WELDING (442)

442-105 Pipe Welding - Gas Tungsten Arc Welding 1
Credits: 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 - Associate Degree.
Complete Course Listing

442-107 Pipe Welding - Gas Tungsten Arc Welding 3
Credits: 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: 31 - One-year Technical Diploma.
Pre-requisites: (442-106)
Complete Course Listing

442-108 Pipe Welding - Gas Tungsten Arc Welding 4
Credits: 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 - Associate Degree.
Complete Course Listing

442-307 Gas Metal Arc Welding (GMAW)
Credits: 5

This is an introductory course designed for students who desire to learn the theories and skills of welding. The theoretical principals learned in Welding Processes & Safety are put into practice. Students will learn to make sound welds with the Gas Metal Arc process (GMAW) on mild steel in all positions using short circuiting transfer mode. Students will also make sound welds in the Spray Transfer Mode on mild steel in the flat and horizontal positions. Industry standards and codes will be explored as visual and destructive testing of welded samples are carried out by students as an introduction to aspects of weld quality assurance and weld quality control. Health hazards and safety rules are discussed along with grinding, shearing, joint design and welding certification procedures.
Aid Code: 31 - One-year Technical Diploma.
Restrictions: Restricted to students admitted to Welding Program.
Co-requisites: (804-306)
Complete Course Listing

442-308 Flux Cored Arc Welding (FCAW)
Credits: 5

This is an introductory course designed for students who desire to learn the theories and skills of welding. The theoretical principals learned in Welding Processes & Safety are put into practice. Students will learn to make sound welds with the Flux Cored Arc Welding process (FCAW) and Metal Cored Arc Welding Process (MCAW) on mild steel in all positions using short circuiting, spray and semi-spray transfer modes. Industry standards and codes will be explored as visual and destructive testing of welded samples are carried out by students as an introduction to aspects of weld quality assurance and weld quality control. Health hazards and safety rules are discussed along with grinding, shearing, joint design and welding certification procedures. Library research, written assignments and tests, and basic metallurgy and certification preparation are all units of instruction involved in the above areas.
Aid Code: 31 - One-year Technical Diploma.
Restrictions: Restricted to students admitted to Welding Program.
Co-requisites: (804-306)
Complete Course Listing

442-310 Shielded Metal Arc Weld (SMAW)
Credits: 5

This is an introductory course designed for students who desire to learn the theories and skills of welding. The theoretical principals learned in Industrial Welding Procedures-Codes & Specifications are put into practice. Students will learn to make sound welds with the Shielded Metal Arc Welding Process (SMAW) on mild steel in all positions with non low hydrogen electrodes such as E6010, E6011, E6013, and E7014. Health hazards and safety rules are discussed along with metal weldability, electrode classification and weld inspection. Industry standards and codes will be explored as visual and destructive testing of welded samples are carried out by students as an introduction to aspects of weld quality assurance and weld quality control. Library research, written assignments and tests, and basic metallurgy and certification preparation are all units of instruction involved in the above areas.
Aid Code: 31 - One-year Technical Diploma.
Restrictions: Restricted to students admitted to Welding Program.
Co-requisites: (804-306) and (801-311)
Complete Course Listing

442-312 Gas Tungsten Arc Weld (GTAW)
Credits: 5

This is an introductory course designed for students who desire to learn the theories and skills of welding. The theoretical principals learned in Industrial Welding Procedures - Codes & Specifications are put into practice. Students will learn to make sound welds with the Gas Tungsten Arc Welding Process (GTAW) on mild steel, stainless steel and aluminum alloys. Industry standards and codes will be explored as visual and destructive testing of welded samples are carried out by students as an introduction to aspects of weld quality assurance and weld quality control. Health hazards and safety rules are discussed along with weldability, tungsten electrode selection, shielded gasses, grinding, shearing, joint design and welding certification procedures. Library research, written assignments and tests, basic metallurgy and certifi cation preparation are all units of instruction involved in the above areas.
Aid Code: 31 - One-year Technical Diploma.
Restrictions: Restricted to students admitted to Welding Program.
Co-requisites: (804-306) and (801-311)
Complete Course Listing

442-315 Metal Fabrication-Structural
Credits: 3

This course is designed to include basic light and heavy duty structural steel fabrication skills. The class will link the student's understanding of welding processes with real world fabrication techniques used in the industry today. The class will introduce a variety of skills needed to perform in today's fast pace and highly skilled work force that will include, tools of the trade, measuring, cutting and bolting principals, layout and design, drilling, bending, shaping and actual construction of light and heavy duty structural steel projects. This class will also involve exposure to riveting, automated CNC cutting equipment, basic manufacturing principals, and promotion of teamwork and communication skills as learners. Students will design, layout, and fabricate real projects.
Aid Code: 31 - One-year Technical Diploma.
Restrictions: Restricted to students admitted to Welding Program.
Co-requisites: (442-307 or 442-308 or 442-310 or 442-312)
Complete Course Listing

442-316 Metal Fabrication-Sheet Metal
Credits: 3

This course is designed to introduce the basic skills involved in the sheet metal fabrication industry. The class will involve design and layout, tools of the trade, measuring and location techniques, forming and "shaping" of sheet metal. The class will involve specialty equipment used in the aviation industry, the custom auto and motorcycle industry, food industry and other specialty sheet metal industries. This class will also include exposure to fastener types, riveting, CNC cutting equipment, and promotion of teamwork and communication skills required in this highly skilled industry. Some of the specialty tools presented will include English wheels, Shot bag and mallets, shrinking and stretching equipment, bead rollers and hammer's and dollies, the Pullmax machine and the techniques used with them. Students will design, layout and construct real sheet metal projects in groups and individually.
Aid Code: 31 - One-year Technical Diploma.
Co-requisites: (442-307 or 442-308 or 442-310 or 442-312)
Complete Course Listing

442-317 Welding Shop Safety
Credits: 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 - One-year Technical Diploma.
Complete Course Listing

442-318 Introduction to Welding
Credits: 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 - One-year Technical Diploma.
Co-requisites: (442-317)
Complete Course Listing

442-320 Gas Metal Arc Welding 1
Credits: 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 - One-year Technical Diploma.
Co-requisites: (442-343)
Complete Course Listing

442-321 Gas Metal Arc Welding 2
Credits: 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 - One-year Technical Diploma.
Co-requisites: (442-320)
Complete Course Listing

442-322 Gas Metal Arc Welding 3
Credits: 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 - One-year Technical Diploma.
Co-requisites: (442-321)
Complete Course Listing

442-323 Gas Metal Arc Welding 4
Credits: 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 - One-year Technical Diploma.
Co-requisites: (442-322)
Complete Course Listing

442-324 Gas Metal Arc Welding 5
Credits: 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 - One-year Technical Diploma.
Co-requisites: (442-323)
Complete Course Listing

442-325 Gas Metal Arc Welding 6
Credits: 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 - One-year Technical Diploma.
Co-requisites: (442-324)
Complete Course Listing

442-326 Gas Tungsten Arc Welding 1
Credits: 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 - One-year Technical Diploma.
Co-requisites: (442-343)
Complete Course Listing

442-327 Gas Tungsten Arc Welding 2
Credits: 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 - One-year Technical Diploma.
Co-requisites: (442-326)
Complete Course Listing

442-328 Gas Tungsten Arc Welding 3
Credits: 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 - One-year Technical Diploma.
Co-requisites: (442-327)
Complete Course Listing

442-329 Gas Tungsten Arc Welding 4
Credits: 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 - One-year Technical Diploma.
Co-requisites: (442-328)
Complete Course Listing

442-330 Gas Tungsten Arc Welding 5
Credits: 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 - One-year Technical Diploma.
Co-requisites: (442-329)
Complete Course Listing

442-331 Flux Cored Arc Welding 1
Credits: 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 - One-year Technical Diploma.
Pre-requisites: (442-118)
Complete Course Listing

442-332 Flux Cored Arc Welding 2
Credits: 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 - One-year Technical Diploma.
Co-requisites: (442-331)
Complete Course Listing

442-333 Flux Cored Arc Welding 3
Credits: 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 - One-year Technical Diploma.
Co-requisites: (442-332)
Complete Course Listing

442-334 Flux Cored Arc Welding 4
Credits: 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 - One-year Technical Diploma.
Co-requisites: (442-333)
Complete Course Listing

442-335 Flux Cored Arc Welding 5
Credits: 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 - One-year Technical Diploma.
Co-requisites: (442-334)
Complete Course Listing

442-336 Shielded Metal Arc Welding 1
Credits: 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 - One-year Technical Diploma.
Pre-requisites: (442-318)
Complete Course Listing

442-337 Shielded Metal Arc Welding 2
Credits: 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: 31 - One-year Technical Diploma.
Co-requisites: (442-336)
Complete Course Listing

442-338 Shielded Metal Arc Welding 3
Credits: 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 - One-year Technical Diploma.
Co-requisites: (442-337)
Complete Course Listing

442-339 Shielded Metal Arc Welding 4
Credits: 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: 31 - One-year Technical Diploma.
Co-requisites: (442-338)
Complete Course Listing

442-340 Shielded Metal Arc Welding 5
Credits: 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 - One-year Technical Diploma.
Co-requisites: (442-339)
Complete Course Listing

442-341 Welding Certification
Credits: 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: 31 - One-year Technical Diploma.
Co-requisites: (442-325) and (442-330) and (442-335) and (442-340)
Complete Course Listing

442-342 Advanced Welding Techniques
Credits: 1

Students construct various welding projects in accordance with the American Welding Society (AWS) SENCE program and EG2.0.
Aid Code: 31 - One-year Technical Diploma.
Co-requisites: (442-341)
Complete Course Listing

442-343 Welding Blueprint Reading 1
Credits: 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 - One-year Technical Diploma.
Co-requisites: (442-318)
Complete Course Listing

442-344 Welding Blueprint Reading 2
Credits: 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: 31 - One-year Technical Diploma.
Co-requisites: (442-343)
Complete Course Listing

442-345 Structural Fab Welding 1
Credits: 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 - One-year Technical Diploma.
Pre-requisites: (442-319)
Complete Course Listing

442-352
Credits: 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 - One-year Technical Diploma.
Co-requisites: (442-318)
Complete Course Listing

442-510
Credits: 1

Aid Code: 50 - Apprentice.
Complete Course Listing

442-511 Print Reading, Math, Cutting & Inspection
Credits: 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 - Apprentice.
Complete Course Listing

442-513 Advanced Fabrication and Layout with Soldering and Brazing
Credits: 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 - Apprentice.
Complete Course Listing

442-515 Welding & Fabrication Troubleshooting
Credits: 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 - Apprentice.
Complete Course Listing

442-522 Layout & Fabrication Basics with SMAW and GMAW Welding
Credits: 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 - Apprentice.
Complete Course Listing

442-524 Metallurgy & FCAW and GTAW Welding
Credits: 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 - Apprentice.
Complete Course Listing

442-526 Introduction to Automation, CNC and Lean Manufacturing
Credits: 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 - Apprentice.
Complete Course Listing