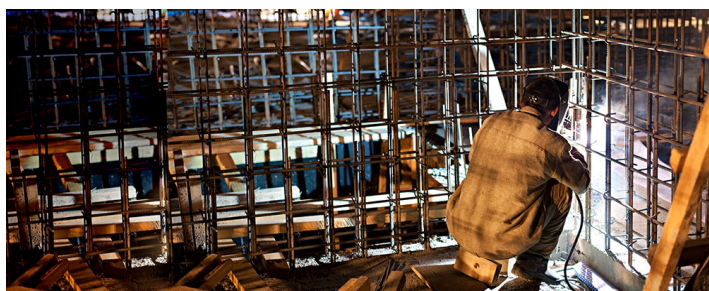


# IRONWORKING, CERTIFICATE OF PROFICIENCY



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:

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            |
| 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           |