



MASTER COURSE OUTLINE

A. DESL 1213 Engines II

B. COURSE DESCRIPTION:

This course covers the basic theory and operation of common diesel engine fuel systems. Fuel characteristics, grades, filtration, and safe handling are included. The student performs maintenance, diagnostics, and repair of fuel systems found on medium duty, heavy duty, and agricultural diesel engines. 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:

- Diesel fuel characteristics
- Fuel handling and safety
- Filtration and fuel transfer systems
- Fuel system diagnostics
- Fuel system repair

F. GOAL TYPE, OBJECTIVES, AND OUTCOMES:

<u>GOAL TYPE</u>	<u>OBJECTIVES</u>	<u>OUTCOMES</u>
**Critical Thinking	Students will be able to 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. identify and choose the proper repair procedure for a specific fuel system problem.

<u>CS</u>	recognize key elements of the fuel system.	1. explain basic fuel system operation of common light, medium duty, heavy duty diesel engines.
<u>CS</u>	demonstrate skills in the shop related to fuel system disassemble, parts cleaning, measuring, and inspection.	1. complete fuel system disassembly, cleaning, measuring, and inspection.
<u>CS</u>	perform basic diagnostic tests on diesel engine fuel systems.	1. follow a diagnostic "tree" to isolate and repair the fuel systems with common problems.
<u>CS</u>	test run and make final adjustments to project.	1. complete all projects, test run, and complete final adjustments.

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; 02/03/23

AASC Approval date: 04/19/11; 03/24/20; 03/28/23

*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.

Riverland