



MASTER COURSE OUTLINE

COURSE TITLE: Hydraulics I

Dept.: Agricultural Mechanics

CIP Code:01.0205

CREDITS: 6

Total Contact Hrs Per Qtr.: 88

Distribution Design:

Course Num: 141

Intent Code:

Lecture Hrs: 44

DATE: 4/28/20

(Formerly:)

Program Code:123

Lab Hrs: 44

Other Hrs:

Prepared By: Brett Iksic

COURSE DESCRIPTION (as it will appear in the catalog)

This course introduces students to hydraulic fundamentals and hydraulic safety. Students will learn how hydraulic flow and pressure is created and how it is harnessed to produce mechanical motion in open-center and closed-center systems. Upon successful completion of the course, students will be able to understand hydraulic system components and be able to articulate how they synergize to form a system. Additionally, students will be able to decipher basic hydraulic schematics.

PREREQUISITES: AGM 102 Agricultural Equipment and Workplace Safety (required), AGM 109 Shop Skills I (recommended).

TEXTBOOK GUIDELINES: Textbook determined by Agricultural Mechanics Faculty (Example: Hydraulic Systems for Mobile Equipment, Dell, Timothy.)

STUDENT LEARNING OUTCOMES: *Upon successful completion of the course, students should be able to demonstrate the following knowledge or skills.*

1. Articulate hydraulic fundamentals and safety.
2. Describe how hydraulic pressure and flow are created.
3. Differentiate between open and closed center hydraulic systems.
4. Identify hydraulic components, their purpose, and how they form a hydraulic system.
5. Interpret hydraulic schematics.

GENERAL EDUCATION/RELATED INSTRUCTION OUTCOMES

3. Students will be able to demonstrate teamwork, ethics, safety awareness, and/or workplace specific skills related to agricultural mechanics.

COURSE CONTENT OUTLINE

1. Intro to Hydraulics
 - Basic Principles of Hydraulics,
 - Components
 - Hydraulic Safety
2. Intro to Hydraulic Schematics
3. Open Center Systems
 - Components and System Operation
 - System Testing
4. Closed Center Systems
 - Components and System Operation
 - System Testing

DEPARTMENTAL GUIDELINES (optional)

DIVISION CHAIR APPROVAL

DATE