



Course Syllabus: Applied Fluid Power Design
McCoy College of Science, Math and Engineering
MENG 3203-201
Spring 2026 MW: 10:00 AM – 10:50 AM
MY 136

Contact Information

Instructor: Pranaya Pokharel
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Office hours: MW 9:00-10:00 AM, R 9:00 AM-12:00 PM
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Course Description

The fundamentals of fluid mechanics as applied to hydraulic and pneumatic hardware models of pumps, motors, pistons, accumulators, valves and transmission lines. Design and analysis procedures for implementing total fluid power systems with high operating efficiencies and adequate dynamic response.
This class has a companion lab.

Course Pre-Requisite
MENG 3104

Textbook & Instructional Materials

Fluid Power Circuits and Controls- Fundamentals and Applications by Cundiff
Lab Book Provided in D2L

Student Handbook

Refer to: [Student Handbook](#)

Academic Misconduct Policy & Procedures

Academic Dishonesty: Cheating, collusion, and plagiarism (the act of using source material of other persons, either published or unpublished, without following the accepted techniques of crediting, or the submission for credit of work not the individual's to whom credit is given). Additional guidelines on procedures in these matters may be found in the [Office of Student Conduct](#).

Moffett Library

Moffett Library provides resources and services to support student's studies and assignments, including books, peer-reviewed journals, databases, and multimedia materials accessible both on campus and remotely. The library offers media equipment checkout, reservable study rooms, and research assistance from librarians to help students effectively find, evaluate, and use information. Get started on this [Moffett Library webpage](#) to explore these resources and learn how to best utilize the library.

Grading

The final grade for the course will be based on the scores earned in the two mandatory exams, the mandatory final exam, and the average score earned in the lab reports and the average score earned in the homework. The average of the three exams contributes 70%, the average of the homework 10%, the average of the lab reports contributes 10%, and active participation contributes 10%, for a total of 100%.

Table 1: Points allocated to each assignment.

Assignments	%
Attendance/Participation	10
Homework Average	10
Exams Average	70
Lab Reports Average	10
Total Percent	100

Table 2: Total points for final grade.

Grade	%
A	90 - 100
B	80 to less than 90
C	70 to less than 80
D	60 to less than 70
F	Less than 60

Homework

All homework assignments will be due at the class period on the due date. After the due date, points will be taken off for late homework. Printing issues are not a valid excuse for late homework. Print at home or the student center, library, or in the lab. Since writing, analytical, and critical thinking skills are part of the learning outcomes of this course, all writing, problem solving, and coding assignments should be prepared by the student. Developing strong competencies in this area will prepare you for a competitive workplace. Therefore, AI-generated submissions are not permitted and will be treated as plagiarism.

Labs

Students should stay with their assigned lab group all semester long. Students will turn in the lab report as a group. The lab sessions will nearly always start out with an explanation of theory the first portion of the lab. Attendance is required from start to finish. The instructor will setup the lab groups so that the students will learn to be working in teams as would be the case later in regular employment. The students cannot switch lab groups once they are assigned into a group. Students will be held responsible on the tests for any information covered in lab. Students will also be required to clean the laboratory equipment and store equipment away neatly in the drawers after wiping the components clean. Students are required to wear safety glasses at all times. This is done for their own safety since we do not want anybody to get hurt.

Exams

There will be two midterm exams and one final exam during the semester. You are expected to take all exams on the scheduled date and time. However, if for some acceptable reason you are not able to do so, then you must inform the instructor in advance. The instructor will then decide whether you will be allowed to take a make-up exam, depending on the validity of your excuse. Final exam is scheduled on May 13, 2026.

Important Dates

Last day for term schedule changes: January 23, 2026. Check date on [Academic Calendar](#).

Deadline to file for graduation: February 16, 2026. Check date on [Academic Calendar](#).

Last Day to drop with a grade of "W:" April 29, 2026. Check date on [Academic Calendar](#).

Refer to: [Drops, Withdrawals & Void](#)

Desire-to-Learn (D2L)

Extensive use of the MSU D2L program is a part of this course. Each student is expected to be familiar with this program as it provides a primary source of communication regarding assignments, examination materials, and general course information. You can log into [D2L](#) through the MSU Homepage. If you experience difficulties, please contact the technicians listed for the program or contact your instructor.

Attendance

Students are expected to attend all meetings of the classes in which they are enrolled.

Change of Schedule

A student dropping a course (but not withdrawing from the University) within the first 12 class days of a regular semester or the first four class days of a summer semester is eligible for a 100% refund of applicable tuition and fees. Dates are published in the Schedule of Classes each semester.

Refund and Repayment Policy

A student who withdraws or is administratively withdrawn from Midwestern State University (MSU) may be eligible to receive a refund for all or a portion of the tuition, fees and room/board charges that were paid to MSU for the semester. **HOWEVER**, if the student received financial aid (federal/state/institutional grants, loans and/or scholarships), all or a portion of the refund may be returned to the financial aid programs. As described below, two formulas (federal and state) exists in determining the amount of the refund. (Examples of each refund calculation will be made available upon request).

Services for Students with Disabilities

In accordance with Section 504 of the Federal Rehabilitation Act of 1973 and the Americans with Disabilities Act of 1990, Midwestern State University endeavors to make reasonable accommodations to ensure equal opportunity for qualified persons with disabilities to participate in all educational, social, and recreational programs and activities. After notification of acceptance, students requiring accommodations should make application for such assistance through Disability Support Services, located in the Clark Student Center, Room 168, (940) 397-4140. Current documentation of a disability will be required in order to provide appropriate services, and each request will be individually reviewed. For more details, please go to [Disability Support Services](#).

College Policies

Campus Carry Rules/Policies

Refer to: [Campus Carry Rules and Policies](#)

Smoking/Tobacco Policy

College policy strictly prohibits the use of tobacco products in any building owned or operated by WATC. Adult students may smoke only in the outside designated-smoking areas at each location.

Alcohol and Drug Policy

To comply with the Drug Free Schools and Communities Act of 1989 and subsequent amendments, students and employees of Midwestern State are informed that strictly enforced policies are in place which prohibits the unlawful possession, use or distribution of any illicit drugs, including alcohol, on university property or as part of any university-sponsored activity. Students and employees are also subject to all applicable legal sanctions under local, state and federal law for any offenses involving illicit drugs on University property or at University-sponsored activities.

Campus Carry

Effective August 1, 2016, the Campus Carry law (Senate Bill 11) allows those licensed individuals to carry a concealed handgun in buildings on public university campuses, except in locations the University establishes as prohibited. The new Constitutional Carry law does not change this process. Concealed carry still requires a License-to-carry permit, and openly carrying handguns is not allowed on college campuses. For more information, visit [Campus Carry](#).

Active Shooter

The safety and security of our campus is the responsibility of everyone in our community. Each of us has an obligation to be prepared to appropriately respond to threats to our campus, such as an active aggressor. Please review the information provided by the MSU Police Department regarding the options and strategies we can all use to stay safe during difficult situations. For more information, visit [MSUReady – Active Shooter](#). Students are encouraged to watch the video entitled "Run. Hide. Fight." which may be electronically accessed via the University police department's webpage.

Grade Appeal Process

Students who wish to appeal a grade should consult the Midwestern State University [MSU Catalog](#)

***Notice:** Changes in the course syllabus, procedure, assignments, and schedule may be made at the discretion of the instructor.

Course Schedule:

The course is scheduled on MW 10:00-10:50 AM in room MY136

The lab is scheduled on R and F 1:00 PM – 2:50 PM in rooms MY 131 and MY 135

Topics	Assignments/Exams	Due Date
Overview of Fluid Power	Assignment 1	TBD
Fluid Power Basics	Assignment 1	TBD
Pressure Control	Assignment 2	TBD
Creation and Control of Fluid Flow	Assignment 3 & Exam 1	TBD
Rotary Actuators	Assignment 4 & Exam	TBD
Linear Actuators	Assignment 5 & Exam	TBD
Temperature and Contamination Control	Assignment 6 & Exam 2	TBD
Auxiliary Components	Assignment 6	TBD
Pneumatics	Assignment 7	TBD
Electrical Control of Fluid Power Equipment	Assignment 8 & Final Exam	May 13
Laboratories using Hydraulics/Pneumatics	Labs and Lab Reports	TBD
Automation Studio Software	Lab Assignments	TBD