



MASTER COURSE OUTLINE

A. DESL 1107 Industry-Related Welding

B. COURSE DESCRIPTION:

This course introduces students to the basic welding processes commonly used in the Automotive and Diesel Technology area where certified welds are not required. Basic theory and application of the welding processes along with flat position welding using the shielded metal arc welding (SMAW) and gas metal arc welding (GMAW) processes are included. Safety practices and equipment required for the safe use of plasma cutting equipment are introduced. This course, along with other program courses, satisfies the task requirements set forth by the Automotive Service Excellence (ASE) Education Foundation accreditation.
(2 Cr – 1 lect, 1 lab)

C. **Core Theme: Critical Thinking

D. RIVERLAND INSTITUTIONAL LEARNING OUTCOMES:

This course addresses the following Riverland Institutional Learning Outcome(s):

- ILO 1: critical thinking (*Core Theme Goal 2*)
- ILO 2: awareness of the larger global community (*Core Theme Goal 7 or 8*)
- ILO 3: ethical, engaged citizenship (*Core Theme Goal 9 or Goal 10*)
- ILO 4: communication and collaboration (*Discipline Goal 1 and by any learning outcome(s) involving communication or collaboration*)

E. MAJOR CONTENT AREAS:

- Welding Knowledge
 - Welding Safety
 - Measurement for welding
 - American Welding Society (AWS)
 - Weld symbols
- Preparation for Welding
 - Preparing joints
 - Welding equipment
 - Metal identification
 - Welding – rods and fluxes – wire and gases
- Welding Techniques
 - Welding different types of weld joints
 - Welding out of positions joints
 - Inspection of welds
- Advanced Welding Process

- Cutting equipment
- Brazing
- Soldering
- Gas metal arc welding (GMAL)
- Plasma cutting

F. GOAL TYPE, OBJECTIVES, AND OUTCOMES:

<u>GOAL TYPE</u>	<u>OBJECTIVES</u> Students will be able to	<u>OUTCOMES</u> The student will successfully
<u>**Critical Thinking</u>	gather factual information and apply it to a given problem in a manner that is relevant, clear, comprehensive, and conscious of possible bias in the information selected.	1. perform various different weld joints to make different components.
<u>CS</u>	evaluate critically environmental and natural resource issues in light of understanding about interrelationships, ecosystems, and institutions.	1. identify electrodes, fluxes, gas, and metals as to proper recycling.
<u>CS</u>	understand the necessary skills needed in the repair of vehicles.	1. perform safety operations in the repair of vehicles.
<u>CS</u>	understand the health hazards of welding or cutting.	1. demonstrate the safe use of different types of equipment and the supplies required to perform welding tasks.
<u>CS</u>	understand the ways that electronic equipment is damaged or destroyed by improper welding techniques.	1. demonstrate the proper hookup of welding equipment to vehicles with electronics.

G. SPECIAL INFORMATION:

This course may require use of the Internet, the submission of electronically prepared documents and the use of a course management software program. Students who have a disability and need accommodations should contact Accessibility Services at the beginning of the semester. This information will be made available in alternative format, such as Braille, large print, or current media, upon request.

The student will need access to and use of a laptop computer capable of running required software.

H. COURSE CODING INFORMATION:

Course Code S/Class Maximum 24; Letter Grade

Revision date: 01/10/20; 10/23/23

AASC Approval date: 04/19/11; 3/24/20; 12/11/23

*Riverland Community College Disciplines	MnTC Goal Number
Communication (CM)	1
Natural Sciences (NS)	3
Mathematics/Logical Reasoning (MA)	4
History and the Social & Behavioral Sciences (SS)	5
Humanities and Fine Arts (HU)	6

**Riverland Community College Core Themes	MnTC Goal Number
Critical Thinking (CT)	2
Human Diversity (HD)	7
Global Perspective (GP)	8
Ethical and Civic Responsibility (EC)	9
People and the Environment (PE)	10

*These five MnTC Goals have been identified as Riverland Community College Disciplines.

** These five MnTC Goals have been identified as Riverland Community College Core Themes.

NOTE: The Minnesota Transfer Curriculum “10 Goal Areas of Emphasis” are reflected in the five required discipline areas and five core themes noted in the Riverland Community College program of study guide and/or college catalog.