## Certificate of Achievement — Industrial Millwright Technology

### Professional Skills and Career Paths

Process Maintenance Mechanic, Fixed Maintenance Mechanic, Millwright Technician, Mill Maintenance, Precision Millwright, Industrial Mechanic, Millwright Mechanic

### Student Learning Outcomes

Upon successful completion of the Industrial Millwright Technology Program, the student will have the skills to:

- Read and interpret standard blueprints and drawings of industrial equipment.
- Align shafts using laser and dial indicator methods of alignment.
- Perform troubleshooting and maintenance of fluid handling pumps,industrial gear trains and drives, and material handling systems.
- Rebuild and replace components in liquid and air handling systems.
- Replace bearings and seals in a non-destructive manner.
- Basic electrical theory and safety on single and three phase power equipment.
- Identify failure causes in industrial equipment using vibration analysis and the root cause analysis tree.
- Identify metals according to standard metallurgical tests.
- Fabrication and layout of equipment in industrial settings.
- Perform safely in the work environment, meeting and obeying all workplace safety requirements.

The Industrial Millwright Technology Certificate of Achievement Program is designed for the student who desires a highly technical and challenging field.

Because of the intensity of the program, students will be very close to completion of an AAS degree and are encouraged to pursue the degree.

The Industrial Millwright Technology AAS curriculum is inundated throughout with workplace safety. The program uses multiple industry supplied workplace safety forms provided by members of our advisory board which make the student use critical thinking skills to not only solve problems, but make sure the task is done safely for both the student and the employer.

***Formal admission to this program is required. Refer to page 86 for an outline of admission standards.*** This program is a rigorous 42 week accelerated program, and can be completed in that time.

The Industrial Millwright Technology Program prepares a student for an exciting entry-level career as an Industrial Mechanic in manufacturing, mining, construction, and the service industry. We use the NCCER curriculum which was developed by industry and is recognized nationally by industry as a training standard. Our program allows students to graduate with a Certificate of Achievement and the opportunity to receive a nationally recognized certification of completed training that they can use to find employment in this field. The student receives technical training in mechanical operations, fluid power, industrial pumps, preventive predictive maintenance, precision shaft alignment, electrical theory, welding processes, and all safety standards for tools and equipment in the work place. Upon successful completion of the program, the student will possess the skills necessary to be able to diagnose and repair mechanical, electrical, liquid, and air handling systems found in most industrial, agricultural, mining, construction, and service industries. A graduate can work in all locations that use machinery to produce a product or service including steel mills, paper mills, mining operations, gravel quarries, universities, schools, textile mills, food processing plants, automotive plants, ship yards, power plants, hospitals, aerospace industry facilities and office building/complexes.

| General Education Requirements | | | Credits |
|---|---|---|---|
| English/Communications. Determined by placement testing ENG 100, 101, 103, or 107 | | | 3 |
| Computation — Any course with a MATH prefix | | | 3 |
| Human Relations — Embedded in Millwright Curriculum (IT 106) | | | |

| Program Requirements | | | Credits |
|---|---|---|---|
| IT | 102 | Pipefitting Principles | 2 |
| IT | 103 | Industrial Pump Technology | 3 |
| IT | 105 | Mechanical Power Transmission | 4 |
| IT | 106 | Millwright and Process Terminology | 3 |
| IT | 201 | Blueprint Reading and Measurement Fundamentals | 5 |
| IT | 207 | Boiler, Conveyor, and Pneumatic Systems | 3 |
| IT | 208 | Fluid Power | 2 |
| IT | 209 | Rigging Principles | 2 |
| IT | 210 | Failure Analysis and Predictive/ Preventative Maintenance | 4 |
| IT | 214 | Basic Electrical Theory for Industrial Technicians | 3 |
| IT | 216 | Basic Metallurgy | 4 |
| IT | 220 | Alignment Principles | 5.5 |
| TA | 100 | Shop Practices | 3 |
| WELD | 136 | Welding for the Maintenance Technician I | 3 |
| WELD | 235 | Welding for the Maintenance Technician II | 3 |
| | | **Total Program Credits** | **47.5** |

**SUGGESTED COURSE SEQUENCE**
**Certificate of Achievement—**
**Industrial Millwright Technology**

| FALL—1st Semester | | | Credits |
|---|---|---|---|
| ENGLISH* | | | 3 |
| IT | 102 | | 2 |
| IT | 106 | | 3 |
| IT | 201 | | 5 |
| IT | 209 | | 2 |
| IT | 216 | | 4 |
| TA | 100 | | 3 |
| COMPUTATION* | | | 3 |
| WELD | 136 | | 3 |
| **TOTAL** | | | **28** |

| SPRING—2nd Semester | | | Credits |
|---|---|---|---|
| IT | 103 | | 3 |
| IT | 105 | | 4 |
| IT | 207 | | 3 |
| IT | 208 | | 2 |
| IT | 210 | | 4 |
| IT | 214 | | 3 |
| IT | 220 | | 5.5 |
| WELD | 235 | | 3 |
| **TOTAL** | | | **27.5** |

**Refer to page 85.** **Minimum Credits: 55.5**

***Choose with advisor.**