools (15 hours)</td>
<td></td>
</tr>
<tr>
<td>Module ID 85105-13 Oxyfuel Cutting (17.5 hours)</td>
<td></td>
</tr>
<tr>
<td>Module ID 85106-13adders and Scaffolds (12.5 hours)</td>
<td></td>
</tr>
<tr>
<td><strong>Maritime Pipelining NCCER Level I 352.5 Hrs (2019)</strong></td>
<td></td>
</tr>
<tr>
<td>Module ID 85201-13 Piping Systems (5 hours)</td>
<td></td>
</tr>
<tr>
<td>Module ID 85202-13 Butt Weld Pipe Fabrication (27.5 hours)</td>
<td></td>
</tr>
<tr>
<td>Module ID 85203-13 Socket Weld Pipe Fabrication (25 hours)</td>
<td></td>
</tr>
<tr>
<td>Module ID 85204-13 Preparing and Braiding (15 hours)</td>
<td></td>
</tr>
<tr>
<td>Module ID 85205-13 Threaded Pipe Fabrication (15 hours)</td>
<td></td>
</tr>
<tr>
<td>Module ID 85206-13Plastic and Plastic Pipe (15 hours)</td>
<td></td>
</tr>
<tr>
<td>Module ID 85207-13 Identifying Valves, Flanges, and Gaskets (20 hours)</td>
<td></td>
</tr>
<tr>
<td>Module ID 85208-13 Drawings and Detail Sheets (20 hours)</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Post-Secondary Partnerships</th>
<th>Industry Partners</th>
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<tbody>
<tr>
<td>CCO</td>
<td>NEIT</td>
</tr>
</tbody>
</table>

**Recommended Coursework:**
<table>
<thead>
<tr>
<th>Career &amp; Technical Student Organization (CTSO):</th>
<th>SkillsUSA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Work-Based Learning example:</td>
<td>Internship</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>
US Dept. of Labor (USDOL) Career Cluster: Marine Trades
GWB Priority Sector: Marine Trades

Career Field: Boat Building – SUNSETTING 7/1/2022

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 Technology 2; 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 & 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 a boat builder pay is $37,440.00 ($18.00 per hour)
GWB Priority Sector: Marine Trades

Career Field: Boat Building – NEW in effect 7/1/2022

<table>
<thead>
<tr>
<th>RI Career &amp; Technical Education Board of Trustees Program Industry Standards</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>GWB Priority Sector: Marine Trades</td>
<td>DRAFT Approval Date:</td>
</tr>
<tr>
<td>Career Field: Boat Building</td>
<td></td>
</tr>
</tbody>
</table>

**Career Pathway Plan of Study**

<table>
<thead>
<tr>
<th>Work-Based Learning</th>
<th>Academic Context</th>
<th>CTE Content</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Career Pathway Plan of Study</strong></td>
<td><strong>Work-Based Learning:</strong></td>
<td><strong>Academic Context:</strong></td>
</tr>
<tr>
<td><strong>Marine Trades</strong></td>
<td><strong>(Total 490 hours)</strong></td>
<td><strong>40 hours of marine science, marine engineering, and marine technology</strong></td>
</tr>
<tr>
<td><strong>Boat Building</strong></td>
<td><strong>40 hours of marine science, marine engineering, and marine technology</strong></td>
<td><strong>40 hours of marine science, marine engineering, and marine technology</strong></td>
</tr>
<tr>
<td><strong>Boat Building/Repair</strong></td>
<td><strong>40 hours of marine science, marine engineering, and marine technology</strong></td>
<td><strong>40 hours of marine science, marine engineering, and marine technology</strong></td>
</tr>
<tr>
<td><strong>Boat Building/Repair</strong></td>
<td><strong>40 hours of marine science, marine engineering, and marine technology</strong></td>
<td><strong>40 hours of marine science, marine engineering, and marine technology</strong></td>
</tr>
</tbody>
</table>

**Salary Information:**

The median annual wage for a boat builder is $57,440.00 ($27.00 per hour)

**Projected Job Outlook**

Using 2014 Marine Trades Skills Gap Study Data, the Rhode Island Marine Trades Association & their third-party consultant, Planning Decisions, defined “the Marine Trades” as encompassing 530 businesses and establishments that employed 4,000 people who earned $246.0 million in wages, in seven separate industries.

**Occupations to this Pathway**

- Boat Builder/Repair
- Manager of Boatbuilding Facility
- Marine Carpentry

**Recommended Curriculum**

- Primary curriculum in the Marine Trade Council (AMTV) with integrated units from
- Opportunities through Advanced Course Network

**Post-Secondary Partnerships**

- Rhode Island Marine Trades Association
- Safe Harbors
- New England Institute of Technology
- IYRS School of Technology & Trade
- City Sail Inc., and In Command Seamanship Training

**Recommended**

- **Courses:**
  - Marine Trades I: Intro to Boat Building, Marine Trades II: Advanced Boatbuilding, Marine Trades III: Systems and Repairs
  - **CTE:**
  - **Work-Based Learning:**
    - Internship
    - Service Learning
    - Industry Project
  - School/Residency
  - Safe Boating License & Boat Handling Training
  - Apprenticeship
  - Preferred admission at IYRS
GWB Priority Sector: Marine Trades

Career Field: Composites- SUNSETTING 7/1/2022

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 (where applicable).

Expected industry credential (s) and/or certificate(s) granted upon successful completion of the program (if applicable): 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 as an entry-level Composite Technician.

Job Outlook: Composites Technician - Using 2014 Marine Trades Skills Gap Study Data, 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 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: Composites - NEW IN EFFECT, 7/1/2022

| RI Career & Technical Education Board of Trustees Program Industry Standards |
|-----------------------------|-----------------------------|
| GWB Priority Sector: Marine Trades Draft Approval Date: | Version: |
| Career Field: Composites | |
| Career Pathway Plan of Study for: Learners, Parents, Guidance, and Teacher/Faculty |
| Program and ACTE Title: |

<table>
<thead>
<tr>
<th>Work-Based Learning</th>
<th>Academic Content</th>
<th>CTE Content</th>
</tr>
</thead>
<tbody>
<tr>
<td>RI Hours of Industry, Service Learning Industry-based Project in the four years</td>
<td>Four years of ENGR aligned to the EIP and LEA production requirements including</td>
<td>CTE Government and Experience</td>
</tr>
<tr>
<td>Related</td>
<td></td>
<td>Marine Trades I: Introduction to Composites</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Marine Trades II: Composite Boat Building and Repair</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Marine Trades III: Advanced Composites</td>
</tr>
<tr>
<td></td>
<td></td>
<td>American Composites</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Manufacturing Association (BSMA) Certification, Certified Composites Technician (CCT), and IMERA Certificate of Competency</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Salary Information:</th>
</tr>
</thead>
<tbody>
<tr>
<td>The median annual wage for entry-level composite technicians is $36,940.80 ($17.76 per hour)</td>
</tr>
</tbody>
</table>

Employability Skills & Knowledge for Entry Level: |
<table>
<thead>
<tr>
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</thead>
<tbody>
<tr>
<td>Problem Solving</td>
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<tr>
<td>Communication</td>
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<tr>
<td>Collaboration</td>
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<td>Critical Thinking</td>
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Recommended Curriculum: |
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<tbody>
<tr>
<td>The primary curriculum is American Composite Manufacturers Association (ACMA).</td>
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</table>

Projected Job Outlook: |
<table>
<thead>
<tr>
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</thead>
<tbody>
<tr>
<td>Using 2014 Marine Trades Skills Gap Study Data, the Rhode Island Marine Trades Association &amp; their third-party consulting firm, Planning Decisions, defined the “Marine Trades” as encompassing 550 business establishments that employed 6,000 people who earned $328.8 million in wages in seven separate industries.</td>
</tr>
</tbody>
</table>

Occupations to this Pathway: |
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</tbody>
</table>

Secondary Grades CTE Teacher: Grades 7-12: Marine Maintenance/Ship Technology/Technician |
High School Diploma/GED + 3 Years Industry Work Experience |

Recommended: |
<table>
<thead>
<tr>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Coursework: Marine Trades I: Introduction to Composites, Marine Trades II: Composite Boat Building and Repair, Marine Trades III: Advanced Composites</td>
</tr>
<tr>
<td>CTE: OSHA10</td>
</tr>
<tr>
<td>Work-Based Learning: Internship, Service Learning, Industry Project, School-Based Enterprise, Apprenticeship</td>
</tr>
<tr>
<td>Credential: RMTA Certificate of Completion, OSHA 10 Certificate</td>
</tr>
</tbody>
</table>
GWB Priority Sector: Marine Trades

Career Field: Systems — SUNSETTING 7/1/2022

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 the program (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, 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 in wages in seven separate “industries.” According to the US Bureau of Labor Statistics, employment of small 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.
GWB Priority Sector: Marine Trades

Career Field: Systems – NEW IN EFFECT 7/1/2022

### RI Career & Technical Education Board of Trustees Program Industry Standards

<table>
<thead>
<tr>
<th>Work-Based Learning</th>
<th>Academic Content</th>
<th>CTE Content</th>
<th>One of the following softwaricertifications</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total (of 80 hours)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>121 Hours of Internship, Service Learning, Industry-Based Project in the four years</td>
<td>Four years of ELA aligned to the ESL and LLA graduation requirements including</td>
<td>OSHA 10 Maritime Certification, RI Marine Trades Association (WMTA) Certificate.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Four years of Math Aligned to the ESL and LLA graduation requirements including</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>At least three years of Science Aligned to the ESL and LLA graduation requirements including</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>At least three years</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

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

### Employability Skills & Knowledge for Entry Level:
- Problem Solving
- Teamwork
- Critical Thinking
- Communication
- Creativity
- Flexibility
- Initiative
- Orientation to onboard electrical, plumbing, and propulsion systems
- Systems terminology, materials and methods
- Related industry math and schematics reading
- Technology specific equipment and basic operational techniques
- Quality control

### Projected Job Outlook:
Using 2014 Marine Trades Skills Gap Study Data, the Rhode Island Marine Trades Association & their third-party consultant, Planning Decisions, defined “the Marine Trades” as encompassing 659 business establishments that employed 8000 people who earned $266.9 million, in wages in seven separate industries. According to the US Bureau of Labor Statistics, employment of small engine mechanics is projected to grow 4 percent from 2014 to 2024.

### Occupations to this Pathway:
- Marine Technician
- Marine Engineer
- Marine Mechanic

### Recommended Curriculum:
The primary curriculum is American Boat and Yacht Council (ABYC).

### Related Teacher Certification:
- Secondary Grades CTE Teacher: Grades 7-12 Marine Maintenance/Ship Technology/Technician
- High School Diploma/GED + 5 Years Validated Industry Work Experience
US Dept. of Labor (USDOL) Career Cluster:
Pre-Engineering
**GWB Priority Sector:** Pre-Engineering

(Governor’s Workforce Board Priority – Defense)

**Career Field:** Technician—MOVED TO MANUFACTURING SECTOR

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*

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

Technician openings are more difficult to measure; as of 2015, there were about three engineering technicians per 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 could work 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 the US Department of Labor statistics.

GWB Priority Sector: Pre-Engineering

(Governor’s Workforce Board Priority – Defense)
**Career Field: Engineer REVISED! in effect 7/1/22**

<table>
<thead>
<tr>
<th>GWBI Priority Sector:</th>
<th>Pre-Engineering</th>
<th>DRAFT Approval Date:</th>
<th>Version:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Career Field:</td>
<td>Engineer</td>
<td></td>
<td></td>
</tr>
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</table>

**RI Career & Technical Education Board of Trustees Program Industry Standards**

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<th>CTE Content</th>
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</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Salary Information:**

<table>
<thead>
<tr>
<th>Occupation</th>
<th>Median Pay</th>
<th>Projected Job Outlook</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aerospace Engineers</td>
<td>$155,120</td>
<td>Outlook: Pass</td>
</tr>
<tr>
<td>Agricultural Engineers</td>
<td>$77,110</td>
<td>Occupational</td>
</tr>
<tr>
<td>Biomedical Engineers</td>
<td>$88,550</td>
<td></td>
</tr>
<tr>
<td>Chemical Engineers</td>
<td>$134,913</td>
<td></td>
</tr>
<tr>
<td>Civil Engineers</td>
<td>$86,640</td>
<td></td>
</tr>
<tr>
<td>Computer Hardware Engineers</td>
<td>$114,600</td>
<td></td>
</tr>
<tr>
<td>Electrical and Electronic Engineers</td>
<td>$69,070</td>
<td></td>
</tr>
<tr>
<td>Environmental Engineers</td>
<td>$87,620</td>
<td></td>
</tr>
<tr>
<td>Health and Safety Engineers</td>
<td>$89,130</td>
<td></td>
</tr>
<tr>
<td>Industrial Engineers</td>
<td>$87,040</td>
<td></td>
</tr>
<tr>
<td>Marine Engineers and Naval Architects</td>
<td>$102,560</td>
<td></td>
</tr>
<tr>
<td>Materials Engineers</td>
<td>$92,390</td>
<td></td>
</tr>
<tr>
<td>Mechanical Engineers</td>
<td>$87,370</td>
<td></td>
</tr>
<tr>
<td>Mining and Geological Engineers</td>
<td>$93,350</td>
<td></td>
</tr>
<tr>
<td>Nuclear Engineers</td>
<td>$107,650</td>
<td></td>
</tr>
<tr>
<td>Petroleum Engineers</td>
<td>$137,170</td>
<td></td>
</tr>
</tbody>
</table>

**Skills and Knowledge for Entry Level:**

- **Problem Solving**
- **Collaboration**
- **Creative Thinking**
- **Communication**
- **Flexibility**
- **Initiative**

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

**Occupations to this Pathway:**

- Aerospace Engineers
- Agricultural Engineers
- Biomedical Engineers
- Chemical Engineers
- Civil Engineers
- Computer Hardware Engineers
- Electrical and Electronic Engineers
- Environmental Engineers
- Health and Safety Engineers
- Marine Engineers and Naval Architects
- Materials Engineers
- Mechanical Engineers
- Mining and Geological Engineers
- Nuclear Engineers
- Petroleum Engineers

**RI Department of Labor & Training: Labor Market Information:**

**US Department of Labor, Bureau of Labor Statistics, Occupational Employment Statistics:**

**Outlook Handbook:**

**ین**
### Work-Based Learning (WBL)

During the CTE program approval process, the Pre-Engineering CTE subcommittee will validate that the program submitted for approval meets or exceeds the CTE WBL requirements set forth below. Approved and active CTE programs will be required to submit their WBL plans for review and approval prior to the start of the next calendar year.

All approved engineering CTE programs must include a robust WBL plan which includes the following:
- A clear structure that provides students with at least 40 hours of WBL activities prior to graduation.
- One or more activities coordinated for students that are in the area of industry, community, or entrepreneurial need requiring the direct application of skills taught within their CTE program.
- A process for tracking and accountability where at least two parties validate the completion of each student’s required WBL activities. These parties must hold different titles and can include industry practitioners, CTE teachers, or CTE program directors. All hours counted towards completion must be performed in direct support of the planning or execution of the WBL activities described within that program’s WBL plan.

Pre-Engineering CTE programs must include a focus on Capstone projects, engineering internships, entrepreneurial experiences including the production of a sustainable marketable product (SMP), and internships on premises or virtual job shadowing when internships are not practical. WBL activities should provide students with opportunities to apply the skills they have learned within their pre-engineering CTE programs to solve relevant engineering problems. These activities should provide real-world context to their intellectual understandings and contribute to their development as lifelong engineering students.

Programs are encouraged to tailor their WBL activities to the unique needs as outlined in their communities which will provide the greatest educational and experiential benefits to their students. Activities should be structured to provide students with direct exposure to a variety of real-world professional engineering concepts while facilitating the deep exploration of the various engineering projects focused on solving customer problems.

### The following is an example of a Pre-Engineering WBL activity plan:

<table>
<thead>
<tr>
<th>#</th>
<th>Grade</th>
<th>Activity Description</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>10</td>
<td>Actual industry site - Industry</td>
<td>2</td>
</tr>
<tr>
<td>2</td>
<td>9</td>
<td>Industry project - Industry</td>
<td>8</td>
</tr>
<tr>
<td>3</td>
<td>11</td>
<td>Industry site - Industry</td>
<td>4</td>
</tr>
<tr>
<td>4</td>
<td>13</td>
<td>Industry site - Industry</td>
<td>4</td>
</tr>
<tr>
<td>5</td>
<td>12</td>
<td>Industry project - Industry</td>
<td>28</td>
</tr>
<tr>
<td>6</td>
<td>12</td>
<td>Industry project - Industry</td>
<td>42</td>
</tr>
</tbody>
</table>

Total hours: 100

Submission of a brief narrative program description, a numbered list of all WBL activities listed in the WBL plan table, and a list of active industry partnerships is required. Additional details are encouraged to provide context and benefits to inform future decision-making. At the end of the career and technical education (CTE) program, the school’s principal, or the school’s designated representative, should provide a summary of the program's effectiveness in preparing students for further education and/or the workforce. The summary should include a description of the program's activities, the number of students participating, and the outcomes achieved.
### RI Career and Technical Education Board of Trustees Program Industry Standards

<table>
<thead>
<tr>
<th>GWB Priority Sector</th>
<th>Transportation, Distribution, and Logistics</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Approved by CTEBOT and adopted by RIDE on April 30, 2021; effective July 1, 2021</strong></td>
<td></td>
</tr>
</tbody>
</table>

**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.

<table>
<thead>
<tr>
<th>Work-Based Learning</th>
<th>Academic Content</th>
<th>CTE Content</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>ELA</strong></td>
<td><strong>Math</strong></td>
<td><strong>Science</strong></td>
</tr>
<tr>
<td>Work-Based Learning: (Total of 80 Hours)</td>
<td>Four years of ELA aligned to the BEP and LEA graduation reqs</td>
<td>Four years of Math aligned to the BEP and LEA graduation reqs</td>
</tr>
<tr>
<td>80 hours of Internship, School-based Enterprise, and/or Industry Based Project in the program.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Salary Information:

The median annual wage for automotive body and related repairers was $43,850 in May 2019.

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

### Projected Job Outlook:

Employment of automotive body is projected to grow 9% from 2014 to 2024.

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

### Employability Skills and Knowledge for Entry Level:

Problem Solving: Non-structural body repair technician

### Problem Solving:

*Non-structural body repair technician*
<table>
<thead>
<tr>
<th>Professionalism</th>
<th>Refinish technician:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Collaboration</td>
<td>-Prepper</td>
</tr>
<tr>
<td>Critical Thinking</td>
<td>-Refinish technician</td>
</tr>
<tr>
<td>Communication</td>
<td>Welders:</td>
</tr>
<tr>
<td>Creativity</td>
<td>-Steel and aluminum</td>
</tr>
<tr>
<td>Flexibility</td>
<td>Estimator:</td>
</tr>
<tr>
<td>Initiative</td>
<td>-In collision repair shop</td>
</tr>
<tr>
<td>Review damage reports, prepare cost estimates, and plan work</td>
<td>-Licensed Insurance adjuster</td>
</tr>
<tr>
<td>Adaptability; specifically with techniques, products, timeline, requests, and technology</td>
<td>-Independent or specific insurance company</td>
</tr>
<tr>
<td>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</td>
<td>Detailer</td>
</tr>
<tr>
<td>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</td>
<td>Auto recycling center dismantler</td>
</tr>
<tr>
<td>Fit, attach, and weld replacement parts using proper procedures</td>
<td>Automotive Air Conditioning Mechanic</td>
</tr>
<tr>
<td>Knowing how to and be able to apply refinishing materials, which includes repairing damaged coatings, applying, and sanding primers, and masking panels for refinishing</td>
<td>Collision specific supply salesperson</td>
</tr>
<tr>
<td>Know what refinish materials should be applied depending on the stage of the repair process and how to mix refinish materials for application</td>
<td>-Jobber- supplies and stocks paint and body repair materials</td>
</tr>
<tr>
<td>Knowing how to create and read a paper and an electronic estimate</td>
<td>-Part distributor</td>
</tr>
<tr>
<td>Following proper masking and prepping procedures before refinishing of body panels</td>
<td>-Oem Part</td>
</tr>
<tr>
<td>Following proper welding personal</td>
<td>-Aftermarket Parts</td>
</tr>
<tr>
<td>Collision Repair Educator</td>
<td>Collision Repair Educator</td>
</tr>
<tr>
<td>-Postsecondary</td>
<td>-Secondary</td>
</tr>
<tr>
<td>-Secondary</td>
<td>-Manufacturer Trainer</td>
</tr>
<tr>
<td>safety procedures</td>
<td></td>
</tr>
<tr>
<td>-------------------</td>
<td></td>
</tr>
<tr>
<td>Know how to and be able to perform welder set up to show proper welding procedures</td>
<td></td>
</tr>
<tr>
<td>Know how to perform the three most common welds used in the collision repair industry: Lap, plug, and butt with backing</td>
<td></td>
</tr>
<tr>
<td>Know how to prevent corrosion and application of anti-corrosive materials after repairs</td>
<td></td>
</tr>
<tr>
<td>Know how to and be able to properly maintain refinishing equipment such as spray guns, panel stands, and spray booths</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Recommended Curriculum:</th>
</tr>
</thead>
<tbody>
<tr>
<td>I-Car – Collision Repair Curriculum for Career and Technical Schools. The curriculum is aligned 376 hours ASE standards</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Related Teacher Certification:</th>
</tr>
</thead>
<tbody>
<tr>
<td>RIDE Certification: Automotive Body Repair; High School Diploma/GED + 5 years’ experience; NOCTI-5266 Collision Repair/Refinishing</td>
</tr>
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</table>

<table>
<thead>
<tr>
<th>Postsecondary Partnerships:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mass Bay CC, New England Institute of Technology, Central Maine CC, UTI, MTTI, UNOH, Lincoln Tech</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Recommended Elements:</th>
</tr>
</thead>
<tbody>
<tr>
<td>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</td>
</tr>
<tr>
<td>CTSO: SkillsUSA</td>
</tr>
<tr>
<td>Work-based learning – Type and Description: Internship, Industry Project, School-based Enterprise</td>
</tr>
<tr>
<td>Credential(s) Identify Course Alignment: SP2 collision safety and pollution prevention, ASE, I-CAR Refinish and Non-Structural ProLevel 1, MACS 609</td>
</tr>
</tbody>
</table>
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**
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.

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<td>ELA</td>
<td>Math</td>
</tr>
<tr>
<td>80 hours of Internship, School-based Enterprise, and/or Industry Based Project in the program.</td>
<td>Four years of ELA aligned to the BEP and LEA graduation reqs</td>
<td>Four years of Math aligned to the BEP and LEA graduation reqs</td>
</tr>
</tbody>
</table>

Optional:
- SP2 Safety/Pollution
- ALL Lift Certification
- 609 Certification
- OSHA 10 (optional)
- And/or any industry credentials approved by program
### Salary Information:

The median annual wage for automotive service technicians and mechanics was $42,090 in May 2019.

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

### Projected Job Outlook:

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.

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

### Employability Skills and Knowledge for Entry Level:

- 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

### Occupations to this Pathway:

- 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
repairs, steering and suspension 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

<table>
<thead>
<tr>
<th>Required Curriculum: One of the Following</th>
<th>Related Teacher Certification:</th>
</tr>
</thead>
<tbody>
<tr>
<td>CDX (Jones and Bartlett) Electude Today’s Class or a curriculum that is aligned to ASE standards for program cert level and contact hours</td>
<td>RIDE Certification: Automotive Mechanics; High School Diploma/GED, 5 years’ experience; NOCTI-5262</td>
</tr>
</tbody>
</table>

**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

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</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Career Field</th>
<th>Parts Specialist</th>
</tr>
</thead>
</table>

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.

<table>
<thead>
<tr>
<th>Work-Based Learning</th>
<th>Academic Content</th>
<th>CTE Content</th>
</tr>
</thead>
<tbody>
<tr>
<td>Work-Based Learning: (Total of 80 Hours)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>80 hours of Internship, School-based Enterprise, and/or Industry Based Project in the program.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

- **ELA:** Four years of ELA aligned to the BEP and LEA graduation reqs
- **Math:** Four years of Math aligned to the BEP and LEA graduation reqs
- **Science:** At least three years of Science aligned to the BEP and LEA graduation reqs
- **Social Studies, Sciences:** At least three years aligned to the BEP and LEA graduation reqs
- **Other Courses or Learning Activities:** Automotive coursework completed in succession, consisting of at least three years in the auto program.
- **CTE Coursework:** ASE Entry Level Certification
- **Primary Credential (Earned at least one of the following):** SP2 Safety/Pollution
- **And/or any industry credential approved by program**

*Note: The table continues with more detailed course requirements and industry credentials.*
### Salary Information:

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.  

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

### Projected Job Outlook:

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.  

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

### Employability Skills and Knowledge for Entry Level:

- 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

### Occupations to this Pathway:

- 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:

- CDX (Jones and Bartlett)
- Electude
- Today’s Class or a curriculum that is aligned to ASE standards for program

### Teacher(s), CTE Course(s), & Certification:

- RIDE Certification: Automotive Mechanics; High School Diploma/GED, 5 years’ experience; NOCTI-5262
<table>
<thead>
<tr>
<th>certification level and contact hours</th>
</tr>
</thead>
</table>

**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

<table>
<thead>
<tr>
<th>GWB Priority Sector</th>
<th>Transportation, Distribution, and Logistics Approved by CTEBOT and adopted by RIDE on April 30, 2021; effective July 1, 2021</th>
</tr>
</thead>
<tbody>
<tr>
<td>Career Field</td>
<td>Service Advisor</td>
</tr>
</tbody>
</table>

**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.

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<tr>
<td>Work-Based Learning: (Total of 80 Hours)</td>
<td>ELA</td>
<td>Math</td>
</tr>
</tbody>
</table>

- 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

- Automotiv e coursewor k completed in succession, consisting of at least three years in the auto program.

- Automotiv e 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 credential s approved by
### Salary Information:
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.

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

### Projected Job Outlook:
Employment of service/sales representatives is projected to grow at 1% from 2018 to 2028, average for all occupations

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

### Employability Skills and Knowledge for Entry Level:
- 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

### Occupations to this Pathway:
- 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:
- CDX (Jones and Bartlett)
- Electude
- Today’s Class or a curriculum that is aligned to ASE standards for program certification level and contact hours.

### Related Teacher Certification:
- CTE Teacher Certification – RIDE Certification: Automotive Mechanics; High School Diploma +5 years’ experience; NOCTI-5262

### Postsecondary Partnerships:
<table>
<thead>
<tr>
<th>Mass Bay CC, New England Institute of Technology, Central Maine CC, UTI, MTTI, UNOH, Lincoln Tech</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Recommended Elements:</strong></td>
</tr>
<tr>
<td><strong>Complementary Coursework (Chemistry, Geometry, Pre-Calculus, etc.):</strong> Ford ACE, SP2, AllDATA</td>
</tr>
<tr>
<td><strong>CTSO:</strong> Skills USA</td>
</tr>
<tr>
<td><strong>Work-based learning – Type and Description:</strong> Internship, Industry Project, School-based Enterprise</td>
</tr>
<tr>
<td><strong>Credential(s) Identify Course Alignment:</strong> OSHA 10, SP2, NOCTI, 609 Cert, ASE</td>
</tr>
</tbody>
</table>
P-Tech Standards
**RI Career and Technical Education Board of Trustees Program Industry Standards**

<table>
<thead>
<tr>
<th>GWB Priority Sector</th>
<th>P-TECH – Information Technology Approved by CTEBOT and adopted by RIDE on July 24, 2020; effective July 1, 2021</th>
</tr>
</thead>
<tbody>
<tr>
<td>Career Field</td>
<td>CyberSecurity (Newport)</td>
</tr>
</tbody>
</table>

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

<table>
<thead>
<tr>
<th>Work-Based Learning</th>
<th>Academic Content</th>
<th>CTE Content</th>
<th>Other Courses or Learning Activities</th>
<th>Primary Credential (Earned at least one of the following)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Work-Based Learning:</strong> (Total of 80 Hours)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Project, in the four years</td>
<td>ELA</td>
<td>Math</td>
<td>Science</td>
<td>Social Studies, Social Sciences</td>
</tr>
<tr>
<td></td>
<td>English 10</td>
<td>English 11</td>
<td>Geometry</td>
<td>Biology</td>
</tr>
<tr>
<td></td>
<td>English 12</td>
<td>Algebra 2</td>
<td>Algebra 2</td>
<td>Chemistry</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Pre Calc</td>
<td>Pre Calc</td>
<td>Physics</td>
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</tbody>
</table>

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

**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.

**Employability Skills/Knowledge for Entry Level:**
Problem Solving
Professionalism
Collaboration
Critical Thinking
Communication
Understand how different network

**Occupations to this Pathway:**
Cyber Security Analyst
Cyber Security Engineer
Security Architect
Security Administrator
Security Software Developer
Security Consultant
Information and Security Analyst

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

*US Department of Labor; Bureau of Labor Statistics; Occupational Outlook Handbook
<table>
<thead>
<tr>
<th>technologies and tools</th>
<th>Junior Penetration Tester</th>
</tr>
</thead>
<tbody>
<tr>
<td>Interact to form a secure IT network</td>
<td></td>
</tr>
<tr>
<td>Configure, verify, and troubleshoot a switch with VLAN &amp; interswitch</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Required Curriculum:</th>
<th>Related Teacher Certification:</th>
</tr>
</thead>
<tbody>
<tr>
<td>CCRI CyberSecurity Curriculum</td>
<td>CCRI Instructors</td>
</tr>
<tr>
<td></td>
<td>CCRI Curriculum</td>
</tr>
</tbody>
</table>

**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
<table>
<thead>
<tr>
<th>Work-Based Learning</th>
<th>Academic Content</th>
<th>CTE Content</th>
</tr>
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<tbody>
<tr>
<td><strong>Work-Based Learning:</strong> (Total of 80 Hours)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Internships and Industry-Based Projects</td>
<td>Four classes of ELA aligned to the BEP and LEA graduation requirements</td>
<td>Four classes of ELA aligned to the BEP and LEA graduation requirements</td>
</tr>
<tr>
<td></td>
<td>At least three classes of Science aligned to the BEP and LEA graduation requirements</td>
<td>At least three classes of Science aligned to the BEP and LEA graduation requirements</td>
</tr>
<tr>
<td></td>
<td></td>
<td>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.</td>
</tr>
</tbody>
</table>
### Health Science through CCRI.

- student receives a (3) or higher on specified exam. CNA and EMT courses and certification as well through Industry Partnerships.

### Salary Information:
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 EMT is $31,890.00.

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

### Projected Job Outlook:
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.

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

### Employability Skills/Knowledge for Entry Level:
- Problem Solving
- Professionalism
- Collaboration
- Critical Thinking
- Communication
- Creativity
- Flexibility
- Initiative All of these skills would apply to any health science career

### Occupations to this Pathway:
- 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.
cluster. Regardless of the specific occupation, 21st century skills and 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.

<table>
<thead>
<tr>
<th>Required Curriculum:</th>
<th>Related Teacher Certification:</th>
</tr>
</thead>
<tbody>
<tr>
<td>District Approved Curriculum, AP and EEP Curriculums, &amp; CCRI Health Science Curriculum</td>
<td>Certified High School teachers across disciplines, CCRI Instructors, and Certified Health Instructors for CNA and EMT coursework.</td>
</tr>
</tbody>
</table>

**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 |
<table>
<thead>
<tr>
<th></th>
<th></th>
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</thead>
<tbody>
<tr>
<td>Career Field</td>
<td>Innovation (PPSD)</td>
</tr>
</tbody>
</table>

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

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<th>CTE Content</th>
</tr>
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<tbody>
<tr>
<td>Work-Based Learning: (Total of 80 Hours)</td>
<td>ELA</td>
<td>Math</td>
</tr>
</tbody>
</table>
| Internship, Service Learning, Industry Project in the four years | Intro to Lit World Literature American Lit British Lit | Algebra 1 Geometr y 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:
The entry-level annual median salary for an IT Specialist was $52,160 in 2016 according to the U.S. Bureau of Labor Statistics

Projected 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. 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.

**Employability Skills/Knowledge for Entry Level:**
- Collaboration skills
- Customer-service skills
- Listening skills
- Problem-solving skills
- Communication skills
- Writing skill

**Occupations to this Pathway:**
- 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:**
- 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)

**Credential(s) Identify Course Alignment:** CCRI Computer Programming or Networking, Associate Degree

**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.
RI Career and Technical Education Board of Trustees Program Industry Standards

<table>
<thead>
<tr>
<th>GWB Priority Sector</th>
<th>P-TECH – Manufacturing Approved by CTEBOT and adopted by RIDE on June 26, 2020; effective July 1, 2020</th>
</tr>
</thead>
<tbody>
<tr>
<td>Career Field</td>
<td>Innovation (Westerly)</td>
</tr>
</tbody>
</table>

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

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<td>ELA</td>
<td>Math</td>
</tr>
<tr>
<td>Internship, School-based Enterprise, Industry project over the four years</td>
<td>English 9</td>
<td>Algebra 1</td>
</tr>
<tr>
<td></td>
<td>English 10</td>
<td>Geometry</td>
</tr>
<tr>
<td></td>
<td>English 11</td>
<td>Algebra 2</td>
</tr>
<tr>
<td></td>
<td>English 12</td>
<td>Calc</td>
</tr>
</tbody>
</table>

### Salary Information:

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.

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

### Projected Job Outlook:

Employment of machinists is projected to grow 16% from 2016 to 2026. Employment of computer-controlled machine tool 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.

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

### Employability Skills/Knowledge for Entry Level:

### Occupations to this Pathway:
<table>
<thead>
<tr>
<th>Effort and Engagement</th>
<th>Problem Solving</th>
<th>Professionalism</th>
<th>Collaboration</th>
<th>Critical Thinking</th>
<th>Communication</th>
<th>Collaboration</th>
<th>Creativity</th>
<th>Flexibility</th>
<th>Initiative</th>
<th>Technology issues and resolution</th>
<th>Lifelong Learner</th>
</tr>
</thead>
<tbody>
<tr>
<td>Machinists</td>
<td>Computer controlled Machine Tool Operators</td>
<td>CNC Controlled Machine Tool Programmers</td>
<td>Material Services</td>
<td>Pipe Design/HVAC</td>
<td>Mechanical Designer</td>
<td>Electrical Designer</td>
<td>Structural Designer</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Required Curriculum:**
- Completion of a Senior Project
- Connection of Career exploration and preparation in a pathway area

**Advisor Certification:**
- 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

<table>
<thead>
<tr>
<th>GWB Priority Sector</th>
<th>P-TECH – Computer Science Approved by CTEBOT and adopted by RIDE on July 24, 2020; effective July 1, 2021</th>
</tr>
</thead>
<tbody>
<tr>
<td>Career Field</td>
<td>Innovation (Woonsocket)</td>
</tr>
</tbody>
</table>

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

<table>
<thead>
<tr>
<th>Work-Based Learning</th>
<th>Academic Content</th>
<th>Social Studies, Social Sciences</th>
<th>CTE Coursework</th>
<th>Other Courses or Learning Activities</th>
<th>Primary Credential (Earned at least one of the following)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Work-Based Learning: (Total of 80 Hours)</td>
<td>ELA</td>
<td>Math</td>
<td>Science</td>
<td></td>
<td></td>
</tr>
<tr>
<td>10 Hours Industry Project</td>
<td>ELA I</td>
<td>Algebra I or Geometry</td>
<td>Biology</td>
<td>World</td>
<td>Required: Safety Training specific to content</td>
</tr>
<tr>
<td>20 Hours Industry Project</td>
<td>ELA II</td>
<td>Geometry</td>
<td>Chemistry</td>
<td>History 1</td>
<td>Required:</td>
</tr>
<tr>
<td>20 Hours Industry Project Internship</td>
<td>ELA III</td>
<td>Geometry or Algebra II</td>
<td>3rd year Science – LEA approved Elective</td>
<td>History</td>
<td></td>
</tr>
<tr>
<td>30 Hours Internship or Industry Project</td>
<td>ELA IV/Technic al Reading</td>
<td>Algebra II</td>
<td>Pre-Calculus (Optional)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Salary Information:
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.

Projected Job Outlook:
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

Occupations to this Pathway:
**Entry Level:**

<table>
<thead>
<tr>
<th>Problem Solving</th>
<th>Computer Network Architects</th>
</tr>
</thead>
<tbody>
<tr>
<td>Professionalism</td>
<td>Computer and Information Systems Managers</td>
</tr>
<tr>
<td>Collaboration</td>
<td>Computer Hardware Engineers</td>
</tr>
<tr>
<td>Critical Thinking</td>
<td>Customer service representatives</td>
</tr>
<tr>
<td>Communication</td>
<td>Database administrators</td>
</tr>
<tr>
<td>Understand how different network technologies and tools</td>
<td>Network and computer systems administrators</td>
</tr>
<tr>
<td>Interact to form a secure IT network</td>
<td>Web developers</td>
</tr>
<tr>
<td>Configure, verify, and troubleshoot a switch with VLAN &amp; interswitch</td>
<td>Computer and information systems managers</td>
</tr>
<tr>
<td>Implement an IP addressing scheme and IP Services</td>
<td>Help Desk</td>
</tr>
<tr>
<td>Identify network security threats</td>
<td>Computer Support Specialists</td>
</tr>
<tr>
<td>Communication skills</td>
<td>Information Security Analysts</td>
</tr>
<tr>
<td>Writing skills</td>
<td>Computer Support Specialists</td>
</tr>
</tbody>
</table>

**Required Curricula:**

- PLTW and Specific College Coursework
- Connection of career exploration and preparation in a pathway area
- Experience in a community-based Internship

**Advisor Certification:**

- 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