

COURSE SYLLABUS

LAST REVIEW	Fall 2024
COURSE TITLE	Industrial Fluid Power
COURSE NUMBER	AMFT 0112
DIVISION	Career and Technical Education
DEPARTMENT	Automation Engineer Technology
CIP CODE	15.0406
CREDIT HOURS	3
CONTACT HOURS	48
PREREQUISITES	None
COURSE PLACEMENT	Reading score of 240 on the Accuplacer tests. Information may be found at: https://www.kckcc.edu/admissions/information/mandatory-evaluation-placement.html

COURSE DESCRIPTION

The course examines theory, applications and operation of industrial hydraulic and pneumatic systems. The inspection, maintenance, and repair of the various components are covered in this course. Interpretation of the various schematic symbols used in hydraulic and pneumatic circuit diagrams will be discussed.

PROGRAM ALIGNMENT

This course is part of a program aligned through the Kansas Board of Regents and Technical Education Authority. For more information, please visit:
https://kansasregents.org/workforce_development/program-alignment

PROGRAM LEARNING OUTCOMES

1. The student will be able to assess hazards, mitigate risk, and develop procedures and protocol to create a safe working environment.
2. Student will be able to collaborate with team members in developing a plan to maximize efficiency in a production facility.
3. The student will be able to evaluate implicit tasks and identify necessary resources to install and maintain industrial equipment.
4. Student will be able to troubleshoot and repair industrial equipment in the high stress environment of modern manufacturing.

INSTITUTIONAL LEARNING OUTCOMES

This course supports student achievement of one or more of the KCKCC Institutional Learning Outcomes. Additional information is located at <https://www.kckcc.edu/academics/assessment/institutional-learning-outcomes.html>

TEXTBOOKS

<http://kckccbookstore.com/>

METHODS OF INSTRUCTION

A variety of instructional methods may be used depending on content area. These include but are not limited to lecture, multimedia, cooperative/collaborative learning, labs and demonstrations, projects and presentations, speeches, debates, panels, conferencing, performances, and learning experiences outside the classroom. Methodology will be selected to best meet student needs.

COURSE OUTLINE

- I. Calculations required for temperature and pressure conversions.
- II. Calculations for Boyles Law
- III. Calculations for Universal Law of Perfect Gas
- IV. Calculations for equations related to force requirements
- V. ISO symbols used in Fluid Power including Valves, Actuators and Motors
- VI. Identify different valve and actuators types
- VII. Principles of Pneumatic and hydraulic drawings
- VIII. Troubleshoot Hydraulic and Pneumatic processes.

COURSE LEARNING OUTCOMES

Upon successful completion of this course, the student will:

- A. Demonstrate the safety procedures when working with hydraulic and pneumatic systems.
- B. Discuss the concepts associated with hydraulic theory.
- C. Describe the various types and applications of hydraulic components.
- D. Interpret a hydraulic circuit drawing.
- E. Discuss the concepts associated with pneumatic theory.
- F. Describe the various types and applications of pneumatic components.
- G. Interpret a pneumatic circuit drawing.
- H. Demonstrate the process of hydraulic and pneumatic system troubleshooting.

ASSESSMENT OF COURSE LEARNING OUTCOMES

Student progress is evaluated through both formative and summative assessment methods. Specific details may be found in the instructor's course information document.

COLLEGE POLICIES AND PROCEDURES

Student Handbook

<https://www.kckcc.edu/files/docs/student-resources/student-handbook-and-code-of-conduct.pdf>

College Catalog

<https://www.kckcc.edu/academics/catalog/index.html>

College Policies and Statements

<https://www.kckcc.edu/about/policies-statements/index.html>

Accessibility and Accommodations

<https://www.kckcc.edu/academics/resources/student-accessibility-support-services/index.html>.