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PORTLAND ARTS + TECHNOLOGY HIGH SCHOOL

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**My education. My choice.**

# **Program of Studies**

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Portland, ME

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[paths.portlandschools.org](https://paths.portlandschools.org)

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### **Mission Statement**

Our mission is to provide opportunities for students to acquire 21st century academic, creative, and technical skills needed for entry into the global workforce and/or post-secondary education in order to become contributing members of their community.

### **Equity Statement**

PATHS is committed to supporting every student's journey to career readiness and post-secondary education by promoting equity in all policies and procedures, eliminating barriers to success, encouraging family engagement, and establishing and maintaining businesses and community partnerships to guide and support all students. We recognize that racial, religious, gender, gender identity, socio-economic, ableism, and other inequities exist in our society and schools and commit ourselves to enhance our educational awareness and intolerance to any overt or underlying issues that hinder equity for all.

### **Core Values**

**Students:** PATHS is committed to providing students with an authentic and rigorous Career and Technical Education (CTE) learning environment; building skills and knowledge that expand creativity, problem solving and the innovation required for the current and future workplace.

**Community:** We believe that as a CTE center, one of our inherent strengths is our relationship with our community partners. We will support and advocate for our students, families, schools, businesses and each other, as well as seek to expand these relationships.

**Empowering Professionalism:** We will continue to embrace our professional responsibilities, be self-reflective and committed to personal and professional growth. Through equal and consistent accountability and support for both students and staff, we will develop effective and innovative teaching and learning practices.

**Trust & Collaboration:** In order to have a supportive and respectful culture for each other and our students, we recognize the need to nurture an environment of trust. Individually and collectively we will construct an atmosphere of collegiality recognizing that our combined experiences and perspectives guide our efforts to create an atmosphere of trust and collaboration.

**Communication:** We recognize that effective communication is vital to healthy organizations. Therefore, we will practice open, honest and regular communication with our colleagues, students, and our community partners.

### **Continuous Notice of Non-Discrimination**

[Portland Public Schools Non-Discrimination, Policies, Inquiries, and Complaint Procedures](#)

## Admissions

Admittance at PATHS is focused on incoming juniors. All programs are designed with a two-year curriculum, therefore, acceptance priority is given to two-year students. One-year seniors may be accepted pending space. Sophomores are considered for enrollment on a case-by-case basis. PATHS does not offer placement for three years.

Students must be attending one of our sending schools to apply. Homeschool and charter school students must live in one of the sending school districts to apply. PATHS is not a comprehensive high school and students still attend their sending school for half of their day to earn their core academic credits and diploma. Students may attend one PATHS program in one of two sessions: 8:00-10:30 or 11:00-1:30.

PATHS begins the admissions process for Fall enrollment in January and runs through April 1st.

To apply for a program, students must complete a full session visit to PATHS. Visits are a full immersion experience for the student. They will be actively engaged in hands-on work during their visit. All visits are scheduled through student's sending school counselors. Students will receive an email with their visit date and the required dress/footwear. Students who miss their visit or are not dressed appropriately may not have the opportunity to have their visit rescheduled. Students who do not complete a visit will not be considered for acceptance.

During visits, students will participate in both technical and academic activities designed to help them gain an understanding of the program. Student interest and ability to meet the academic and technical program requirements will be gauged. Visits are an opportunity for students to get a sense of whether or not the program is a good fit for them and should feel free to ask questions of the instructor and the other students in order to gather as many details as possible. Students must follow safety procedures; if a student cannot operate safely during the visit, the visit will be ended.

Student ability to comprehend and practice good safety habits, along with technical and academic skills, will determine if they are invited to join the program.

The first acceptance deadline is April 1st with most programs filling by then. Visits will continue after the deadline pending openings in each program.

Many programs have more students apply than can be accepted, therefore, we strongly recommend students come prepared to engage during their visit.

### **Workplace Readiness Standards**

PATHS programs use workplace readiness standards as part of every student's ongoing grading. Employers across Maine agree that workplace readiness skills are essential in every career path. Workplace readiness skills are evident through instructional simulations, project-based learning, work-based learning, and Career and Technical Student Organizations. Students with workplace readiness skills can apply those employable skills in all areas of their lives.

1. Dresses appropriately for work and maintains good hygiene.
2. Demonstrates regular attendance and punctuality and arrives to work on time.
3. Demonstrates a positive work ethic.
4. Demonstrates appropriate workplace behavior.
5. Manages time effectively and stays on task.
6. Works effectively and efficiently with all members of a team.
7. Communicates effectively with supervisors, peers, and clients.
8. Responds appropriately to supervision and feedback.
9. Demonstrates a positive attitude.
10. Follows written and verbal directions.
11. Takes initiative.
12. Demonstrates the ability to satisfy clients.
13. Troubleshoots and solves workplace problems.
14. Keeps materials organized.
15. Applies academic skills to professional work.
16. Produces and organizes written documents.
17. Maintains tools and equipment properly.
18. Follows all safety guidelines and procedures while performing a task.
19. Demonstrates the ability to troubleshoot and solve technical problems.
20. Demonstrates the ability to locate and research information or data.
21. Uses telecommunications devices appropriately.

### **Jobs for Maine Graduates**

JMG provides new learning opportunities for students and offers support and guidance as students gain the skills and motivation needed to participate in community and workplace activities, graduate from high school, and pursue continued education and/or employment.

### **Integrated Academic Credits**

In recognition that 9-12 literacy, mathematics, and science content are regularly embedded and assessed in Career and Technical Education programs, PATHS suggests core academic credits for sending schools to award to students for graduation. All credits are awarded by sending schools. Please view our [Integrated Academic Credit & Standards Alignment Handbook](#) for more information.

### **College Credits**

PATHS offers tuition free college courses taught by our instructors who have been approved by the sponsoring college. College credits and a transcript are awarded immediately upon satisfactory completion of the course. Credits may be used towards a degree at the sponsored college or applied for transfer credit to another college.

Students must enroll by the given deadline provided by the instructor and college. Attendance and performance may affect students' ability to enroll in dual enrollment courses and is up to instructor discretion.

A failing grade in the college course will result in a fail mark on students' college transcript should they continue on to that institution.

### **Industry Certifications**

PATHS programs are designed for students to earn third-party certifications of value which are recognized by business and industry at the local, state or national level. Industry certificates measure competency in an occupation, and they validate the knowledge base and skills that show mastery in a particular industry. Earning a nationally recognized certification boosts a student's employability, as well as options for postsecondary education.

Attendance and performance may affect students' ability to sit for third-party certification exams and is up to instructor discretion.

### **Co-Op Placements**

Many PATHS programs offer students an opportunity for a work-based learning experience. These experiences can be in the form of pre-apprenticeship placement, internships, clinical rotations, or job shadowing. Program instructors will determine each student's readiness to take on this professional responsibility. Only students in good standing will be offered a work-based learning experience. A student in good standing is one that demonstrates a high level of commitment to their learning through good attendance and reliable performance in their respective programs.

### **SkillsUSA**

Students enrolled at PATHS are eligible to participate in [SkillsUSA](#), a national organization of students, teachers and industry representatives working together to prepare high-performance workers in career and technical occupations. SkillsUSA emphasizes total work quality-high ethical standards, superior work skills and pride in the pursuit of lifelong learning. The program includes local, state and national competitions in which students demonstrate occupational and leadership skills in over 70 different areas. These competitions are judged by industry representatives, with scholarships and equipment prizes awarded to medalists.

### **National Technical Honor Society**

One of the highest honors a PATHS student can earn is to be inducted into the [National Technical Honor Society](#) (NTHS). NTHS strives to bring well-deserved recognition, scholarship opportunities, and career opportunities to students who excel at Career and Technical Education (CTE) schools. Not only do NTHS students embody all the attributes and talent which are in demand in today's workforce, these students

also embrace a clear vision for tomorrow's workforce and their role in it. NTHS honors the achievements of top CTE students, provides scholarships to encourage the pursuit of higher education, and cultivates excellence in today's highly competitive, skilled workforce.

# PROGRAMS



## **Automotive Collision**

### **Description:**

The Automotive Collision program offers the opportunity for students to learn and practice all aspects of the automotive collision industry. Students will learn how to analyze damage and write estimates on CCC estimating software, repair body damage, remove and align body panels, repair bumper covers with Polyvance Nitrogen plastic welders and 3M repair procedures and more, during the non-structural/structural classes. The paint and refinishing classes offer learning opportunities for students such as; mixing and matching paint using our computerized mixing bank and scales, applying etching primers, primer surfacers, sealers, base and topcoats using professional HVLP spray guns in our downdraft Devilbiss paint booth. Steel MIG welding is also a priority during both years to earn a I-CAR MIG (GMAW) welding certification. Partnerships with local shops provide students with first-hand experience into the industry. Students who complete the program can further their education or enter into the workforce as a collision technician, damage estimator, automotive refinisher and more.

### **Curriculum:**

#### Non-Structural:

Hazardous Materials, Personal Safety, and Refinish Safety  
Trim and Hardware  
Bolted-On Part Replacement  
Movable Glass  
Plastic and Composite Repair  
Lighting, Starting, and Charging Systems  
Automotive Foams  
Vehicle Construction Material Types  
Vehicle Technology and Trends  
Measuring Structural Damage  
MIG Welding

#### Paint and Refinishing:

Trim and Hardware  
Corrosion Protection  
Waterborne Products, Systems and Application  
Solvent products, Systems and Applications  
Hazardous Airborne Pollutant Reduction  
Liquid and Solid Hazardous Waste Storage and Disposal Overview  
Detailing

### **Textbooks:**

[Inter-Industry Conference on Auto Collision Repair](#)

### **National Standards:**

[Inter-Industry Conference on Auto Collision Repair](#)  
[National Institute for Automotive Service Excellence](#)

### **Certifications:**

ASE: Automotive Education Foundation  
I-CAR: Inter-Industry Conference on Auto Collision Repair  
S/P2: Safety & Pollution Prevention

### **Suggested Integrated Academic Credit:**

English  
Science

## Is This Program A Fit ?

### I enjoy...

- › Solving technical problems
- › Working with cars
- › Working with my hands
- › Working with people and customer service

### I am able to...

- › **Critically Think**- assessing damaged vehicles and what it will take to repair, including cost
- › **Maintain Physical Endurance**- sustained periods of standing, and participating in and facilitating gross fine motor activities
- › **Pay Attention to Detail**- having a good eye for detail to get a car looking like new
- › **Perform Technical Skills**- using a wide range of tools and equipment safely
- › **Work Independently**- follow multi-step instructions and work independently for sustained periods of time while maintaining safety and quality

### I am comfortable with...

- › **Reading**- interacting with technical documents and college level text
- › **Science**- engineering design and physical sciences

## **Automotive Technology**

### **Description:**

The Automotive Technology program provides students with skills to develop a thorough understanding of the design, construction, and operation of automotive systems. During their two-year enrollment in this program, students are taught how to troubleshoot, service and repair modern automobiles. Using the most up-to-date technology available, students are prepared to face the challenges of today's automotive industry needs. National affiliations with the SkillsUSA, Automotive Service Excellence (ASE) national workplace learning, and ongoing placement opportunities with local dealerships provide practical skill development and first-hand experience in the industry. Students who complete the program can further their education or enter into the workforce as an automotive technician, brake specialist, tire specialist, service writer, parts specialist and more.

### **Curriculum:**

#### Year I:

Shop Safety  
Measurement Fasteners and Tools  
Lubrication System  
Cooling Systems  
4 Cycle Theories  
Engine Rebuild  
Electricity  
Ignitions Systems  
Fuel Systems  
Computer Controls  
Emissions

#### Year II:

Wheels and Tires  
Brakes  
Steering and Suspension  
State Inspection  
Engine Performance

### **National Standards:**

[National Institute for Automotive Service Excellence](#)

### **Certifications:**

ASE: Automotive Service Excellence  
Electude  
Ford Service  
Maine State Inspection License  
Pro-Cut  
S/P2: Safety & Pollution Prevention  
Timken  
Valvoline Oil

### **College Credit:**

Southern Maine Community College  
    AUTO 105- Intro to Automotive Technology (3 credits)  
    AUTO 111- Steering & Suspension (1 credit)  
    AUTO 116- Brakes I (2 credits)  
    AUTO 155- Electricity & Electronics (4 credits)

**Suggested Integrated Academic Credit:**

English

Math

Science

**Is This Program A Fit?****I enjoy...**

- › Solving technical problems
- › Working with cars
- › Working with my hands
- › Working with people and customer service

**I am able to...**

- › **Critically Think**- assessing damaged vehicles and what it will take to repair, including cost
- › **Maintain Physical Endurance**- sustained periods of standing, and participating in and facilitating gross fine motor activities
- › **Perform Technical Skills**- use a wide range of tools and equipment safely
- › **Problem Solve**- issues under the hood of a vehicle aren't always obvious to determine
- › **Work Independently**- follow multi-step instructions and work independently for sustained periods of time while maintaining safety and quality

**I am comfortable with...**

- › **Math**- algebraic and geometric reasoning
- › **Reading**- interacting with technical documents and college level text
- › **Science**- engineering design and physical sciences

## Biomedical & Health Science

### Description:

The Biomedical and Health Science program provides students with the opportunity to explore three different tracks: nursing, dental or veterinary. The first year will introduce students to different careers in health sciences. Students will study anatomy, physiology, nutrition, diet therapy, and complete a medical research project through field trips, demonstrations, and classroom instruction. The second year prepares students in basic health science skills, body mechanics, aseptic techniques, and medical terminology. Students are placed in a clinical experience of their choice during the second semester to gain valuable hands-on experience in the industry; clinicals are held twice a week in the evening after school. Students who complete the program can further their education or enter into the workforce as a Certified Nursing Assistant, Dental Aide, Veterinary Aide and more.

### Curriculum:

#### Year I:

##### Principles of Biomedical Science (first semester)

In the introductory course of the PLTW Biomedical Science program, students explore concepts of biology and medicine to determine the factors that led to the death of a fictional person. While investigating the case, students examine autopsy reports, investigate medical history, and explore medical treatments that might have prolonged the person's life. The activities and projects introduce students to human physiology, basic biology, medicine, and research processes while allowing them to design their own experiments to solve problems.

##### Human Body Systems (second semester)

Students examine the interactions of human body systems as they explore identity, power, movement, protection, and homeostasis in the body. Exploring science in action, students build organs and tissues on a skeletal Maniken®; use data acquisition software to monitor body functions such as muscle movement, reflex and voluntary action, and respiration; and take on the roles of biomedical professionals to solve real-world medical cases

#### Year II:

##### Program of Study Nursing Assistant, Dental Assistant or Veterinary Assistant (first semester)

Students learn about their desired course of study. They go through the curriculum and learn the skills needed to work in the field. Once they have practiced their hands on materials students then attend on the job training.

##### Medical Interventions and Basic Math (second semester)

Students follow the life of a fictitious family as they investigate how to prevent, diagnose, and treat disease. Students explore how to detect and fight infection; screen and evaluate the code in human DNA; evaluate cancer treatment options; and prevail when the organs of the body begin to fail. Through real-world cases, students are exposed to a range of interventions related to immunology, surgery, genetics, pharmacology, medical devices, and diagnostics.

### Textbooks:

[Hole's Human Anatomy & Physiology](#)

[Medical Terminology A Living Language](#)

[Veterinary Assisting Fundamentals & Application](#)

[McCurnin's Clinical Textbook for Veterinary Technicians](#)

[Dental Assisting: A Comprehensive Approach](#)

[Dental Radiography Principles and Techniques](#)

[Nursing Assisting A Foundation in Caregiving](#)

[Nursing Assistant A Nursing Process Approach](#)

[Medical Law & Ethics](#)

[Medical Math](#)

**National Standards:**

[Certified Nursing Assistant](#)

[Project Lead The Way](#)

**Certifications:**

CNA: Certified Nursing Assistant

First Aid & CPR

RHS/ICE: Dental Radiation Health and Safety & Infection Control

**College Credit:**

Southern Maine Community College

BIOL 132- Anatomy and Physiology I (4 credits)

FIGS 102- Intro to Healthcare Professionals (1 credit)

HLTH 100- Intro to Health Sciences (3 credits)

HLTH 105- Medical Terminology (3 credits)

HLTH 120- Medical Ethics and Law (3 credits)

NURS 100- Dosage Calculation (1 credit)

**Suggested Integrated Academic Credit:**

English

Science

**Is This Program A Fit?****I enjoy...**

- › Helping people and/or animals
- › Working as a member of a team
- › Working under pressure and demonstrating patience

**I am able to...**

- › **Communicate**- speaking with patients and their families in addition to routinely communicating with coworkers
- › **Maintain Physical Endurance**- sustained periods of standing, and participating in and facilitating gross fine motor activities
- › **Perform Technical Skills**- use fine motor skills for the use of medical tools
- › **Use Interpersonal Skills**- dealing with and relating to patients, understanding their body language, and understanding their concerns and needs in a compassionate manner
- › **Work Independently**- follow multi-step instructions and work independently for sustained periods of time while maintaining safety and quality

**I am comfortable with...**

- › **Reading**- interacting with technical documents and college level text
- › **Science**- life sciences
- › **Writing**- conveying scientific concepts and other written forms of communication

## **Careers in Education**

### **Description:**

The Careers in Education program is designed for students contemplating a career as a teacher or in any occupational area that focuses on children. Students will acquire the knowledge, attitude, behaviors and skills required to be effective in a school setting or in the wider community. Through concurrent enrollment with SMCC and CMCC, students will explore careers such as teaching, social work, and specialized therapy (occupational therapy, speech therapy, and developmental therapy). Students will also learn about the art and science of teaching, educational philosophies, stages of development, curriculum planning, observation and assessment, and partnering with families. The program offers practical experience in which classroom instruction is applied in a real situation. First-year students will be required to participate in our on-site pre-kindergarten classroom while second-year students will be required to participate in a fieldwork experience with the age group of their choice, in a location that they can easily access. Positive attendance in students' first year is a requirement for fieldwork placement in their second year. Throughout the program students will be expected to write performance reflections, perform child observations, create lesson plans and learning materials, and create a professional portfolio. Students who complete the program can further their education or enter into the workforce as a pre-k teacher, educational technician, tutor and more.

### **Curriculum:**

Curriculum and Implementation  
Child Development  
Intentional Teaching Strategies  
Behavior Guidance  
Classroom Management  
Learning Environments  
Family Engagement  
Adapting for Individual Differences  
Cultural Inclusivity  
Professionalism

### **Textbooks:**

[Effective Practices in Early Childhood Education: Building a Foundation](#)  
[Those Who Can, Teach](#)

### **National Standards:**

[National Association for the Education of Young Children](#)  
[National Board for Professional Teaching Standards](#)

### **Certifications:**

Behavioral Health Professional  
Health & Safety  
First Aid & CPR  
Mandated Reporter

### **College Credit:**

Central Maine Community College  
EDU 101- Introduction to Education (3 credits)  
Southern Maine Community College  
ECED 100- Introduction to Early Childhood Education (3 credits)

## **Suggested Integrated Academic Credit:**

English

### **Is This Program A Fit?**

#### **I enjoy...**

- › Actively working with children
- › Creating activities and having an active imagination
- › Helping others

#### **I am able to...**

- › **Be Creative**- creating innovative lesson plans and activities that engage all children
- › **Be a Leader**- lead lessons, circles and read aloud to a full class of children and other members of the classroom team
- › **Display Patience**- working with children who are full of energy and curiosity
- › **Use Interpersonal Skills**- dealing with and relating to children and families understanding their concerns and needs
- › **Work Collaboratively**- work cooperatively and professionally with classmates

#### **I am comfortable with...**

- › **Reading**- interacting with technical documents and college level text
- › **Writing**- conveying student data and creating lesson plans and other written forms of communication



## **Carpentry**

### **Description:**

The Carpentry program is designed to instruct students in all types of house construction and remodeling. Students are involved in foundation layout work, house framing, and exterior and interior finish carpentry work. Students work with a variety of building and finishing materials, and become familiar with modern methods and styles of commercial and residential construction. An integral component of the curriculum involves live hands-on shop work, allowing the students to practice all phases of house construction. Major projects will include the construction of a shed and house. Students who complete the program can further their education or enter into the workforce as a framing carpenter, mill worker, finish carpenter and more.

### **Curriculum:**

#### Year I:

Basic Safety (OSHA 10)  
Introduction to Construction Math  
Introduction to Hand Tools  
Introduction to Power Tools  
Introduction to Construction Drawings  
Basic Communication & Employability Skills  
Introduction to Material Handling

#### Year II:

Orientation to the Trade  
Building Materials Fasteners and Adhesives  
Hand and Power Tools  
Introduction to Construction drawings, Specifications and Layout  
Floor Systems  
Wall Systems  
Ceiling Joist and Roof Framing  
Introduction to Building Envelope Systems  
Basic Stair Layout  
Roofing Applications  
Exterior Finishing  
Cabinetmaking and Installation (Optional)

### **Textbooks:**

[Carpentry Level 1 Trainee Guide](#)

[Core Curriculum: Introductory Craft Skills Trainee Guide](#)

### **National Standards:**

[National Center for Construction Education and Research](#)

### **Certifications:**

NCCER: National Center for Construction Education and Research  
OSHA: Occupational Safety and Health Administration 10-Hour Safety

### **Suggested Integrated Academic Credit:**

Math

## Is This Program A Fit?

### I enjoy...

- › Working as a member of a team
- › Working with my hands
- › Working with people and customer service

### I am able to...

#### › **Maintain Physical**

**Endurance-** sustained periods of standing, and participating in and facilitating gross fine motor activities

#### › **Pay Attention to Detail-**

ability to follow blueprints and building plans

#### › **Perform Technical Skills-**

using a wide range of tools and equipment safely

› **Work Collaboratively-** work cooperatively and professionally with classmates

› **Work Independently-** follow multi-step instructions and work independently for sustained periods of time while maintaining safety and quality

### I am comfortable with...

› **Math-** algebraic and geometric skills

› **Reading-** interacting with technical documents and college level text

## Commercial & Advertising Art

### Description:

The Commercial & Advertising Art program introduces students to the fields of Graphic Design and Illustration through traditional and digital media techniques from a historical and contemporary lense. There is strong emphasis on learning how to visually communicate clear and creative ideas to an audience through creative problem solving skills. Using the Adobe Suite software, students will have the ability to finalize and produce print ready work including but not limited to logo design, sequential art, mural design, book covers, greeting and postcard design, poster advertisements and 2D Animation. Students have the opportunity to gain college credit through SMCC and live work experience during the program if they are in academic good standing. After completing the program, students will have a portfolio to further their education or enter into the workforce in a design related field.

### Curriculum:

Color Theory  
Principles and Elements of Design  
Traditional Illustration Techniques  
Printmaking  
2D Design Basics  
Adobe CC Software  
Page Layout and Design  
Scanning Images  
Digital Image Editing  
Concepts of Typography  
Digital Portfolio

### National Standards:

[Graphic Arts Education and Research Foundation](#)

### College Credit:

Southern Maine Community College  
CNMS 111- Digital Foundations (3 credits)  
CNMS 115- 2D Design (3 credits)

### Suggested Integrated Academic Credit:

English  
Fine Arts

## Is This Program A Fit?

### I enjoy...

- › Creating on a computer using software
- › Using my imagination and expressing myself through art
- › Using new mediums to create art
- › Working for extended periods of time independently

### I am able to...

- › **Be Creative**- developing concepts, graphics and layouts for product illustrations, company logos, websites etc.
- › **Communicate**- listening and communicating with clients to support collaborative professional relationships
- › **Pay Attention to Detail**- when working with clients to determine their creative and time requirements as well as budget
- › **Receive Feedback**- listen and process feedback to develop a product clients are happy with
- › **Work Independently**- follow multi-step instructions and work independently for sustained periods of time

### I am comfortable with...

- › **Fine Art**- basic art skills
- › **Reading**- interacting with technical documents and college level text
- › **Writing**- conveying data and other written forms of communication

## CTE Exploratory

### Description:

The CTE Exploratory program offers the opportunity for sophomores to learn about varied programs at PATHS. This semester-long program offers students the necessary safety and technical skills to be successful in a two-year program. Students are exposed to workplace readiness and soft skills. Practical application, creativity, problem-solving, and teamwork are promoted using industry standards, and state-of-the-art equipment. At the completion of the semester students will have developed a portfolio highlighting their accomplishments. Acceptance to a two-year program is not guaranteed after completion of this program. All students seeking enrollment in a two-year CTE program at PATHS must complete the visitation process.

### Curriculum:

Financial Literacy

Introduction to Basic Culinary Arts: tool safety, farm to table, and cooking techniques.

Introduction to Basic Graphic Design: t-shirt, poster, logo, and business cards design.

Introduction to Basic Greenhouse Productions- wreath making, cider and maple syrup production.

Introduction to Basic Masonry: tool safety, terminology, and brick oven design.

Introduction to Basic Woodworking: tool safety and project design including pizza peels, night lights, and cutting boards.

### Certifications:

ServSafe Food Handlers

S/P2: Safety & Pollution Prevention

Valvoline Oil

### Is This Program A Fit?

#### I enjoy...

- › Exploring and learning about varied career fields
- › Working with my hands

#### I am able to...

##### › **Maintain Physical**

**Endurance-** sustained periods of standing, and participating in and facilitating gross fine motor activities

##### › **Perform Technical Skills -**

using a wide range of tools and dangerous equipment safely

› **Work Collaboratively-** work cooperatively and professionally with classmates

› **Work Independently-** follow multi-step instructions and work independently for sustained periods of time while maintaining safety and quality

#### I am comfortable with...

› **Reading-** interacting with technical documents and college level text

› **Writing-** conveying data and other written forms of communication

## **Culinary Arts**

### **Description:**

The Culinary Arts program is designed to prepare students for entry level cooking positions in the hospitality industry. Graduates will also be ready to study culinary arts at the post secondary level. Over the course of two years, students will learn personal and professional skills needed to be successful in commercial foodservice: kitchen sanitation, food safety, knife skills, cooking techniques, flavor theory, culinary math, basic food writing, and photography. Every Friday, we open The Bistro which serves the student body and staff at PATHS. We also offer private catered luncheons and sometimes host meals in the evening for school-related functions. On Wednesdays, we invite industry leaders to come speak and/or work with us in the kitchen. Students who complete the program can continue their culinary arts education and/or seek employment at local restaurants, bakeries, farms, gourmet markets, food trucks, catering outlets, web services, commercial food processing, and/or food insecurity prevention.

### **Curriculum:**

Career Workplace Readiness Prep

Kitchen Basics and Safety

Food Service Equipment

Kitchen Sanitation

Food Safety

Knife Skills

Vegetables Cookery

Prepare common breakfast items including eggs, potatoes, pancakes

Prepare a variety of tossed and composed salads

Prepare emulsified and vinaigrette dressings

Prepare grains, potatoes, rice, and pasta

Prepare a variety of sandwiches and other handheld food

Introduction to FOH operations and Hospitality Practices

Introduction to Culinary Math

Introduction to Purchasing & Inventory Control

Introduction to Basic Nutrition

### **Textbooks:**

[The Professional Chef – Culinary Institute of America](#)

[ServSafe](#)

### **National Standards:**

[American Culinary Federation](#)

### **Certifications:**

ServSafe Food Handlers

ServSafe Food Managers

### **College Credit:**

Southern Maine Community College

CULA 110- Culinary Skills (4 credits)

CULA103- ServSafe (1 credit)

### **Suggested Integrated Academic Credit:**

English

Math

Science

## Is This Program A Fit?

### I enjoy...

- › Working with food and tasting new things
- › Working as part of a team and taking care of guests
- › Working under pressure and cleaning

### I am able to...

- › **Pay Attention to Detail & Follow Directions** - when following a multi-step recipe and chef instructions
- › **Perform Technical Skills**- using a wide range of tools and equipment safely
- › **Maintain Physical Endurance**- sustained periods of standing, and participating in and facilitating gross fine motor activities
- › **Meet Industry Requirements**- wear a work uniform and follow industry dress code including no jewelry, no artificial nails, and a head covering.
- › **Work Collaboratively**- work cooperatively and professionally with classmates

### I am comfortable with...

- › **Math** - algebraic and geometric skills
- › **Reading**- interacting with technical documents and college level text
- › **Science**- life sciences
- › **Writing**- conveying data and other written forms of communication

## **Cybersecurity**

### **Description:**

This program is an introduction into the exciting world of careers in Cybersecurity. This program will take you in many directions highlighting roles as an analyst, penetration tester, systems administrator and computer crime investigator. You will learn priceless skills in this program to help keep you, your family and eventual employer safe on the internet for many years to come. The program will be a constantly evolving experience starting with the basics of security but also studying current and evolving threats facing the real world security landscape. Collaboration and teamwork will be critical to the success of a student in the program. Students who complete the program can further their education or enter into the workforce as a security consultant, ethical hacker, information security analyst and more.

### **Curriculum:**

Learn the fundamentals of an Information Technology Infrastructure

- End User Devices
- Servers
- Network Devices

Familiarize yourself different authentication methods

Focus on the CIA triad of Cyber Security and best practices

- Confidentiality
- Integrity
- Availability

Hands-on practice securing networks of different sizes and scopes

How to gather evidence and maintain a chain of custody

### **Textbooks:**

[CompTIA CertMaster Perform Network+](#)

[CompTIA CertMaster Perform Security+](#)

[CodeHS Python](#)

### **National Standards:**

[National Initiative for Cybersecurity Education Workforce Framework](#)

### **Certifications:**

CodeHS Python

CompTIA Tech+

CompTIA Network+

CompTIA Security+

### **College Credit:**

Southern Maine Community College

CMIT 100- Introduction to Information Technology (3 credits)

UMaine Augusta

ISS 210- Intro to Information Systems Security (3 credits)

CIS 240 Intro to Networking (3 credits)

CIS 110 Intro to Programming (3 credits)

### **Suggested Integrated Academic Credits:**

English

Math

Science



## Is This Program A Fit?

### I enjoy...

- › Being a lifelong learner
- › Solving technical problems
- › Working with computers

### I am able to...

- › **Communicate**- verbal and written communication to support collaborative professional relationships with colleagues
- › **Commit To Ethical Behavior**- with the use of technology and networking
- › **Problem Solve**- find creative ways to take on and address complex information security challenges
- › **Work Independently**- follow multi-step instructions and work independently for sustained periods of time

### I am comfortable with...

- › **Math**- algebraic, statistical reasoning and quantitative reasoning
- › **Reading**- interacting with technical documents and college level text
- › **Science**- engineering design
- › **Writing**- conveying data and other written forms of communication

## Dance

### Description:

Dance is a performance based program for students interested in pursuing a professional experience in the performing arts. Technique classes include modern dance technique, ballet technique, Afrobeat and hip hop. Technique class has a consistent form, a sequence of exercises and movement combinations that repeat, vary, or build, from class to class. While students acquire improved skills and a feel for the depth and rigor of technical dance training, the class is taught from the perspective of dance as art making. Students participate in 2-3 sessions per week called, Making Dances. Making Dances sessions happen after technique class and focus on choreography and dance composition (where students learn set material that will be made into a dance piece) and where students are asked to make original material based on a variety of themes and improvisational tools. There are several opportunities for special one day workshops with professional instructors and choreographers in a wide range of subjects. Previous workshops have featured guest teachers in fields such as salsa dancing, Capoeira, West African dance and drumming, theater, musical theater studies, Quebecois step-dancing. Students who complete the program can further their education or enter into the workforce as a choreographer, dancer and more.

### Curriculum:

Modern Dance and Ballet Technique

Afrobeat and Hip Hop Technique

Choreography

Introduction to Pilates/Core (Strengthening and Conditioning for Dancers)

Making Dances and Introduction to Dance Composition

Special Projects and Workshops With a Variety of Guest Artists in a Variety of Dance Styles and Interdisciplinary Art Forms

### Textbook:

[The Anatomy of Exercise and Movement](#)

### National Standards:

[MDOE Maine Learning Results: Visual & Performing Arts](#)

### Suggested Integrated Academic Credit:

Fine Art

Physical Education

### Is This Program A Fit?

#### I enjoy...

- › Being active
- › Creating dance choreography
- › Performing for an audience

#### I am able to...

##### › **Maintain Physical**

**Endurance-** sustained periods of standing, and participating in and facilitating gross fine motor activities

› **Work Collaboratively-** work cooperatively and professionally with classmates

#### I am comfortable with...

› **Reading-** interacting with technical documents and college level text

## Food Service

### Description:

The Food Service program prepares students for entry-level employment in the food service industry. This exciting program offers hands-on experience and learning through the operation of a student-run café. Students receive a varied hands-on education in food preparation, equipment usage, sanitation, personal hygiene, customer relations, teamwork, attitude, initiative, and independence. Students are supported to meet their needs with a focus on building self-confidence, independence, and collaborative working skills. Students who complete the program can further their education or enter into the workforce as a prep-cook, counter server, dishwasher and more.

### Curriculum:

Safety: Personal, Equipment, Food, General Kitchen

Sanitation

Personal Hygiene

Manipulative Skills: Knife Usage, Hand Tools, Stationary and Portable Equipment, Techniques

Recipes: Ingredient Identification, Measurement, Following Directions, Proper Tool Usage

Table Service: Table Setting, Service, Selling Product

Work Affect: Attitude, Collaborative Skills, Participation

Personal Affect: Leadership Skills, Mentoring, Giving and Receiving Feedback

### National Standards:

[MDOE Diversified Occupations](#)

### Certification:

ServSafe Food Handlers

### Is This Program A Fit?

#### I enjoy...

- › Working with food
- › Working with people and customer service

#### I am able to...

- › **Communicate**- working with customers and maintaining polite professional relationships
- › **Follow Directions**- follow multi-step written and verbal instructions while maintaining safety and quality of work
- › **Perform Technical Skills**- use a wide range of tools and equipment safely
- › **Maintain Physical Endurance**- sustained periods of standing, and participating in and facilitating gross fine motor activities
- › **Work Collaboratively**- work cooperatively and professionally with classmates

#### I am comfortable with...

- › **Math**- use of basic arithmetic skills including addition, subtraction, fractions, decimals, and money skills including coin and bill identification
- › **Reading**- comprehension of technical documents including recipes and daily work logs
- › **Writing**- ability to effectively complete daily assignments

## Horticulture

### Description:

The Horticulture program is designed to expose students to the varied jobs in the “Green Industry”, including landscaping, greenhouse production, hydroponic and outdoor vegetable and fruit production, floral trades, and retail sales. The learning environment includes a 3,000 square foot greenhouse, as well as a 40 acre campus. Students will work with display beds, gardens, orchards, and the extensive grounds of our campus. Practical greenhouse, landscape, and garden techniques are taught in a collaborative environment. Students who complete the program can further their education or enter into the workforce as a nursery/greenhouse worker, sustainable agricultural worker, gardening crew member and more.

### Curriculum:

Garden Preparation/Design  
Hydroponics  
Floral Design  
Plant Identification/Maintenance  
Integrated Pest Management  
General Greenhouse Operations  
Sustainable Agriculture/Vegetable Production  
Soil and Nutrients  
Maple Production

### National Standards:

[Plant Systems Pathway CIP 01.0601 Applied Horticulture uses NCAE Plant Systems](#)

### Certifications:

UMaine COOP Extension Horticultural Apprentice

### College Credit:

Southern Maine Community College  
HRT 100- Intro to Horticulture (3 credits)

### Suggested Integrated Academic Credits:

Science

### Is This Program A Fit?

#### I enjoy...

- › Creating and maintaining landscape installations
- › Growing plants and learning about natural food production
- › Working outside on my feet
- › Working with dirt and soil

#### I am able to...

- › **Communicate**- work cooperatively and professionally with customers and coworkers
- › **Maintain Physical Endurance**- sustained periods of standing, and participating in and facilitating gross fine motor activities
- › **Work Independently**- follow multi-step instructions and work independently for sustained periods of time

#### I am comfortable with...

- › **Reading**- interacting with technical documents and college level text
- › **Science**- earth and life sciences
- › **Writing**- conveying data and other written forms of communication

## **HVAC & Plumbing**

### **Description:**

The HVAC and Plumbing trades correlate in many ways and this program ties the two together by covering the many aspects of both professions through classroom theory, hands-on applications in the shop, and real life scenarios provided by the instructor. In Plumbing we cover topics such as faucets / fixtures, water distribution, drainage, venting, and water heaters. In the end we bring these lessons together by building functioning bathrooms in our house mock-up. In HVAC topics such as oil and gas heating systems, roof top units (RTU), pumps, air conditioning systems, and equipment are covered. Time is spent maintaining the school's HVAC units located on the roof. We also cover the specialty tools, installation techniques, troubleshooting, and repair of the systems and equipment associated with both HVAC and Plumbing. Students who complete the program can further their education or enter into the workforce as a residential or commercial plumber, HVAC technician, pipe fitter, AC specialist, and more.

### **Curriculum:**

#### Plumbing Year:

Soldering, Speciality Tools, Water Supply, Drainage, Waste, Vents, Water Heaters, Well Pumps, and Installations and Repairs

#### HVAC Year:

Speciality Tools, Oil and Gas burners, Hot Water Loops, Steam Systems, Roof Top Units and Air Handlers, Heat Pumps, Mini Splits, and Installations and Repairs

### **National Standards:**

[International Association of Plumbing and Mechanical Officials](#)

[National Center for Construction Education and Research](#)

### **Certifications:**

Aerial Lift

EPA 608

OSHA: Occupational Safety and Health Administration 10-Hour Safety

### **Suggested Integrated Academic Credit:**

Science

### **Is This Program A Fit?**

#### **I enjoy...**

- › Problem solving technical issues
- › Using technology to find solutions to problems
- › Working with my hands

#### **I am able to...**

##### **› Maintain Physical**

**Endurance-** sustained periods of standing, and participating in and facilitating gross fine motor activities

##### **› Pay Attention to Detail-**

having a good eye for detail

##### **› Perform Technical Skills-**

using a wide range of tools and equipment safely

**› Work Independently-** follow multi-step instructions and work independently for sustained periods of time

#### **I am comfortable with...**

**› Reading-** interacting with technical documents and college level text

**› Science-** engineering design and physical sciences

## **Marine Service Technology**

### **Description:**

The Marine Service Technology program offers many opportunities for students to find their interests in one or more skill sets in the field. The course is designed to teach the necessary theoretical and practical skills to prepare and educate individuals to become competent marine technicians with career readiness skills and an aptitude for the industry. Students will gain the ability to diagnose, repair, install and rebuild multiple marine systems, inboard and outboard engines, diesel engines, AC & DC electrical, marine electronics and composite boat building and repair. Partnerships with local boatyards provide students with valuable hands-on experience in the industry. Students who complete the program can further their education or enter into the workforce as a boatyard technician, boat builder, small engine mechanic and more.

### **Curriculum:**

#### Year I: Small Engine

Shop safety, tools & measurements, fasteners & sealants, engine construction, theory & operation of 2-stroke & 4-stroke engine, small engine maintenance, troubleshooting, repairs, rebuilding, carburetion, ignition systems, lubrication systems, cooling systems, customer service skills, basic DC electrical theory & installation, battery systems, introduction to marine composites & coatings.

#### Year II: Marine Systems

Customer service skills, introduction to boat handling, navigation, & safety, outboard & inboard engine maintenance, troubleshooting & repair. Advanced DC electrical theory, troubleshooting & installation. Fuel injection systems. Marine diesel & support systems. Marine electronics installation & troubleshooting. Advanced marine composite repairs & coatings. Seasonal maintenance & shrink wrapping.

### **Textbooks:**

[Fundamentals of Marine Service Technology](#)

[Small Gas Engine](#)

[Diesel Engine Technology](#)

### **National Standards:**

[American Boat and Yacht Council](#)

### **Certifications:**

OSHA: Occupational Safety and Health Administration 10-Hour Safety

Snap-on Industrial

S/P2: Safety & Pollution Prevention

### **Suggested Integrated Academic Credit:**

Math

Science

## Is This Program A Fit?

### I enjoy...

- › Solving technical problems
- › Working with boats
- › Working with my hands

### I am able to...

#### › **Maintain Physical**

**Endurance-** sustained periods of standing, and participating in and facilitating gross fine motor activities

#### › **Pay Attention to Detail-**

having a good eye for detail to get a boat looking like new

#### › **Perform Technical Skills-**

using a wide range of tools and equipment safely

› **Work Independently-** follow multi-step instructions and work independently for sustained periods of time

### I am comfortable with...

› **Math-** algebraic and geometric skills

› **Reading-** interacting with technical documents and college level text

› **Science-** engineering design and physical sciences

## **Masonry**

### **Description:**

The Masonry program is designed to instruct students in the different aspects of masonry. Students learn shop and job safety practices and procedures while developing the skills of design and layout. Projects such as fireplaces, steps, planters and more will be done using brick, block, dry stone and decorative precast concrete. Students receive related instruction in blueprint reading, layout work, measurement, sketching, and estimating. Students who complete the program can further their education or enter into the workforce as a mason tender, bricklayer, contractor, tile setter and more.

### **Curriculum:**

Hardscaping  
Crane Rigging  
Masonry Tools and Equipment  
Measurements, Drawings, Specifications  
Mortar  
Masonry Units  
Installation Techniques

### **Textbooks:**

[Masonry: Brick and Block Construction](#)

### **National Standards:**

[Home Builders Institute](#)  
[National Association of Home Builders](#)

### **Certifications:**

Forklift  
OSHA: Occupational Safety and Health Administration 10-Hour Safety

### **Suggested Integrated Academic Credit:**

Math

### **Is This Program A Fit?**

#### **I enjoy...**

- › Being creative in hardscape design
- › Being physically active
- › Working with my hands

#### **I am able to...**

- › **Maintain Physical Endurance-** sustained periods of standing, and participating in and facilitating gross fine motor activities
- › **Pay Attention to Detail-** having a good eye for detail
- › **Perform Technical Skills-** using a wide range of tools and equipment safely
- › **Work Independently-** follow multi-step instructions and work independently for sustained periods of time

#### **I am comfortable with...**

- › **Math-** algebraic and geometric skills
- › **Reading-** interacting with technical documents and college level text



## Music

### Description:

The Music program is designed to teach students how to interpret and perform many contemporary musical styles from Rock to R&B, Pop to Jazz and Funk. There are three aspects of the program: performing, music theory and recording studio. Students perform four times a year, with one evening rock show off campus. Students will study music theory, arranging, songwriting, and the ins and outs of the music business. The audio engineering component of the program is unique in its approach to introducing students to recording, mixing, music production and live sound. Students receive instruction in recording, mixing, editing, a foundation in the physics of sound and electricity, and an in-depth survey of popular music fundamentals. With plenty of hands-on opportunities, students learn engineering techniques with cutting edge ProTools software. Students will record each other to create an album at the end of every year. Students who complete the program can further their education or enter into the workforce as a performer, composer, producer, sound mixer and more.

### Curriculum:

Music Theory  
Sight Reading/ Ear Training  
Dictation  
Songwriting  
Performance  
Audio Recording

### Textbook:

[The Musician's Guide to Fundamentals](#)

### National Standards:

[MDOE Maine Learning Results: Visual & Performing Arts](#)

### College Credit:

Southern Maine Community College  
MUSI 110- Fundamentals of Music (3 credits)

### Suggested Integrated Academic Credit:

English  
Fine Arts

### Is This Program A Fit?

#### I enjoy...

- › Expressing my emotions while performing music
- › Learning music technology
- › Performing for an audience
- › Playing an instrument and/or singing and developing new skills/musical mediums

#### I am able to...

- › **Be Assertive**- in musical ideas and concepts
- › **Be a Learning Person**- exploring various music genres
- › **Receive Feedback**- listen and process feedback and be reflective
- › **Sing and/or play a complete song and match pitch**
- › **Work Collaboratively**- work cooperatively and professionally with classmates

#### I am comfortable with...

- › **Fine Art**- basic music skills
- › **Reading**- interacting with technical documents and college level text

## New Media

### Description:

New Media Students will learn the basics of graphic design, project design, and management, shooting and editing video. Students will learn these concepts while learning how to use Adobe's Creative Cloud focusing on Adobe PhotoShop, Premiere Pro, and Audition. Introductory topics include concepts in graphic design, project design, and management, introduction to video creation and editing. Advanced topics include broadcast production and scriptwriting. Interpersonal communication and teamwork are important elements in the industry and are stressed during student time in the New Media Program. Students who complete the program can further their education or enter into the workforce as a video editor, production assistant and more.

### Curriculum:

Cameras - Digital DSLRs, Mirrorless, and 4K Professional Camcorders

Digital Media Formats, Storage, and Management

Electronic Field & News Production

Studio Production

Microphones, Sound Recording, and Sound Design

Lighting - types of lights and methods for Studio & Field Production

Digital Editing & Techniques - Premiere Pro

Digital Photography - image formats, techniques, styles, lighting and editing

Photoshop- photo editing and graphic design

Internet Usage

### National Standards:

[Maine Association of Broadcasters](#)

### College Credit:

Southern Maine Community College

CNMS 160- Video & Audio Production Basics (3 credits)

### Suggested Integrated Academic Credit:

English

Fine Arts

### Is This Program A Fit?

#### I enjoy...

- › Creating scripts and storyboards
- › Using my imagination
- › Using video and recording technology

#### I am able to...

- › **Be Creative**- developing video shots and project management
- › **Work Collaboratively**- work cooperatively and professionally with classmates
- › **Work Independently**- follow multi-step instructions and work independently for sustained periods of time

#### I am comfortable with...

- › **Fine Art**- basic computer and technology skills
- › **Reading**- interacting with technical documents and college level text
- › **Writing**- conveying data and other written forms of communication

## Outdoor Education and Leadership

### Description:

Outdoor Education and Leadership serves as an experiential pathway for students interested in careers or post-secondary education in the outdoor industry, including outdoor or environmental education, adventure programming, parks and public land management, environmental conservation, and other aspects of the outdoor field. This course is suitable for students who love the outdoors and are willing to be physically, mentally, and academically challenged while developing their leadership skills, teamwork, and ability to engage with the natural world as their classroom. Students will gain a solid foundation in outdoor education and leadership theories and methods while gaining the necessary technical skills to be leaders in outdoor settings. This new program is in response to the growing demand for qualified and trained specialists in the outdoor industry here in Maine. Students who complete the program can further their education or enter into the workforce as an adventure guide, park ranger, environmental educator, game warden, conservationist and more.

### Curriculum:

#### Year One: Foundations in Outdoor Skills and Environmental Awareness

In the first year, students will establish a foundation of outdoor skills while learning about the critical principles of adventure-based programming, environmental stewardship, and group dynamics.

- Core outdoor skills, including camp basics, wilderness survival, backcountry cooking
- Introduction to ecological systems, conservation practices, plant/animal ID, and Leave No Trace Principles.
- Essential navigation techniques and map reading skills.
- Challenge course experience and the educational concepts behind facilitating and processing with groups.
- First aid, safety protocols, hazard assessment, and risk management training.
- Team building and leadership development through collaborative challenges.
- Essential industry certifications (Year One)
- Experience and familiarity with outdoor classroom and place-based learning through relationships with on-site and some off-site locations.

#### Year Two: Advancing Skills and Career Readiness

In the second year, students will deepen their knowledge of best practices and essential outdoor leadership skills while gaining more experience in the field and connecting with industry professionals. Students will choose a concentration to focus their skill-building in the outdoor field.

- Exploring careers: Outdoor education, adventure recreation, public land management, and other industry possibilities.
- Advanced outdoor skills and essential industry certifications (Year Two)
- Proven strategies and experience teaching and leading diverse outdoor programs and activities.
- Planning and managing trips and outdoor events.
- Practical experience working with youth outside.
- Learn about public land policies, conservation initiatives, and wilderness ethics.
- Career exploration opportunities are available through networking with industry professionals, speakers, and field visits.
- Experience off-site wilderness trips as participants and leaders.

### Textbooks:

[Be an Expert with Map & Compass](#)

[Master Guide Handbook: Outdoor Adventure Trips](#)

[Outward Bound Wilderness First-Aid Handbook](#)

[The Serviceberry](#)

**Certifications:**

Avalanche Level 1  
Basic Search and Rescue  
Boaters' Safety  
Educational Trip Leader  
FEMA Intro to Incident  
Leave No Trace Trainer  
Lifeguard/Water Safety Instructor  
Paddlesports Safety  
Preparation for Registered Maine Guide Test  
Ropes Course Facilitator  
Swiftwater Rescue  
Wilderness First Aid/AED/CPR

**Suggested Integrated Academic Credit:**

Physical Education  
Science

**Is This Program A Fit?****I enjoy...**

- Being outside in nature for hours
- Observing animals, plants, and human interactions through the seasons
- Challenging myself to learn new adventure and outdoor skills
- Helping others and working as part of a team

**I am able to...**

- **Be a Leader-** take a leadership role or a supporting role as needed
- **Maintain Physical Endurance-** sustained periods of standing, and participating in and facilitating gross fine motor activities
- **Problem Solve-** assess and address situations and actions necessary in a given environment and make good-decisions
- **Work Collaboratively-** work cooperatively and professionally with classmates

**I am comfortable with...**

- **Reading-** interacting with technical documents and college level text
- **Science-** earth and life sciences
- **Writing-** conveying data and other written forms of communication

## **Welding**

### **Description:**

The Welding program provides students with the opportunity to gain fundamental welding skills needed to be employed in the welding/ fabrication industry. Students will be trained in the safe use of various hand tools such as grinders, oxy-fuel torches, plasma cutters, and portable band saws. Instruction will be given in the use of an array of measuring and layout tools used in the welding trade. Students will learn to read and interpret welding symbols and blueprints used in welding/fabrication shops. Performance tests are administered throughout the program that focus on using shielded metal arc welding (Stick), gas metal arc welding (MIG ), flux cored arc welding, and gas tungsten arc welding (TIG) on various materials such as carbon steel, stainless steel, and aluminum. Second-year students will have the opportunity to take the American Welding Society D1.1 limited structural plate test, which will give them an entry level welding certification. Advanced students will have the opportunity to try their hand at pipe fitting and pipe welding both carbon and stainless steel. Students who complete the program can further their education or enter into the workforce as an entry level welder.

### **Curriculum:**

Safety  
Equipment Operation  
Oxygen- Acetylene Safe Set Up  
Electrical Safety  
SMAW Flat Pos. Horizontal position, Rod I.D. / Uses  
SMAW Vertical- O.H. Paddle / Plate Tests for Certification  
Math for Welders  
Blueprint Reading for Welders  
Welding Workbook  
Fabrication Techniques  
GMAW (Gas, Metal Arc Welding) Performance Tests  
FCAW (Flux Cored Arc Welding) Performance Tests  
SMAW (Shielded Metal Arc Welding) Performance Tests  
Plasma Cutting  
Carbon Arc Cutting  
Pipe fitting / Pipe Welding Performance Tests  
GTAW (Gas Tungsten Arc Welding) Performance Tests

### **Textbooks:**

[AWS Fundamentals Of Welding](#)  
[GW Welding Fundamentals](#)

### **National Standards:**

[American Welding Society](#)

### **Certification:**

AWS: American Welding Society  
S/P2: Safety & Pollution Prevention

### **Suggested Integrated Academic Credit:**

Math  
Science

## Is This Program A Fit?

### I enjoy...

- › Fabricating and building things with steel
- › Learning new skills and applying them in real world settings
- › Working with my hands

### I am able to...

#### › **Maintain Physical**

**Endurance-** sustained periods of standing, and participating in and facilitating gross fine motor activities

› **Perform Technical Skills-** using a wide range of tools and equipment safely

› **Work Independently-** follow multi-step instructions and work independently for sustained periods of time

### I am comfortable with...

› **Math-** algebraic and geometric skills

› **Reading-** interacting with technical documents and college level text

› **Science-** engineering design and physical sciences

# APPENDIX

## **Appendix A: PATHS College Credits**

### **Automotive Technology (10 credits)**

#### **SMCC**

AUTO 105- Intro to Automotive Technology (3 credits) [Year 1](#)

AUTO 155- Electricity & Electronics (4 credits) [Year 1](#)

AUTO 111- Steering & Suspension (1 credit) [Year 2](#)

AUTO 116- Brakes I (2 credits) [Year 2](#)

### **Biomedical & Health Science (15 credits)**

#### **SMCC**

FIGS 102- Intro to Healthcare Professionals (1 credit) [Year 1](#)

HLTH 105- Medical Terminology (3 credits) [Year 1](#)

BIOL 132- Anatomy and Physiology I (4 credits) [Year 1](#)

HLTH 100- Intro to Health Sciences (3 credits) [Year 2](#)

HLTH 120- Medical Ethics and Law (3 credits) [Year 2](#)

NURS 100- Dosage Calculation (1 credit) [Year 2](#)

### **Careers in Education (6 credits)**

#### **SMCC**

ECED 100- Intro to Early Childhood Education (3 credits) [Alternating Years \(Fall 26, 28, 30\)](#)

#### **CMCC**

EDU 101- Intro to Education (3 credits) [Alternating Years \(Fall 25, 27, 29\)](#)

### **Commercial & Advertising Art (6 credits)**

#### **SMCC**

CNMS 111- Digital Foundations (3 credits) [Alternating Years](#)

CNMS 115- 2D Design (3 credits) [Alternating Years](#)

### **Culinary Arts (4 credits)**

#### **SMCC**

CULA 110- Culinary Skills (4 credits) [Year 2](#)

### **Cybersecurity (12 credits)**

#### **SMCC**

CMIT 100- Intro to Information Technology (3 credits) [Alternating Years \(Fall 25, 27, 29\)](#)

#### **UMaine Augusta**

ISS 210- Intro to Information Systems Security (3 credits) [Alternating Years \(Spring 26, 28, 30\)](#)

CIS 240 Intro to Networking (3 credits) [Alternating Years \(Fall 26, 28, 30\)](#)

CIS 110 Intro to Programming (3 credits) [Alternating Years \(Spring 27, 29, 31\)](#)

### **Horticulture (3 credits)**

#### **SMCC**

HRT 100- Intro to Horticulture (3 credits) [Year 1](#)

### **Music (3 credits)**

#### **SMCC**

MUSI 110- Fundamentals of Music (3 credits) [Year 2](#)

### **New Media (3 credits)**

#### **SMCC**

CNMS 160- Video & Audio Production Basics (3 credits) [Year 2](#)



## **Appendix B: PATHS Suggested Integrated Academic Credits**

Please view our [Integrated Academic Credit & Standards Alignment Handbook](#) for more information

### **Automotive Collision**

English  
Science

### **Automotive Technology**

English  
Math  
Science

### **Biomedical & Health Science**

English  
Science

### **Careers in Education**

English

### **Carpentry**

Math

### **Commercial & Advertising Art**

English  
Fine Arts

### **Culinary Arts**

English  
Math  
Science

### **Cybersecurity**

English  
Math  
Science

### **Dance**

Fine Arts  
Physical Education

### **Food Service**

FLA Math

### **Horticulture**

Science

### **Marine Service Technology**

Math  
Science

### **Masonry**

Math

### **Music**

English  
Fine Art

### **New Media**

English  
Fine Arts

### **Plumbing & HVAC**

Science

### **Welding**

Math  
Science