Structural Welding Technology AAS

Program Learning Outcomes (PLOs)	Measurable Student Learning Outcomes (MSLOs)- PLO Alignment										
	IRW130	WLD110	WLD118	WLD128	WLD129	WLD130	WLD221	WLD222	WLD228	WLD229	WLD230
1. (Synthesis Level) Show motivation, dependability, reliability, willingness to learn, willingness to work as a team member and the ability to work safely. (CSLO 3)	✓	✓			✓	✓	✓	✓	✓	✓	✓
2. (Synthesis Level) Demonstrate skills related to applied science, basic computers, applied mathematics/measurements, reading for information, business writing, listening and following directions, locating/using information and speaking/presentation skills. (CSLO 2,3)	✓			✓							
3. (Evaluation Level) Demonstrate, explain and critique teamwork, adaptability/flexibility, business fundamentals, marketing and customer focus, planning and organizing, problem-solving, decision-making, and applied technology. (CSLO 2,3)		✓				✓					
4. (Evaluation Level) Evaluate and demonstrate welding competencies in manufacturing process development and design, production, maintenance installation and repair, quality assurance/continuous improvement, and health and safety.(CSLO 2,3)	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
5. (Synthesis Level) Apply welding fundamentals and processes, and the correct and safe use of welding equipment and tools.(CSLO 2,3)	✓	✓	✓	✓	✓	✓	✓	✓			
6. (Comprehension Level) Identify the physical characteristics and mechanical properties of metals. (CSLO 4)	✓	✓	✓	✓	✓	✓				✓	✓
7. (Synthesis Level) Demonstrate competencies in safety and health, drawing and symbols, Shielded Metal Arc Welding (SMAW), Gas Metal Arc Welding (GMAW), Flux Cored Arc Welding (FCAW), Gas Tungsten Arc Welding (GTAW), Thermal Cutting, Oxygen Fuel Cutting (OFC), Plasma Arc Cutting (PAC), Carbon Arc Cutting (CAC), and Inspection. (CSLO 2,4)	✓	✓	✓	✓	✓	✓	✓	✓		✓	
8. (Synthesis Level) Create completed projects by demonstrating proficient techniques in SMAW, GMAW, FCAW, GTAW, thermal cutting, OFC, PAC, CAC, and inspection.(CSLO 2)	✓										
9. (Evaluation Level) Demonstrate, evaluate and explain weld imperfections and their causes. Explain the importance of quality workmanship and how imperfections or incorrect welding techniques may impact society. Demonstrate consistent, high quality workmanship to ensure public safety and to protect the environment. (CSLO 1)		✓			✓	✓	✓	✓			

Fundamentals of Structural Welding Certificate

Program Learning Outcomes (PLOs)	Measurable Student Learning Outcomes (MSLOs)- PLO Alignment		
	WLD118	WLD130	WLD230
1. (Synthesis Level) Incorporate skills into projects related to applied science, basic computers, applied mathematics and measurements, reading for information, business writing, listening and following directions, locating and using information, and public speaking and presenting skills. (CSLO 2,3)	✓	✓	
2. (Application Level) Demonstrate proficiency using the most common welding and cutting processes. (CSLO 2,3)		✓	✓
3. (Application Level) Demonstrate the safe use and storage of welding equipment and tools. (CSLO 2,3)		✓	✓
4. (Synthesis Level) Perform competencies in safety and health, drawing and symbols, Shielded Metal Arc Welding (SMAW), Gas Metal Arc Welding (GMAW), Flux Cored Arc Welding (FCAW), Thermal Cutting, Oxygen Fuel Cutting (OFC), Plasma Arc Cutting (PAC), Carbon Arc Cutting (CAC), and Inspection. (CSLO 2,4)	✓	✓	✓
5. (Synthesis Level) Create completed projects by demonstrating proficient techniques in Shielded Metal Arc Welding (SMAW), Gas Metal Arc Welding (GMAW), Thermal Cutting, Oxygen Fuel Cutting (OFC), Plasma Arc Cutting (PAC), Carbon Arc Cutting (CAC), and Inspection. (CSLO 2)		✓	✓
6. (Evaluation Level) Demonstrate, evaluate, and explain weld imperfections and their causes. Explain the importance of quality workmanship and how imperfections or incorrect welding techniques may impact society. Demonstrate consistent, high-quality workmanship to ensure public safety and to protect the environment. (CSLO 1)	✓	✓	✓
7. (Comprehension Level) A focus on the understanding and interpretation of structural fabrication, steel erection, and structural contract drawings. (CSLO 2,3,4)	✓	✓	

Advanced Structural Welding and Fabrication Certificate

Program Learning Outcomes (PLOs)	Measurable Student Learning Outcomes (MSLOs)- PLO Alignment		
	WLD128	WLD129	WLD229
1. (Synthesis Level) Incorporate skills into projects related to applied science, basic computers, applied mathematics and measurements, reading for information, business writing, listening and following directions, locating and using information, and public speaking and presenting. (CSLO 2,3)	✓		
2. (Application Level) Demonstrate and explain the safe use and storage of welding equipment and tools. (CSLO 2,3)		✓	✓
3. (Application Level) Demonstrate proficiency in quality control and the following processes: Flux Cored Arc Welding (FCAW), Shielded Metal Arc Welding (SMAW) Thermal Cutting, Oxygen Fuel Cutting (OFC), Plasma Arc Cutting (PAC), Carbon Arc Cutting (CAC), and Inspection. (CSLO 2,4)		✓	✓
4. (Synthesis Level) Create completed projects using proficient techniques in Shielded Metal Arc Welding (SMAW), Gas Metal Arc Welding (GMAW), Flux Cored Arc Welding (FCAW), Thermal Cutting, Oxygen Fuel Cutting (OFC), Plasma Arc Cutting (PAC), Carbon Arc Cutting (CAC), and Inspection. (CSLO 2)		✓	✓
5. (Evaluation Level) Demonstrate, evaluate, and explain weld imperfections and their causes. Explain the importance of quality workmanship and how imperfections or incorrect welding techniques may impact society. Demonstrate consistent, high-quality workmanship to ensure public safety and to protect the environment. (CSLO 1)		✓	✓
6. (Synthesis Level) Given a set of structural blueprints, rig structural members into position, make initial connections, plumb and align members, and finalize connections by bolting or welding structural members into place. (CSLO 2,3,4)	✓		✓