

WELDING (442)

Information provided includes course descriptions by subject only. For complete 2022-2023 programs/academic plans, please refer to Academic Programs (<http://catalog.blackhawk.edu/academics/>).

442-100 Pipe Welding - Prep

Credits: 0.05-1

This course covers various ways to cut and bevel pipe as well as proper cleaning, fitment and tacking techniques on various size and thicknesses of pipe.

Aid Code: 10 - undefined.

Complete Course Listing

442-101 Pipe Welding - Shielded Metal Arc Welding 1

Credits: 0.05-1

This class covers SMAW welding of 6" schedule 80 steel pipe. This will include welding open roots with E6010 and fill and cover passes using E7018 in a 1G position.

Aid Code: 10 - undefined.

Complete Course Listing

442-102 Pipe Welding - Shielded Metal Arc Welding 2

Credits: 0.05-1

This class covers SMAW welding of 6" schedule 80 steel pipe. This will include welding open roots with E6010 and fill and cover passes using E7018 in a 5G position.

Aid Code: 10 - undefined.

Co-requisites: (442-101)

Complete Course Listing

442-104 Pipe Welding - Shielded Metal Arc Welding 4

Credits: 0.05-1

This class covers SMAW welding of 6" schedule 80 steel pipe. This will include welding open roots with E6010 and fill and cover passes using E7018 in a 6G position.

Aid Code: 10 - undefined.

Co-requisites: (442-103 or 420-134)

Complete Course Listing

442-105 Pipe Welding - Gas Tungsten Arc Welding 1

Credits: 0.05-1

This class covers GTAW welding of 6" schedule 40 steel pipe. This will include welding open roots, fill and cover passes using the cup walking technique in a 1G position.

Aid Code: 10 - undefined.

Complete Course Listing

442-106 Pipe Welding - Gas Tungsten Arc Welding 2

Credits: 0.05-1

This class covers GTAW welding of 6" schedule 40 steel pipe. This will include welding open roots, fill and cover passes using the cup walking technique in a 5G position.

Aid Code: 10 - undefined.

Co-requisites: (442-105)

Complete Course Listing

442-107 Pipe Welding - Gas Tungsten Arc Welding 3

Credits: 0.05-1

This class covers GTAW welding of 6" schedule 40 steel pipe. This will include welding open roots, fill and cover passes using the cup walking technique in a 2G position.

Aid Code: 10 - undefined.

Pre-requisites: (442-106)

Complete Course Listing

442-108 Pipe Welding - Gas Tungsten Arc Welding 4

Credits: 0.05-1

This class covers GTAW welding of 6" schedule 40 steel pipe. This will include welding open roots, fill and cover passes using the cup walking technique in a 2G position.

Aid Code: 10 - undefined.

Complete Course Listing

442-109 Mechanics of Learning for Welding

Credits: 0.05-1

This course provides learners with strategies to develop study skills for success in college and the Welding Program. Through hands-on experience, learners apply study skills, learn how to think critically, and use information resources and technology. Focus will be on the use of college resources, goal setting, time management, flexible learning success strategies, and BTC Welding Program processes and procedures. Students will complete this course prior to starting other program welding courses.

Aid Code: 10 - undefined.

Complete Course Listing

442-116 Welding Metal Fabrication

Credits: 0.05-1

This course is designed to provide students with the knowledge and skills required to fabricate simple projects or parts of a project found on engineering drawings. The use and care of fabricating tools, along with safety, is stressed.

Aid Code: 10 - undefined.

Pre-requisites: (442-113)

Complete Course Listing

442-117 Welding Metal Fabrication 2

Credits: 0.05-1

This course is designed to teach proper layout, fitment and tacking of complex projects found on engineering drawings. Students will assemble advanced weldments and use welding skills learned in previous welding classes to build those weldments in position and within tolerances listed on the drawing.

Aid Code: 10 - undefined.

Pre-requisites: (442-116)

Complete Course Listing

442-118 GTAW Stainless Steel 1

Credits: 0.05-1

This course covers Gas Tungsten Arc Welding equipment and welding procedures for producing fillet welds on stainless steel plates in the flat and horizontal positions. Students will also clean and polish their completed weldments.

Aid Code: 10 - undefined.

Complete Course Listing

442-119 GTAW Stainless Steel 2

Credits: 0.05-1

This course covers Gas Tungsten Arc Welding (GTAW) equipment and welding procedures for producing fillet welds in the vertical position on stainless steel plates and in all positions on structural shapes fitted to plate. Students will also clean and polish their completed weldments.

Aid Code: 10 - undefined.

Complete Course Listing

442-120 GTAW Stainless Steel 3

Credits: 0.05-1

This course covers Gas Tungsten Arc Welding (GTAW) equipment and welding procedures for producing fillet welds in the overhead position on stainless steel plates and structural shapes fitted to plate. Students will also clean and polish their completed weldments.

Aid Code: 10 - undefined.

Complete Course Listing

442-121 GTAW Stainless Steel 4

Credits: 0.05-1

This course covers Gas Tungsten Arc Welding (GTAW) equipment and welding procedures for producing groove welds in the flat and horizontal positions on stainless steel plates and structural shapes. Students will also clean and polish their completed weldments.

Aid Code: 10 - undefined.

Complete Course Listing

442-122 GTAW Stainless Steel 5

Credits: 0.05-1

This course covers Gas Tungsten Arc Welding (GTAW) equipment and welding procedures for producing groove welds in the vertical and overhead positions on stainless steel plates and in all positions on structural shapes. Students will also clean and polish their completed weldments.

Aid Code: 10 - undefined.

Complete Course Listing

442-123 GTAW Stainless Steel 6

Credits: 0.05-1

This course uses skills developed in previous Gas Tungsten Arc Welding courses to produce a weldment from stainless steel following procedures and prints.

Aid Code: 10 - undefined.

Complete Course Listing

442-124 GTAW Pipe Welding 1 – Stainless Steel

Credits: 0.05-1

This course covers equipment, consumables and machine settings needed to produce welds in Schedule 40 stainless steel pipe. Students will learn to produce groove welds on schedule 40 stainless steel pipe in the 1G position using GTAW.

Aid Code: 10 - undefined.

Complete Course Listing

442-125 GTAW Pipe Welding 2 – Stainless Steel

Credits: 0.05-1

This course will teach students to produce groove welds on schedule 40 stainless steel pipe in the 2G position using GTAW.

Aid Code: 10 - undefined.

Complete Course Listing

442-126 GTAW Pipe Welding 3 – Stainless Steel

Credits: 0.05-1

This course will teach students to produce groove welds on schedule 40 stainless steel pipe in the 5G position using GTAW.

Aid Code: 10 - undefined.

Complete Course Listing

442-127 GTAW Pipe Welding 4 – Stainless Steel

Credits: 0.05-1

This course will teach students to produce groove welds on schedule 40 stainless steel pipe in the 6G position using GTAW.

Aid Code: 10 - undefined.

Complete Course Listing

442-128 GTAW Stainless Sanitary Tube Welding 1**Credits:** 0.05-1

This course covers equipment, consumables and machine settings needed to produce welds in stainless steel sanitary tubing. Students will learn to produce groove welds on .065" wall stainless steel tubing with no filler metal in the 1G position using GTAW.

Aid Code: 10 - undefined.

Complete Course Listing

442-129 GTAW Stainless Sanitary Tube Welding 2**Credits:** 0.05-1

This course will teach students to produce groove welds on .065" wall stainless steel tubing with no filler metal in the 2G position using GTAW.

Aid Code: 10 - undefined.

Complete Course Listing

442-130 GTAW Stainless Sanitary Tube Welding 3**Credits:** 0.05-1

This course will teach students to produce groove welds on .065" wall stainless steel tubing with no filler metal in the 5G position using GTAW.

Aid Code: 10 - undefined.

Complete Course Listing

442-131 GTAW Stainless Sanitary Tube Welding 4**Credits:** 0.05-1

This course will teach students to produce groove welds on .065" wall stainless steel tubing with no filler metal in the 6G position using GTAW.

Aid Code: 10 - undefined.

Complete Course Listing

442-132 GMAW Stainless Steel 1**Credits:** 0.05-1

This course covers Gas Metal Arc Welding (GMAW) equipment and welding procedures for producing fillet welds on stainless steel plates in the flat and horizontal positions. Students will also clean and polish their completed weldments.

Aid Code: 10 - undefined.

Complete Course Listing

442-133 GMAW Stainless Steel 2**Credits:** 0.05-1

This course covers Gas Metal Arc Welding (GMAW) equipment and welding procedures for producing fillet welds in the vertical position on stainless steel plates and in all positions on structural shapes fitted to plate. Students will also clean and polish their completed weldments.

Aid Code: 10 - undefined.

Complete Course Listing

442-134 GMAW Stainless Steel 3**Credits:** 0.05-1

This course covers Gas Metal Arc Welding (GMAW) equipment and welding procedures for producing fillet welds in the overhead position on stainless steel plates and structural shapes fitted to plate. Students will also clean and polish their completed weldments.

Aid Code: 10 - undefined.

Complete Course Listing

442-135 GMAW Stainless Steel 4**Credits:** 0.05-1

This course covers Gas Metal Arc Welding (GMAW) equipment and welding procedures for producing groove welds in the flat and horizontal positions on stainless steel plates and structural shapes. Students will also clean and polish their completed weldments.

Aid Code: 10 - undefined.

Complete Course Listing

442-136 GMAW Stainless Steel 5**Credits:** 0.05-1

This course covers Gas Metal Arc Welding (GMAW) equipment and welding procedures for producing groove welds in the vertical and overhead positions on stainless steel plates and in all positions on structural shapes. Students will also clean and polish their completed weldments.

Aid Code: 10 - undefined.

Complete Course Listing

442-137 GMAW Stainless Steel 6**Credits:** 0.05-1

This course uses skills developed in previous Gas Metal Arc Welding courses to produce a weldment from stainless steel following procedures and prints.

Aid Code: 10 - undefined.

Complete Course Listing

442-139 Metal Finishing-General Fabrication**Credits:** 0.05-1

This course covers metal finishing that occurs after welding. Students will learn to identify grades of finishes as well as the proper equipment needed to achieve those finishes. Students will learn to finish welds mechanically with hand held power tools.

Aid Code: 10 - undefined.

Complete Course Listing

442-140 Metal Finishing-Food Grade

Credits: 0.05-1

This course covers metal finishing that occurs after welding in the food industry. Students will learn to identify grades of finishes as well as the proper equipment needed to achieve those finishes. Students will learn to finish welds mechanically with hand held power tools to achieve finishes that are acceptable by food grade standards.

Aid Code: 10 - undefined.

Complete Course Listing

442-141 Welding Shop Safety

Credits: 0.5-1

This course will familiarize students with all necessary national safety rules and regulations of the welding industry, in addition to personal protective equipment and machine operation.

Aid Code: 10 - undefined.

Co-requisites: (442-109)

Complete Course Listing

442-142 Introduction to Welding

Credits: 0.5-1

The introduction to welding course will introduce students to the history of welding, basic metallurgy, weld defects and discontinuities, codes and standards and common welding processes and practices.

Aid Code: 10 - undefined.

Co-requisites: (620-165 or 442-141 or 442-317)

Complete Course Listing

442-143 Shielded Metal Arc Welding 1

Credits: 0.5-1

This course examines the theory and operation of Shielded Metal Arc Welding (SMAW). Safety protocols are reviewed and practiced. Proper machine settings and common filler metals are used to produce flat position welds on carbon steel. Summer 2022 Welding Lab Hours will be shared by the program faculty.

Aid Code: 10 - undefined.

Co-requisites: (442-318 or 442-142)

Complete Course Listing

442-144 Shielded Metal Arc Welding 2

Credits: 0.5-1

This course examines the theory and operation of Shielded Metal Arc Welding (SMAW). Safety protocols are reviewed and practiced. Proper machine settings and common filler metals are used to produce horizontal position welds on carbon steel.

Aid Code: 10 - undefined.

Co-requisites: (442-336 or 442-143)

Complete Course Listing

442-145 Shielded Metal Arc Welding 3

Credits: 0.5-1

This course examines the theory and operation of Shielded Metal Arc Welding (SMAW). Safety protocols are reviewed and practiced. Proper machine settings and common filler metals are used to produce vertical position welds on carbon steel.

Aid Code: 10 - undefined.

Co-requisites: (442-337 or 442-144)

Complete Course Listing

442-146 Shielded Metal Arc Welding 4

Credits: 0.5-1

This course examines the theory and operation of Shielded Metal Arc Welding (SMAW). Safety protocols are reviewed and practiced. Proper machine settings and common filler metals are used to produce overhead position welds on carbon steel.

Aid Code: 10 - undefined.

Co-requisites: (442-338 or 442-145)

Complete Course Listing

442-147 Shielded Metal Arc Welding 5

Credits: 0.05-1

This course applies the theory and operation of Shielded Metal Arc Welding (SMAW) learned in prior courses through completion of projects. Safety protocols are reviewed and practiced. Summer 2022 Welding Lab Hours will be shared by the program faculty.

Aid Code: 10 - undefined.

Co-requisites: (442-339 or 442-146)

Complete Course Listing

442-148 Flux Cored Arc Welding 1

Credits: 0.5-1

This course examines the theory and practical operation of Flux Cored Arc Welding (FCAW). Safety protocols are reviewed and practiced. Proper machine settings and filler metals are used to produce flat position welds on carbon steel using Gas Shielded and Self Shielded FCAW.

Aid Code: 10 - undefined.

Co-requisites: (442-118 or 442-142)

Complete Course Listing

442-149 Flux Cored Arc Welding 2

Credits: 0.5-1

This course examines the theory and practical operation of Flux Cored Arc Welding (FCAW). Safety protocols are reviewed and practiced. Proper machine settings and filler metals are used to produce horizontal position welds on carbon steel using Gas Shielded and Self Shielded FCAW.

Aid Code: 10 - undefined.

Co-requisites: (442-331 or 442-148)

Complete Course Listing

442-150 Flux Cored Arc Welding 3**Credits:** 0.5-1

This course examines the theory and practical operation of Flux Cored Arc Welding (FCAW). Safety protocols are reviewed and practiced. Proper machine settings and filler metals are used to produce vertical position welds on carbon steel using Gas Shielded and Self Shielded FCAW.

Aid Code: 10 - undefined.**Co-requisites:** (442-332 or 442-149)

Complete Course Listing

442-151 Flux Cored Arc Welding 4**Credits:** 0.5-1

This course examines the theory and practical operation of Flux Cored Arc Welding (FCAW). Safety protocols are reviewed and practiced. Proper machine settings and filler metals are used to produce overhead position welds on carbon steel using Gas Shielded and Self Shielded FCAW.

Aid Code: 10 - undefined.**Co-requisites:** (442-333 or 442-150)

Complete Course Listing

442-152 Flux Cored Arc Welding 5**Credits:** 0.5-1

This course applies the theory and operation of Flux Cored Arc Welding (FCAW) learned in prior courses through completion of projects. Safety protocols are reviewed and practiced.

Aid Code: 10 - undefined.**Co-requisites:** (442-334 or 442-151)

Complete Course Listing

442-153 Welding Blueprint Reading 1**Credits:** 0.05-1

This course covers blueprint reading specific to the welding industry. Students examine and define welding symbols and abbreviations used on welding specific blueprints.

Aid Code: 10 - undefined.**Co-requisites:** (442-318 or 442-109)

Complete Course Listing

442-154 Thermal Cutting**Credits:** 0.5-1

Students will perform oxy-fuel cutting set up and operations, line burner operation, plasma cutting operations, carbon arc cutting and gouging and coupon preparations used for practice and testing.

Aid Code: 10 - undefined.**Co-requisites:** (442-318 or 442-142)

Complete Course Listing

442-155 Gas Metal Arc Welding 1**Credits:** 0.5-1

This course examines Gas Metal Arc Welding (GMAW) machine settings, theory, filler metals, polarities, safety protocol and welding process. Students will make welds in the flat position on carbon steel.

Aid Code: 10 - undefined.**Co-requisites:** (442-343 or 442-142)

Complete Course Listing

442-156 Gas Metal Arc Welding 2**Credits:** 0.5-1

This course examines Gas Metal Arc Welding (GMAW) machine settings, theory, filler metals, polarities, safety protocol and welding process. Students will make welds in the horizontal position on carbon steel.

Aid Code: 10 - undefined.**Co-requisites:** (442-320 or 442-155)

Complete Course Listing

442-157 Gas Metal Arc Welding 3**Credits:** 0.5-1

This course examines Gas Metal Arc Welding (GMAW) machine settings, theory, filler metals, polarities, safety protocol and welding process. Students will make welds in the vertical position on carbon steel.

Aid Code: 10 - undefined.**Co-requisites:** (442-321 or 442-156)

Complete Course Listing

442-158 Gas Metal Arc Welding 4**Credits:** 0.5-1

This course examines Gas Metal Arc Welding (GMAW) machine settings, theory, filler metals, polarities, safety protocol and welding process. Students will make welds in the overhead position on carbon steel.

Aid Code: 10 - undefined.**Co-requisites:** (442-322 or 442-157)

Complete Course Listing

442-159 Gas Metal Arc Welding 5**Credits:** 0.5-1

This course examines Pulsed Gas Metal Arc Welding (GMAW-P) machine settings, theory, filler metals, safety protocol and welding process. Students will make welds in the flat position on carbon steel.

Aid Code: 10 - undefined.**Co-requisites:** (442-323 or 442-158)

Complete Course Listing

442-160 Gas Metal Arc Welding 6

Credits: 0.5-1

This course examines Pulsed Gas Metal Arc Welding (GMAW-P) machine settings, theory, filler metals, safety protocol and welding process. Students will make welds in the horizontal and vertical positions on carbon steel.

Aid Code: 10 - undefined.

Co-requisites: (442-324 or 442-159)

Complete Course Listing

442-161 Gas Tungsten Arc Welding 1

Credits: 0.5-1

This course covers Gas Tungsten Arc Welding (GTAW) machine settings, theory, filler metals, polarities, safety protocol and welding process. Students will make flat position welds on carbon steel.

Aid Code: 10 - undefined.

Co-requisites: (442-318 or 442-142)

Complete Course Listing

442-162 Gas Tungsten Arc Welding 2

Credits: 0.5-1

This course covers Gas Tungsten Arc Welding (GTAW) machine settings, theory, filler metals, polarities, safety protocol and welding process. Students will make horizontal position welds on carbon steel.

Aid Code: 10 - undefined.

Co-requisites: (442-326 or 442-161)

Complete Course Listing

442-163 Gas Tungsten Arc Welding 3

Credits: 0.5-1

This course covers Gas Tungsten Arc Welding (GTAW) machine settings, theory, filler metals, polarities, safety protocol and welding process. Students will make vertical position welds on carbon steel.

Aid Code: 10 - undefined.

Co-requisites: (442-327 or 442-162)

Complete Course Listing

442-164 Gas Tungsten Arc Welding 4

Credits: 0.5-1

This course covers Gas Tungsten Arc Welding (GTAW) machine settings, theory, filler metals, polarities, safety protocol and welding process. Students will make flat and horizontal position welds on aluminum.

Aid Code: 10 - undefined.

Co-requisites: (442-328 or 442-163)

Complete Course Listing

442-165 Gas Tungsten Arc Welding 5

Credits: 0.5-1

This course covers Gas Tungsten Arc Welding (GTAW) machine settings, theory, filler metals, polarities, safety protocol and welding process. Students will make vertical position welds on aluminum.

Aid Code: 10 - undefined.

Co-requisites: (442-329 or 442-164)

Complete Course Listing

442-166 Welding Certification

Credits: 0.5-1

This course covers destructive and non-destructive testing methods and welding procedure creation and implementation as it relates to welding code work. Participants will write a procedure, fabricate, weld and test two pre-qualified specimens in accordance with a specified welding code.

Aid Code: 10 - undefined.

Co-requisites: (442-330 or 442-165) and (442-335 or 442-152) and (442-340 or 442-147) and (442-325 or 442-160)

Complete Course Listing

442-167 Advanced Welding Techniques

Credits: 0.5-1

Students construct various welding projects in accordance with the American Welding Society (AWS) SENCE program and EG2.0.

Aid Code: 10 - undefined.

Co-requisites: (442-341 or 442-166)

Complete Course Listing

442-168 Welding Blueprint Reading 2

Credits: 0.05-1

This course covers the fundamentals of Blueprint reading. Students examine and analyze types of drawings, orthographic projection, library of lines, title block dimensions and produce sketching projects.

Aid Code: 10 - undefined.

Co-requisites: (442-343 or 442-153)

Complete Course Listing

442-169 FCAW-G and GMAW-S Welding

Credits: 0.05-1

This course examines Gas Metal Arc Welding Short Circuit Transfer and Flux Cored Arc Welding with Gas Shielding machine settings, theory, filler metals, polarities, safety protocol and welding processes. Students will make welds in the flat position on carbon steel.

Aid Code: 10 - undefined.

Complete Course Listing

442-170 Pipe Welding – GMAW-S and FCAW-G

Credits: 0.5-1

This class covers welding of 6" schedule 80 steel pipe with GMAW-S root passes and FCAW-G fill and cover passes in the 1 G position.

Aid Code: 10 - undefined.

Complete Course Listing

442-171 Pipe Welding - GTAW and SMAW**Credits:** 0.05-1

This class covers GTAW and SMAW welding of 2" and 6" steel pipe. This will include welding open roots, fill and cover passes in various positions.

Aid Code: 10 - undefined.

Complete Course Listing

442-317 Welding Shop Safety**Credits:** 0.5-1

This course will familiarize students with all necessary national safety rules and regulations of the welding industry, in addition to personal protective equipment and machine operation.

Aid Code: 31 - undefined.

Complete Course Listing

442-318 Introduction to Welding**Credits:** 0.5-1

The introduction to welding course will introduce students to the history of welding, basic metallurgy, weld defects and discontinuities, codes and standards and common welding processes and practices.

Aid Code: 31 - undefined.**Co-requisites:** (442-317 or 412-124 or 412-305 or 620-164)

Complete Course Listing

442-320 Gas Metal Arc Welding 1**Credits:** 0.5-1

This course examines Gas Metal Arc Welding (GMAW) machine settings, theory, filler metals, polarities, safety protocol and welding process. Students will make welds in the flat position on carbon steel.

Aid Code: 31 - undefined.**Co-requisites:** (442-343)

Complete Course Listing

442-321 Gas Metal Arc Welding 2**Credits:** 0.5-1

This course examines Gas Metal Arc Welding (GMAW) machine settings, theory, filler metals, polarities, safety protocol and welding process. Students will make welds in the horizontal position on carbon steel.

Aid Code: 31 - undefined.**Co-requisites:** (442-320)

Complete Course Listing

442-322 Gas Metal Arc Welding 3**Credits:** 0.5-1

This course examines Gas Metal Arc Welding (GMAW) machine settings, theory, filler metals, polarities, safety protocol and welding process. Students will make welds in the vertical position on carbon steel.

Aid Code: 31 - undefined.**Co-requisites:** (442-321)

Complete Course Listing

442-323 Gas Metal Arc Welding 4**Credits:** 0.5-1

This course examines Gas Metal Arc Welding (GMAW) machine settings, theory, filler metals, polarities, safety protocol and welding process. Students will make welds in the overhead position on carbon steel.

Aid Code: 31 - undefined.**Co-requisites:** (442-322)

Complete Course Listing

442-324 Gas Metal Arc Welding 5**Credits:** 0.5-1

This course examines Pulsed Gas Metal Arc Welding (GMAW-P) machine settings, theory, filler metals, safety protocol and welding process. Students will make welds in the flat position on carbon steel.

Aid Code: 31 - undefined.**Co-requisites:** (442-323)

Complete Course Listing

442-325 Gas Metal Arc Welding 6**Credits:** 0.5-1

This course examines Pulsed Gas Metal Arc Welding (GMAW-P) machine settings, theory, filler metals, safety protocol and welding process. Students will make welds in the horizontal and vertical positions on carbon steel.

Aid Code: 31 - undefined.**Co-requisites:** (442-324)

Complete Course Listing

442-326 Gas Tungsten Arc Welding 1**Credits:** 0.5-1

This course covers Gas Tungsten Arc Welding (GTAW) machine settings, theory, filler metals, polarities, safety protocol and welding process. Students will make flat position welds on carbon steel.

Aid Code: 31 - undefined.**Co-requisites:** (442-343)

Complete Course Listing

442-327 Gas Tungsten Arc Welding 2**Credits:** 0.5-1

This course covers Gas Tungsten Arc Welding (GTAW) machine settings, theory, filler metals, polarities, safety protocol and welding process. Students will make horizontal position welds on carbon steel.

Aid Code: 31 - undefined.**Co-requisites:** (442-326)

Complete Course Listing

442-328 Gas Tungsten Arc Welding 3

Credits: 0.5-1

This course covers Gas Tungsten Arc Welding (GTAW) machine settings, theory, filler metals, polarities, safety protocol and welding process. Students will make vertical position welds on carbon steel.

Aid Code: 31 - undefined.

Co-requisites: (442-327)

Complete Course Listing

442-329 Gas Tungsten Arc Welding 4

Credits: 0.5-1

This course covers Gas Tungsten Arc Welding (GTAW) machine settings, theory, filler metals, polarities, safety protocol and welding process. Students will make flat and horizontal position welds on aluminum.

Aid Code: 31 - undefined.

Co-requisites: (442-328)

Complete Course Listing

442-330 Gas Tungsten Arc Welding 5

Credits: 0.5-1

This course covers Gas Tungsten Arc Welding (GTAW) machine settings, theory, filler metals, polarities, safety protocol and welding process. Students will make vertical position welds on aluminum.

Aid Code: 31 - undefined.

Co-requisites: (442-329)

Complete Course Listing

442-331 Flux Cored Arc Welding 1

Credits: 0.5-1

This course examines the theory and practical operation of Flux Cored Arc Welding (FCAW). Safety protocols are reviewed and practiced. Proper machine settings and filler metals are used to produce flat position welds on carbon steel using Gas Shielded and Self Shielded FCAW.

Aid Code: 31 - undefined.

Pre-requisites: (442-318)

Complete Course Listing

442-332 Flux Cored Arc Welding 2

Credits: 0.5-1

This course examines the theory and practical operation of Flux Cored Arc Welding (FCAW). Safety protocols are reviewed and practiced. Proper machine settings and filler metals are used to produce horizontal position welds on carbon steel using Gas Shielded and Self Shielded FCAW.

Aid Code: 31 - undefined.

Co-requisites: (442-331)

Complete Course Listing

442-333 Flux Cored Arc Welding 3

Credits: 0.5-1

This course examines the theory and practical operation of Flux Cored Arc Welding (FCAW). Safety protocols are reviewed and practiced. Proper machine settings and filler metals are used to produce vertical position welds on carbon steel using Gas Shielded and Self Shielded FCAW.

Aid Code: 31 - undefined.

Co-requisites: (442-332)

Complete Course Listing

442-334 Flux Cored Arc Welding 4

Credits: 0.5-1

This course examines the theory and practical operation of Flux Cored Arc Welding (FCAW). Safety protocols are reviewed and practiced. Proper machine settings and filler metals are used to produce overhead position welds on carbon steel using Gas Shielded and Self Shielded FCAW.

Aid Code: 31 - undefined.

Co-requisites: (442-333)

Complete Course Listing

442-335 Flux Cored Arc Welding 5

Credits: 0.5-1

This course applies the theory and operation of Flux Cored Arc Welding (FCAW) learned in prior courses through completion of projects. Safety protocols are reviewed and practiced.

Aid Code: 31 - undefined.

Co-requisites: (442-334)

Complete Course Listing

442-336 Shielded Metal Arc Welding 1

Credits: 0.5-1

This course examines the theory and operation of Shielded Metal Arc Welding (SMAW). Safety protocols are reviewed and practiced. Proper machine settings and common filler metals are used to produce flat position welds on carbon steel.

Aid Code: 31 - undefined.

Pre-requisites: (442-318)

Complete Course Listing

442-338 Shielded Metal Arc Welding 3

Credits: 0.5-1

This course examines the theory and operation of Shielded Metal Arc Welding (SMAW). Safety protocols are reviewed and practiced. Proper machine settings and common filler metals are used to produce vertical position welds on carbon steel.

Aid Code: 31 - undefined.

Co-requisites: (442-337)

Complete Course Listing

442-340 Shielded Metal Arc Welding 5**Credits:** 0.5-1

This course applies the theory and operation of Shielded Metal Arc Welding (SMAW) learned in prior courses through completion of projects. Safety protocols are reviewed and practiced.

Aid Code: 31 - undefined.**Co-requisites:** (442-339)

Complete Course Listing

442-342 Advanced Welding Techniques**Credits:** 0.05-1

Students construct various welding projects in accordance with the American Welding Society (AWS) SENCE program and EG2.0.

Aid Code: 31 - undefined.**Co-requisites:** (442-341)

Complete Course Listing

442-343 Welding Blueprint Reading 1**Credits:** 0.05-1

This course covers the fundamentals of Blueprint reading. Students examine and analyze types of drawings, orthographic projection, library of lines, title block dimensions and produce sketching projects.

Aid Code: 31 - undefined.**Co-requisites:** (442-318)

Complete Course Listing

442-345 Structural Fab Welding 1**Credits:** 0.5-1

This course covers the fundamentals of structural steel fabrication for the welding industry. Included in this course is safety, introduction to structural fabrication equipment and techniques.

Aid Code: 31 - undefined.**Pre-requisites:** (442-319)

Complete Course Listing

442-352 Thermal Cutting**Credits:** 0.5-1

Students will perform oxy-fuel cutting set up and operations, line burner operation, plasma cutting operations, carbon arc cutting and gouging and coupon preparations used for practice and testing.

Aid Code: 31 - undefined.**Co-requisites:** (442-318)

Complete Course Listing

442-409 Intro to Welding-24**Credits:** 2.4

This course will introduce students to the history of welding, basic metallurgy, weld defects, and discontinuities, codes and standards and common welding processes and practices.

Aid Code: 47 - undefined.

Complete Course Listing

442-410 Fund of Welding I-Arc or Gas**Credits:** 0.1-4**Aid Code:** 47 - undefined.

Complete Course Listing

442-411 Fund of Welding II-Mig/Tig**Credits:** 0.1-8**Aid Code:** 47 - undefined.

Complete Course Listing

442-412 Welding Open**Credits:** 0.1-4**Aid Code:** 47 - undefined.

Complete Course Listing

442-413 Welding II**Credits:** 0.1-4**Aid Code:** 47 - undefined.

Complete Course Listing

442-414 Welding-Plumbers**Credits:** 0.1-3.2**Aid Code:** 47 - undefined.

Complete Course Listing

442-415 Welding-Steamfitters**Credits:** 0.1-4**Aid Code:** 47 - undefined.

Complete Course Listing

442-416 Welding-Plumbers & Fitters**Credits:** 0.2-4**Aid Code:** 47 - undefined.

Complete Course Listing

442-417 Welding-Open**Credits:** 2.5

Update your skills with individualized instruction in the principles of Welding Techniques and process related to various materials. Welding safety is emphasized. Please note that this course requires the student to sign the ACKNOWLEDGEMENT OF RISK/ACCEPTANCE OF RESPONSIBILITY AGREEMENT AND RELEASE form prior to engaging in course activities.

Aid Code: 47 - undefined.

Complete Course Listing

442-418 Welding Certification-Prep

Credits: 0.2-6

Aid Code: 47 - undefined.

Complete Course Listing

442-421 Garage and Repair Welding-12

Credits: 1.2

This course is designed for students with basic welding knowledge and who may have basic welding equipment at home but have questions on how to use it for projects throughout their workshop/garage and home.

Aid Code: 47 - undefined.

Complete Course Listing

442-422 Intro to Welding-3

Credits: .3

This course will allow students to explore welding by teaching them welding safety, and basic welds and techniques.

Aid Code: 47 - undefined.

Complete Course Listing

442-510 Welding Plumbers

Credits: 0.05-1

Aid Code: 50 - undefined.

Complete Course Listing

442-511 Print Reading, Math, Cutting & Inspection

Credits: 1-2

The program configuration model for the Welder Fabricator apprenticeship related instruction provides xx semesters of coursework and the Transition-to-Trainer course in the last year. Courses listed here were developed by instructors and subject matter experts from industry. Each semester includes 72 hours of instruction (4 hours per week, or the equivalent, each term).

Aid Code: 50 - undefined.

Complete Course Listing

442-513 Advanced Fabrication and Layout with Soldering and Brazing

Credits: 1-2

The program configuration model for the Welder Fabricator apprenticeship related instruction provides xx semesters of coursework and the Transition-to-Trainer course in the last year. Courses listed here were developed by instructors and subject matter experts from industry. Each semester includes 72 hours of instruction (4 hours per week, or the equivalent, each term).

Aid Code: 50 - undefined.

Complete Course Listing

442-515 Welding & Fabrication Troubleshooting

Credits: 1-2

The program configuration model for the Welder Fabricator apprenticeship related instruction provides xx semesters of coursework and the Transition-to-Trainer course in the last year. Courses listed here were developed by instructors and subject matter experts from industry. Each semester includes 72 hours of instruction (4 hours per week, or the equivalent, each term).

Aid Code: 50 - undefined.

Complete Course Listing

442-522 Layout & Fabrication Basics with SMAW and GMAW Welding

Credits: 1-2

The program configuration model for the Welder Fabricator apprenticeship related instruction provides xx semesters of coursework and the Transition-to-Trainer course in the last year. Courses listed here were developed by instructors and subject matter experts from industry. Each semester includes 72 hours of instruction (4 hours per week, or the equivalent, each term).

Aid Code: 50 - undefined.

Complete Course Listing

442-524 Metallurgy & FCAW and GTAW Welding

Credits: 1-2

The program configuration model for the Welder Fabricator apprenticeship related instruction provides xx semesters of coursework and the Transition-to-Trainer course in the last year. Courses listed here were developed by instructors and subject matter experts from industry. Each semester includes 72 hours of instruction (4 hours per week, or the equivalent, each term).

Aid Code: 50 - undefined.

Complete Course Listing

442-526 Introduction to Automation, CNC and Lean Manufacturing

Credits: 1-2

The program configuration model for the Welder Fabricator apprenticeship related instruction provides xx semesters of coursework and the Transition-to-Trainer course in the last year. Courses listed here were developed by instructors and subject matter experts from industry. Each semester includes 72 hours of instruction (4 hours per week, or the equivalent, each term).

Aid Code: 50 - undefined.

Complete Course Listing

442-600 Beginning Art Welding-6

Credits: .6

This course will introduce students to basic welding techniques as they complete an instructor-designed art welding project.

Aid Code: 60 - undefined.

Complete Course Listing

442-601 The World of Welding**Credits:** 1.8

This course will introduce students to the basic of welding, with an overview of four most common types of welding. At the end of the course students will create a project using what they have learned.

Aid Code: 60 - undefined.[Complete Course Listing](#)**442-602 Intermediate Art Welding-6****Credits:** .6

This course will introduce the students to more advanced welding techniques as they complete an instructor-designed art welding project.

Aid Code: 60 - undefined.[Complete Course Listing](#)