At the HACTC we believe:

All students can learn.

Learners solve problems and think critically.

Purposeful relationships between students and educators enhance learning.

Learners communicate effectively.

Leadership and teamwork are essential to learning.

Learning occurs in a respectful, diverse, equitable and safe community.

Evidence of learning results from applied, occupational, academic, and technological practice.

Reflection complements learning.

Learning creates and sustains strong, caring individuals.

Learning and service strengthen the greater community.

Thank you to Design, Illustration and Media Arts student Matt Robbins for designing the front and back covers of the HACTC program brochure!
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Jessica Enright, Instructor, Health Sciences
Scott Farnsworth, Assistant Director
Christine Flanagan, Paraprofessional, Career and Technology Exploration
Jessica Gardner, Administrative Assistant
Patrick Gobeille, Instructor, Culinary Arts
Bill Goldsworthy, Instructor, STEM
Doug Heavisides, “H”, Director
Tim Hebert, School Counseling Coordinator
Richard Hoffman, Cooperative Education Coordinator
Lance Johnson, Instructor, Building Trades
Kelli Kehoe, Paraprofessional, Support Team
Bev Kerr, Support Team
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Michele Morrell, Instructor, Education Sciences
Tom Ostler, Instructor, Natural Resources
Charlie Reibel, Adult Education Coordinator
Sarah Pfeiffer, Paraprofessional
Carl Speer, Instructor, Industrial Mechanics and Welding
Jennifer Thygesen, Outreach Coordinator
Aron Tomlinson, Curriculum, Instruction and Assessment Coordinator
Vicky Trombly, Instructor, Business Administration
Mike Viens, Instructor, Career and Technology Exploration
Amy Willey, Paraprofessional
Dear Students, Parents, and Community Members:

On a daily basis I am awestruck at the amount and magnitude of learning that takes place at the Hartford Area Career and Technology Center (HACTC). Yes, that is a bold assertion to open with, but in a letter meant to welcome you to a resource focused solely on the HACTC, anything less would be misleading. In short and simply put, the HACTC lives as an incredible school. I am proud of the learning that happens here and am excited to share with you some information that provides the foundation for it.

To begin, a professional and caring staff exists at the center of all the learning that takes place at the HACTC. This staff has dedicated itself to connecting all students, regardless of strengths or challenges, with practical, hands-on program curriculums. These curriculums prepare students for both post-secondary education and workforce employment, a duality necessary for success in today’s job market. And it is these curriculums that are outlined here in this program guide. So please, use this resource to explore the fourteen programs that the HACTC offers: read the course descriptions and notice other pieces of information like each program’s Industry Recognized Credentials or Concurrent Enrollment opportunities. Most importantly, though, generate a list of questions and contact me so that I may answer them for you. I want to do everything possible to help make the HACTC a very real educational experience for you or someone that you know.

In closing, there is a lot of information here, but if you want more specifics about the daily learning that occurs at the HACTC, please see our school’s Facebook or Instagram pages, or visit www.hactc.com. Thank you for your time.

Respectfully,
Douglas Heavisides
Director, Hartford Area Career and Technology Center
802-295-8630
heavisidesd@hartfordschools.net
What is Career and Technical Education at the HACTC?
Career and Technical Education (CTE) is for every kind of student. Students who attend CTE programs complete the same academic requirements that all students in their school district are required to meet. CTE programs teach through real-life examples and hands-on learning models. Students who excel in CTE are typically hands-on learners, critical thinkers and creative problem solvers.

Half-Day Program:
Generally, first-year students attend the HACTC from 11:15am-1:30pm, and second-year students attend from 8:30am-10:45am. Students spend the remainder of their school day at their home school.

Students come to the HACTC from the following schools:
Hanover High School     Ledyard Charter School     The Sharon Academy
Hartford High School     Mascoma Valley Regional High School     Thetford Academy
Home School             Mid-Vermont Christian School     Windsor High School
Lebanon High School      Rivendell Academy             White River Valley High School
Woodstock Union High School and more!

Cooperative Education Placements and Live Jobs:
Students participate in Cooperative Education program placements in an occupational field of their interest. Several HACTC programs also work with the public on “live jobs,” accepting work from clients in the community as part of their learning experience. Through these responsibilities, students build professional proficiency in industry skills, plus practice transferable work skills like time management and professional courtesy.

At the end of two years, students leave proficient in both academic and professional skills. Each program focuses on industry standards for its field, and normal core class topics are also embedded into the curriculum. At the end of their program, students produce a professional-quality Digital Assessment Tool, complete with resume, awards, certifications, and examples of their projects from the HACTC, making them ready to compete in the workforce and pursue additional education.
How to Apply to the HACTC:

For help completing your application, please see your school counselor or call the HACTC School Counseling Coordinator, Tim Hebert, at 802-359-4724.

- Students are encouraged to complete an interest/ability inventory at their home schools.
- Students attend the HACTC’s presentation at their home school.
- Students and parents complete the entire HACTC application online, including a parent signature.
- School counselors will be notified when a student submits their online application, and counselors will then provide a transcript and additional paperwork directly to the HACTC.
- Students must visit the HACTC before being accepted into a program. They may attend a scheduled tour with their school, arrange a separate tour, and/or attend the HACTC Open House on March 3, 2020 with their parents.
- Student applications, including supplemental forms and transcripts from school counselors, are due to the HACTC by Friday, March 20, 2020.

Students from Rivendell Academy and Thetford Academy may apply for the following HACTC programs:

- Business Administration
- Collision Repair and Refinishing
- Computer Science Essentials
- Computer Science Principles
- Cybersecurity
- Design, Illustration and Media Arts
- Industrial Mechanics and Welding
- Natural Resources
- STEM: Introduction to Engineering Design
- STEM: Principles of Engineering

White River Valley High School students may apply for the following HACTC programs:

- Collision Repair and Refinishing
- Computer Science Essentials
- Computer Science Principles
- Cybersecurity
- Cosmetology
- Education Sciences: Teaching and Learning
- Education Sciences: Coaching and Leading
- Industrial Mechanics and Welding
- Natural Resources
- STEM: Introduction to Engineering Design
- STEM: Principles of Engineering
Automotive Technology

Steve Bingham, Instructor
binghams@hartfordschools.net

Automotive Technology trains and prepares students to go into the automotive field with the skills to succeed. Students are trained on HACTC shop vehicles. After students perfect their skills, they then do maintenance and repair work on customer vehicles. Students also have the opportunity to participate in the AYES Program (Automotive Youth Educational Systems) and Cooperative Education placements, which prepare them for certified internships and a potential job placements with a local dealership. The Automotive Technology program is also NATEF (National Automotive Technicians Education Foundation) certified.

**Embedded High School Credit:** Science

**Career Technical Student Organization:** Automotive Club Enthusiasts (ACE)

**Concurrent Enrollment for College Credit:**
Automotive Systems I, 3 credits, Lakes Region Community College

**Industry Certifications:**
ASE Student Certification; Lift it Right Certification; S/P2 Environmental Safety Training Certification; CPR/AED and First Aid; and Conover® Workplace Readiness.

**Articulation Agreements:**
Universal Technical Institute; University of Northwestern Ohio; Lakes Region Community College;

**Units of Study:**

**LEVEL I**
- Safety I
- General Engine Diagnosis I
- Ignition System I
- Fuel and Exhaust Systems I
- Steering Systems
- Front and Rear Suspensions I
- Miscellaneous Service
- Wheel and Tire Service I
- Power Assist Units
- Hydraulic Brake System
- Drum Brake I; Disk Brake I
- General Electrical Diagnosis I
- Battery Service
- Starting Systems I
- Charging Systems I
- Horn and Wiper/Windshield I

**LEVEL II**
- Safety II
- General Engine Diagnosis II
- Ignition System II
- Fuel and Exhaust Systems II
- Steering Systems
- Front and Rear Suspensions II
- Miscellaneous Service
- Wheel and Tire Service II
- Four Wheel Alignment
- Air Conditioner System
- Hydraulic Brake System
- Drum Brake II; Disc Brake II
- Anti-Lock Brake System
- General Electrical Diagnosis II
- Battery Service
- Starting Systems II
- Charging Systems II
- Horn and Windshield Wiper II
- Supplemental Restraint System
In Building Trades students participate in the construction of a new home over a two-year period. Students are exposed to all phases of construction of a new home, and learn everything from beginning tool safety, skill techniques, and blueprint reading through residential plumbing and electrical. Safety is our 100% goal at all times. Students are also exposed to real world experiences on field trips, job shadowing and Cooperative Education learning experiences. Upon program completion, students are qualified to walk into most entry-level positions within the Building Trades arena, pursue apprenticeships, or further their education.

**Concurrent Enrollment for College Credit:**
Construction Management I, 2 credits, Vermont Technical College (pending)
Construction Management II, 3 credits, Vermont Technical College (pending)

**Embedded High School Credit:** Math

**Career Technical Student Organization:** Future Business Leaders of America (FBLA)

**Industry Certifications:**
Vermont Association of General Contractors; CPR/AED and First Aid; Careersafe OSHA-10; National Center for Construction Education and Research General Safety Certification; and Conover® Workplace Readiness.

**Articulation Agreements:**
Vermont Technical College; Keene State College; Lincoln Technical Institute.

**Units of Study:**
- Blueprint reading
- Hand and power tool safety
- NCCER modules
- Concrete layout and installation
- Energy Star construction
- House framing layout and installation
- Stair layout and construction
- Roofing
- Siding: undergarment choices
- Door and window installation
- Deck construction
- Insulation
- Sheetrock
- Interior Finish Work
- Painting
- Flooring
- Rough and finish electrical, hands-on with a licensed contractor
- Rough and finish plumbing, hands-on with a licensed contractor
- Heat work, hands-on with a licensed contractor
- Kitchen and bath cabinet and counter installation
Business Administration students are people who want to develop the business professionals lurking within them. This program leads students through all aspects of the business world, from accounting and personal finance to marketing and professional communications. Students develop their own business skills through individual and group projects, cooperative education placements, and guest lectures from industry professionals. Business Administration students stay active by participating in Future Business Leaders of America (FBLA), earning up to nine different college credits, building a professional business and communications portfolio, and earning five different industry recognized credentials.

Career Technical Student Organization: Future Business Leaders of America (FBLA)

Articulation Agreements: Northern Vermont University - Johnson; Keene State College

Concurrent Enrollment for College Credit:
River Valley Community College:
Introduction to Computer Applications, 3 credits;
Introduction to Business, 3 credits;
Accounting I, 3 credits.

Industry Certifications:
AED/CPR and First Aid; CareerSafe OSHA Certification;
Personal Finance Certification; and Conover® Workplace Readiness.

Embedded High School Credit: English

Units of Study:

LEVEL I
- Accounting (college course)
- Employability Development
- Introduction to Computer Applications (college course)
- Communications
- Digital Assessment Tool (DAT)
- Leadership/FBLA
- Introduction to Entrepreneurship
- Sports and Entertainment Management
- Retail Management
- OSHA Certification - CareerSafe
- Social Media and Marketing

LEVEL II
- Career Research Project
- Communications
- Cooperative Education/Internship Placements
- Digital Assessment Tool
- Financial Literacy - Personal Finance SIMS
- Human Resource Management
- Introduction to Business
- Retail Management
- Leadership/FBLA
- OSHA Certification
- CPR and First Aid
- Integrated Business Projects
Career and Technology Exploration (CTE) is a unique program at the HACTC, open only to high school sophomores. Students are referred for admission to the CTE program by their school counselor.

The Career and Technology Exploration model offers a unique and holistic learning experience in a non-traditional classroom. Small group and one-on-one instruction are at the heart of helping CTE students reconnect to their own educational experience. The more individualized, hands-on, and supported instruction is vital in helping students find success in school and their overall educational experience. The CTE program helps students earn high school credits while providing exposure to Career and Technical Education. Students cycle back and forth between more traditional classroom time and placement in each of the HACTC technical programs, giving students a hands-on introduction to HACTC opportunities. Each student is given eight hours of professional level instruction in all 13 programs the HACTC has to offer. Upon successful completion of the CTE program, students may select a HACTC program to apply to for his or her Junior year.

Embedded High School Credits: English, Math, Art

Units of Study:

**ENGLISH**
- Goal Setting
- Oral and Technical Presentations
- Short and Long Term Writing Assignments
- Vocabulary Development
- Reading Skills
- Language Comprehension and Communication
- Listening Skills
- Interpretation/Evaluation Skills
- Writing for Purpose
- Career Preparedness and Readiness

**MATH**
- Elements of Basic Math
- Consumer Math
- Career and Business Math
- Pre Algebra/Transition to Algebra 1

**VISUAL ARTS**
- Principles & Elements of Art
- Multi-Media Expressions of Art
Cosmetology
Stacey Dunham, Instructor
dunhams@hartfords.net

This course will give students basic experience in the Cosmetology industry. The Cosmetology field offers a variety of employment avenues as well as experiences in travel, personal satisfaction, and financial independence. Students will be introduced to skills such as hair design, nail and skin care, personal appearance, communication, and business skills. These skills will be learned through demonstrations on mannequins and by working with fellow students and clients, as well as through Cooperative Education and community job placements. Students may earn hours towards licensure through this program.

Students will be expected to meet general course units of study and be able to demonstrate their understanding of the curriculum. The instruction will be a series of phases that include combinations of salon clinic interaction, practical skill sets, academic assignments, as well as lecture and demonstration. The course is comprised of self-paced, basic instruction in related studies and practical skills training. Student assessment will be based on teacher observation, formal and informal assessment, project-based self-reflection, and both academic and skill development assessments.

Concurrent Enrollment for College Credit:
Introduction to Business, 3 credits, Community College of Vermont
Introduction to Human Services, 3 credits, Community College of Vermont

Industry Certifications:
S/P2 Cosmetology Safety and Sanitation Certification; Barbicide Certification; Shampoo Assistant Certification; CPR/AED and First Aid; Pivot Point; and Conover® Workplace Readiness.

Embedded High School Credit: Science

Career Technical Student Organization: Future Business Leaders of America (FBLA)

Articulation Agreements:
New England School of Hair Design; Keene Beauty Academy; Michael's Paul Mitchell Academy.

Units of Study:
- Safety
- Salon Ecology
- Hair Styling
- Design Decisions
- Nails Theory
- The Study of Skin
- The Law of Color
- Chemistry
- Electricity
- Anatomy
- Draping
- Hair cutting
- Braiding
- Blow Dry, Curling/Flat Irons
- Upstyling, Wet Styling, Thermal Styling
- Manicures and Pedicures
- Shampooing and Conditioning
- Facials; Make Up
- Hair analysis
- Hair removal
- Chemical texturizing
- Cosmetology Math
- Salon Business
- Professional Development
- Portfolio Development
- Workplace Readiness and Employability
- Marketing using social media
- Advanced Cosmetology Specialties
- Client Service
Computer Science Essentials

Leroy Martelle, Instructor
martellel@hartfordschools.net

HACTC partners with Project Lead the Way (PLTW) to offer the following curriculum:
  - Computer Science Essentials - one-semester course
  - Computer Science Principles - full-year course
  - Cybersecurity - one-semester course

**Computer Science Essentials: (one-semester course)**

Computer Science Essentials deals with the nuts and bolts of the Information Technology (IT) world. First, students will use MIT Apps Creator to learn visual, block-based programming. Then they will transition to text-based programming using Python. They will create applications and explore career paths in the IT arena. Finally, they will learn how to make computers network together to put their design into practice. Students will learn to work together, just as computing professionals do, to create products that address topics and problems important to them.

**Industry Certifications:**
CPR/AED and First Aid; Conover® Workplace Readiness; CareerSafe OSHA-10; CyberSafety Online; and Internet and Computing Core Certification (IC3).

**Articulation Agreements:** Available through PLTW partner colleges and universities.

**Concurrent Enrollment for College Credit:** Introduction to C++ Programming, 3 credits, RVCC

**Career Technical Student Organization:** Technology Student Association (TSA)

**Embedded High School Credit:** Technology

**Units of Study:**

**Creative Computing: Building with Blocks**
- Introduction to Computer Science Essentials
- Collaborating Around Computing
- Innovation and Problem Solving

**Computing and Society: Transitions to Text**
- Transitions to Text-Based Coding
- Computing and Careers in our Society
- Computing in our World

**Solving with Syntax**
- Collaborating in Text
- Text-Based Solutions
- The Power of Text-Based Programming

**Computing with a Purpose**
- Innovation of Computational Problem Solving
Computer Science Principles: (full-year course)

In Computer Science Principles, students will utilize multiple platforms and programming languages as they develop programming skills, generate excitement about career paths that utilize computing, explore the workings of the Internet, and experiment with professional tools that foster creativity and collaboration. Class projects and problems include app development, visualization of data, cybersecurity and simulation. This full-year course can be a student’s first in Computer Science, but we encourage students without prior computer experience to start with Computer Science Essentials.

Concurrent Enrollment for College Credit:
Introduction to PC Assembly and Soft Skills, 3 credits, River Valley Community College
Introduction to Web Design, 3 credits, River Valley Community College

Industry Certifications:
CPR/AED and First Aid; Conover® Workplace Readiness; CareerSafe OSHA-10; CyberSafety Online; and Internet and Computing Core Certification (IC3).

Embedded High School Credit: Technical Writing, Computer Science or Technology Elective.

Career Technical Student Organization: Technology Student Association (TSA)

Units of Study:

Algorithms, Graphics, and Graphical User Interfaces
- Algorithms and Agile Development
- Mobile App Design
- Algorithms in Python
- Images and Object-Oriented Libraries
- GUIs in Python

The Internet
- The Internet and the Web
- Shopping and Social on the Web
- Security and Cryptography

Raining Reigning Data
- Visualizing Data
- Discovering Knowledge from Data
- Visualizing Data

Intelligent Behavior
- Moore's Law and Modeling
- Intelligent Agents
Computer Science Cybersecurity: (one-semester course)

Cybersecurity gives students a broad exposure to the many aspects of digital and information security, while encouraging socially responsible choices and ethical behavior. It inspires algorithmic thinking, computational thinking, and "outside-the-box" thinking. Students work both individually and in teams to explore the educational and career paths available to cybersecurity experts, as well as other careers in the field of information security.

Concurrent Enrollment for College Credit: Introduction to Computer Operating Systems, 3 credits, RVCC

Articulation Agreements:
Available through PLTW partner colleges and universities.

Industry Certifications:
CPR/AED and First Aid; Conover® Workplace Readiness; CareerSafe OSHA-10; CyberSafety Online; and Internet and Computing Core Certification (IC3).

Embedded High School Credit: Technology

Career Technical Student Organization: Technology Student Association (TSA)

Units of Study:

**Personal Security:**
- Introduction to Cybersecurity
- Security and the Internet
- Protect your Data

**System Security:**
- Information Architecture
- Server Vulnerabilities
- Server Exploits
- The E-Commerce Site

**Network Security:**
- Files and Processes
- Attacks from the Net
- Analyzing the Net
- Secure the Net

**Applied Cybersecurity:**
- Cryptography
- Digital Forensics
- Criminal Justice and Computer Science
Students will be introduced to the field of Collision Repair and Refinishing (CRR). This field requires a thorough understanding of how an automobile is constructed. The focus of the CRR program is based on a select group of key Vermont standards, along with other industry standards.

Students in CRR will use top-of-the-line equipment and technology such as the DeVilbiss semi downdraft paint booth, PPG Aquabase paint mixing system, and a commercial quality vinyl cutting machine. The curriculum focuses on mechanical, body repair and replacement, sanding, masking, painting, and use of high tech spray equipment. With permission from the instructor, students may work on “live jobs” brought in by the local community. After completing this program, students have had success entering directly into the workforce or going on to post-secondary education. This program is NATEF (National Automotive Technicians Education Foundation) certified.

**Career Technical Student Organization:** Automotive Club Enthusiasts (ACE)

**Concurrent Enrollment for College Credit:**
Basic Collision Repair, 3 credits, Nashua Community College

**Industry Certifications:**
S/P2 Environmental Safety Training Certification; PPG Refinisher Certification; CPR/AED and First Aid; and Conover® Workplace Readiness.

**Embedded High School Credit:** Math or Science

**Articulation Agreements for Advanced Standing:**
Nashville Auto Diesel College; Nashua Community College; Ohio Technical College; and Lincoln Technical Institute.

**Units of Study:**
- HACTC Rules and Expectations
- Safety Modules/Tool Safety
- Basic Dent Repair
- Welding: Oxy-fuel and Plasma Cutting
- Body Filler
- Application of Primer
- Paint Mixing
- Masking
- Paint and Refinishing
- Custom Paint
- Power Buffing and Polishing
- Glass Replacement
- Plastic Repair
- Estimating
- Basic Body Repair Skills
- Frame Repair
- Panel Repair
- Performance and Motor Sports
- Custom Fabrication
Culinary Arts
Patrick Gobeille, Instructor
gobeillep@hartfordschools.net

Culinary Arts is a fast-paced learning environment grounded in food science, safety, sanitation, customer service and the basic principles of cooking. With our cafe-style restaurant named ‘The Get-Away’, Chef Patrick Gobeille exposes students to a practical application of skills in a dynamic, rigorous curriculum. Students will demonstrate a basic knowledge of the food service industry, including: organizational flow, HACCP, sanitation practices, personal hygiene, equipment and utensil identification and use, basic first aid, nutrition, customer service, basic food and bakeshop techniques, as well as storage, handling of food and math applications.

Concurrent Enrollment for College Credit:
Introduction to Food and Beverage Management, 3 credits, New England Culinary Institute; Culinary Fundamentals, 3 credits, Lakes Region Community College

Industry Certifications:
American Culinary Federation Secondary Graduate Certification; S/P2 Culinary Arts; ServSafe Food Handler; CPR/AED and First Aid; and Conover® Workplace Readiness.

Embedded High School Credit: Science

Career Technical Student Organization: Hospitality Club

Articulation Agreements for Advanced Standing:
Culinary Institute of America; New England Culinary Institute; New Hampshire Culinary Institute (WMCC); and Lakes Region Community College.

Units of Study:
LEVEL I
- Sanitation, VT Regulations and HACCP
- Culinary History and Career Options
- Personal, Equipment and Fire Safety
- Respect & Responsibility, Ethics
- Customer Service/Waitperson
- Equipment and Utensil ID and Use
- Knife Skills/Basic Cuts
- Cooking Principles and Methods
- Weights and Measures
- Recipe Structure & Conversion
- Produce Identification and Use
- Mise en Place
- Nutrition
- Introduction to Bake Shop
- Math and Measurements: Menu planning, meal evaluations, food costing, recipe conversion, weights and measures, cash register
- Digital Assessment Tool

LEVEL II
- Safety and Sanitation
- Menu Planning
- Food Costing
- Breakfast Foods and Cookery
- Meat Fabrication
- Poultry Fabrication
- Fish and Shellfish Cookery
- Math and Measurements: Menu planning, meal evaluations, food costing, recipe conversion, weights and measures, storeroom procedures
- Specialty Desserts
- Appetizers
- French Terms
- Pasta Making
- Grains and Starches
- Sustainability
- Dairy Products
- Digital Assessment Tool
The Design, Illustration & Media Arts (DIMA) program at the HACTC is full of creative thinkers. Through this program students explore the technology skills for a growing creative industry. Students use industry standard Mac platform software with the most up-to-date Adobe software. Students work through projects that introduce them to many different aspects of digital illustration, digital video production, digital photography, 2-D animation, and motion graphics.

Students also accept “live jobs” from the public sector and must learn how to create professional quality work products, follow real-world timelines and work with clients. Students will prepare themselves for their endeavors after high school by creating a professional online portfolio, resume, and cover letter that they can use for post secondary education or the workforce.

Concurrent Enrollment for College Credit:
Fundamentals of Design, 3 credits, Lakes Region Community College (pending)
Design Software Essentials, 3 credits, Lakes Region Community College (pending)
Digital Illustration, 3 credits, Lakes Region Community College (pending)
Introduction to Photography, 3 credits, Lakes Region Community College (pending)

Industry Certifications:
Adobe Photoshop CC; Adobe Dreamweaver CC;
Adobe Illustrator CC; Adobe InDesign CC;
CareerSafe OSHA Certification;
CPR/AED and First Aid; and
Conover® Workplace Readiness.

Embedded High School Credit: Art

Articulation Agreements for Advanced Standing:
Northern Vermont University - Johnson
Northern Vermont University - Lyndon

Units of Study:

LEVEL I
- Traditional, Digital Illustration
- Digital Photography
- Graphic Design and Desktop Publishing
- Culminating Book Design Project
- Digital Assessment Tool

LEVEL II
- Video Production
- 2-D Animation
- Motion Graphics
- Culminating Advertising Campaign Project
- Digital Assessment Tool
Health Sciences
Jessica Enright, Instructor
enrightj@hartfordschools.net

Students in Health Sciences build a strong foundation of academic and practical knowledge in general health care. Health Sciences offers students a springboard into nursing programs, EMT training, sports medicine, physical therapy, imaging sciences, and dentistry. Program completers may earn up to nine college credits and five industry certifications to help them on their career path. Those wishing to distinguish themselves often do so through the National Technical Honor Society and HOSA, a student leadership program for future health professionals. Health Sciences students are actively engaged in the field through volunteer work and Cooperative Education work placements. Students wishing to receive their Licensed Nursing Assistant (LNA) certification will have the opportunity to enroll in the evening or weekend LNA program.

Concurrent Enrollment for College Credit:
Medical Terminology, 3 credits, River Valley Community College
Human Biology, 3 credits, Community College of Vermont
Introduction to Psychology, 3 credits, Vermont Technical College
Introduction to Health Care, 3 credits, Community College of VT

Embedded High School Credit: Science

Articulation Agreement for Advanced Standing:
Northern Vermont University - Johnson; Keene State College

Industry Certifications:
Basic Life Support (BLS) for Health Care Providers: CPR and AED; First Aid; Bloodborne Pathogens; FEMA and Emergency Management Institute courses; and Conover® Workplace Readiness.

Career Technical Student Organization: HOSA - Future Health Professionals

Units of Study:
**LEVEL I**
- Careers in Health Science
- CPR and First Aid
- Communication Skills
- Workplace Safety
- Legal and Ethical Principles
- Employment Skills
- Culture and Health Care
- Foundation Skills
- Wellness, Growth and Development
- Nutrition
- Body Organization
- Medical Terminology
- Systems of the Body: Integumentary, Cardiovascular, Circulatory, Respiratory, Skeletal, Muscular, Digestive, Urinary, Endocrine, Nervous, Sensory, Reproductive
- Community Service

**LEVEL II**
- Community Service
- Vital Signs
- Time Management and Goal Setting
- Conversions
- Basic Human Anatomy and Physiology
- Stages of Development
- Nutritional Needs
- Emergency Care and Preparation
- Workplace Safety
- Psychology
- Career Exploration with Job Shadowing
- Medical Math
- Poverty Unit with Education Science
- Portfolio Development
- Communication and Cultural Diversity
- Legal and Ethical Issues in Healthcare
Education Sciences: Teaching and Learning

This is a one-year course, for students in grades 10-12, that gives high school students an opportunity to study topics important to the fields of education and psychology. This course will assist students in determining if this is the field in which they would like to further their post-secondary education. This course has the potential for three college credits through Introduction to Psychology at River Valley Community College. This course also explores the numerous opportunities available in the education and psychology professions.

Embedded High School Credit: 1 Technology, 1 Elective, .5 English, .5 Behavioral Science

Articulation Agreement for Advanced Standing: Northern Vermont University - Johnson (pending)

Concurrent Enrollment for College Credit: Introduction to Psychology, 3 credits, RVCC

Career Technical Student Organization: Educators Rising

Industry Certifications: CPR/AED and First Aid; Mandated Reporter Training; Conover® Workplace Readiness

Units of Study:
- Qualities of effective teachers
- Special Education
- Lifespan Development
- Introduction to Psychology (college course)
- English Language Learners
- Lesson Planning
- Classroom Management/Science of Behavior
- Abuse and neglect
- Brain-based Learning
- Mindfulness
- Public Speaking
- Assessment
- Ethics
- Online Learning
- Socioeconomics in Education
- Diversity/multiculturalism in Education
- Financial Literacy
- Portfolio Development
- Community Service
- Careers in Education and Psychology
Education Sciences: Coaching and Leading

This is a one-year course, for students in grades 10, 11 or 12, that gives high school students an opportunity to study topics important to the fields of coaching and leadership. This course, along with the Hulbert Outdoor Center, will assist students in realizing their leadership potential through weekly physical challenges which will benefit them in any career path they choose. This course has the potential for three college credits through Supportive Communication Skills at River Valley Community College. This course also explores the numerous opportunities available in various coaching professions, and has an outdoor education component.

Embedded High School Credit:
1 Technology, 1 Elective, .5 English, .5 Behavioral Science

Articulation Agreement for Advanced Standing: Northern Vermont University - Johnson (pending)

Concurrent Enrollment for College Credit: Effective Communication, 3 credits, River Valley Community College

Career Technical Student Organization: Educators Rising

Industry Certifications: CPR/AED and First Aid; Wilderness First Aid Training; Conover® Workplace Readiness

Units of Study:
- Ethics
- Online Learning
- Teamwork Skills
- Leadership Skills
- Community Building and Non-profit Work
- Wilderness Skills
- Influencing People
- Athletic Coaching
- Life/Personal Coaching
- Executive/Performance Coaching
- Skills Coaching
- Career Coaching
- Health and Wellness Coaching
- Supportive Communication (college course)
- Financial Literacy
- Career Path Exploration
Industrial Mechanics & Welding
Carl Speer, Instructor
speerc@hartfordschools.net

The Industrial Mechanics and Welding (IMW) program exposes students to a wide range of topics designed to instill general fabrication skills combined with technical subjects. The course prepares students for a variety of occupations ranging from welding, electrical, and machining to mechanical trades. Students routinely use math and science skills, and interact with STEM, Automotive Technology, Natural Resources, and Collision Repair and Refinishing programs while working on projects. Students are prepared for a career or post-secondary education with technical skills as well as a positive attitude and work ethic. Personal projects students have designed and built include lamps, stools and tables, as well as other miscellaneous projects.

Industry Certifications:
S/P2 Environmental Safety Training Certification; AED/CPR and First Aid; and Conover® Workplace Readiness.

Embedded High School Credit: Science

Articulation Agreement:
University of Northwestern Ohio; Lincoln Technical Institute; and Keene State College.

Units of Study:
- Shop Safety
- Employability
- Fabrication Math
- Information Technology
- Measurement
- Fasteners
- Hand and Power Tools
- Print Reading and Technical Drawing Skills
- Welding: Oxy-acetylene; welding and cutting; GTAW Aluminum and Ferrous; GMAW; SMAW
- Plasma Cutting
- Machining: Manual mill; CNC mill manual lathe; CNC lathe; surface grinder; sheet metal fabrication; shear; brake; slip roll; bread roller; English wheel; stretcher
- Electrical: DC, AC
Natural Resources

Tom Ostler, Instructor
ostlert@hartfordschools.net

Our mission in the Natural Resources program is to expose and get students excited about outdoor-related careers. The six main areas of our curriculum are forestry, natural history, diversified agriculture, horticulture, water and soils. Safety, equipment usage, and teamwork are very large parts of the program as well. Students participate in leadership training and regional competitions through FFA. Hopefully after two years in the program, students find an area of high interest, and take steps to secure a job or further their education in a related field. Examples of careers that Natural Resources students have pursued include: arborist, forester, farmer, water management, heavy equipment operator, land management, landscaping, conservation law enforcement, and outdoor recreation, among many others. Many of our alumni go on to employment in state positions and local municipalities. Come visit us and see all the things we do.

Concurrent Enrollment for College Credit:
Burls to Boards, 3 credits, Vermont Technical College

Industry Certifications:
Chainsaw Safety; CPR/AED and First Aid; Game of Logging I and II; and Conover® Workplace Readiness.

Embedded High School Credit: Science

Articulation Agreements:
Paul Smith’s College; SUNY Cobleskill; Keene State College; University of Maine - Fort Kent.

Units of Study:

LEVEL I
- Workplace Safety, SDS, and Teamwork
- Forestry Technology and Math
- Heavy Equipment Safety and Operation
- Study of Wildlife and Nature
- Chainsaw Safety
- Log Cabin Building
- Water
- Glaciers
- Land Measurement & Mapping
- Maple Syrup Industry
- Digital Assessment Tool

LEVEL II
- Safety
- History
- Wood and Forest Industries
- Soil Composition and Quality
- Tree and Insect Identification
- Game of Logging Certification
- Winter Forestry
- Horticulture and Greenhouse Operation
- Digital Assessment Tool
- Community Service

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HACTC partners with Project Lead the Way (PLTW) to offer the following curriculum:

Introduction to Engineering Design and Principles of Engineering.

**Introduction to Engineering Design: (year-long course in the P.M.)**
Introduction to Engineering Design (IED) students are introduced to the engineering design process, applying math, science and engineering standards to identify and design solutions to a variety of real problems. They work both individually and in collaborative teams to develop and document design solutions using engineering notebooks and 3-D modeling software.

**High School Credit Options:**
1 credit Algebra II (optional), 1 credit Engineering, and 1 credit Technology

**Industry Certifications:**
Conover® Workplace Readiness; CPR/AED and First Aid; Careersafe OSHA-10.

**Concurrent Enrollment for College Credit:**
Introduction to Engineering Design, 3 credits, St. Cloud State University

**Articulation Agreement:** Keene State College

**Units of Study:**
- Design Process
- Technical Sketching and Drawing
- Measurement and Statistics
- Modeling Skills
- Geometry of Design
- Reverse Engineering
- Documentation
- Advanced Computer Modeling
- Design Team
- Design Challenges
Principles of Engineering: (year-long course in the A.M.)
Through problems that engage and challenge, students explore a broad range of engineering topics, including mechanisms, the strength of structures and materials, and automation. Students develop skills in problem solving, research, and design while learning strategies for design process documentation, collaboration and presentation.

Concurrent Enrollment for College Credit:
Principles of Engineering, 3 credits, St. Cloud State University
Precalculus 1, 3 credits, Vermont Technical College
Precalculus II, 3 credits, Vermont Technical College

Industry Certifications:
Conover® Workplace Readiness; and CPR/AED and First Aid.

Articulation Agreement: Keene State College

High School Credit Options:
2/3 credits in Engineering OR 1 credit Physics (optional)

Units of Study:
• Energy and Power: Mechanisms; Energy Sources; Energy Applications; Design Problem - Energy and Power
• Materials and Structures: Statics; Material Properties; Material Testing; Design Problem - Materials and Structures
• Control Systems: Machine Control; Fluid Power; Design Problem - Control Systems
• Statistics and Kinematics
Career & Technical Student Organizations (CTSOs)

Through membership and participation in state and national Career Technical Student Organizations (CTSOs), the HACTC seeks to support and empower students to develop their potential for personal growth, leadership and career success. Students have the opportunity to:

- gain skills related to membership in an organization including: teamwork, leadership, money management, meeting structure, shared decision-making, communication, networking, organization, committee work and event planning;
- serve others through community service;
- enhance learning beyond the classroom and gain valuable feedback from an objective audience; and
- enhance their employability skills through competitive events at the state and/or national level.

Automotive Club Enthusiasts (ACE)
  - Automotive Technology; Collision Repair and Refinishing

Educators Rising
  - Education Sciences

National FFA Organization
  - Natural Resources

Future Business Leaders of America (FBLA)
  - Building Trades; Business Administration; Cosmetology; Design, Illustration and Media Arts

HOSA Future Health Professionals
  - Health Sciences

Hospitality Club
  - Culinary Arts

Technical Student Association
  - Computer Science and Cybersecurity; STEM
National Technical Honor Society (NTHS)

The National Technical Honor Society (NTHS) is for students in high academic standing both at their home schools and at the HACTC. Students are nominated for NTHS by their instructors, and are recognized for their superior achievement in career and technical fields. This honor allows students to earn scholarship opportunities and position themselves ahead of others in a highly competitive workforce. HACTC NTHS members also participate in community service activities such as the annual food drive for The Haven during the month of December.

Student Advisory Board

Both Level I and Level II students representing their programs meet monthly to share information and feedback with HACTC administration to help shape the future of the HACTC.

HACTC Employability Card

New in 2017, students may earn the HACTC Employability Card. Students who earn this card have proven, through various tasks, activities, courses, trainings, and experiences, that they are committed to being a good employee. Students earning this card have completed a list of requirements and have presented their evidence of completion to the Employability Committee at the HACTC.

HACTC Navigator Program

The HACTC Navigator program is a mentoring program that matches HACTC Level II students (Seniors) with middle school students to provide opportunities to enhance academic engagement, transferable skills, self-esteem, and educational/career path options for participating Explorers. During this initiative, “Navigators” and “Explorers” meet every other Friday morning.
Cooperative Education (Co-op) gives students opportunities to get their feet on the ground with local businesses. Under the guidance of their Program Instructors and the Cooperative Education Coordinator, students are able to develop their professional skills in a supervised, planned environment. Students not only gain access to job specific training and equipment, but they also have the opportunity to build contacts with area business leaders.

When Co-ops are part of a student’s educational path, they benefit from a head start in career development and real-world applications of their academic skills. Co-op students can earn school-release time and high school credits for their placements, as well as documentation that he or she is responsible enough to maintain positive work relationships, are dependable, and focused when it comes to their future. College representatives and employers alike report looking for these very qualities in students.

Any student, with the recommendation of his or her Program Instructor, may apply for one or more of the following Co-op experiences:

- **Job Shadows** provide short-term experiences that enable students to observe different fields and work environments.
- **Career Work Experiences** are short-term, unpaid opportunities for students to explore their career interests.
- **Cooperative Technical Education** provides long-term paid positions for students. Many continue with their local area employer for summer jobs and post-graduation employment.
- **Student Apprenticeships** are long-term salaried positions with employer directed on-the-job training. Student Apprenticeships are certified by the VT Department of Education and sponsored by the employer.
Community Service & Collaborations

Women Can Do Conference
The Women Can Do Conference is a one-day career immersion experience for high school girls from across Vermont. It features dozens of hands-on workshops and action stations highlighting careers in the skilled trades and STEM (science, technology, engineering, and math) fields. Many HACTC students lead activities or workshops for participants, or actively participate each year as observers. Recently HACTC students have led activities on how to jump start a car, use a chainsaw, weld, operate a drill and change a tire. More than 35 workshops highlight careers in architecture and engineering, computer programming, green energy, natural resources, public safety and health, communications, trades, and other non-traditional careers for women.

HACTC Summer Tech Camp
Each June, the HACTC holds a Summer Tech Camp for rising 7th, 8th and 9th grade students from around the Upper Valley. This half-day, week-long camp provides middle school students with ten hands-on activities that have included photography, making vegetable centerpieces, building robots or model airplanes, welding, taking apart a car engine, and more. HACTC students volunteer community service hours to help with hands-on activities at the camp.

FIRST Robotics Competition Team 95 - The Grasshoppers
Hosted by the HACTC, the FIRST Robotics Team 95 is an opportunity for high school students to learn valuable STEM and life skills while building and programming robots to perform tasks against a field of competitors. Participants raise funds, hone teamwork skills, perform community outreach, and are eligible for college scholarships.

Upper Valley FIRST Lego League (FLL)
FIRST Lego League is a program, hosted at the HACTC, to promote technology and science at the grade school level. FLL gives team members a glimpse of what life is like in a technology career: students create an autonomous robot, present a research project, and compete in regional and statewide competitions.

HACTC Adult Education Courses
HACTC adult education courses improve the lives of adults in the Upper Valley of Vermont & New Hampshire through hands-on training to gain skills, improve career opportunities, and strengthen communities. We offer hands-on work, career, and life/community enrichment training classes in manufacturing, construction, agriculture, transportation, business, and health career industry sectors. The HACTC Adult Education Program also offers customized business and industry training.
Caught in the Act Award

HACTC students nominate their peers for a “Caught in the Act” Award when they see them doing something helpful or thoughtful for someone else. Two students are drawn at random monthly from the box of nominations for a “Caught In the Act” award, and the remainder of the nominations are posted in the lobby for all to see. HACTC recognizes “Caught in the Act” Award winners in front of their peers with a presentation of a HACTC t-shirt and a pound of bacon!

HACTC Students of the Month

Each month instructors nominate two students per program, one for each level, who have demonstrated excellence based on one key aspect of the HACTC’s mission statement: Respect. Engage. Learn. Work. Serve. Grow. We recognize students in front of their peers in an awards assembly, in a Valley News advertisement, and on our social media pages. Honored students receive their choice of HACTC gear plus an award certificate.

White River Rotary Students of the Month

Each month the White River Rotarians recognize a total of four HACTC students from two different programs for their Students of the Month. These students are recognized during the Rotarians’ monthly meeting and luncheon in the HACTC’s Getaway Restaurant.
At the Hartford Area Career and Technology Center, we embrace the values in our mission statement as a learning community for students and educators alike. **We believe all students can learn.**

**Contact us with questions or for more information:**
HACTC  
1 Gifford Road  
White River Jct., VT 05001  
Tel. 802.295.8630  
Fax. 802.295.8631  
www.hactc.com

Also visit us on Facebook, Twitter and Instagram.

The Hartford Area Career and Technology Center is committed to maintaining a learning environment free from discrimination on the basis of sex, race, color, national origin, religion, disability, or sexual orientation.