MASTER COURSE OUTLINE

A. DESL 2209 Commercial Vehicle HVAC Systems

B. COURSE DESCRIPTION:

This course covers the heating, ventilation, and air conditioning (HVAC) systems used in today's commercial vehicles. Topics include R12 systems, R134A systems, system diagnostics, refrigerant identification, Environmental Protection Agency (EPA) regulations, and HVAC Technician Certification. This course, along with other program courses, satisfies the task requirements set forth by the Automotive Service Excellence (ASE) Education Foundation accreditation. Prerequisite: DESL 1104.
(3 Cr – 1 lect, 2 lab)

C. **Core Theme: Critical Thinking and People and the Environment

D. MAJOR CONTENT AREAS:

- Vehicle HVAC systems theory of operation
- HVAC systems maintenance, diagnostics, and service
- HVAC Environmental Protection Agency (EPA) regulations and technician certification
- Refrigerant handling

E. GOAL TYPES, 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. describe, diagnose, and repair HVAC systems
**People and the Environment	explain the basic structure and function of various natural ecosystems and of human adaptive strategies within those systems	1. identify refrigerant effects on the ozone
CS	demonstrate how a HVAC system works and how heat is displaced	1. test theories related to HVASC systems
CS	diagnose problems related to HVAC systems	1. complete task sheets related to HVAC systems
CS	recognize preventative maintenance and troubleshooting of the different HVAC systems	1. demonstrate how to troubleshoot related HVAC problems 2. perform preventative HVAC maintenance procedures
CS	replace HVAC system components	1. perform shop tasks using

		service manuals related to HVAC systems

F. 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 the instructor or the Student Success Center 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. Students pay a fee for voucher to complete Environmental Protection Agency (EPA) online refrigerant handling certification during this course.

G. COURSE CODING INFORMATION:

Course Code S/Class Maximum 25; Letter Grade

Revision date: 01/10/20
AASC Approval date: 04/19/11 ; 3/24/2020

***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.