MASTER COURSE OUTLINE

A. DESL 2112 Introduction to Hydraulics

B. COURSE DESCRIPTION:

This course covers basic hydraulic systems and the operation of the components that make up the different types of systems. Basic hydraulic system nomenclature is introduced. Troubleshooting, repair, and adjustment of various components 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.
(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:

- Hydraulic Fundamentals
  - Safety and maintenance
  - Hydraulic principles and laws
  - Hydraulic laws application
  - Force, pressure, and area calculation
- Functions of Hydraulic Components
  - Pumps
  - Valves
  - Actuators
  - Motors
  - Reservoirs
- Symbols
  - Graphic symbols
  - Circuits
  - Hydraulic schematic

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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. articulate the effects of using an open center versus a closed center hydraulic system.
CS	explain the theory and operation of the basic hydraulic system.	1. perform shop tasks related to basic hydraulic systems.
CS	recognize hydraulic systems.	1. assemble basic hydraulic components.
CS	identify different hydraulic components work together.	1. assemble hydraulic circuits that function.
CS	understand hydraulic systems safety.	1. demonstrate safety when working with hydraulic systems.

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; 4/04/21; 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**

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*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.

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