



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. 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:

- 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

F. GOAL TYPE, OBJECTIVES, AND OUTCOMES:

<u>GOAL TYPE</u>	<u>OBJECTIVES</u> Students will be able to	<u>OUTCOMES</u> The student will successfully
<u>*Critical Thinking</u>	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.	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.

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.

H. COURSE CODING INFORMATION:

Course Code S/Class Maximum 25; Letter Grade

Revision date: 01/10/20; 03/03/26

AASC Approval date: 04/19/11; 03/24/20; 03/17/26

*These five MnTC Goals have been identified as Riverland Community College Core Themes. Every course in the Riverland Community College curriculum shall meet outcomes from one of these themes.

**These five MnTC Goals have been identified as Riverland Community College Disciplines. Riverland's MnTC courses also shall meet outcomes from a Discipline Area.

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 Community College Core Themes	MnTC Goal Number
Critical Thinking (CT)	2
Human Diversity (HD)	7A, 7B, 7A/B
Global Perspective (GP)	8
Ethical and Civic Responsibility (EC)	9
People and the Environment (PE)	10

**Riverland Community College Discipline Areas	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