



Registered Electrical & Plumbing Apprenticeship Program 2020-2021 Guidebook



Table of Contents

Helpful Terms

Apprenticeship at Vermont Tech

Student Code of Conduct

Non-discrimination Policy & Equal Opportunity Statement

Title IX & Sexual Assault (Policy 311-A)

Family Education Rights & Privacy Act

Release of Academic Information

Grade Request Form

Electrical Course Outlines

Plumbing Course Outlines

Classroom Accommodation Request Procedure

Continuing Education Credits

Employer Sponsor Advisory Board

Enrollment/Registration Procedure

Cost of Attendance

Attendance Policy

Grading Policy

Test-Out Policy

Classroom Behavior & Cell Phone Use Policy

Site & Program Rules

Academic Schedule

Instruction Locations

Instructor Directory

Textbook & Course Material Requirements

Required Electrical Textbooks

Required Plumbing Textbooks

Helpful Terms

What does this mean again?

ADA - American Disabilities Act; The American's Disabilities Act of 1990 or ADA is a civil rights law that prohibits discrimination based on disability.

Curriculum - The framework for guiding a course or program content, subject matter is often arranged in a sequence to make learning a subject easier.

Employer Sponsor - This is the apprentice's employer who has registered the apprentices with the State of Vermont Dept. of Labor (VDOL) and who is responsible for the on-the-job hours as required to meet program requirements.

IPC - International Plumbing Code

Level 1 - the first year of the apprenticeship program

Level 2 - the second year of the apprenticeship program

Level 3 - the third year of the apprenticeship program

Level 4 - the fourth year of the apprenticeship program

NEC - National Electric Code

NFPA - The National Fire Protection Association (NFPA) is an international nonprofit organization devoted to eliminating death, injury, property and economic loss due to fire, electrical and related hazards.

VDOL - The State of Vermont Department of Labor who's main office is located in Montpelier, VT.

Vermont Tech - Vermont Technical College

VOSHA - Since 1974, Vermont Occupational Safety and Health Administration (VOSHA) has labored diligently to protect the health and safety of working Vermonters. A safe and helpful workplace is important to the financial wellbeing of an establishment. VOSHA wants to work with employers and employees to reduce workplace injuries and illnesses through education and enforcement activities.

VSCS - The Vermont State Colleges System (VSCS) is the US State of Vermont's system of public colleges. It functions as governance organization, and was created by act of the Vermont General Assembly in 1961.

E1 - Electrical Level 1

E2 - Electrical Level 2

E3 - Electrical Level 3

E4 - Electrical Level 4

P1 - Plumbing level 1

P2 - Plumbing Level 2

P3 - Plumbing Level 3

P4 - Plumbing Level 4

Apprenticeship at Vermont Tech

Since 1999, Vermont Tech has partnered with the Vermont Department of Labor (VDOL) to manage the related instruction component of the Registered Electrical & Plumbing Apprenticeship programs. Through these programs, students meet the classroom requirement to sit for the Vermont State Journeyman Licensure Exam.

Registered apprenticeship is an industry driven, high-quality career pathway where employers can develop and prepare their future workforce; individuals can obtain paid work experience, classroom instruction, and a portable nationally recognized credential.

The VDOL Registered Apprenticeship Program for Electrical & Plumbing assists in setting up structured, yet flexible training programs designed to meet the specific needs of Vermont employers through on-the-job learning and related instruction. Registered Apprentices can be sponsored by employers, employer associations, colleges, or labor management groups that can hire and train in a working situation.

Apprentices are required to complete 144 hours of classroom instruction each year of their apprenticeship. The instruction program jointly established with VDOL and Vermont Tech delivers the required instruction in 48, 3-hour sessions.

VT Registered Apprenticeship is an employer-sponsored training program that includes both supervised work experience and related instruction. The cost of participating in the program is covered by the employer sponsor and participants are receiving a wage while enrolled in the program. According to ONET - the median wage for a Journeyman Plumbing in 2016 was \$24.74 per hour and \$25.35 per hour for a Journeyman Electrician with benefits. Both of these occupations have a much faster than average growth rate nationally, as the need for trained individuals is growing exponentially.

Vermont Tech Student Code of Conduct

The code of conduct applies principally to conduct that occurs on College-owned, leased or controlled property, at College-related activities, programs or events, or on College-sponsored trips, as well as inappropriate or unsafe behavior in clinical settings related to College educational programs. Off-campus conduct may also subject a student to disciplinary or other appropriate administrative action where it is reasonable perceived to pose an imminent threat of harm or safety to the student or other or reflects on a student's fitness to continue in the academic program in which she or he is enrolled, or is perceived to have an adverse effect on College/Community relations. This includes violation of state, federal, or local law.

VSC Policy 311: Non-discrimination and Prevention of Harassment and Related Unprofessional Conduct and VSC Policy 311-A: Sexual Misconduct, Domestic Violence, Dating Violence, Sexual Assault and Stalking cover conduct that takes place on College property, as well as conduct that takes place off campus, or through the use of online, electronic or digital technologies, that may have a nexus to any college education program or activity, for example by creating a hostile environment on campus or representing a threat to the safety of members of the College community or the continuance of normal College operations. See here:

<https://www.vsc.edu/board-of-trustees/policies-procedures/students-affairs-policies/>

The College may work with law enforcement agencies, to the extent permitted by law, and it reserves the right to discipline students charged or convicted of criminal activity.

Impairment due to the consumption of alcohol or other drugs or ignorance of the Code of Conduct or other College policies shall not be a defense to a finding of responsibility.

Although every effort has been made to assure the accuracy of the information contained in this Student Handbook, laws, rules, and policies do change from time to time. This may be due to legislative action, judicial decisions, new and revised regulations of the state and federal level, as well as the adoption of new or revised policies by the Board of Trustees of the Vermont State Colleges System (VSCS), the Office of the Chancellor, or by the President or President's designees. Such changes may alter the information contained in this publication. If there is a conflict between the information in this Handbook and a subsequently amended policy, law or rule, the subsequently amended policy, law or rule will control.

Students have the opportunity to participate in the formulation of policy directly affecting students through membership on appropriate committees as determined by the President or other recognized groups within the College.

The above is an abbreviation of the full Code of Conduct. Apprentices can find the full Student Code of Conduct document online by going to:

<https://www.vtc.edu/my-vermont-tech/my-vtc-home/student-handbook-20192019/student-code-conduct>.

Vermont Tech Non-discrimination Policy & Equal Opportunity Statement

Every member of Vermont Tech should work to ensure non-discriminatory processes and practices with faculty, staff, and students. Qualified students are recruited for, admitted to, and participate in all college programs without discrimination on the basis of race, color, sex, sexual orientation, religion, creed, national origin, age, veteran status, or disability. Vermont Tech will provide reasonable accommodations to create equal opportunities for students with documented disabilities.

Faculty, administrators, and staff are employed without discrimination on the basis of race, color, sex, sexual orientation, religion, creed, national origin, age, veteran status, or disability unrelated to job requirements. Vermont Tech will make reasonable accommodations to the known disability of an otherwise qualified applicant or employee.

Additionally, the Vermont State Colleges System (VSCS) will engage in affirmative efforts to recruit, admit, and support students and to recruit, employ, and support employees in order to achieve the diversity which advances the educational mission.

The VSCS complies with state and federal laws related to equal opportunity and non-discrimination. Any questions or complaints about potential or perceived discrimination in violation of any state or federal law should be directed to the Vermont Tech Ombudsperson, the VSCS Office of the Chancellor, the Vermont Office of the Attorney General, or the Federal Equal Opportunity Employment Commission.

If auxiliary aid or service is needed to apply for admission or employment, please contact Vermont Tech's Learning Skills Specialist at **(802) 728-1278**. For questions related to Title IX, please contact **Mary Kathryn Juskiewicz**, Vermont Tech's Title IX Coordinator, at mjuskiewicz@vtc.edu, by phone at (802) 728-1673, or via mail at PO Box 500, Randolph Center, VT 05061-0500.

Vermont Tech Title IX & Sexual Assault (Policy 311-A)

Vermont Technical College is committed to assisting keeping our community safe. If you would like to discuss your options regarding your reporting options regarding sexual harassment, stalking, dating, or domestic assault, please speak with the Title IX Coordinator, the Coordinator of College Health Service, the Director of Public Safety, or staff in the Center for Academic Success and Student Affairs department. Individuals in each of these areas have gone through training to deal specifically with these matters.

The following person has been designated as Vermont Technical College's Title IX Coordinator (311-A):

Mary Kathryn Juskiewicz

124 Admin Dr

Randolph Center, VT 05061-0500

802-728-1673

mjuskiewicz@vtc.edu

Policy 311-A

<https://www.vtc.edu/sites/default/files/wysiwyg/PDFs/Policies/VSC%20Policy%20311-A%20and%20Implementing%20Procedures%20%28revised%20effective%208-9-16%29.pdf>

Policy 311-A Procedures

<https://www.vtc.edu/sites/default/files/wysiwyg/PDFs/Policies/Policy-311-A-Procedures-9-1-18.pdf>

Vermont State Colleges Resource and Reporting Guide

<https://resolve.vsc.edu/>

Not alone: Together Against Sexual Assault

<https://youth.gov/federal-links/notalonegov-together-against-sexual-assault>

Rape, Abuse, & Incest National Network (RAINN)

<https://rainn.org/>

Sexual Assault Facts & Education (SAFE)

<http://rivervision.com/safe/>

Care & Concern Form

<https://campus.vtc.edu/modules/student-life/care-and-concern.html>

Campus Security Authority Training

https://www.vtc.edu/sites/default/files/wysiwyg/CSA_Narrated_v2.pptx

Family Educational Rights & Privacy Act

The Family Educational and Privacy Act (FERPA) is a federal law designed to protect the privacy of student educational records. The law gives eligible students, those who have reached the age of 18, or the parents of students under the age of 18, certain rights with respect to their education records. Students have the right to inspect and review all of their educational records maintained by the college. If parents/guardians claim a student as a dependent, they may have access to the student's educational records without prior consent.

Generally, the college must have written permission to release any **academic information** from a student's record. However, the law allows the college to disclose records without consent, to the following parties:

- College employees who have a need to know;
- Other schools to which the student is applying;
- Certain government officials in order to carry out lawful functions;
- Appropriate parties in connection with financial aid to a student;
- Parents of dependent eligible students;
- Organizations conducting students for the college;
- Accrediting organizations;
- Individuals who have obtained court orders or subpoenas;
- Person who need to know in cases of health and safety emergencies; and state and local authorities, within the justice system, pursuant to specific state law.

Students have the right to request that the college correct **academic records** believed to be inaccurate or misleading. If the college decided not to amend the record, the student then has the right to a formal hearing. After the hearing, if the college still decides not to amend the record, the eligible student has the right to place a statement with a record commenting on the contested information in the record.

DIRECTORY INFORMATION

The college may also disclose, without consent, "**directory type information**" that is considered not to be harmful to the student/parent if released. The information considered by the college to be directory information is: name, college address (PO Box), telephone listing and e-mail, place of birth, major, dates of attendance, degree(s) and awards received, weight and height of athletic team members, photographs, most recent and previous educational institution attended, and participation in officially recognized activities and sports. Parent information is not directory information.

Students have the right to withhold the release of any or all directory information, to do so a written request must be made to the Office of the Registrar. It should be noted that if directory information is to be withheld, it will be withheld at all parties. A request to withhold directory information must be made **as soon as possible after the term** and will remain in effect until revoked by written request.

For additional information, technical assistance, or to file a complaint, you may contact the **Family Policy Compliance Office - (202)260-3887** or om@ed.gov.

U.S. Department of Education
400 Maryland Ave, SW
Washington, DC 20202-4605

Release of Academic Information

[PRINT FULL NAME]

SSN

College

The college must have written permission from the eligible student prior to releasing any information from a student's educational record to parties not approved for disclosure under FERPA (if a student wishes to give access to any other individual(s) or organizations(s) other than those listed below, he or she must give written consent for each release.

List below individuals or organizations to whom you wish to release general academic information; these may include one or both parents, guardian(s), spouse, or employer. General academic information may include information about a student's academic performance, attendance in classes, etc. Please ensure that these individuals know your SSN and birth date when requesting information.

Information from my educational records may be released to:

[PRINT FULL NAME]

[Relationship/Organization]

[PRINT FULL NAME]

[Relationship/Organization]

[PRINT FULL NAME]

[Relationship/Organization]

Comments/Restrictions:

[Student Signature]

[Date]

Vermont Statutes Annotated, Title 16, Statute 176, Section 1 ©

Vermont State Law requires that we inform you that credits earned in the Vermont State Colleges System (VSCS) are transferrable to other institutions only at the discretion of the receiving institution.

Registered Electrical & Plumbing Apprenticeship Programs

GRADE REQUEST FORM

PO Box 500
Randolph Center, VT 05061-0500
802-728-1680 | 802-728-1354 FAX
sballou@vtc.edu

Full Name: _____ Last 4 of SSN: _____
[PLEASE PRINT CLEARLY]

Former Name (if applicable): _____

Last year enrolled in program: _____ Site: _____

REQUEST:

Grade Report for Apprenticeship Year: _____

- Student will pick up (Vermont Tech Randolph Center Campus ONLY)
- Mail to:

- Fax to: _____
[FAX NUMBER]

CONTACT INFORMATION:

Phone: _____ Home Work Cell/Mobile

Email: _____

[SIGNATURE - REQUIRED]

[DATE]

OFFICIAL USE ONLY

Date Produced/Sent: _____ Sent to Student Sent to other Picked up

2020-2021 Apprenticeship Program

Electrical Level 1 Course Outline

This is the first introductory year to the Registered Electrical Apprenticeship program. This level is an introduction to the Electrical trade in Vermont. Material covered includes electrical theory, safety, hazards on the job, an introduction to conduit bending, an intro to motors, electrical calculations, and a primary focus on residential electrical wiring. Students are introduced to the NFPA 70, which is the safety/design manual that is utilized by electricians in the US.

This year will specifically cover the following topics:

- **Atomic Structure**
- **Batteries & Other Sources of Electricity**
- **Blueprints**
- **Bonding/Grounding**
 - Ground Fault Protection
- **Circuits**
 - Appliance Circuits
 - Combination Circuits
 - Garage
 - Rec Room & Workshops
 - Water Pumps & Water Heaters
 - Kitchen Circuits
 - Laundry Circuits
 - Lighting Circuits
 - Parallel Circuits
 - Series Circuits
- **Conductors**
 - Determining Conductor Sizes
- **Conduit Bending - Introduction**
- **Controls**
 - Switch Controls
- **Electrical Quantities**
- **Electrical Symbols**
- **Fire/Smoke Alarms & Security Systems**
- **General Information for Electrical Installations**
- **Hand Tools**
- **Heating Systems**
- **Induction Heating**
- **Lighting**
 - Bedroom Lighting
 - Bathroom Lighting
 - Hallway Lighting
 - Lamp Identification (info only)
 - Living Room Lighting
 - Low Voltage Lighting (info only)
 - Luminaires (Fixtures)
 - Study Lighting
- **Math**
 - Whole Numbers, Fractions, Decimal Fractions, Percents, Averages, Powers, Roots, Measures, Ratios, Proportions, Formulas
 - Using fractions in current dividers
 - Intro to Trig/Basic Triangles to prep for Level 2
- **Magnetism**
- **Measuring Instruments**
- **Ohm's Law**
- **Outlets**
- **Residential Utility Interactive PV Systems**
- **Resistors**
- **Safety**
- **Service Equipment & Overcurrent Protection**
- **Service Entrance Calculations**
- **Specs**
- **Standby Power Systems**
- **Static Electricity**
- **Swimming Pools, Spas, & Hot Tubs**
- **Television, Telephone, & Low Voltage Systems**
- **Wiring**
 - Entryway
 - Furnace: Home Automation Systems
 - Using Wiring Tables
- **Professional Development**
 - Awareness Training
 - First Impression - Getting A Job
 - Professionalism - Keeping Your Job
 - Building a Strong Relationship With Your Supervisor
 - Teamwork: Getting Along With Your Co-Workers
 - Communication Skills I: Listening & Speaking
 - Resolving Conflict
 - Giving & Receiving Criticism
 - Substance Abuse

2020-2021 Apprenticeship Program

Electrical Level 2 Course Outline

This is the second year, of four, in the Registered Electrical Apprenticeship program. This year students will study the effects of Alternating and Direct Current electricity in regards to Resistive, Inductive and Capacitive Circuits. Students will learn to calculate voltages and amperages, using basic Trigonometry and Vector Math. Students will learn to determine the proper Electrical Code Rules and Application with regards to Single Phase Transformers.

This year will specifically cover the following topics:

- **Alternating Current (AC)**
 - Three Phase AC Alternators
- **Circuits**
 - Capacitors in AC Circuits
 - Introduction to AC Circuits
 - Resistive-Capacitive Parallel Circuits
 - Resistive-Capacitive Series Circuits
 - Resistive-Inductive Parallel Circuits
 - Resistive-Inductive Series Circuits
 - Resistive-Inductive-Capacitive Parallel Circuits
 - Resistive-Inductive-Capacitive Series Circuits
 - RLC Circuits
 - Three Phase AC Circuits
- **Direct Current (DC)**
 - DC Generators
 - DC Motors
- **Harmonics**
- **Introduction to AC Electricity**
- **Magnetic Induction**
- **Math Review**
 - Pythagorean Theorem
 - Basic Trigonometry
 - Vectors
- **Motors**
 - Motors
 - Motor Circuits
 - Motor Controllers
 - Single Phase Motors
 - Three Phase Motors
- **Power Factor Correction**
- **Transformers**
 - Single Phase Transformers
 - Three Phase Transformers & Calculations
 - Transformers Components
 - Transformer Windings
 - Transformer Sizing
 - Transformer Protection

2020-2021 Apprenticeship Program

Electrical Level 3 Course Outline

This is the third year, of four, in the Registered Electrical Apprenticeship Program. Students will gain an understanding of the 2020 NEC and how to use it relative to Articles 250, 400-800 and Chapter 9 and how they apply to the code. They will learn about Basic Motor Controls and understanding the control logic and how to read, write, and wire basic motor controls.

This year will specifically cover the following topics:

- **Appliances**
- **Attachment Plugs (Caps)**
- **Bonding (Articles 250.90-250.106)**
- **Capacitors**
- **Communications Systems**
- **Cord Connectors**
- **Enclosure, Raceway & Service Cable Connections (Articles 250.80 & 250.86)**
- **Equipment**
 - Air-Conditioning & Refrigerating Equipment
 - Fixed Electric Space-Heating Equipment
 - Equipment Grounding & Equipment Grounding Conductors (Articles 250.110-250.126)
 - Methods of Equipment Grounding (Articles 250.130-250.148)
 - Special Equipment
- **Generators**
- **Grounding and Bonding (Articles 250.3-250.12)**
- **Grounding Electrode System & Grounding Electrode Conductor (Articles 250.50-250.70)**
- **Lighting**
 - Lamps
 - Lampholders
 - Luminaires
 - Low Voltage Lighting
- **Motor Controls**
 - Introduction to Motor Controls
 - Controls for Multiple Motors
 - Miscellaneous Requirements
 - Motor Controls & Schematics
 - Motors, Motor Circuits & Controllers (Article 430)
 - Reversing Controls
- **Panelboards**
- **Receptacles**
- **Special Conditions**
- **Special Occupancies**
- **Special Occupancies & Hazardous Locations**
- **Switchboards**
- **Switchgear**
- **System Grounding (Articles 250.20-250.36)**
- **Tables - Conductor and Raceway Specifications**
- **Transformers**
- **Transformer Vaults (including Secondary Ties)**

2020-2021 Apprenticeship Program

Electrical Level 4 Course Outline

This is the fourth and final year of the apprenticeship program. This year is based on reviewing the 2020 National Electrical Code (2020 NEC). This year is meant to prep apprentices to the Journeyman Licensure Exam. NEC Articles to be covered this year include the following:

- Article 100 Definitions
- Article 110 Requirements for Installations
- Article 200 Grounded Conductors
- Article 210 Branch Circuits
- Article 215 Feeders
- Article 220 Branch Circuit Calculations
- Article 220 Commercial, Dwelling, and Multifamily Calculations
- Article 225 Outside Branch Circuits & Feeders
- Article 230 Services
- Article 240 Overcurrent Protection/Taps
- Article 250 Grounding & Bonding
- Article 300 / Chapter 9 Tables Wiring Methods & Materials
- Article 310 Conductors for General Wiring
- Article 310 / Chapter 9 Tables Voltage Drop Review
- Article 312 Raceway and Box Fill
- Article 314 Chapter 9 Review
- Article 320-399 Chapter 3
- Article 400-427 Equipment for General Use
- Article 430 Motors & Motor Calculations / Motor Controls
- Article 440 AC & Refrigeration
- Article 445 Generators
- Article 450 Transformers and Calculations
- Article 455 Phase Converters
- Article 460 Capacitors
- Article 470 Resistors and Reactors
- Article 480 Storage Batteries
- Article 490 Equipment over 1000 Volts, Nominal
- Article 500-516 Hazardous Locations
- Article 517 Health Care
- Article 518-520 Assembly, Performance Areas
- Article 522-540 Carnivals, etc.
- Article 545 Manufactured Buildings
- Article 547 Agricultural
- Article 550-555 Mobile Homes & Parks
- Article 590 Temporary
- Article 600-695 Special Equipment
- Article 700-750 & 770 Special Conditions
- Article 760 Fire Alarm Systems
- Article 800 Communication Systems

2020-2021 Apprenticeship Program

Plumbing Level 1 Course Outline

This is the first introductory year to the Plumbing Apprenticeship Program. This level is an introduction to the Plumbing trade in Vermont. Students learn the theory and industry standards for the processes and materials that they will be working with as they progress into the Plumbing career. Students review/learn the basic math skills that they will need for this trade. They study the basics of DWV systems and the cycle of providing potable water. Students learn about working safely and the OSHA standards that apply in the workplace.

This year will specifically cover the following topics:

- **Drain, Waste & Vent (DWV) Systems** (Introduction)
- **Fixtures** (Introduction to Plumbing Fixtures)
- **Introduction to the Plumbing Profession**
- **Math** (Introduction to Plumbing Math)
- **Pipe & Fittings**
 - Carbon Steel Pipe & Fittings
 - Cast-Iron Pipe & Fittings
 - Copper Pipe & Fittings
 - Plastic Pipe & Fittings
- **Professional Development**
 - Awareness Training
 - First Impression - Getting a Job
 - Professionalism - Keeping Your Job
 - Building a Strong Relationship With Your Supervisor
 - Teamwork: Getting Along with Your Co-Workers
 - Communication Skills I: Listening & Speaking
 - Resolving Conflict
 - Giving & Receiving Criticism
 - Substance Abuse
- **Plumbing Drawings** (Introduction)
- **Tools** (Tools of the Plumbing Trade)
- **Safety** (Construction/Plumbing Safety)
- **Water Distribution Systems** (Introduction)
- **Water Heaters** (PS 1 - Water Heater Specialist)

2020-2021 Apprenticeship Program

Plumbing Level 2 Course Outline

This is the second year, of four, in the Registered Plumbing Apprenticeship program. This level is a continuation of Plumbing Level 1 going more in depth in most areas. Safety continues as a critical part of the working trade. Code is studied more in depth and DWV moves into larger systems with more code references. Math and geometry are used for piping layout of various systems and students begin to calculate flow rates and velocity of fluids in the system. Students learn about various hydronic heating systems and the requirements for installation.

This year will specifically cover the following topics:

- **Basic Electricity**
- **Drains**
 - Installing Roof, Floor, and Area Drains
- **Fixtures**
 - Installation
 - Types of Fixtures
- **Heating Systems (PS 2 - Heating System Specialist)**
 - Fuel Gas & Fuel Oil Systems
 - Hydronic Heat
 - Steam Systems
- **Math (Plumbing Math - Year 2)**
- **Piping**
 - Drain, Waste & Vent (DWV) Piping
 - ADA Compliance
 - Installation
 - Isometric Drawings
 - Light Commercial Blueprint Drawings
 - Residential Blueprint Drawings
 - Sizing
 - Water Supply Piping
 - Installation
 - Testing
- **Reading Commercial Drawings**
- **Structural Penetrations, Insulation & Fire Stopping**
- **Valves**
 - Installation
 - Types of Valves
- **Water Heaters (PS 1 - Water Heater Specialist)**
 - Installation

2020-2021 Apprenticeship Program

Plumbing Level 3 Course Outline

This is the third year, of four, in the Registered Plumbing Apprenticeship program. This level further develops what was previously learned by applying the current International Plumbing Code (IPC) + the current Vermont Plumbing Rules to everyday work. This year is based on residential and light commercial applications. Noteworthy, the code + rules are written in a quasi-judicial language and are hard for students to understand. Students are instructed on how to find and understand this information in the 13 chapters of the code. This level emphasizes water regulations, sizing, engineering tables and charts, plus DWV using tables and charts.

This year will specifically cover the following topics:

- **Applied Math**
 - Angles (45 degrees)
 - Area
 - Basic Fractions
 - Cylinders
 - Rectangles
 - Volume
- **Backflow Preventers**
- **Blueprint Reading**
- **Compressed Air**
 - VOSHA Safety Regulations
- **IPC Code Book Review**
 - Definitions
 - How to find information
 - Index
 - Table of Contents
- **Potable Water Treatment**
- **Piping**
 - ADA Code/Compliance
 - Corrosive-Resistant Waste Piping
 - Pex Charts
 - Rough in Sheets
 - Water Supply Piping - Sizing
- **Pumps**
 - Sewage Pumps
 - Sump Pumps
- **Venting**
 - Types of Venting
 - Sizing DWV & Storm Systems
- **Water - Service Plumbing**

2020-2021 Apprenticeship Program

Plumbing Level 4 Course Outline

This is the fourth and final year in the Registered Plumbing Apprenticeship program. This final year prepares students to successfully pass the Vermont Plumbing Journeyman's Licensure Exam by reviewing the last three years of accumulated knowledge / learning. Students fine tune how to use the current code book and Vermont Rules quickly to locate information needed. Students practice using simulated Journeyman's Exam questions and are timed in order to become comfortable with the time limit on the exam. This level incorporates all 13 Chapters in the current code book, with emphasis on the following topics:

- **Business Principles for Plumbers**
- **Drain, Waste & Vent (DWV)**
 - Understand and apply Chapters 4 (Fixtures), 8 (Indirect and Special Waste), 7 (Sanitary Drainage), 9 (Vents), and 10 (Traps, Interceptors and Separators) of the current code book.
- **Fixtures, Faucets & Fixture Fittings**
- **Indirect & Special Waste**
- **Sanitary Drainage**
- **Storm Drainage**
 - Understand the Code enforceable items in Chapter 11 of the current code book. Demonstrate sizing the storm drainage systems using all the sizing tables therein.
- **Water Heaters**
 - Understand the code enforceable items in Chapter 5 + Section 607 of the current code book.
 - Size water heating to include BTU gains and safety.
- **Water Supply & Distribution**
 - Understand and apply Chapter 6 (Water Supply & Distribution) + Appendix E (Water Pipe Sizing) of the current code book.
 - Apply the above on the jobsite.
 - Size water distribution systems for residential and light commercial applications.
 - Learn and understand specific enforceable code regulations and technical terms.
 - Size water flow pressure drop variables. Backflow is emphasized.

The second half of the fourth year will be a **complete review** of the **2018 IPC & 2018 VT Plumbing Rules**.

Instructors will actively work to prepare apprentices for the journeyman licensure exam, which will include timed prep exams throughout the entire year.

2020-2021 Apprenticeship Program

Classroom Accommodation Request Procedure

Vermont Tech is a very special place with a strong reputation for supporting students with all sorts of learning challenges. Our goal is always to develop resilient independent learners who are capable of embracing the challenges that lay ahead of them.

Process to Receiving Accommodations

Any apprentice who feels he/she should be receiving accommodations should first reach out to **Sarah Ballou**, Vermont Tech Apprenticeship Coordinator. The program coordinator will provide the apprentice with an **Accommodation Request Form**. Once filled out, it be returned to **Robin Goodall**, Vermont Tech Learning Specialist. Robin will then preform an evaluation to determine what services you will be eligible for. If deemed eligible, Robin will work with you and your instructor to ensure you're receiving the necessary accommodations for you to be successful.

Documentation Guidelines for Accommodations

These are the guidelines we use here at Vermont Tech, developed by the Association of Higher Ed and Disability (AHEAD) in collaboration with disability service providers around the country.

By identifying the essential dimensions of documentation, the college allows for flexibility in accepting documentation from the full range of theoretical and clinical perspectives. This approach enhances consistency and provide stakeholders (students, prospective students, parents and professionals) with the information we need to assist students in establishing eligibility for services and receiving appropriate accommodations.

Seven Essential Elements of Quality Disability Documentation:

1. The credentials of the evaluator(s).
2. A diagnostic statement identifying the disability.
3. A description of the diagnostic methodology used.
4. A description of the current functional limitations.
5. A description of the expected progression or stability of the disability.
6. A description of current and past accommodations, services and/or medications.
7. Recommendations for accommodations, adaptive devices, assistive services, compensatory strategies, and/or collateral support services.

Adapted from the AHEAD Guidelines for Best Practices in Disability Documentation, 2006

Sarah A. Ballou

Vermont Tech Registered Electrical & Plumbing Apprenticeship Program Coordinator
802-728-1680 Office | 802-661-8493 Cell | sballou@vtc.edu

Robin Goodall, M.Ed.

Vermont Tech Learning Specialist
802-728-1278 Office | rgoodall@vtc.edu

Registered Electrical & Plumbing Apprenticeship Programs

Accommodation Request Form Apprenticeship Related Instruction

To request an accommodation because of a disability, please submit the form below, as soon as possible, so that we can determine your needs. Include your official documentation (**verification of your disability from an individual qualified to make such a determination**) with this Accommodation Request Form.

Apprentice Name: _____

Apprentice DOB: _____

Apprentice Address: _____

Daytime Telephone: () _____ - _____

[APPRENTICE SIGNATURE - REQUIRED]

[DATE]

Description of Disability:

Accommodation Requested:

Please return this form to:

Attn: Robin Goodall
Vermont Technical College
PO Box 500
Randolph Center, VT 05061-0500

For more information please contact:

Robin Goodall, Learning Specialist
802-728-1278 Office | 802-728-1260 Fax
rgoodall@vtc.edu

Registered Electrical & Plumbing Apprenticeship Programs

Employer Sponsor Advisory Board

Registered Apprenticeship is an industry-driven, high quality, career pathway where employers can contribute to the development and preparation of their future workforce. Through this program, individuals can obtain paid work experience, classroom instruction, and a portable nationally recognized credential. To better facilitate and improve this process, Vermont Tech established the **Employer Sponsor Advisory Board** in 2020 to assist the VDOL Registered Electrical & Plumbing Apprenticeship programs in meeting the needs of the employer sponsors as well as the community.

The specific purposes of the board include the following:

- Help recruit apprentices into the program
- Assist in placing students at employment sites
- Assist by offering job mentoring and shadowing opportunities for prospective apprentices
- Facilitate cooperation and communication between the program and the community
- Offer recommendations for program improvement
- Assist the program in setting priorities, including participating in ongoing planning activities of the program
- Support and advocate for the program by helping raise our profile and visibility to the community

The Employer Sponsor Advisory Board will meet the third Tuesday of the month at Vermont Tech. Meeting location and time will be posted on the meeting agenda two weeks prior to the meeting. Below please find the meeting schedule of the board for the 2020 year:

1. Tuesday, January 21, 2020
2. Tuesday, April 21, 2020
3. Tuesday, July 21, 2020
4. Tuesday, October 20, 2020

The Employer Sponsor Advisory Board is comprised of the following employer sponsor representatives that will serve a term of **three years** beginning in January 2020:

- **Jody Perkins** - ARC Mechanical
- **Pamela Benoit** - Benoit Electric
- **Krista Benoure** - Benoure Plumbing, Heating, & AC
- **Danielle Bombardier** - IBEW Local 300
- **William Lepore** - Omega Electric
- **Rob Stubbins** - Rob Stubbins Electrical & General Contractor
- **Brian Thomas** - Vermont Mechanical
- **Jodi Doyle** - Former Apprentice

2020-2021 Apprenticeship Program

Enrollment/Registration Procedure

Registration for the 2020-2021 Apprenticeship year will open on **May 1, 2020**. The priority deadline for registration will be **August 1st, 2020**. Registrations received after that date will be evaluated on a case by case basis and are dependent on space in the class. If/when a site becomes full we will begin a waitlist for that site. We will continue to pull from the waitlist until classes begin should someone withdraw from the program. We will NOT accept any registrations past **September 18, 2020**; the end of the first full week of classes.

Kick-Off day for all Level 1 apprentices will be held on **Saturday, September 12, 2020**. Any apprentices attending kick-off day **must be registered** with VDOL and Vermont Tech no later than **4PM on Thursday, Sept. 10, 2020** in order to participate in kick-off day. Apprentices **should not** plan to attend kick-off day if not registered as we may not be able to accommodate them that day.

To enroll in the 2020-2021 Registered Apprenticeship program for either Electrical or Plumbing first begin by submitting a registration form online by going to www.vtc.edu/cewd/apprenticeship and click on the **Enrollment & Registration** tab. From there you will find the link to the online registration form. ALL registrations must follow this process. Please contact the Vermont Tech Program Coordinator should you have issues with the registration form.

Please be Vermont Tech does not collect payment for the apprenticeship program; therefore, payment will not be required to submit the registration form. VDOL will collect payment at a later date.

2020-2021 Apprenticeship Program

Cost of Attendance

The cost of tuition for the 2020-2021 apprenticeship year is **\$900**. This does not include the cost of books and course materials which average an additional \$400 per year. Registered apprentices should consult with their employer sponsor to confirm tuition costs will be met. For those apprentices who are not currently sponsored, or who must pay up front and be reimbursed at a later time, payment must be received by the first day of classes. Payments should be sent directly to:

Judy Bourbeau, VDOL Apprenticeship Program Supervisor
Vermont Dept. of Labor
PO Box 488
Montpelier, VT 05604-0488

VSAC Education Opportunity Center

Helping Vermont adults access college and career training services.

VSAC's Educational Opportunity Center (EOC) is a federally funded TRIO program that helps adult's access college and career training services.

The EOC serves qualified non-traditional adult learners who do not already have a 4-year degree. Most of the EOC students are from low-income backgrounds and are the first in their family to go to college.

The EOC provides college and training access services, including help with:

- Career Exploration
- Education and Training Options
- Financial Aid Applications

To access this free service all you need to do is call the EOC and schedule an appointment with the counselor who works closest to where you live. You can call:

- **802-654-3793** Burlington Area
- **802-786-8840** Rutland Area
- **877-961-4369** Long Distance

Any apprentice struggling with the cost of attendance and/or textbooks should contact VDOL for additional resources by calling 802-828-5250

****Cost of attendance is subject to change without notice****

2020-2021 Apprenticeship Program

Attendance Policy

Apprentices are required to complete 144 hours of classroom instruction each year for their apprenticeship. The instruction program is jointly established by VDOL and Vermont Tech. Students are expected to attend **ALL** scheduled classes and should arrive to class on time, expect to stay for the entire class, be prepared to learn, and have completed assignments as assigned.

Classes are scheduled for the required 144 hours only. Therefore, attendance is mandatory. However, we do understand that circumstances such as illness, family, or work related emergencies may force you to miss a class. In the event you **must** miss a class, please contact your instructor regarding make-up work/tests/time. Students are expected to make up missed work on their own time in order to stay up with their class. If you a registered apprentice, VDOL will be notified of the absence as well as your employer sponsor.

It is Vermont Tech's duty to ensure that all students enrolled in the program are receiving the same education in the same format across the board. We are required by the Electrical & Plumbing Licensing Boards to show that apprentices are completing 144 hours of instruction each year. With that being said, apprentices are allowed **four absences per year**. Any apprentice who exceed four absences **will be dropped from the program**. Distance learning students should be aware that Saturday classes count as **two absences**.

Attendance will be taken at the beginning of each class. Please be aware that absences will not count until after the first full week of classes have ended to allow for late registrants, class start-ups, etc. For the 2020-2021 apprenticeship year absences will count after **Sept. 18, 2019**.

Employers have been notified of this attendance policy and will be strongly discouraged from scheduling work that interferes with scheduled classes.

If there are any questions regarding this policy, please contact Vermont Tech Program Coordinator, **Sarah Ballou**, by calling **802-728-1680** or by emailing sballou@vtc.edu.

2020-2021 Apprenticeship Program

Grading Policy

- ❖ The minimum passing grade is 70%
- ❖ Grades are Figured in the following manner:
 - 10 Points - Determined by instructor
 - 20 Points - Average of Classroom Quizzes/Tests/Homework Grades
 - 30 Points - Midterm Exam
 - 40 Points - Final Exam
- ❖ Midterm Warning Letters will be mailed to any apprentice who is at a grade of **70 or lower** after the midterm exam has been administered.
- ❖ If at any time you feel you need extra help, or special classroom accommodations, please contact your instructor or the Vermont Tech Program Coordinator, **Sarah Ballou**. You can reach the program coordinator by calling **802-728-1680** or by emailing sballou@vtc.edu.
- ❖ If at any time you have questions regarding your grade, or this policy, please contact the Vermont Tech Program Coordinator.

2020-2021 Apprenticeship Program

Test-Out Policy

Students who wish to test out of one or more years of the Registered Electrical or Plumbing Apprenticeship Program should contact the Vermont Tech Program Coordinator, **Sarah Ballou**, by calling **802-728-1680** or by emailing sballou@vtc.edu.

Once the initial request has been received, the Program Coordinator will work with VDOL staff to determine the eligibility of a test out for the apprentice. Factors such as years' of experience in the trade, military training, and earned hours on the job are just a few things that are considered when making the decision. An apprentice will be notified in writing within five business days from the initial request if a test-out will be approved/denied.

Apprentices who fail out of a year in the apprenticeship program **are not** eligible to test out and will be **required** to repeat that year.

Apprentices who fail their initial test-out exam are eligible for **only one re-test**. Apprentices are not eligible to schedule a retest for a minimum of **two weeks** after failing the initial exam.

An apprentice who fails the initial test-out exam as well as the retest will **no longer be eligible** for a test-out option for that year, or any other years, in the apprenticeship program moving forward.

Test-outs will be administered on the **1st Saturday of the Month** from **May to August** at Vermont Tech in Randolph Center, VT with the exception of the Fourth of July holiday. Test-out dates for the 2020 year are as follows:

- Saturday, May 2, 2020
- Saturday, June 6, 2020
- Saturday, July 11, 2020
- Saturday, August 1, 2020

Test-outs will **not** be administered to apprentices during the apprenticeship year.

2020-2021 Apprenticeship Program

Classroom Behavior & Cell Phone Use Policy

Apprentices should at no time be in any room other than your assigned classroom or the restroom during your class time. Apprentices found wandering or in unauthorized areas will be subject to discipline and could face dismissal from the program.

No apparel that promotes, or seems to promote, the use of alcohol, tobacco, illegal substances, or is vulgar or profane are permitted.

Apprentices are under the direct supervision of the instructor and are expected to act in a respectful, civil, and mature manner. Apprentices working in classrooms, labs, or studios are responsible for the furniture and equipment within these areas.

Instructors are to set their classroom expectations at the beginning of each year. Any apprentice who has questions about these expectations should contact their instructor and/or the Vermont Tech Program Coordinator immediately.

All apprentices should act in a professional and respectful manner at all times. The classroom is meant to be a safe learning environment for ALL apprentices and instructors in the program. Any disruptive and/or disrespectful behavior towards the instructor or classmates will not be tolerated. Any such behavior could result in **dismissal from the program**.

The use of cell phones during class is strictly prohibited. Apprentices whose employer sponsor requires them to be on-call during class time may keep a pager with them during class. If a page is received, the apprentice is expected to leave the room to answer the call.

Any apprentice found using their cell phone during class may be asked to leave class for the evening resulting in an absence for the night. Any apprentice who repeatedly uses their phone during class will be notified by the program coordinator with a final warning to stop the behavior. Any use past that warning could result in **dismissal from the program**.

2020-2021 Apprenticeship Program

Site & Program Rules

- All sites are smoke and tobacco free; no apprentices is permitted to smoke, chew, vape, etc. anywhere on site grounds at any time. Apprentices who violate this rule are subject to discipline and could be fined for the offense.
- No apprentice is permitted to use or have possession of alcohol or drugs on site. This includes, but is not limited to consumption of alcohol and/or drugs in your vehicle. Any apprentice found to be under the influence of alcohol and/or drugs during class will be removed from the class. Local authorities and the Vermont Tech Program Coordinator will be contacted immediately. Further investigation will take place to determine future enrollment in the program.
- Apprentices should at no time be in any room other than your assigned classroom or the restroom during your class time. Apprentices found wandering or in unauthorized areas will be subject to discipline.
- Instructors and/or apprentices should refrain from altering any information posted on white/smart boards in classrooms when possible.
- No firearms, weapons, knives, ammunition, explosives, fireworks, or any potentially dangerous devices or substances of any kind are allowed on site premises. Violation may result in immediate removal from the program. Local authorities would be notified of any such violation.
- No apparel that promotes, or seems to promote, the use of alcohol, tobacco, illegal substances, or is vulgar or profane are permitted.
- Apprentices should plan to be to class on time. Evening classes begin promptly at 5:30PM and end at 8:30PM. Attendance will be taken at the beginning of each Traditional class and beginning and end of each Distance Learning (DL) class to ensure apprentices are staying for the entire class time. Continuously being late OR leaving early may result in discipline and/or dismissal from the program.
- Per the Attendance Policy, Apprentices are allowed no more than four absences during the 2019-2020 year. Apprentices who need to miss class must inform their instructor as well as the Program Coordinator as soon possible by calling 802-728-1680 (office) 802-661-8493 (cell) or by emailing sballou@vtc.edu.
- No electronic device (cell phone, tablet, etc.) use is permitted during class. Apprentices who must carry pagers and who are on-call are allowed to have those items with them but please step outside to take your call/page to ensure you're not distracting the class. Apprentices who distract the class by using an electronic device for purposes other than on-call will be asked to leave and are subject to further discipline.
- Apprentices are under the supervision of the instructor in charge and are expected to act in a respectful, civil and mature manner. Apprentices working in classrooms, labs or studios are responsible for the furniture and equipment within these areas whether during organized classes or while utilizing the facilities independently. Apprentices who violate these regulations may be subject to reprimand or disciplinary action.
- Academic dishonesty includes but is not limited to: plagiarism; cheating and other forms of academic misconduct; misuse of academic resources or facilities; misuse of computer software and hardware, data, equipment or networks or misuse of electronic devices such as cell phones. Apprentices caught in acts of academic dishonesty face serious consequences, up to and including dismissal from program.

2020-2021 Apprenticeship Program

Academic Schedule

NOTE: Kick-Off Day is **required for ALL Level 1 apprentices** and will be held at the Vermont Tech Randolph Center Campus (Judd Gym) on **Saturday, Sept. 12th, 2020** from **9AM-4PM**. Check-in will begin promptly at 8AM.

Any level 2, 3, or 4 apprentice that has not previously participated in Diversity & Harassment training will be required to attend from 9AM-11AM that day.

Site	Day & Time of Class	VDOL Contact
Barre Electrical Only	Tuesdays & Thursdays 5:30-8:30PM Level 1 - 1 st Class: 9/12/2020 Level 2-4 - 1 st Class: 9/15/2020	Judy Bourbeau 802-828-5250 judy.bourbeau@vermont.gov
Distance Learning Plumbing Only Level 1 - Mondays Level 2 - Wednesdays Level 3 - Tuesdays Level 4 - Thursdays	Weeknight Class 5:30-8:30PM Level 1-3 1 st Saturday of Month 8AM-4PM Level 4 3 rd Saturday of Month 8AM-4PM All Levels 1 st Class: 9/12/2020	Judy Bourbeau 802-828-5250 judy.bourbeau@vermont.gov
Rutland Electrical 1-4 Plumbing 1-2	Tuesdays & Thursdays 5:30-8:30PM Level 1 - 1 st Class: 9/12/2020 Level 2-4 - 1 st Class: 9/15/2020	Becky Dansereau 802-786-8841 rebecca.dansereau@vermont.gov
Springfield Plumbing 4 Only	Mondays & Thursdays 6:00-9:00PM Level 4 Apprentices 1 st Class: 9/14/2020	Becky Dansereau 802-786-8841 rebecca.dansereau@vermont.gov
St Johnsbury Electrical Only	Tuesdays & Thursdays 5:30-8:30PM Level 1 - 1 st Class: 9/12/2020 Level 2-4 - 1 st Class: 9/15/2020	Judy Bourbeau 802-828-5250 judy.bourbeau@vermont.gov
White River Electrical Only	Mondays & Thursdays 5:30-8:30PM Level 1 Apprentices 1 st Class: 9/12/2020 Level 2-4 - 1 st Class: 9/14/2020	Judy Bourbeau 802-828-5250 judy.bourbeau@vermont.gov
Williston	Electrical - Mondays & Wednesdays Plumbing - Tuesdays & Thursdays 5:30-8:30PM ALL Level 1 - 1 st Class: 9/12/2020 Electrical 2-4 - 1 st Class: 9/9/2020 Plumbing 2-4 - 1 st Class: 9/10/2020	Allison Richards 802-951-5845 allison.richards@vermont.gov

2020-2021 Apprenticeship Program

Instruction Locations

Barre (Electrical Only)

Instruction Location:

Central Vermont Career Center
155 Ayers St #2
Barre, VT 05641

Rutland (Electrical 1-4 / Plumbing 1-2)

Instruction Location:

Stafford Technical Center
22 Stratton Rd
Rutland, VT 05701

Springfield (Plumbing 4 Only)

Instruction Location:

River Valley Technical Center
307 South St
Springfield, VT 05156

St Johnsbury (Electrical Only)

Instruction Location:

St Johnsbury Academy
Streeter Hall
1000 Main St
St Johnsbury, VT 05819

White River (Electrical Only)

Instruction Location:

Hartford Area Career & Technology Center
1 Gifford Rd
White River Junction, VT 05001

Williston

Instruction Location:

Vermont Tech - Williston Campus
201 Lawrence Place
Williston, VT 05495

Distance Learning (Plumbing Only)

Instruction Locations:

DL - Brattleboro

Vermont Tech - Brattleboro Campus
Room 249
41 Harmony Place
Brattleboro, VT 05301

DL - Lyndon

Northern Vermont University - Lyndon Campus
VAIL 120
1001 College Rd
Lyndonville, VT 05851

DL - Newport

North Country Career Center
Room 436
209 Veterans Ave
Newport, VT 05855

DL - Randolph

Vermont Tech - Randolph Center Campus
P1, P3, P4 = Morrill 137
P2 = Clarke 110
124 Admin Dr
Randolph Center, VT 05061

DL - Rutland (P3 & P4 Only)

Stafford Technical Center
Room 218
22 Stratton Rd
Rutland, VT 05701

DL - White River (P1, P3, & P4 Only)

Community College of Vermont - Upper Valley
Room 110
145 Billings Farm Rd
White River Jct., VT 05001

***Please note:** Students will be notified of their instructor and classroom assignment prior to the first class. Changes to your assignment will not be made unless there are extenuating circumstances. Distance Learning students will be pre-assigned a DL location for the year based on their geographic residence. Distance Learning students should be prepared that some sites close during specific times due to winter breaks, holidays, etc. and travel to another site may be required.*

2020-2021 Apprenticeship Program

Instructor Directory

Barre

Curt Beachum	(EM-06640)	E1	802-279-5819	c.beachum@yahoo.com
Robbie Strachan	(EM-03684)	E2	802-793-3490	robbie.strachan@barrecity.org
Rick Cusson	(EM-04092)	E3	802-356-2687	richard.cusson@vermont.gov
Mark Fournier	(EM-05695)	E4	802-279-4731	markdfournier@gmail.com

Distance Learning

David Lyon	(PJ-02724)	P1	802-485-3444	dlyonnu12@gmail.com
Kevin Hodgeman	(PM-03916)	P2	802-673-7806	kevin.hodgeman@ncsuvt.org
Jim Ficken	(PM-03733)	P3&4	802-345-0946	jficken123@comcast.net

Rutland

Chuck Thompson	(EM-00572)	E1	802-681-8884	cthompson@vtc.edu
Jim Navin	(EM-04038)	E2	802-558-0608	jim4nav@gmail.com
Bill Sharp	(EM-03575)	E3	802-345-2279	williamf.sharp@ge.com
Vince Bent	(EM-02657)	E4	802-318-1891	vincent.bent@vermont.gov
Bruce Jones	(PM-03901)	P1	802-379-5136	brucevermont@aol.com
GJ Garrow	(PM-03537)	P2	802-775-3440	gerald.garrow@vermont.gov

Springfield

Chris Prouty	(PM-04131)	P4	802-289-2881	chrisprouty289@gmail.com
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St Johnsbury

Jeremy Roberts	(EM-03995)	E1	802-473-2132	jroberts@stjacademy.org
Jay Henderson	(EM-05690)	E2	802-535-8696	jay@suttonriverelectrical.com
Ray Richard	(EM-05093)	E3	802-745-8897	rrichard@stjacademy.org
Dan Brownlow	(EM-04539)	E4	802-249-7517	daniel.brownlow@vermont.gov

White River

Greg Hance	(EM-05343)	E1	802-359-2683	ghance55@msn.com
Ben Bemis	(EM-02303)	E2	802-785-3013	bbdirtbiker@yahoo.com
Ken Domey	(EM-00973)	E3	603-826-0132	ascutney@gmail.com
John Foster	(EM-02701)	E4	603-445-5610	seabee42@hotmail.com

Williston

Jodi Doyle	(EM-05337)	E1	802-922-5892	vwjodi@comcast.net
James Lang	(EM-04698)	E1	802-891-6171	james_lang62@comcast.net
Paul Provencher	(EM-04596)	E1	802-922-3511	paul.provencher@vermont.gov
Denny Barnard		E2	802-453-3826	ldbarnard@gmavt.net
Peter May	(EM-04777)	E2	802-777-3493	petermccauleymay@gmail.com
George Patenaude	(EM-02629)	E3	802-999-2016	compumotor@comcast.net
Steve Baker	(EM-3466)	E4	802-309-3869	steve.baker@mei-vt.com
John Black	(EM-04013)	E4	802-253-2241	john.black@vermont.gov
Chuck Bettis	(PM-04353)	P1	802-782-7327	chukm3@gmail.com
Lance Loiselle	(PM-04487)	P1	802-316-6491	loiselle@blodgettssupply.com
Brett LaVigne	(PM-01885)	P2	802-893-2904	mem_n_pep@yahoo.com
Dave Paquette	(PM-01971)	P2	802-879-5155	davepsr32@yahoo.com
Bryan Brooks	(PM-03079)	P3	802-893-7105	bkdmbrooks@gmail.com
Ray Doner	(PM-03510)	P3	802-434-4151	raymond.doner@uvm.edu

2020-2021 Apprenticeship Program

Textbook Requirements

Enrollment in the Registered Electrical or Plumbing Apprenticeship Program requires all apprentices to purchase textbooks. Employer sponsors are not required to purchase textbooks and course materials for apprentices.

All apprentices are **required to have you're their books for their first class**. Any apprentice who does not have the textbooks outlined in the apprentice booklist by the end of the first week of class **may be dropped from the program**.

Books can be purchased through the Vermont Tech Bookstore by visiting www.vermonttechshop.com. We strongly encourage apprentices to purchase books through the Vermont Tech Bookstore to ensure your purchasing the correct textbook. Apprentices who order books through Amazon, Barnes & Noble, or another site of your choice are order at their own risk as we cannot guarantee the textbooks received.

All apprentices should arrive at each class with a **notebook** and **pencil** along with the required textbooks and non-programmable calculator, as outlined on the apprentice booklist. Students who arrive to class without proper materials may be asked to leave class which could result in an absence.

2020-2021 Apprenticeship Program

Required Electrical Apprenticeship Textbooks

You are required to have your books at the FIRST class!

Books can be ordered through the Vermont Tech Bookstore by visiting www.vermonttechshop.com or by calling 802-728-9265.

ALL STUDENTS: A non-programmable calculator, pencil, and notebook are **REQUIRED** in addition to your textbooks. Your cell phone is **NOT** an acceptable calculator.

*All purchase prices listed below are estimates and are **subject to change without notice.***

Electrical - Level One (E1)

2020 NEC	\$120.00
2020 NEC Tabs	\$20.00
Electrical Wiring Residential, 19th Edition	\$165.00
Delmar's Standard Textbook of Electricity, 7 th Edition	\$183.00
2020 Ugly's Electrical References	\$26.00
2020 VT Electrical Safety Rules	FREE

Electrical - Level Two (E2)

2020 NEC	\$120.00
2020 NEC Tabs	\$20.00
Delmar's Standard Textbook of Electricity, 7 th Edition	\$183.00
2020 Ugly's Electrical References	\$26.00
2020 VT Electrical Safety Rules	FREE

Electrical - Level Three (E3)

2020 NEC	\$120.00
2020 NEC Tabs	\$20.00
Understanding Basic Motor Controls (2015 Edition) by Mike Holt	\$50.00
Understanding the 2020 NEC Textbook (Volume 1) by Mike Holt	\$75.00
Understanding the 2020 NEC Textbook (Volume 2) by Mike Holt	\$60.00
2020 Ugly's Electrical References	\$26.00
2020 VT Electrical Safety Rules	FREE

Electrical - Level Four (E4)

2020 NEC	\$120.00
2020 NEC Tabs	\$20.00
2020 Ugly's Electrical References	\$26.00
2020 Calculations for the Electrical Exam by Tom Henry	\$55.00
2020 VT Electrical Safety Rules	FREE

2020-2021 Apprenticeship Program

Required Plumbing Apprenticeship Textbooks

You are required to have your books at the FIRST class!

Books can be ordered through the Vermont Tech Bookstore by visiting www.vermonttechshop.com or by calling 802-728-9265.

ALL STUDENTS: A non-programmable calculator, pencil, and notebook are **REQUIRED** in addition to your textbooks. Your cell phone is **NOT** an acceptable calculator.

*All purchase prices listed below are estimates and are **subject to change without notice.***

Plumbing - Level One (P1)

2018 International Plumbing Code	\$100.00
2018 IPC Tabs	\$20.00
Plumbing Level 1 Trainee Guide, 4 th Edition by NCCER	\$100.00
2018 VT Plumbing Rules	FREE

Plumbing - Level Two (P2)

2018 International Plumbing Code	\$100.00
2018 IPC Tabs	\$20.00
Plumbing Level 2 Trainee Guide, 4 th Edition by NCCER	\$150.00
2018 VT Plumbing Rules	FREE

Plumbing - Level Three (P3)

2018 International Plumbing Code	\$100.00
2018 IPC Tabs	\$20.00
Plumbing Level 3 Trainee Guide, 4 th Edition by NCCER	\$150.00
2018 VT Plumbing Rules	FREE

****NCCER Level 3 Trainee Guide required ONLY for Springfield & Williston students****

Plumbing - Level Four (P4)

2018 International Plumbing Code	\$100.00
2018 IPC Tabs	\$20.00
2018 IPC Commentary	\$150.00
2018 VT Plumbing Rules	FREE

*****Please note: returning apprentices may have purchased some textbooks the previous year and would NOT be required to purchase them again*****