MASTER COURSE OUTLINE

A. DESL 1208 Air and Hydraulic Brakes

B. COURSE DESCRIPTION:

This course covers air and hydraulic brake assemblies used on trucks and trailers. Evaluating and repairing brake systems to the Federal Motor Vehicle Safety Standard (FMVSS) #120 requirements are also covered. This course, along with other program courses, satisfies the task requirements set forth by the Automotive Service Excellence (ASE) Education Foundation accreditation.
(3 Cr – 2 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:

- Air Brake Service
  - Maintenance and safety
  - Brake system assessment
  - Foundation brake service
  - General brake troubleshooting
- Truck Brake Systems
  - Primary brake circuits
  - Secondary Brake circuits
  - Foundation brake components
  - Trailer systems
- Anti-Lock Brake Systems (ABS)
  - Anti-lock brake systems function
  - Types of ABS
  - ABS programming
  - ABS components
  - ABS service procedures

- Hydraulic Brake Systems
    - Hydraulic brake components
    - Hydraulic brake circuits
    - Hydraulic brake service procedures
    - Air-over hydraulic 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. perform minor brake repairs on air, hydraulic and ABS systems.
CS	explain the theory of brake system operations.	1. identify the theory of different air systems.
CS	recognize brake system components.	1. identify brake components and locations.
CS	demonstrate correct repair procedures on brake systems.	1. complete common repair procedures.

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; 03/23/21; 10/23/23
AASC Approval date: 04/19/11; 04/20/21; 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.