

MASTER COURSE OUTLINE

A. DESL 2225 Commercial Vehicle Power Trains II

B. COURSE DESCRIPTION:

This course covers identification, preventative maintenance (PM), troubleshooting, and major overhaul of live front and rear drive axles assemblies. 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. MAJOR CONTENT AREAS:

- Identify Axle Types and Operation
 - Dead axles
 - Live axles
 - Pusher axles
 - Tag axles
- Axles
 - Lubrication service
 - Fluid types
 - Troubleshooting differential carrier problems
 - Axle alignment
- Differential Carrier Overhaul
 - Disassemble carrier
 - Pinion adjustments
 - Ring gear assembly and adjustments
 - Power divider disassemble/reassemble
- Failure Analysis
 - Gear failure
 - Axle failure
 - Lubrication failure
 - Operation misuse

E. GOAL TYPES, OBJECTIVES, AND OUTCOMES:

<u>GOAL TYPE</u>	<u>OBJECTIVES</u>	<u>OUTCOMES</u>
** <u>Critical Thinking</u>	Students will be able to recognize and articulate the value assumptions which underlie and affect decisions, interpretations, analyses, and evaluations made by ourselves and others	The student will successfully 1. evaluate the problem with parts or operation of the differential carrier assembly to share with the customer

<u>CS</u>	understand the operation of the forward and rear differential	1. demonstrate the operations of forward and rear differentials
<u>CS</u>	understand the overhaul process of differentials	1. perform tear down and reassembly of differentials per service manuals
<u>CS</u>	understand the inspection of failed parts	1. inspect parts and determine reusability per failure books

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.

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.