

APPLIED INDUSTRIAL TECHNOLOGY (IRONWORKING), ASSOCIATE OF APPLIED SCIENCE



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. 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.

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.

Other Information

- 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.

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	
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 ¹		3
Select one of the following:		3

BADM-xxxx	Business Elective	
CNST-1xxx	CNST Elective	
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	
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	
Credit Hours		15
Total Credit Hours		64

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.

¹ 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