



SCHOOL DISTRICT OF MONROE

Preparing for the Future, One Child at a Time

Welding 2

Course Description:

The curriculum for this course is developed from the [Wisconsin Standards for Technology and Engineering](#). This elective course is a 1 Trimester Course in which students will develop entry level skills and technical knowledge in the area of Welding Safety, GTAW welding, SMAW welding, GMAW welding, Oxy Fuel Cutting, Plasma Arc Cutting, Welding Symbols, Blueprints, fabrication, and weld inspection. While learning skills and technical knowledge in these areas, students will be welding with three major processes on various activities in multiple positions. This course is transcribed with Blackhawk Technical College. The information in this course overview outlines what students should understand and be able to do by the end of the trimester.

Mastery Standards:

Knowledge of equipment and safety procedures are essential to responsible use of equipment and tools in the welding industry . (AC1.c, AC1.d, AC1.e, AC1.f, MNF1.a)

Understanding and knowledge of tools and materials is requisite for analyzing sound choices in methods and materials in the welding industry. (BB1.b)

Quality design, engineering, and construction require accurate knowledge and application of measuring systems. (AC1.a, AC1.b)

Analyze and safely use GMAW & SMAW welding systems. (MNF1.g.8.h,MNF1.g.9.h)

Analyze and safely use cutting systems. (MNF1.h.6.h,MNF1.h.7.h)

Executing and receiving evaluations and feedback on projects is vital to learning and improving skills. (ENG4.c, ENG5.a)

Specific tasks require experience and knowledge to correctly identify, select, and safely use appropriate tools, machines, products, systems, and techniques. (MNF1.a, MNF1.b, MNF1.c, MNF1.d, MNF1.e, MNF1.f, MNF1.g, MNF1.h)

Unit	Description of Unit and Learning Targets
<p>Unit Title: 1</p> <p><u>Essential Questions:</u></p> <ul style="list-style-type: none"> How does understanding technical welding information and basic welding skills help you become a proficient entry level welder? 	<p>Students will...</p> <p><u>Learning Targets:</u></p> <ul style="list-style-type: none"> I know that there are many careers associated with the welding industry, the training required for entry level positions and the income ranges for these positions I know the fusibility of various metals, how secondary materials are categorized and sold. I can demonstrate the safety procedures and practices in various work environment settings pertaining to the welding Industry. I know how to transform secondary materials into useful products and exercises using various hand tools, power tools, and separating processes. I can identify, interpret, measure and apply manufacturing blueprints and welding symbols to produce a welded part. I can identify the major weld defects and discontinuities using

	visual inspection according to welding symbol data.
<p>Unit Title: 2</p> <p><u>Essential Questions:</u></p> <ul style="list-style-type: none"> How do you use a GMAW Welder to produce entry level welds? 	<p>Students will...</p> <p><u>Learning Targets:</u></p> <ul style="list-style-type: none"> I know the safe operation and parts of a GTAW welder and can make setting changes according to material thickness, material type and welding position. I can correctly use GTAW to surface steel and aluminum. I can use GTAW to weld various joint configurations (butt, lap, edge, tee & outside corner) in the flat and horizontal positions with stainless steel or mild steel. I can use GTAW to weld various joint configurations (butt, lap, edge, tee & outside corner) in the flat and horizontal positions with aluminum.
<p>Unit Title: 3</p> <p><u>Essential Questions:</u></p> <ul style="list-style-type: none"> How do you use a GMAW Welder to produce entry level welds? 	<p>Students will...</p> <p><u>Learning Targets:</u></p> <ul style="list-style-type: none"> I know the safe operation, parts, basic maintenance of the GMAW welder and can make setting changes according to material thickness and welding position. I can correctly use GMAW to surface pieces in multiple positions. I can use GMAW to weld various joint configurations (butt, lap, edge, tee & outside corner) in multiple positions. I can use GMAW to produce multi fillet welds in multiple positions. I can use GMAW to complete and pass a guided bend test. I can use GMAW to complete and pass a pressure test.
<p>Unit Title: 4</p> <p><u>Essential Questions:</u></p> <ul style="list-style-type: none"> How do you use a SMAW Welder to produce entry level welds? 	<p>Students will...</p> <p><u>Learning Targets:</u></p> <ul style="list-style-type: none"> I know the safe operation and parts of the SMAW welder and can make setting changes according to material thickness and welding position. I can correctly use SMAW to surface pieces in multiple positions. I can use SMAW to weld various joint configurations (butt, lap, edge, tee & outside corner) in multiple positions. I can use SMAW to produce multi fillet welds. I can use SMAW to complete and pass a guided bend test. applying rules, and following through with decisions made I can exhibit respectful and mature behavior to contribute to a positive learning environment.