

# INDUSTRIAL TECHNOLOGY AND FABRICATION, CERTIFICATE OF ACHIEVEMENT

The Certificate of Achievement in Industrial Technology and Fabrication is designed to prepare students to develop the core technical skills necessary to meet the needs and challenges of applied industrial technologies and the various industries utilizing these skills, including manufacturing, fabrication, construction and welding. Students integrate concepts from the areas of fabrication, welding, heavy equipment, computer applications, and fluid power as applied to the technological sectors of manufacturing, construction, and agriculture.

Students who complete this certificate will be prepared for careers within manufacturing, agriculture, construction, and welding industries as industrial engineering technologists, technicians, assemblers and fabricators.

Course ID	Title	Units/ Hours
<b>Required Core Courses (19 units):</b>		
AG V13	Agricultural and Industrial Computer Applications	3
AIT V01	Introduction to Heavy Equipment: Operation and Maintenance	3
AIT V03	Fluid Power: Hydraulics and Pneumatics	3
AIT V04	Industrial Electrical Systems	3
MT V04	Measurements and Computations	3
MT V18	Manufacturing Projects and Applications	2
WEL V01	Introduction to Welding	2
<b>Required Emphasis Courses (10 units):</b>		
MT V02	Applied Machining I	2
MT V05	CNC Machining I	2
WEL V13A	ARC and MIG Welding I	4
WEL V30	Applied Metal Fabrication	2
<b>TOTAL</b>		<b>29 units</b>

## One-Year Plan:

Year 1		
Fall Semester		Units/Hours
AG V13	Agricultural and Industrial Computer Applications	3
AIT V01	Introduction to Heavy Equipment: Operation and Maintenance	3
MT V02	Applied Machining I	2
MT V04	Measurements and Computations	3
WEL V01	Introduction to Welding	2
	<b>Units/Hours</b>	<b>13</b>
Spring Semester		
AIT V03	Fluid Power: Hydraulics and Pneumatics	3
AIT V04	Industrial Electrical Systems	3
MT V05	CNC Machining I	2
MT V18	Manufacturing Projects and Applications	2

WEL V13A	ARC and MIG Welding I	4
WEL V30	Applied Metal Fabrication	2
	<b>Units/Hours</b>	<b>16</b>
	<b>Total Units/Hours</b>	<b>29</b>

## Two-Year Plan:

Year 1		
Fall Semester		Units/Hours
AG V13	Agricultural and Industrial Computer Applications	3
MT V02	Applied Machining I	2
MT V04	Measurements and Computations	3
	<b>Units/Hours</b>	<b>8</b>
Spring Semester		
AIT V03	Fluid Power: Hydraulics and Pneumatics	3
AIT V04	Industrial Electrical Systems	3
MT V05	CNC Machining I	2
	<b>Units/Hours</b>	<b>8</b>
Year 2		
Fall Semester		Units/Hours
AIT V01	Introduction to Heavy Equipment: Operation and Maintenance	3
WEL V01	Introduction to Welding	2
	<b>Units/Hours</b>	<b>5</b>
Spring Semester		
MT V18	Manufacturing Projects and Applications	2
WEL V13A	ARC and MIG Welding I	4
WEL V30	Applied Metal Fabrication	2
	<b>Units/Hours</b>	<b>8</b>
	<b>Total Units/Hours</b>	<b>29</b>

Upon successful completion of this program, students will be able to:

- Apply safe practices and procedures within industrial fabrication and machining settings.
- Demonstrate appropriate setup of machinery, tools and applications used in fabrication projects.
- Demonstrate accurate use and application of appropriate technology, including: welding, machining and fabrication.