WELDING (WELD)

WELD 1115, Welding Fundamentals I (5 Credit Hours)
0 lecture hours per week, 10 lab hours per week, 10 contact hours per week
Introduces safety in the welding trade and includes methods, safety procedures, equipment setup, fuel gas types, flow rates, and techniques for oxyfuel cutting process, plasma arc cutting process, and air-carbon arc cutting and gouging processes.
Corequisite(s): CORE 1003 and WELD 1124

WELD 1124, SMAW I, Beads & Fillet Welds (4 Credit Hours)
1 lecture hours per week, 9 lab hours per week, 10 contact hours per week
Introduces the methods and procedures for preparing base metal for welding, as well as welding codes and provisions, discontinuities, examination practices, and weld procedure testing. Introduces the methods and procedures for setting up SMAW equipment (safety procedures, current characteristics, various kinds of SMAW equipment, maintenance); selection, classification, use, handling, and proper storage of electrodes for arc welding; and methods and procedures related to SMAW beads and fillet welding (safety procedures, equipment setup, how to strike an arc, and how to produce weave beads and stringer beads).
Corequisite(s): CORE 1003 and WELD 1115

WELD 1134, Welding Inspection and Welding Processes (4 Credit Hours)
0 lecture hours per week, 8 lab hours per week, 8 contact hours per week
Continues the safety, methods, and procedures of shielded metal arc welding (SMAW). Introduces special tools and measuring devices used for performing the techniques and procedures for joint fit-up and inspection. Introduces the method and procedures related to the SMAW groove welding process (safety procedures, welding joint preparation, specifications, identification of physical characteristics, mechanical properties, and cleaning techniques) of SMAW groove welds. Also includes the method and procedures of the SMAW open-root groove welding process (safety procedures and groove joint preparation). Students must pass each National Center for Construction Education and Research (NCCER) module exam with a score of 70% or higher to pass this course. This course requires a lab fee and a fee for NCCER module exams.
Prerequisite(s): CORE 1003, WELD 1115 and 1124.

Corequisite(s): WELD 1211 and WELD 1317

WELD 1211, Welding Fundamentals II (1 Credit Hour)
0 lecture hours per week, 2 lab hours per week, 2 contact hours per week
Covers additional fundamentals for success in more advanced welding techniques, including the structure and basic rules for applying information conveyed in welding symbols; reading and interpreting assembly and detail drawings (dimensional information, notes, bills of materials); physical and mechanical properties of common metals and alloys, metallurgical factors, and standard commercial shapes of steel used for fabrication and construction; and devices and methods for heating metal and measure temperature. Students must pass the National Center for Construction Education and Research (NCCER) module exams with a score of 70% or higher to pass this course. This course requires a lab fee and a fee for the NCCER module exams.
Prerequisite(s): CORE 1003, WELD 1115 and 1124.

Corequisite(s): WELD 1134 and WELD 1317

WELD 1317, SMAW III, Pipe 2G, 5G, 6G (7 Credit Hours)
1 lecture hours per week, 12 lab hours per week, 13 contact hours per week
Completes the three-course series for shielded metal arc welding (SMAW). Covers preparation of joints and performance of open root V-groove welds on pipe in all positions. Students must pass the National Center for Construction Education and Research (NCCER) module exam with a score of 70% or higher to pass this course. This course requires a lab fee and a fee for the NCCER module exam.
Prerequisite(s): CORE 1003, WELD 1115 and 1124.

Corequisite(s): WELD 1134 and WELD 1211

WELD 2227, GMAW and FCAW Plate (7 Credit Hours)
1 lecture hours per week, 12 lab hours per week, 13 contact hours per week
Covers equipment and set up, processes and related safety practices, techniques, and types of filler metals used for gas metal arc welding (GMAW) and flux-cored arc welding (FCAW). Includes instruction in fillet welds in the flat, vertical, horizontal, and overhead positions. Students must pass the National Center for Construction Education and Research (NCCER) module exams with a score of 70% or higher to pass this course. The course includes a lab fee and a fee for NCCER module exams.
Prerequisite(s): WELD 1134, 1211 and 1317.

Corequisite(s): WELD 2325

WELD 2233, GTAW Basic Multi Joint (3 Credit Hours)
6 lab hours per week, 6 contact hours per week
Provides an overview of the equipment, consumables (power sources, torches, nozzles, electrodes, shielding gases, and filler metals), and safety concerns associated with gas tungsten arch welding (GTAW). The first of three courses covering GTAW, this course Includes safety and efficiency considerations for the selection, preparation, and set up of GTAW equipment for producing various types of weld beads. Students must pass the National Center for Construction Education and Research (NCCER) module exams with scores of 70% or higher to pass this course. This course requires a lab fee and a fee to cover the NCCER module exams.
Prerequisite(s): WELD 2227 and 2325.

Corequisite(s): WELD 2336 and WELD 2343

WELD 2325, GMAW and FCAW Pipe 2G-5G-6G (5 Credit Hours)
0 lecture hours per week, 10 lab hours per week, 10 contact hours per week
Covers some basic concepts of open-root gas metal arc welding (GMAW) of pipe and describes how to prepare and perform open-root V-groove welds on medium- and thick-walled pipe in all positions. Students must pass the National Center for Construction Education and Research (NCCER) module exams with a score of 70% or higher to pass this course. This course requires a lab fee and a fee to cover the NCCER module exams.
Prerequisite(s): WELD 1134, 1211 and 1317.

Corequisite(s): WELD 2227

WELD 2336, GTAW Carbon Steel Pipe2G-5G-6G (6 Credit Hours)
1 lecture hours per week, 10 lab hours per week, 11 contact hours per week
Continues coverage of the utility of gas tungsten arc welding (GTAW). Includes consumables for carbon-steel pipe and covers welding of pipe joints in the 2G vertical fixed, 5G horizonal fixed, and 6G-45o fixed positions. Students must pass each National Center for Construction Education and Research (NCCER) module exam with a score of 70% or higher to pass this course. This course requires a lab fee and a fee for the NCCER module exam.
Prerequisite(s): WELD 2227 and 2325.

Corequisite(s): WELD 2233 and WELD 2343

WELD 2343, GTAW Low Alloy & SS Pipe (3 Credit Hours)
0 lecture hours per week, 6 lab hours per week, 6 contact hours per week
Concludes the series of courses covering gas tungsten arc welding (GTAW), with challenging materials. Covers the properties and unique characteristics of low alloy and stainless steel and the techniques for producing sound and reliable welds in a variety of positions. Students must pass the National Center for Construction Education and Research (NCCER) module exam with a score of 70% or higher to pass this course. This course requires a lab fee and a fee for the NCCER module exam.
Prerequisite(s): WELD 2227 and 2325.

Corequisite(s): WELD 2233 and WELD 2336