

# APPLIED INDUSTRIAL TECHNOLOGY (IRONWORKING), ASSOCIATE OF APPLIED SCIENCE



This program is offered in partnership with the International Union of Painters and Allied Trades at various local training centers around the state. Students must be currently working in a registered apprenticeship program in conjunction with the U.S. Department of Labor, Bureau of Apprenticeship and Training.

The apprenticeship program prepares the student to earn a journey-level status in Ironworking, as well as an Associate of Applied Science degree in Ironworking Technology. A three-year apprenticeship emphasizes the skill set required to be a highly skilled craftsman. The Ironworker erects, assembles, and installs fabricated structural metal products, usually large metal beams, in the erection of industrial, commercial, or large residential buildings. Structural Ironworkers erect the steel framework of bridges and buildings. Reinforcing Rod Ironworkers set steel bars or mesh in concrete forms to strengthen concrete in buildings and bridges. Ornamental Ironworkers install metal stairways, catwalks, gratings, grills, screens, fences, and decorative ironwork. The Rigger is an ironworker whose job is to move heavy machinery, using rollers, forklifts, and other sources of power.

**Program contact:** Learn more

**This degree program contains one or more embedded certificates which will be automatically awarded when the certificate requirements are completed. If you do not want to receive the embedded certificate(s), please notify the Office of the Registrar at RegistrarOffice@tri-c.edu.**

Learn more about how certificate credits apply to the related degree.

## Related Degrees and Certificates

- Ironworking, Certificate of Proficiency

## Program Admission Requirements

- Aptitude Test
- High School Diploma/GED
- ENG-0995 Applied College Literacies or appropriate score on English Placement Test.
- MATH-0955 Beginning Algebra or appropriate score on Math Placement Test.
- Participant must be working in an apprenticeship in conjunction with the U.S. Department of Labor, Bureau of Apprenticeship and Training.

- Applicants are reviewed and selected by committee for admission to the program.

## Next Steps to Apply

- Individuals interested in this program/certificate must reach out to the training center of your choice listed at the bottom of the program page on the public website.
- The union must select and admit you into the apprenticeship program first.
- Once accepted into the apprenticeship program, a Tri-C representative will work with you directly to enroll in the credit courses. Each of the classes will be held at your training center.

## Program Learning Outcomes

This program is designed to prepare students to demonstrate the following learning outcomes:

1. Listen, ask questions, confirm understanding and use hand signals when needed to communicate with job steward, foreman and other journeymen on the crew to ensure effective and safe completion of the job and to be environmentally sensitive.
2. Act according to the ironworkers Code of Excellence and continually upgrade knowledge and skills.
3. Apply OSHA, company and in-house standards and policies, first aid and CPR to maintain a safe work site that is environmentally sensitive.
4. Interpret appropriate blueprints for a given project and apply basic math and geometry to determine layout.
5. Fabricate, erect and detail the structure and/or precast using appropriate equipment and tools in a safe, effective and environmentally sensitive manner for industrial, commercial or large residential building clients.
6. Fabricate, erect and detail stairways, catwalks, curtain walls, handrails, gratings, screens, fences and windmills using appropriate equipment and tools in a safe, effective and environmentally sensitive manner for industrial, commercial or large residential building clients.
7. Fabrication and placement of rebar and post tensioning using appropriate equipment and tools in a safe, effective and environmentally sensitive manner for industrial, commercial or large residential building clients.
8. Move and install machinery using rollers, forklifts and other appropriate equipment and tools in a safe, effective and environmentally safe manner.
9. Be certified in OSHA/O and Subpar R; D1.5 for Shield Metal and Flux Core Arc Welding; CPR/AED and First Aid; Forklift Operations; Scaffolding Erector and Dismantling; Rigging; Post Tensioning Unbonded and Bonded; HAZMAT and Material Abatement; Drug Free Workplace; and Mine Safety and Health Act (MSHA).

## Suggested Semester Sequence

First Semester		Credit Hours
ATIW-1300	Structural Steel Concepts	2
ATIW-1310	Safety for Ironworkers	1
ATIW-1320	Steel Construction Procedures	1
ATIW-1330	Erection Concepts & Practices	3
ATIW-1410	Practical Applications of Reinforcing Steel	1

Any Approved Ohio Transfer 36 Mathematics course	3
Select one of the following:	3
ENG-1010 College Composition I	
ENG-101H Honors College Composition I	

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**Credit Hours 14**

**Second Semester**

ATIW-1600 Welding Fundamentals for Ironworkers	3
ATIW-2300 Shielded Metal Arc Welding	3
ATIW-2310 Welding Specialties	3
ATIW-2320 Welding Blueprints and Design	3
Communication requirement <sup>1</sup>	3
Select one of the following:	3
BADM-xxxx Business Elective	
CNST-1xxx CNST Elective	

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**Credit Hours 18**

**Third Semester**

ATIW-2330 Pre-Construction Planning of Specialty Applications	2
ATIW-2340 Specialty Installation Equipment	2
ATIW-2350 Ornamental Systems & Railings	2
ATIW-2360 Ornamental Applications	2
Arts & Humanities requirement	3
Select one of the following:	3
BADM-xxxx Business Elective	
CNST-1xxx CNST Elective	
Select one of the following:	3
IT-1090 Computer Applications	
IT-109H Honors Computer Applications	

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**Credit Hours 17**

**Fourth Semester**

AIT-2990 Contracting in a Diverse World	3
ATIW-2500 Rigging and Hoisting	3
Social & Behavioral Science requirement	3
Select one of the following:	3
BADM-xxxx Business Elective	
CNST-xxxx CNST Elective	
Select one of the following:	3
BADM-xxxx Business Elective	
CNST-xxxx CNST Elective	

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**Credit Hours 15**

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**Total Credit Hours 64**

<sup>1</sup> ENG-2151 Technical Writing highly recommended.

**Recommended Business Electives**

Code	Title	Credit Hours
BADM-1020	Introduction to Business	3
BADM-1122	Principles of Management and Organizational Behavior	3
BADM-1210	Labor-Management Relations	3
BADM-1301	Small Business Management	3

BADM-2151	Business Law	3
BADM-2450	New Business Development	5

**Recommended Construction Management Electives**

Code	Title	Credit Hours
CNST-1281	Construction Engineering Orientation	3
CNST-1510	Green Building & Sustainability I	3
CNST-1290	Construction Print Reading	2
CNST-2131	Construction Methods and Materials	3

MATH-1140, MATH-1141, MATH-1200, MATH-1270, and MATH-1280 can no longer count towards fulfilling the college-level mathematics requirement. These courses were re-classified as developmental mathematics by the state of Ohio in 2016. Tri-C established a 5-year transitioning window for students who had completed these courses prior to 2016 to apply them towards meeting graduation requirements, which expired in Summer 2021. It is highly recommended to see a counselor to determine the appropriate math required for your current major.