



Burlington County Institute of Technology

School of Construction Technology

In-Demand Industries

Carpentry

Electrical

HVAC/R

Plumbing

Welding



BCIT's School of Construction Technology prepares our students for many careers and roles, including:

Apprentice
Boilermaker
Brick Layer
Building Inspector
Business Agent
Cabinet Maker

Carpenter
Electrician
Foreperson
HVAC/R Technician
Iron Worker
Journeyman

Land Surveyor
Masonry
Painter
Plumber
Welder

School of Construction Technology Overview

The School of Construction Technology is a programmatic pathway designed to provide practical knowledge of the construction industry while assisting students to develop technical skills needed for in demand trades. Classroom instruction prepares students for an apprenticeship in one of the many areas within the construction field, ranging from carpentry, HVAC/R, welding, electrical, masonry, plumbing and green technologies. The program relies on hands-on activities supported by visual presentations to assist the student with workplace preparation. Throughout the course of this program, students will study building codes; learn math to understand and work with blueprints and learn techniques to manage people and responsibilities on the work site. The information and techniques presented by this program illustrate practices that are generally accepted throughout the United States. Professional skills are taught to all entry-level apprentices. Therefore, mastery of these skills should be the goal of every student participating in the Construction Technology program. Across programs that support the construction industry, students will be positioned to earn an industry-based credential and others where applicable.

School Objectives

The objectives of the School of Construction Technology are to:

- Provide a clear pathway to a rewarding career in one of the related construction technology fields (Carpentry, Electrical, HVAC/R, Plumbing, and Welding).
- Improve high school students' ability to have a successful transition to the workforce and/or college.
- Provide necessary skills to earn invaluable industry-based credentials.
- Expose students to apprenticeships and school to work opportunities
- Participate in curriculum-in-action trips to union/non-union training facilities
- Provide mini-clinics in related construction fields not offered at BCIT (Masonry, Bricklaying, Ironworkers, Painting, Laborers, Sheet Metal and Operating Engineers)

School Outcome

Many graduates have launched careers in construction and carpentry with local employment in housing-related industries. Areas of employment include, but are not limited to: vinyl and cedar siding installation, sheetrock, door and window replacement, framing, home renovations, welding, HVAC/R installation/repair, residential/commercial wiring, kitchen/bathroom remodeling etc. With experience and skill, this work offers a good foundation for management positions or may serve as a precursor to becoming an independent contractor. Some graduates also join the union-sponsored apprenticeship programs, which enables them to work on commercial projects at higher wages. Others may elect to continue their education and study architecture or civil and structural engineering at the college level. Those who enter an apprenticeship are able to earn college credits upon completion applicable toward an Associate's Degree.



“Our goal is to create programs and curricula that respond to the needs of today’s job market, giving our students a much needed edge when it comes to finding rewarding and well-paying careers right here in Burlington County. This pathway allows students to earn industrial credentials all while introducing themselves to growing fields in construction technology.”

-Bruce Garganio
Burlington County Freeholder Director

Carpentry Course Sequence

Introduction to Construction and Construction
 Materials
 Hand Tools
 Power Tools
 Building Design and Blueprint Reading
 Foundation and Outdoor Slab Construction
 Floor, Wall and Ceiling Frame Construction
 Interior and exterior finish
 Roof frame construction and Energy Conservation:
 Insulation
 Leveling Instruments and Operations
 Stairway Construction and Flooring
 Post and Beam Construction
 Concrete Heavy Construction
 School to Work Experience (Co-op)

Electrical Technology Course Sequence

Basic Electrical Theory I
 Basic Electrical Theory II
 Introduction to Meters
 Introduction to National Electrical Code
 Residential Wiring
 Lighting and Blueprint Reading
 Advanced National Electrical Code
 Commercial Wiring
 Motors and Generators
 Grounding and Electrical Services
 Programmable Logic Controls

HVAC/R Technology Course Sequence

Introduction to HVAC/R 1
 Introduction to HVAC/R 2
 Basic Electricity and Fundamentals of Cooling
 Air Conditioning and Refrigeration Components
 Fundamentals of Heating
 Heating Applications and Indoor Air Quality
 HVAC/R Troubleshooting and Air Distribution
 Components
 Performance Testing and Sustainability



Plumbing Course Sequence

Introduction to Plumbing
 Plumbing Materials and Tools
 Joining, Installing & Supporting Pipe
 Sanitary Drainage & Vent Storm Pipe Installation
 Plumbing Traps & Sizing Water Supply Lines
 Fixtures & Appliance Installation
 Testing & Inspecting Plumbing Systems
 Customer Service & Plumbing System Repair
 Plumbing Code & Gas Venting
 Licensing & Credentialing
 Plumbing Blueprint & Schematic Reading



Welding Technology Sequence

Introduction to Welding Technology
 Introduction to Welding Safety
 Introduction to Oxyfuel Welding and Cutting
 Arc Welding
 Gas Metal Arc Welding (MIG)
 Introduction Gas Tungsten Arc Welding (TIG)
 Cast Iron Repair
 Pipe Welding
 Robotics and Automated Welding
 Surfacing
 Blueprint Reading
 Management and Leadership



Important Construction Technology Links

- United Brotherhood of Carpenters Local 255
<http://www.carpenters-local255.org/>
- United Association of Plumbers Local 322
<http://www.ua322.org/>
- International Union of Bricklayers & Allied Craftworkers
<http://www.bacadcny.com/>
- Ironworkers Local 399
<http://ironworkers399.org/>
- International Brotherhood of Electrical Workers
<http://ibew351.org/>
- Plumbers and Pipefitters Local 9
<http://www.ualocal9.org/>
- Boilermakers Local 28
<http://boilermakerslocal28.com/>
- Sheet Metal Workers International Union Local 27
<https://www.smwlu27.org:8484/>
- Builders League of South Jersey
<http://www.blsj.com/>
- New Jersey State League of Master Plumbers
<http://plumbingweb.com/new-jersey-state-league-of-master-plumbers/>

Apprenticeship & School to Work Opportunities

BCIT on an annual basis will host a Career Trades Fair where unions and non-union halls from across the State will meet with students and provide live demonstrations such as bricklaying, masonry, carpentry, welding, painting, plumbing, ironwork, electrical, heating and air conditioning among a host of other options. As part of National Apprenticeship Week, BCIT will host an annual National Apprentice Conference in November. These demonstrations will provide a glimpse to our students of the extraordinary career opportunities that await our students upon graduation.

The School of Construction Technology at BCIT will incorporate in its curriculum field experiences for students through monthly field trips to various union and non-union halls. In addition, on a monthly basis, students will have opportunities to interact with invited journeypersons, artisans and apprentices on campus. They will provide an overview of a particular trade through live demonstrations and discuss the applications of key program learning at BCIT to real world demands in the building trades.

| Field | Jobs Available | Annual Earning Potential |
|---------------------|----------------|--------------------------|
| Carpentry | 697 | \$25K - \$45K + |
| Electrical | 328 | \$30K - \$55K + |
| Welding | 494 | \$30K - \$50K + |
| Plumbing | 1,500 | \$20K - \$50K + |
| HVAC/R | 1,993 | \$25K - \$65K + |
| Masonry | 65 | \$25K - \$55K + |
| Operating Engineers | 877 | \$50K - \$105K + |
| Painting | 688 | \$20K - \$40K + |
| Millwrights | 19 | \$35K - \$65K + |
| Total: | 6,661 | |

As of July 30, 2017 Source: indeed.com

Program Locations

Medford Campus

Carpentry
Electrical Technology
HVAC/R Technology
Welding Technology

Westampton Campus

HVAC/R Technology
Plumbing Technology

Burlington County Institute of Technology

Medford Campus

10 Hawkin Road, Medford, NJ 08055

Westampton Campus

695 Woodlane Road, Westampton, NJ 08060

**For more information, contact BCIT Admissions
(609) 267-4226, Ext. 8245**

