



Master Course Syllabus

For additional course information, including prerequisites, corequisites, and course fees, please refer to the Catalog: <https://catalog.uvu.edu/>

Semester: Spring

Year: 2025

Course Prefix: DMT

Course and Section #: 2320-001

Course Title: Fluid Power II

Credits: 3

Course Description

Continue teaching the fundamental principles of fluid power (hydraulics). Introduce and teach fluid power systems as they apply to rotary actuators, hydrostatic transmission and the basic principles in fluid coupler/torque converters as well as fluid powered automatic transmissions. Emphasize safety, component operation, maintenance, repair, testing, and troubleshooting

Course Attributes

This course has the following attributes:

- General Education Requirements
- Global/Intercultural Graduation Requirements
- Writing Enriched Graduation Requirements
- Discipline Core Requirements in Program
- Elective Core Requirements in Program
- Open Elective

Other: *Click here to enter text.*

Instructor Information

Instructor Name: Kent Walker

Student Learning Outcomes

- 1 Describe the operation of a variable displacement pump or motor and their applications
- 2 Describe how load sensing and pressure compensation function in a hydraulic circuit
- 3 Explain the operation of electronically controlled hydraulic systems, including electronic proportional valving
- 4 Describe proper troubleshooting steps to diagnose both conventional and electronically controlled hydraulic systems
- 5 Explain the theory of operation for a hydrostatic transmission system
- 6 Describe the operation and purpose of a torque converter
- 7 Explain the role of hydraulics in an automatic transmission
- 8 List the electrical inputs and outputs associated with the electronic controls for both a hydrostatic and an automatic transmission
- 9 Explain maintenance procedures and inspections for hydrostatic and automatic transmissions

Course Materials and Texts

**Mobile Hydraulics-Eaton Corporation (ISBN 0-9634162-5-1)
& Heavy Duty Truck Systems-Bennett(ISBN 978-1-337-78710-9)**
Handouts**

Course Requirements

Course Assignments, Assessments, and Grading Policy

Theory Grading Criteria:

- Tests 40%
- Class Assignments 30%
- Quizzes/Attendance** 30%
- Oral Presentation Opt.

Tests:

Test will be taken in class upon completion of a specified number of chapters covered. Because testing will be done in class, you must be there on the day of the test, or have made ***prior*** arrangements to take the test at a different time because of extenuating circumstances. If not and you miss the test ***you will not be allowed to make up the test!!***

Class Assignments:

Assignments will be posted on ‘Canvas’. All assignments will be submitted through ‘Canvas’. Assignments will be turned in on time in order to avoid point’s reduction. Point value will be reduced by 10% for each day late to a total of 3 days late after 3 days assignment will not be accepted.

Attendance:

Attendance will be taken from the time cards. Each student will be required to clock in and out for both lab as well as for theory. **No student is allowed to clock in or out for any other student.** If a student leaves class early without making prior arrangements with the instructor, he/she will be marked absent or tardy for the day depending upon the severity. Do not write in times. ****Any student with 6 or more unexcused absences will not pass this class.**

Grading scale for Attendance;

0-1 Days Absent = No Penalty	2-3 Days Absent = 2 points lost/day
4-5 Days Absent = 5 points lost/day	6+ Days Absent = 10 points lost/day until points balance reaches 0

Quizzes:

Up to four quizzes a week will be given during theory. The quiz will consist of 1-5 questions based on material covered in the previous lecture and/or previous reading assignment. There is no make up for missed quizzes.

Oral Presentation:

The oral presentation will be based on trouble-shooting a hydraulic related problem/break down in one of the following areas: hydrostat transmission, automatic transmission, hydraulic motor conveyance

Grading for this presentation is as follows:

- ◆ Clearly defining the problem 15%
- ◆ Technical information included 15%
- ◆ Visual aid use 15%
- ◆ Proper steps used to solve the issue 15%
- ◆ Thoroughness and accuracy of subject matter 15%
- ◆ Student's ability to follow all of the above oral presentation instructions 25%

Required or Recommended Reading Assignments

Week	Subject	Text Reading assignment	Assignments Due as announced
1-2	Safety, Cartridge Valves, Reservoirs, Coolers, Fluid Filtration, and Accumulators	PP. Ch. 9, 11, 16, 17, 18, Eaton	Questions as assigned
2-3	Electronics, Diagnosis, Testing, Systems, Maintenance	PP. Ch. 14, 15 Eaton	Questions as assigned
3-4	Brake Theory/Systems, Power Steering Theory/Systems	PP. Chs. 25, 29 HDTs Bennett	Questions as assigned
4-5	Motors	PP. Ch. 5 Eaton	Questions as assigned
5-6	Hydrostats	PP. Ch. 14 Eaton Handout	Questions as assigned
6-7	Fluid Couplers Auto Trans	PP. Chs. 17-19 Bennett Handouts	Questions as assigned

General Description of the Subject Matter of Each Lecture or Discussion

Week	Subject	Text Reading assignment	Assignments Due as announced
1-2	Safety, Cartridge Valves, Reservoirs, Coolers, Fluid Filtration, and Accumulators	PP. Ch. 9, 11, 16, 17, 18, Eaton	Questions as assigned
2-3	Electronics, Diagnosis, Testing, Systems, Maintenance	PP. Ch. 14, 15 Eaton	Questions as assigned
3-4	Brake Theory/Systems, Power Steering Theory/Systems	PP. Chs. 25, 29 HDTs Bennett	Questions as assigned
4-5	Motors	PP. Ch. 5 Eaton	Questions as assigned
5-6	Hydrostats	PP. Ch. 14 Eaton	Questions as assigned

		Handout	
6-7	Fluid Couplers Auto Trans	PP. Chs. 17-19 Bennett Handouts	Questions as assigned

Required Course Syllabus Statements

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Using Remote Testing Software

This course does not use remote testing software.

This course uses remote testing software. Remote test-takers may choose their remote testing locations. Please note, however, that the testing software used for this may conduct a brief scan of remote test-takers' immediate surroundings, may require use of a webcam while taking an exam, may require the microphone be on while taking an exam, or may require other practices to confirm academic honesty. Test-takers therefore shall have no expectation of privacy in their test-taking location during, or immediately preceding, remote testing. If a student strongly objects to using test-taking software, the student should contact the instructor at the beginning of the semester to determine whether alternative testing arrangements are feasible. Alternatives are not guaranteed.

Required University Syllabus Statements

Accommodations/Students with Disabilities

Students needing accommodations due to a permanent or temporary disability, pregnancy or pregnancy-related conditions may contact UVU [Accessibility Services](#) at accessibilityservices@uvu.edu or 801-863-8747.

Accessibility Services is located on the Orem Campus in BA 110.

Deaf/Hard of Hearing students requesting ASL interpreters or transcribers can contact Accessibility Services to set up accommodations. Deaf/Hard of Hearing services can be contacted at DHHservices@uvu.edu

DHH is located on the Orem Campus in BA 112.

Academic Integrity

At Utah Valley University, faculty and students operate in an atmosphere of mutual trust. Maintaining an atmosphere of academic integrity allows for free exchange of ideas and enables all members of the community to achieve their highest potential. Our goal is to foster an intellectual atmosphere that produces scholars of integrity and imaginative thought. In all academic work, the ideas and contributions of others must be appropriately acknowledged and UVU students are expected to produce their own original academic work.

Faculty and students share the responsibility of ensuring the honesty and fairness of the intellectual environment at UVU. Students have a responsibility to promote academic integrity at the university by not participating in or facilitating others' participation in any act of academic dishonesty. As members of the academic community, students must become familiar with their [rights and responsibilities](#). In each course, they are responsible for knowing the requirements and restrictions regarding research and writing, assessments, collaborative work, the use of study aids, the appropriateness of assistance, and other issues. Likewise, instructors are responsible to clearly state expectations and model best practices.

Further information on what constitutes academic dishonesty is detailed in [UVU Policy 541: Student Code of Conduct](#).

Equity and Title IX

Utah Valley University does not discriminate on the basis of race, color, religion, national origin, sex, sexual orientation, gender identity, gender expression, age (40 and over), disability, veteran status, pregnancy, childbirth, or pregnancy-related conditions, citizenship, genetic information, or other basis protected by applicable law, including Title IX and 34 C.F.R. Part 106, in employment, treatment, admission, access to educational programs and activities, or other University benefits or services. Inquiries about nondiscrimination at UVU may be directed to the U.S. Department of Education's Office for Civil Rights or UVU's Title IX Coordinator at 801-863-7999 – TitleIX@uvu.edu – 800 W University Pkwy, Orem, 84058, Suite BA 203.

Religious Accommodation

UVU values and acknowledges the array of worldviews, faiths, and religions represented in our student body, and as such provides supportive accommodations for students. Religious belief or conscience broadly includes religious, non-religious, theistic, or non-theistic moral or ethical beliefs as well as participation in religious holidays, observances, or activities. Accommodations may include scheduling or due-date modifications or make-up assignments for missed class work.

To seek a religious accommodation, a student must provide written notice to the instructor and the Director of Accessibility Services at accessibilityservices@uvu.edu. If the accommodation relates to a scheduling conflict, the notice should include the date, time, and brief description of the difficulty posed by the conflict. Such requests should be made as soon as the student is aware of the prospective scheduling conflict.

While religious expression is welcome throughout campus, UVU also has a [specially dedicated space](#) for meditation, prayer, reflection, or other forms of religious expression.