



MASTER COURSE OUTLINE

A. DESL 2118 Commercial Vehicle Power Trains I

B. COURSE DESCRIPTION:

This course covers manual and manual/automatic transmission service on all twin countershaft transmission. Topics include Fuller/Eaton, Meritor/Rockwell, Allison and computer controlled transmissions. This course, along with other program courses, satisfies the task requirements set forth by the Automotive Service Excellence (ASE) Education Foundation accreditation.

(3 Cr – 1 lect, 2 lab)

C. **Core Theme: Critical Thinking

D. MAJOR CONTENT AREAS:

- Standard Transmissions
 - Identification of transmissions
 - Main and auxiliary gearing
 - Twin counter-shaft transmissions
 - Gear train configuration
- Standard and Automatic Transmission Servicing
 - Preventative maintenance
 - Disassembly and assembly of traps and sub assemblies
 - Troubleshooting transmissions
 - Lubrication and inspection of parts
- Electronically Automated Standard Transmissions
 - Auto shift components
 - Transmission controllers
 - Fault detection and data
- Automatic Transmissions
 - Principles of operation
 - Hydraulic systems
 - Torque paths

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 analyze the logical connections among the facts, goals, and implicit assumptions relevant to a problem or claim; generate and evaluate implications that follow from them	The student will successfully 1. perform an in-depth evaluation of critical parts for the reuse of these components for assembly

<u>CS</u>	understand a twin countershaft and automatic transmission	1. apply classroom theory concerning twin countershaft and automatic transmissions by using system textbooks and service manuals
<u>CS</u>	understand disassembly and reassembly of transmissions	1. demonstrate ability to use service manuals to disassemble and reassemble different models of transmissions
<u>CS</u>	troubleshoot transmission problems	1. follow troubleshooting steps and locate the problems and repairs
<u>CS</u>	recognize different makes of transmissions	1. identify several transmissions using manuals and data tags on transmissions

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: 01/10/2020

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.

Riverland