2/14/2025 DATE
☑ REQUIRED COURSE
☐ ELECTIVE COURSE

TEC DIVISION
☐ NEW COURSE
☑ REVISION

Lake Land College

Course Information Form

COURSE NUMBER:	WLD-040			TITLE *(30 Characters Max):*		Welding Fundamentals					
SEM CR HRS:	2.5	Lecture:		1	Lab:	3				ECH:	4
Course Level:	☐ Gen Ed / IAI ☐ Baccalaureate /Non-IAI ☑ Career/Technical ☐ Dev Ed/ Not in Degree Audit				Clinical Practicum:	0	Work-based Learning:	0		WBL ECH:	0
Course PCS & CIP:	12 - 48.0508			IAI Code		N/A			Contact Hours (Minutes/Week)		
Repeatable (Y/N):	N	Pass/Fail (Y/N):	N	Variable Credit (Y/N):	N	Min:		Max:	16 Wks	200	8 Wks	400
Prerequisites:	None										
Corequisites:	None										
Catalog Description: (40 Word Limit)	Course will cover basic welding processes, including: oxy-acetylene welding, arc welding, cutting and brazing.										

List the Major Course Segments (Units)	Contact Lecture Hours	Contact Lab Hours	Clinical Practicum	Work-based Learning
Welding equipment	1	3		
Safety	1	3		
Oxy/Acetylene welding	2	6		
Oxy/Acetylene cutting	1	3		
Brazing	1	3		
Arc welding	3	9		
Electrode classification	2	6		
Welding symbols	1	3		
Gas metal arc welding	2	6		
Gas tungsten arc welding	1	3		
TOTAL	15	45	0	0

EVALUATION							
QUIZZES	☑	EXAMS	☑	ORAL PRES	☐	PAPERS	☐
LAB WORK	☑	PROJECTS	☑	COMP FINAL	☐	OTHER	☐

COURSE MATERIALS		
TITLE:	Welding: Principles and Practices	
AUTHOR:	Edward Bohnart	
PUBLISHER:	McGraw Hill	
VOLUME/EDITION/URL:	6th edition	
COPYRIGHT DATE:	2024	

MAJOR COURSE SEGMENT	HOURS	LEARNING OUTCOMES
		The student will be able to:
Welding equipment	4	1. Prepare time or job cards, reports or records. 2. Identify and use welding equipment.
Safety	4	1. Perform housekeeping duties. 2. Demonstrate proper use and inspection of personal protection equipment (PPE) 3. Demonstrate proper safe operation practices in work area. 4. Demonstrate proper use and inspection of ventilation equipment. 5. Demonstrate proper Hot Zone operation. 6. Demonstrate proper work actions for working in confined spaces. 7. Demonstrate proper use of precautionary labeling and MSDS information. 8. Demonstrate proper inspection and operation of equipment used for each welding and thermal cutting process used. (This is best done as a part of the process module/unit for each of the required welding or thermal cutting processes.)

Oxy/Acetylene welding	8	1. Follow written and verbal instructions to complete work assignments. 2. Demonstrate how to light and adjust a torch and make simple welds. 3. Demonstrate a fillet weld with gas welding process.
Oxy/Acetylene cutting	4	1. Follow written and verbal instructions to complete work assignments. 2. Demonstrate how to cut steel with a gas powered torch.
Brazing	4	1. Follow written and verbal instructions to complete work assignments. 2. Demonstrate how to braze a lap joint.
Arc welding	12	1. Follow written and verbal instructions to complete work assignments. 2. Demonstrate how to strike and maintain an arc. 3. Demonstrate a multi-pass fillet weld. 4. Demonstrate arc welding in the vertical position.
Electrode classification	8	1. Follow written and verbal instructions to complete work assignments. 2. Identify electrodes by AWS designation. 3. Select proper electrode for various applications.
Welding symbols	4	1. Follow written and verbal instructions to complete work assignments. 2. Identify welding symbols commonly used in industry.
Gas metal arc welding	8	1. Follow written and verbal instructions to complete work assignments. 2. Demonstrate how to setup a MIG welder. 3. Demonstrate welding using MIG processes.
Gas tungsten arc welding	4	1. Follow written and verbal instructions to complete work assignments. 2. Demonstrate the TIG process to weld aluminum.
	60	

Outcomes*	At the successful completion of this course, students will be able to:
Course Outcome 1	Demonstrate proper cutting torch procedures.
Course Outcome 2	Demonstrate basic SMAW fillet and groove welds.
Course Outcome 3	Demonstrate GMAW fillet and groove welds.
Course Outcome 4	Demonstrate GTAW butt welds.
Primary Laker Learning Competency	Scientific Literacy: Students identify foundational science concepts and apply the scientific process to real-life situations.
Secondary Laker Learning Competency	Professional Skills & Ethics: Students demonstrate professional business skills and ethical accountability.

**Course and program outcomes will be used in the software for outcomes assessment and should include at least 1 primary and 1 secondary Laker Learning Competency. Limit to 3-5.*