

WELDING TECHNOLOGY (TECHNICAL AND INDUSTRIAL DIVISION)

WLDTC-120 INTRODUCTION TO WELDING (1-3 cr.) This course helps the student develop confidence and skills in the fundamentals of basic welding concepts. This involves welding with the SMAW and GMAW processes, gas welding, brazing, and flame cutting.

WLDTC-150 WELDING POWER SOURCES (1-2 cr.) Introduces various basic power sources used in welding industry. Students learn construction of power sources, how to obtain optimum performance from a power source, and how to troubleshoot a power source.

WLDTC-151 WELDING CODES FOR CERTIFICATIONS (1-2 cr.) Teaches working knowledge of various welding codes and welder certifications in common use in industry today. Students work from the AWS D1.1 to write a welding procedure qualification record, a prequalified welding procedure, a welding procedure specification, and a welder qualification record form. This will also assist student to take the Associate Certified Welding Inspector Exam.

WLDTC-152 QUALITY CONTROL FOR WELDING INSPECTION (1-2 cr.) Introduce students to quality control and inspection techniques common in industry. Quality assurance and quality control covered from employer and employee points of view. Weld inspection approached through destructive and non-destructive methods as prescribed in AWS D1.1, Unit 6.

WLDTC-153 BASIC ACETYLENE WELDING LAB (4 cr.) Shop practice in basic oxygen acetylene welding.

WLDTC-155 BASIC WELDING PROCESSES LAB (1-7 cr.) Lab practice in basic oxyacetylene welding and cutting, basic shielded metal arc welding, and basic gas metal arc welding.

WLDTC-156 BASIC SMAW LAB (4-8 cr.) Weld with the SMAW process in all positions on mild steel using AC and DC equipment.

WLDTC-157 BASIC GMAW LAB (4-8 cr.) Weld with the GMAW and FCAW processes in all positions, single and multi pass.

WLDTC-158 ADVANCED SMAW LAB (4-8 cr.) Weld with the SMAW process in all positions using DC welding equipment. Obtain certifiable skills on a plate of unlimited thickness.

WLDTC-159 BASIC GTAW LAB (4-8 cr.) Weld with the GTAW process on thin gauge mild steel, stainless steel, and aluminum using both DC and AC equipment.

WLDTC-160 MATHEMATICS I (1-2 cr.) Working knowledge of basic mathematics as applied in the welding industry.

WLDTC-161 WELDING PROCESSES AND APPLICATIONS (1-2 cr.) Explores various welding and cutting processes commonly used in industry and provide students with basic understanding of the principles involved.

WLDTC-162 METALLURGY (1-2 cr.) Introduces basic metallurgy and gives working

knowledge of problems that occur as a result of heating and cooling metal when using the various welding processes.

WLDTC-165 ADVANCED WELDING PROCESSES LAB (1-7 cr.) Lab practice in basic gas tungsten arc welding and structural welding using the shielded metal arc process.

WLDTC-190 DS:WELDING TECHNOLOGY (1-8 cr.) Individual instruction and self-study established to meet specific training objectives. May be repeated. Credits earned may not be directly applicable to degree or certificate.

WLDTC-192 SPECIAL TOPICS IN WELDING TECHNOLOGY (1-12 cr.)

WLDTC-250 DRAFTING AND PIPEFITTING (1-2 cr.) Basic fundamentals of drafting as used in welding trade. Pipefitting section enables students to do basic layout of pipe, figure offsets, runs, and travel distances, and give practical experience in fitting and welding branches or laterals, and blanking off pipe.

WLDTC-251 BLUEPRINT READING AND SYMBOLS (1-2 cr.) Basic working knowledge of blueprint reading as it applies in today's welding industry. Includes welding symbols, non-destructive testing symbols, and methods of dimensioning drawings.

WLDTC-252 HEAT TREATMENT (1-2 cr.) Acquaints students with various industrial heat treatment processes and their applications in industry. Teaches in-depth, the properties and strengths of metals in fabrication and technology.

WLDTC-254 PIPE WELDING: SMAW LAB (1-2 cr.) Develops skills for the welder portion of Pipe Fitter. Involves welding with the SMAW process on mild steel, multi-pass, using E6010 and E7018 electrodes. Welds are performed in the 2G, 5G, and 6G positions. Covers both uphill and downhill techniques.

WLDTC-256 SMAW UPHILL PIPE LAB (4-8 cr.) Weld pipe in all positions using SMAW process and uphill technique to conform to ASME Section IX.

WLDTC-257 SMAW DOWNHILL PIPE LAB (4-8 cr.) Weld pipe in all positions using SMAW process and downhill technique to conform to API standard 1104

WLDTC-258 BASIC ALUMINUM WELDING LAB (4-8 cr.) Weld aluminum using GTAW and GMAW processes in all positions.

WLDTC-260 MATHEMATICS II (1-2 cr.) Give students thorough working knowledge of basic algebra and geometry as applied in industry. Review and re-apply basic trigonometry as learned in previous semester course Drafting/Pipefitting.

WLDTC-261 BENCHWORK FOR WELDERS (1-2 cr.) Familiarizes student with basic hand and machine tools, measuring devices, and shop and tool safety.

WLDTC-262 DISTORTION CONTROL (1-2 cr.) Train students in the correct method of distortion control in welded fabrications. Gives basic guidance to assist student in overcoming and understanding some difficulties inherent when working metals where heat input is involved.

WLDTC-263 PIPE WELDING GMAW LAB (4 cr.) Develop skills for the welder portion of Pipe Fitter I. Involves welding with the GMAW process on mild steel, multi-pass, using small

diameter wire and short circuit transfer in the 2G, 5G, and 6G positions. Covers both uphill and downhill techniques.

WLDTC-264 PIPE WELDING GTAW LAB (1-7 cr.) Develops employable skill in the gas tungsten arc welding portion of Pipe Fitter I. Involves welding with GTAW process on small diameter thin wall pipe and tubing in all positions. High pressure pipe welding using GTAW on root pass with E7018 fill and cover passes is covered.

WLDTC-266 PROJECT WELDING FROM DRAWING LAB (4 cr.) Shop practice in project welding from drawings using all methods and materials.

WLDTC-270 DIRECTED WELDING PROJECTS (1-8 cr.) This course is designed for students who desire to specialize in one field of the welding industry. The student will learn how to safely operate and optimize the performance of various welding machines and how to operate welding shop equipment. They will also acquire additional knowledge of welding theory concerning specific processes or applications, and welding skills appropriate to the area of interest.

WLDTC-290 DIRECTED STUDY IN WELDING TECHNOLOGY (1-8 cr.)

WLDTC-292 DIRECTED SPECIAL PROJECTS (1-8 cr.)

WLDTC-296 COOPERATIVE EDUCATION IN WELDING TECHNOLOGY(1-8 cr.)

WLDTC-366 PROJECT WELDING FORM DRAWING LAB (4 cr.) Shop practice in project welding from drawings using all methods and materials.

WLDTC-370 DIRECTED WELDING PROJECTS (1-8 cr.) This course is designed for students who desire to specialize in one field of the welding industry. The student will learn how to safely operate and optimize the performance of various welding machines and how to operate welding shop equipment. They will also acquire additional knowledge of welding theory concerning specific processes or applications, and welding skills appropriate to the area of interest.

WLDTC-390 DIRECTED STUDY IN WELDING TECHNOLOGY (1-8 cr.)

WLDTC-396 COOPERATIVE EDUCATION IN WELDING TECHNOLOGY (1-8 cr.)