



MASTER COURSE OUTLINE

A. AUTO 1432 Intermediate Electronics

B. COURSE DESCRIPTION:

This course will deepen the student's understanding of electrical and electronic circuits, including data links and common sensors used in Advanced Driver Assistance Systems/Autonomous Vehicles (ADAS/AV). The student will use advanced training equipment such as Controller Area Network (CAN) trainers. Prerequisite: AUTO 1431 (2 Cr – 1 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:

- Understand, diagnose and repair common electrical faults

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>	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. The student will be able to test electrical systems using common tools such as Digital Multi Meters (DMM) and test lights.
<u>CS</u>	understand the physical relationship between the various electrical properties.	1. The student will be able to deduce unknown electrical properties based on observed electrical behavior.
<u>CS</u>	identify components using an Electronic Service Information System.	1. Successfully identify electrical components.
<u>CS</u>	perform electrical diagnosis.	1. As a lab competency, successfully perform an electrical diagnosis.
<u>CS</u>	understand and read contemporary vehicle wiring diagrams.	1. Find faults in wiring diagrams by reading them.

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. A smart phone is insufficient.

H. COURSE CODING INFORMATION: Course Code S/Class Maximum 24; Letter Grade

Revision date: 03/14/23

AASC Approval date: 10/18/22; 04/18/23

*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.