

BUILDING TRADES TECHNOLOGY CERTIFICATE (CAREER)

Program website (<https://www.frederick.edu/programs/skilled-trades/building-trades.aspx>)

Program Manager: Construction & Applied Technologies Institute (CATI)
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Program Description

Provides students with a comprehensive practical training in the areas involved in building trades technology. The student selects a track in Heating, Ventilation, and Air Conditioning (HVAC); Welding; or Electrical.

Program Learning Outcomes

Building Trades Technology Certificate - Track 1: HVAC

- Interpret and apply blueprints and schematics to a construction project within the trade.
- Create a cost estimate of a specific project to include materials, equipment, and labor.
- Evaluate a construction project to select and operate appropriate tools, equipment, and materials.
- Apply principles of safety to equipment usage and materials handling on a construction work site.
- Demonstrate knowledge of and apply appropriate building codes to complete a construction project.
- Install, troubleshoot and/or repair equipment toward completion of a project to meet job specifications.

Building Trades Technology Certificate - Track 2: Welding

- Demonstrate appropriate shop safety rules.
- Perform a variety of cuts in the flat position on carbon steel using multiple methods.
- Demonstrate an understanding of SMAW electrodes and the American Welding Society (AWS) identification system.
- Identify the basic welding joints and welding positions.
- Perform various weld joints in multiple positions using the GMAW, GTAW, and SMAW processes.

Building Trades Technology Certificate - Track 3: Electrical

- Interpret and apply blueprints and schematics to a construction project within the trade.
- Create a cost estimate of a specific project to include materials, equipment, and labor.
- Evaluate a construction project to select and operate appropriate tools, equipment, and materials.
- Apply principles of safety to equipment usage and materials handling on a construction work site.
- Demonstrate knowledge of and apply appropriate building codes to complete a construction project.

- Install, troubleshoot and/or repair equipment toward completion of a project to meet job specifications.

Program Requirements

Track 1: HVAC

Code	Title	Credits
Departmental Requirements		
BLDT 101	Introduction to Building Trades	3
BLDT 110	Fundamentals of HVACR	4
BLDT 111	Controls for HVACR	3
BLDT 212	HVAC Installation & Troubleshooting	3
BLDT 113	Fossil Fuels & Hydronic Heating	3
Optional		
CMIS 101	Information Systems and Technology	
Total Credits		16

Track 2: Welding

Code	Title	Credits
Departmental Requirements		
BLDT 101	Introduction to Building Trades	3
BLDT 121	Welding Symbols & Blueprint Reading	2
BLDT 120	Introduction to Welding	4
BLDT 222	Advanced Welding: SMAW	4
Select one of the following Electives: ¹		
BLDT 224	Advanced Welding: GTAW	
BLDT 225	Advanced Welding: GMAW	
BLDT 223	Advanced Welding: SMAW 4G	
Optional		
CMIS 101	Information Systems and Technology	
Total Credits		16

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Students should check with an advisor before selecting their electives.

Track 3: Electrical

Code	Title	Credits
Departmental Requirements		
BLDT 101	Introduction to Building Trades	3
BLDT 140	Fundamentals of Structural Wiring	4
BLDT 241	Residential Electric	3
BLDT 242	Commercial Electric	3
BLDT 143	Specialized Systems	3
Optional		
CMIS 101	Information Systems and Technology	
Total Credits		16

Transfer Note

For more information on careers and transfer, contact the Career and Academic Planning Services office at 301.846.2471 or visit Transfer Services (<https://www.frederick.edu/student-resources/counseling-advising/transfer-services.aspx>).

Guided Pathway to Success (GPS)

Suggested schedules map your path to degree completion.

Students should meet with an advisor each semester to carefully select and sequence courses based on their specific academic goals and interests. Visit Jefferson Hall or call 301.846.2471 for advising.

Building Trades Technology: Electrical

Recommended First Semester		Credits
BLDT 101	Introduction to Building Trades	3
BLDT 140	Fundamentals of Structural Wiring	4
BLDT 241	Residential Electric	3
Credits		10
Recommended Second Semester		
BLDT 143	Specialized Systems	3
BLDT 242	Commercial Electric	3
Optional		0,3
CMIS 101	Information Systems and Technology	
Credits		6-9
Total Credits		16-19

Building Trades Technology: HVAC

Recommended First Semester		Credits
BLDT 101	Introduction to Building Trades	3
BLDT 110	Fundamentals of HVACR	4
BLDT 111	Controls for HVACR	3
Credits		10
Recommended Second Semester		
BLDT 113	Fossil Fuels & Hydronic Heating	3
BLDT 212	HVAC Installation & Troubleshooting	3
Optional		0,3
CMIS 101	Information Systems and Technology	
Credits		6-9
Total Credits		16-19

Building Trades Technology: Welding

Recommended First Semester		Credits
BLDT 101	Introduction to Building Trades	3
BLDT 120	Introduction to Welding	4
BLDT 121	Welding Symbols & Blueprint Reading	2
Credits		9
Recommended Second Semester		
BLDT 222	Advanced Welding: SMAW	4
Select a Welding Elective in consultation with an advisor:		3
BLDT 224	Advanced Welding: GTAW	
BLDT 225	Advanced Welding: GMAW	
BLDT 223	Advanced Welding: SMAW 4G ¹	
Optional		0,3
CMIS 101	Information Systems and Technology	
Credits		7-10
Total Credits		16-19

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Students must complete BLDT 222 Advanced Welding: SMAW prior to enrolling in BLDT 223 Advanced Welding: SMAW 4G.

Part-time Students

Part-time students should complete courses in the order listed on the pathway. Please contact program manager for questions about part-time status.

Students who take fewer than 15 credits each semester or who require developmental English or Math coursework will need additional

semesters to complete their degrees. Summer term and January session classes may help students to make faster progress.

Pathway Legend

Milestone - courses with the Milestone notation should be taken within the recommend credit range to stay on track for program completion.

Fall, Spring, Summer - courses with a Fall, Spring, or Summer notation indicate the course is offered in the specified semester only.