

MINNESOTA WEST COMMUNITY & TECHNICAL COLLEGE

COURSE OUTLINE

DEPT. DSL

COURSE NUMBER: 2106

NUMBER OF CREDITS: 3

Lecture: 3 Lab: 0 OJT 0

Course Title:
Advanced Powertrain Theory

Catalog Description:
Advanced Powertrain Theory explains the theory of operation of various power shift transmissions, power flow, and terminologies as related to various manufacturers. This course covers the theory of operation of electro hydraulic systems as well as a wide variety of power train systems from Ag equipment, industrial, and truck when and where available.

Prerequisites or Necessary Entry Skills/Knowledge:
DSL1120 or DSL1125

FULFILLS MN TRANSFER CURRICULUM AREA(S)

- ☐ Goal 1: Communication: By meeting the following competencies:
- ☐ Goal 2: Critical Thinking: By meeting the following competencies:
- ☐ Goal 3: Natural Sciences: By meeting the following competencies:
- ☐ Goal 4: Mathematics/Logical Reasoning: By meeting the following competencies:
- ☐ Goal 5: History and the Social and Behavioral Sciences: By meeting the following competencies:
- ☐ Goal 6: The Humanities and Fine Arts: By meeting the following competencies:
- ☐ Goal 7: Human Diversity: By meeting the following competencies:
- ☐ Goal 8: Global Perspective: By meeting the following competencies:
- ☐ Goal 9: Ethical and Civic Responsibility: By meeting the following competencies:
- ☐ Goal 10: People and the Environment: By meeting the following competencies:

Topics to be Covered
Electro-hydraulically controlled transmissions
Advanced drive trains
Computer controlled powertrain systems
Power and hydraulic flows

Student Learning Outcomes
Discuss power shift, shuttle transmissions, hydro/ IVT and other new systems
Explain electrical hydraulics and testing different systems
Define high-pressure and low-pressure standby
Describe computer controlling powertrain systems
Research manuals for information on powertrain systems

Determine power flows
Describe procedures for hydraulic testing

Is this course part of a transfer pathway: Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>

Revised Date: 8/2021