

IRONWORKING, CERTIFICATE OF PROFICIENCY



Students must be currently working in a registered apprenticeship program in conjunction with the U.S. Department of Labor, Bureau of Apprenticeship and Training. 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. The apprenticeship certificate recognizes student attaining journey level status at the completion of the technical studies.

Program contact: Learn more

Financial Assistance funds cannot be applied towards this program.

This certificate will be automatically awarded when the certificate requirements are completed. If you do not want to receive the certificate, 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 – contact Program Coordinator for information.
- Applicants are reviewed and selected by committee for admission to the program.

Other Information

- Participant must be working in an apprenticeship in conjunction with the U.S. Department of Labor, Bureau of Apprenticeship and Training.

Program Learning Outcomes

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

- 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.
- Act according to the ironworkers Code of Excellence and continually upgrade knowledge and skills.

- Apply OSHA, company and in-house standards and policies, first aid and CPR to maintain a safe work site that is environmentally sensitive.
- Interpret appropriate blueprints for a given project and apply basic math and geometry to determine layout.
- 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.
- 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.
- 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.
- Move and install machinery using rollers, forklifts and other appropriate equipment and tools in a safe, effective and environmentally safe manner.
 - 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
Credit Hours		7
Second Semester		Credit Hours
ATIW-1400	Principle of Reinforcing Steel	2
ATIW-1410	Practical Applications of Reinforcing Steel	1
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
Credit Hours		15
Summer Completion		Credit Hours
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
ATIW-2500	Rigging and Hoisting	3
Credit Hours		11
Total Credit Hours		33

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.