WELDING (WLDG)

WLDG 1412. INTRODUCTION TO FLUX CORED ARC WELDING (FCAW) (LECTURE 3, LAB 4). CREDIT 4. WECM.
An overview of terminology, safety procedures, and equipment set-up. Practice in performing T-joints, lap joints, and butt joints using Flux Cored Arc Welding (FCAW) equipment. Demonstrate equipment safety checks; identify Flux Cored Arc Welding (FCAW) equipment parts; demonstrate the procedures for running a continuous bead in the flat position; demonstrate the procedures for welding a butt joint, a T-joint, a lap joint, and an outside corner joint in the flat, horizontal, and overhead positions; and demonstrate the procedures for making an open butt v-groove weld. Prerequisite or co-requisite: WLDG 1430 with a grade of "C" or better in prerequisite course.

WLDG 1421. INTRODUCTION TO WELDING FUNDAMENTALS (LECTURE 3, LAB 4). CREDIT 4. WECM.
This is an introduction to the fundamentals of equipment used in oxyacetylene and arc welding, including welding and cutting safety, basic oxyacetylene welding and cutting, basic arc welding processes and basic metallurgy. Students will demonstrate safety procedures associated with oxyacetylene and arc process; perform basic welds using oxyacetylene and arc welding equipment; and identify ferrous and nonferrous metals.

WLDG 1425. INTRODUCTION TO OXY-FUEL WELDING AND CUTTING (LECTURE 3, LAB 4). CREDIT 4. WECM.
This is an introduction to oxy-fuel welding and cutting, including history and future in welding, safety, setup and maintenance of oxy-fuel welding, and cutting equipment and supplies. Students will describe or explain oxy-fuel welding and cutting safety procedures and identify and classify fuels and filler metals. Students will perform entry-level oxy-fuel welding and cutting operations and select proper equipment and materials.

WLDG 1430. INTRODUCTION TO GAS METAL ARC (GMAW) WELDING (LECTURE 3, LAB 4). CREDIT 4. WECM.
This course studies the principles of gas metal arc welding, setup and use of GMAW equipment, and safe use of tools/equipment. Instruction focuses on various joint designs. Students will describe welding positions with various joint designs on plate; describe safety rules and equipment used; describe the effects of welding parameters in GMAW; and understand safety rules, equipment used, and testing performed by visual inspection. Students will weld various types of structural material and diagnose welding problems and perform visual inspections.

WLDG 1434. INTRODUCTION TO GAS TUNGSTEN ARC (GTAW) WELDING (LECTURE 3, LAB 4). CREDIT 4. WECM.
This course is an introduction to the principles of gas tungsten arc welding (GTAW), setup and use of GTAW equipment, and safe use of tools and equipment. Welding instruction in various positions on joint designs. Students will describe various joint designs; describe safety rules and equipment; and describe the effects of welding parameters in GTAW; and will weld various structural materials.

WLDG 1435. INTRODUCTION TO PIPE WELDING (LECTURE 3, LAB 4). CREDIT 4. WECM.
This is an introduction to welding of pipe using the shielded metal arc welding process, including electrode selection, equipment setup, and safe shop practices. Emphasis is placed on weld positions 1G and 2G using various electrodes. Students will describe equipment and require pipe preparation and perform 1G and 2G welds using various electrodes. Prerequisite or co-requisite: WLDG 1457 with a grade of "C" or better in prerequisite course.

WLDG 1457. INTERMEDIATE SHIELDED METAL ARC (SMAW) WELDING (LECTURE 3, LAB 4). CREDIT 4. WECM.
This is a study of the production of various fillets and groove welds. Students will prepare specimens for testing in all test positions. Students will identify principles of arc welding; describe arc welding operations of fillet and groove joints; explain heat treatments of low alloy steels; and explain weld size and profiles. The student will prepare test plates; perform fillet welds in the overhead position; perform air carbon arc weld removal; perform bevel groove welds with backing plates in various positions; and demonstrate use of tools and equipment. Prerequisite or co-requisite: WLDG 1421 with a grade of "C" or better in prerequisite course.

WLDG 2406. INTERMEDIATE PIPE WELDING (LECTURE 3, LAB 4). CREDIT 4. WECM.
This is a comprehensive course on the welding of pipe using the shielded metal arc welding (SMAW) process. Position of welds will be 1G, 2G, 5G and 6G using various electrodes. Topics covered include electrode selection, equipment setup and safe shop practices. Students will describe equipment and require pipe preparation. Students will perform 1G, 2G, 5G and 6G welds using various electrodes. Prerequisite or co-requisite: WLDG 1435 with a grade of "C" or better in prerequisite course.

WLDG 2413. WELDING USING MULTIPLE PROCESSES (LECTURE 3, LAB 4). CREDIT 4. WECM.
This course provides instruction using layout tools and blueprint reading with demonstration and guided practices with some of the following welding processes: oxy-fuel gas cutting and welding, shield metal arc welding (SMAW), gas metal arc welding (GMAW), flux-cored arc welding (FCAW), gas tungsten arc welding (GTAW) or any other approved welding process. Prerequisite or co-requisite: WLDG 2451 Advanced Gas Tungsten Arc (TIG) Student will identify proper safety equipment and tools and identify and select the proper welding process for a given application. Student will demonstrate skills training using more than one approved welding process; demonstrate ability to analyze situations and make decisions using skills as taught concerning safety and electrode selections; and select the most economic and practical welding process for the given task. 2G, 5G and 6G on stainless steel pipe gas tungsten arc (TIG) welding. Prerequisite: WLDG 2451 with a grade of "C" or better.

WLDG 2451. ADVANCED GAS TUNGSTEN ARC (GTAW) WELDING (LECTURE 3, LAB 4). CREDIT 4. WECM.
Advanced GTAW welding, including welding in various positions and directions. Students will exhibit expertise in various welding positions; describe safety rules and equipment used; and describe the effects of welding parameters in GTAW. Students will weld various joint designs; diagnose welding problems; and perform visual inspection. Prerequisite or co-requisite: WLDG 1434 with a grade of "C" or better in prerequisite course.

WLDG 2453. ADVANCED PIPE WELDING (LECTURE 3, LAB 4). CREDIT 4. WECM.
Advanced topics involving welding of pipe using the shielded metal arc welding (SMAW) process. Topics include electrode selection, equipment setup, and safe shop practices. Emphasis on weld positions 5G and 6G using various electrodes. Students will describe equipment and required pipe preparation and perform 5G and 6G welds using various electrodes. Prerequisite or co-requisite: WLDG 2406 with a grade of "C" or better in prerequisite course.