



MASTER COURSE OUTLINE

A. ARET 1130 Maintenance Operations

B. COURSE DESCRIPTION:

This course will expose the student to maintenance practices and industrial safety common to many of the potential fields within Mechatronics. Mechatronics is a broad field in Industrial Maintenance with many unique specialties requiring technicians to have exposure to multiple mechanical maintenance procedures. This course is one of two courses aligned to Packaging Machinery Manufacturers Institute's (PMMI) Mechanical Components I Mechatronics Certification test. Throughout this course, students will apply concepts to hands-on labs to reinforce the discussed topics.
(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:

- Industrial safety
- Maintenance principles
- Maintenance record keeping
- Mechanical maintenance
- Basic troubleshooting
- Lubrication applications
- Tools for maintenance

F. GOAL TYPE, OBJECTIVES, AND OUTCOMES:

<u>GOAL TYPE</u>	<u>OBJECTIVES</u>	<u>OUTCOMES</u>
	Students will be able to	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.	<ol style="list-style-type: none"> 1. apply effective industrial safety principles. 2. critique proper record keeping.
CS	describe mechanical transmission safety rules.	<ol style="list-style-type: none"> 1. explain industrial safety principles.
CS	identify various types of fasteners common to maintenance operations.	<ol style="list-style-type: none"> 1. identify appropriate tools for maintenance.
CS	recognize trouble shooting techniques.	<ol style="list-style-type: none"> 1. articulate proper trouble shooting procedures.

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 24; Letter Grade

Revision date:

AASC Approval date: 02/15/22

*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.