



CAREER & TECHNICAL EDUCATION CENTER

PROGRAM OF STUDIES



THE “CTE ADVANTAGE”

During a recent conversation, I mentioned that CTE students have a distinct advantage over students who do not enroll in a CTE program. Then it struck me... “there is a CTE advantage.” We kicked this concept around at a staff meeting one day and some common themes and ideas emerged. The CTE Advantage enables students to:

- Engage with their education.
- Explore a potential career choice and emerge with a clear vision of a pathway to success and prosperity.
- Learn about industry best practices and emerging technologies.
- Jump-start their plans in high demand, high wage career pathways.
- Access state of the art equipment, software and technology.
- Interact with teachers who are experienced, industry professionals whose experience extends well beyond the classroom.
- Access a mentor over their two years in the program and receive continuous exposure to industry and post-secondary professionals who help to guide their career choices.
- Earn both college and high school credit within their program.
- Access authentic learning experiences, internships and apprenticeships.
- Apply what they learn.
- Interact with, and establish lasting relationships with students from area schools.
- Compete at both the state and national levels, displaying their skills.
- Integrate and contextualize academic skills.
- Become college and career ready.

Sincerely,



Chris Dodge, Director

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Learn what you love.

Dear Students,

Thank you for taking the time to look through this program booklet and considering a Salem CTE Program. Many of your peers are currently enrolled in—or have successfully completed—a CTE program. I encourage you to seek them out and ask about their experience. My sense is that they will tell you that it is their favorite part of the day, the teachers are awesome and care deeply about their success, and the classrooms and shops are really cool. The reality is that students love Salem CTE.

I'm sure you have heard that question, "So, what do you want to be when you grow up?" Do you have an answer? Do you have any clue as to what you want to do when you graduate (which may be just two short years away)? Will you go to work or to college? Perhaps an apprenticeship, a certificate program, or the military? There are many options, but you need to have a plan. Enrolling in one of our CTE programs will help you identify that plan. You just have to start somewhere.

Salem CTE offers 12 career pathway programs that can help you determine a direction you would like to pursue. Or, if you already know your pathway, enrolling in a CTE program will get you on your way and will give you a competitive edge. In CTE we emulate a work environment while fostering skills of work-readiness, collaboration, communication, critical thinking, and creative thought. This is accomplished through a project and work-based environment. Our programs focus on preparing students for both college and careers. Most CTE students go on to attend 2- or 4-year colleges, enroll in apprenticeships, or enter directly into the workforce.

Enrolling in a CTE program means that you will:

- Be part of a group with shared interest;
- Make new friends, and;
- Establish strong connections with teachers who care deeply about your success and will help you navigate the complexities of career choice and college placement.

You are at a critical time in your growth and development and really need to be thinking about what you will do upon graduation. CTE will help you with these critical decisions. I encourage you to reach out to me personally to talk about CTE, arrange a tour, and come see for yourself what we are all about.

Warmest regards,



Chris Dodge, Director
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STATE-OF-THE ART FACILITIES

The renovation and reconstruction of the Salem CTE Center was completed in the Fall of 2018. Our spaces and programs have been modernized and are amazing! Come see for yourself or visit our website for a virtual tour of many of these labs and classrooms.

Our state-of-the-art facilities include:

Automotive Technology: A classroom and automotive shop that includes seven lift bays (including a 15-ton truck lift), an in-slab Hunter alignment lift and machine, Hunter tire machine, and road force balancing equipment.

Engineering and Architecture: An engineering suite that includes a CADD Lab, engineering work lab and a fabrication laboratory equipped with CNC mill and lathe, laser cutter, welding booth, CNC-driven plasma cutter and table, 3D printing, and other metal and fabrication tools.

Health Science: A nursing and simulation lab that includes two simulation mannequins where students can practice their skills for patient assessment, treatment and care.

TV and Media Production: A TV and media production suite that includes a classroom area, editing lab, sound-proof editing room, control room, and a production studio.

Biomedical Science: The Biomedical science lab is equipped for carrying out advanced biomedical and biotechnology techniques and processes such as protein production and purification, HPLC, DNA extraction, and microbiology techniques.

Cosmetology: A cosmetology salon and classroom where students learn hair cutting and styling, pedicures, manicures and facial techniques. Students can earn apprentice hours toward their cosmetology license.

Culinary Arts: A state-of-the-art culinary arts kitchen and restaurant facility that provides students with the opportunity to learn culinary techniques as well as restaurant and banquet management.

Carpentry and Construction: A carpentry and construction lab and build space provides students the opportunity to learn residential carpentry techniques and systems while completing both pre-fab and on-site projects.

Graphic Design: The graphic design program is equipped with amazing software, technology, and printing and production equipment for creating a variety of graphics-based projects and products.

Computer Science: A computer science lab and data center which provides state-of-the-art computer and computer networking technology and serves as the environment for teaching a variety of IT disciplines.

Teacher Education: A teacher education classroom which serves as the “home base” for the teacher education program which combines classroom and field experience in a variety of school settings.

Business and Marketing: Classrooms and a school-based enterprise combine instruction and experience that foster a collaborative approach to business education and operations.



AUTOMOTIVE TECHNOLOGY

This two-year program is designed to train students for a career in the automotive repair industry. Students perform services on vehicles in a functioning repair shop setting, gaining the experience and knowledge necessary to move directly into the field as an entry-level technician or transition into a two-year post-secondary program.

WHAT YOU WILL LEARN

- Shop safety and operations
- Front-end alignment
- Engine components
- Steering and suspension
- Brake systems
- Vehicle safety inspections
- Cooling and heating systems
- Electrical diagnosis and repair
- Scan tool use

CREDITS + CERTIFICATIONS

- SP2 Safety Certification
- Valvoline Oil Certification
- Student-level ASE Certification
- College credit through Manchester Community College

CAREER OPPORTUNITIES

Automotive technician, service writer, engineer, parts distributor, aviation or diesel technician.

DID YOU KNOW?

The National Institute for Automotive Service Excellence (ASE) recognizes the Salem Automotive Technology program as a certified training program and it has achieved National Automotive Technicians Education Foundation (NATEF) Certification. Automotive Technology 2 students are eligible for student level ASE Certification and have the opportunity to compete in Skills USA competitions.

BIOMEDICAL SCIENCE

Biomedical Science is a two-year, laboratory-based program that introduces students to techniques employed in the biomedical and biotechnology industry while also teaching and reinforcing the skills required to be a successful laboratory technician in any scientific field.

WHAT YOU WILL LEARN

- The role of biotechnology in society including the risks and benefits.
- Lab techniques in DNA manipulation, cell culture, protein, purification, drug discovery, and bioinformatics.
- Advanced techniques in recombinant DNA technology, protein production, purification, DNA 'barcoding', and plant and animal cell culture.
- Microbiology concepts and techniques such as aseptic technique, growing cultures, preparing media, microbial genetics, microbial diagnosis, and virology.

COLLEGE CREDITS

College credit available through Great Bay Community College.

CAREER OPPORTUNITIES

Medicine, genetics, biotechnology, laboratory technician, pharmaceuticals, biochemistry, biomedical engineer, forensic scientist, researcher.



DID YOU KNOW?

According to a Brookings Institution study, STEM jobs—those requiring a science, technology, engineering, or math-related degree—not only account for more than 20% of jobs in the United States, but many of them pay wages close to double the U.S. average.



BUSINESS PATHWAY

The Business Pathway is a project-based business program that develops students' understanding and skills in such areas as business, law, economics, financial analysis, human resources management, information management, marketing, and operations. Students participate in real-world projects while developing technology, communication, collaboration and critical thinking skills. These projects in business management and entrepreneurship prepare students for entry-level positions and provide a foundation for further education.

COURSES

- Business Principles
- Business Law
- Business Management
- College Accounting
- Marketing Principles

COLLEGE CREDITS

Opportunity to earn 15 credits through Manchester Community College, which may be transferred to a four-year college.

CAREER OPPORTUNITIES

Accountant, controller, auditor, payroll manager, purchasing manager, business manager, financial analyst, financial advisor, marketing professional, sales.

CARPENTRY & CONSTRUCTION

The Carpentry & Construction program is designed to prepare students for employment or advanced training in the construction industry. The program includes a blend of classroom theory and on-site, hands-on construction projects that teach basic building systems and techniques. Emphasis is placed on workplace and tool safety instruction.

WHAT YOU WILL LEARN

- Tool selection and usage
- Plan reading and layout
- Footings and foundations
- Floor and wall systems
- Roof and stair framing
- Insulation and siding systems
- Window installation
- Roofing
- Finish work

CREDITS + CERTIFICATIONS

- OSHA 10 hour card
- NCCER Certification

CAREER OPPORTUNITIES

Architect, engineer, commercial construction work, carpenter, plumber, electrician, mason, contractor, building inspector.



A photograph of a computer lab with students. In the foreground, a young woman with long dark hair, wearing a black hoodie, is smiling and pointing at a laptop screen. To her left, the arm and shoulder of another student are visible. In the background, two other students are seated at a desk, looking at their laptops. The room has string lights hanging from the ceiling and a clock on the wall.

COMPUTER SCIENCE

The Computer Science Pathway is designed for students who are interested in careers in the information technology sector such as programming, cybersecurity, networking, computer engineering and game design. This is one of the fastest growing sectors for job growth with excellent earning potential. Career pathways include certificate programs, and two- and four-year college degrees.

WHAT YOU WILL LEARN

- Computer programming
- Cybersecurity
- App design
- Data analytics
- The Internet
- Networking and systems

CREDITS + CERTIFICATIONS

- AP Computer Science Principles
- AP Computer Science A
- Advanced Cybersecurity
- Qualifies for College Credits

CAREER OPPORTUNITIES

Computer programmer, data analyst, software developer, network engineer, software engineer, cyber security analyst.

COSMETOLOGY

Cosmetology is a high demand career with a strong employment outlook. The State of New Hampshire requires 1500 hours of education and clinical experience for licensing. Through partnerships with post-secondary cosmetology schools, students can earn up to 200 clinical hours over the two-year CTE program. Students should have strong communication skills as this is a very social environment.

WHAT YOU WILL LEARN

- Hair cutting and styling techniques
- Hair coloring
- Nail techniques
- Facials and pedicures
- Salon operation

COLLEGE CREDITS

Up to 200 apprentice hours can be applied to cosmetology school.

CAREER OPPORTUNITIES

Cosmetologist, barber, esthetician, nail technician, makeup artist, entrepreneur.





CULINARY ARTS

The Culinary Arts program is an ideal choice for anyone who loves to cook and wants a broad—yet thorough—background in the culinary arts. This highly hands-on program is designed to provide students with the knowledge and skills required to secure employment in the food service and hospitality industry or advanced study at a culinary institute or college.

WHAT YOU WILL LEARN

- Safety and sanitation
- Knife skills
- Introduction to baking and pastry
- Handling and preparation of:
 - Meats, poultry, and seafood
 - Vegetables and starches
 - Soups, sauces, and salads
 - Breakfast items
- Table service
- Cost control
- Menu planning
- Restaurant operations

CERTIFICATION

- ServeSafe Certification

COLLEGE CREDITS

Qualifies for College Credits

CAREER OPPORTUNITIES

Executive chef, pastry chef, sous chef, caterer, restaurant cook, food and beverage manager, restaurant manager/owner.

ENGINEERING & ARCHITECTURE

The Engineering and Architecture program has two pathways for students to pursue. The Engineering pathway is a 2-year program providing students with opportunities to explore the engineering and design process and the many branches of engineering. This pathway is for students looking to pursue careers and majors in engineering. The Architecture and Structural Engineering track is a 1-year program where students experience aspects of architectural design, structural engineering and materials, and building codes and specifications. This track is designed for students who are interested in architecture, structural and civil engineering, and other areas of building design. In both programs, students will develop a strong foundation in the design and engineering process as well as requisite, design software skills.

ENGINEERING PATHWAY:

- **Engineering 1** Introduction to Engineering Design (semester)
- **Engineering 2** Principles of Engineering (semester)
- **Engineering 3** Computer Integrated Manufacturing and Capstone Project (full year)

ARCHITECTURE & STRUCTURAL ENGINEERING PATHWAY:

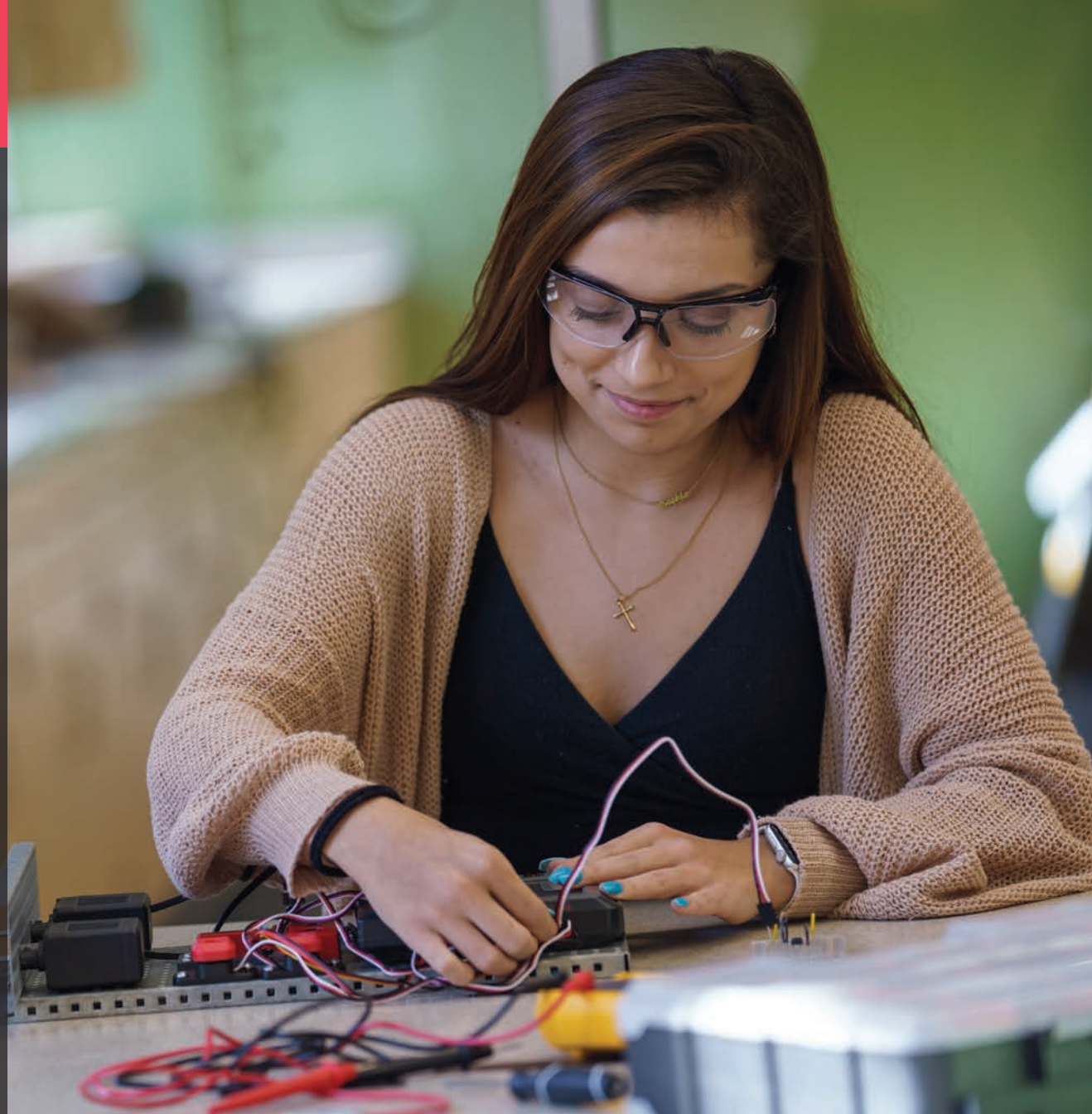
- **Architecture and Structural Engineering 1** (Semester 1)
- **Architecture and Structural Engineering 2** (Semester 2)

COLLEGE CREDITS

Students can earn college credits from NHTI.

CAREER OPPORTUNITIES

Engineering (Mechanical, Electrical, Civil, Software, etc.), Architecture, Physics, Product Design, Advanced Manufacturing





GRAPHIC DESIGN

The Graphic Design program introduces students to the elements of art and principles of Graphic Design through hands-on project-based learning. Using industry standard software programs, students learn the design process necessary to complete compositions from concept to completion. This program explores typography, color theory, printing methodologies, critique standards, technical tools, and creativity necessary to be competitive in the graphic design field. The classroom environment provides students with many opportunities for authentic learning and career path exploration.

WHAT YOU WILL LEARN

- Principles of Design
- Design Terminology and Process
- Typography
- Color Theory
- Page Layout
- Corporate Identity Design
- Photo Editing
- Creation of Vector Graphics
- Adobe Illustrator, InDesign and Photoshop
- Exploration into design thinking, UX design and digital design

CAREER OPPORTUNITIES

Graphic Designer (packaging, publication, corporate identity, print shop, marketing, advertising, etc.), Web/Mobile Designer, UX/UI Designer, Production Designer, Art Director, Service Designer, Illustrator/Motion Graphic Designer

HEALTH SCIENCE TECHNOLOGY

Health Science Technology is an academically rigorous and physically demanding program that emphasizes teamwork, interpersonal relationships, and the effective communication skills necessary to work in a healthcare setting. This outstanding program will prepare you for a variety of healthcare jobs.

WHAT YOU WILL LEARN

- Anatomy and physiology.
- Medical terminology.
- Gown, glove and hand washing techniques.
- Basic patient care techniques.
- Patient observation and documentation.
- Safety issues and infection control.
- Vision and hearing testing.
- Taking vital signs (temperature, pulse, respiration and blood pressure).
- How to perform an EKG.

CREDITS + CERTIFICATIONS

- Three college credits in medical terminology from Manchester Community College.
- American Heart Association CPR Certification.
- Upon successful completion of the EMT or NA program, and the corresponding state licensing exam, licensing will occur.

CAREER OPPORTUNITIES

This program prepares you for multiple careers in healthcare including: Physician, nurse, EMT, physician assistant, occupational or physical therapist, pharmacist.





TEACHER EDUCATION

The Teacher Education program provides first-hand experience for students who are interested in careers within the field of education. Students become skilled at teaching children of various levels and abilities while learning about the pedagogy and skills necessary for success in this career field. Throughout this two-year program, students learn about education theory and teaching strategies as well as observing and interning in classrooms of various grade levels.

WHAT YOU WILL LEARN

- Education theory related to teaching across multiple age levels.
- Designing and implementing curriculum.
- Developing critical thinking skills in learners.
- Assessing learners.
- Planning and supervising the operation of the school routine.

COLLEGE CREDITS

Students are eligible to earn 10 college credits from Southern NH University.

CAREER OPPORTUNITIES

Teacher, special education teacher, school counselor, speech or occupational therapist.

TELEVISION & MEDIA PRODUCTION

Students experience both the creative and technical aspects of video production through the Television & Media Production program. This highly hands-on, project-oriented program teaches a multitude of skills and techniques that rivals many college programs. Students work independently and in crews producing, writing, directing, and videotaping their own projects as well as school district activities for Salem's Channel SLC 6.

WHAT YOU WILL LEARN

- Principles of story development, script writing, and storyboarding.
- Set design.
- Camera set-up and operation.
- Audio mixing, lighting, and switching.
- How to use cutting-edge software applications for video and audio post-production.

COLLEGE CREDITS

College Credits are available through Great Bay Community College.

CAREER OPPORTUNITIES

Video, TV or film producer, production assistant, video editor, camera operator.





MESSAGE FROM AN ALUM

"The Salem Automotive program taught me more than just repair skills—it taught me a lot of life lessons and the importance of planning my future."

-Garret Houle, Automotive Technician



FREQUENTLY ASKED QUESTIONS

WHERE IS SALEM CTE LOCATED?

The Salem Career and Technical Education (CTE) Center is located at Salem High School: 44 Geremonty Drive, Salem, NH 03079.

WHO CAN ATTEND?

If you are a student at either Pelham, Pinkerton, Salem, Timberlane or Windham High School, you are eligible to attend Salem CTE.

HOW WILL I GET THERE?

If you are not a student at Salem High School, bus transportation is provided. If needed, self-transportation will be reimbursed.

WHAT'S THE BENEFIT?

Salem CTE programs provide both a college preparatory education and career-readiness skills. Our program completers possess both a marketable, technical skill set and an ability to succeed at the post-secondary level. You will graduate with more than just a typical diploma; you will be both college and career ready!

HOW MUCH DOES IT COST?

Salem CTE is a free program. There is no cost for tuition or transportation.

HOW DO I APPLY?

Visit www.salemcte.com and click the "Apply" tab.

ARE **YOU** READY TO LEARN WHAT YOU LOVE?



MESSAGE FROM AN ALUM

"The program was the stepping stone to my graduate education. Without the program I would have never found my aspirations to become a physician. It gave me a solid foundation to put me ahead of my peers in my undergraduate and graduate education."

-Mithil Patel, DO

