MASTER COURSE OUTLINE

A. DESL 2221 Engines III

B. COURSE DESCRIPTION:

This course covers theory, diagnosis, and repair of emission systems and electronic engine controls. This course will emphasize advanced diagnostics on mechanical and electronic systems. Original Equipment Manufacturer (OEM) diagnostic software and service information are included in this course. 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:

- Diagnose and repair electronic controls for diesel engines
- Usage of OEM diagnostic software
- Theory and operation of emission systems (Tier 1, 2, 3, and 4)
- Diagnose and repair emission systems

F. GOAL TYPE, OBJECTIVES, AND OUTCOMES:

GOAL TYPE	OBJECTIVES Students will be able to	OUTCOMES The student will successfully
**Critical Thinking	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. diagnose, program, and repair electronic controls for diesel engines.
CS	demonstrate diagnostic procedures outlined in the service literature.	1. apply diagnostic procedures.

CS	demonstrate repair procedures outlined in the service literature.	1. diagnose and repair electronic problems.
CS	demonstrate use of multiple OEM software.	1. establish communication with an engine Electronic Control Module (ECM) using OEM software. 2. demonstrate special engine tests.

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.