

Oklahoma State University Institute of Technology
Course Syllabus
Summer 2017

ETDE 2253 HYDRAULICS & PNEUMATICS:

Hydraulic principles, types of hydraulic fluids and their characteristics are covered. Describes components of the hydraulic system and their functions, including filters and strainers, reservoirs and accumulators, pumps, piping, tubing and hoses, control valves, and actuating devices. Covers a variety of operating principles of reciprocating, positive displacement, rotary and dynamic air compressors. Covers primary and secondary air treatment. Includes valves, logic devices, cylinders, and air motors.

Type of course: *Theory/ Lab.*

Credit Hours: 3; Total hours of theory per semester: 35; Total hours of lab per semester: 40

Class length - Full Semester

Class days and times: TR: 1:00pm to 3:25pm

Prerequisites: ETDE 1343

Instructor Name: Mark Threadgill

Instructor Phone: (918) 293-4749

Office: ET bldg. A11, Room 15N

Instructor E-mail: mark.threadgill@okstate.edu

Contact: My preferred method of contact is e-mail. Please allow 24-48 hours to return your correspondence during the normal work week.

Instructor's Office Hours: By appointment

Division Name: Engineering Technologies **Division Phone:** (918) 293-5150

REQUIRED BOOKS, MATERIALS & TOOLS

Text Book: Fluid Power Technology, F. Don Norvelle, ISBN-13: 978-0-314-01218-0

Classroom Materials:

- Notebook, Pencils & Pens
- Scientific Calculator
- Engineering Work Pad
- Estimated Cost for Materials: \$210
- Estimated Cost for Uniform/Tools: NA

Students must demonstrate the ability to:

Course Outcomes	Assessment Method
1. Solve problems for flow and pressure, relating to hydraulic and pneumatic systems	Labs, Exams, Homework
2. Simulate hydraulic and pneumatic circuits using automation studio.	Labs
3. Design simple fluid power system using industry standard symbols for manual (discrete /variable) controls	Labs
4. Analyze practical hydraulic systems involved in the implementation of process control systems	Labs, Homework, Exams
5. Identify and draw graphic symbols of various components of a hydraulic system	Labs, Exams
6. Explain the functions of fluid power systems in industrial applications	Labs, Test, Homework

COURSE ACTIVITIES

In this course students will:

- *View videos that depict the various concepts.*
- *Compile a portfolio of work produced.*
- *Take examinations.*
- *Complete reading assignments.*
- *May be required to do quizzes.*

Grades will be based on the quality and completion of these tasks:

Lab.....	20%
Homework.....	25%
Exams.....	40%
3 unit Exams	
1 Final Exam	
Quizzes.....	15%
Total	100%

OSU-Okmulgee Grading Scale
A = 90.00 - 100.00
B = 80.00 - 89.99
C = 70.00 - 79.99
D = 60.00 - 69.99
F = 00.00 - 59.99

*The student's grade for the Final Exam will be used in the university's assessment of student learning. A 70% competency or higher receives a Pass rating. This Pass/Fail rating is independent of the student's course grade.

E-MAIL COMMUNICATION STANDARDS

Students are encouraged to use e-mail when communicating personal issues with their instructor. E-mail corruption is a significant problem and unidentified e-mails are simply purged. Therefore a strict standard is necessary to identify a legitimate student communication. The “message line” of student e-mails must contain in order – Subject, Name, Course, and Trimester. Example: **Missing Assignment, John Smith, ETDE 1243, Spring 05.**

INSTRUCTOR’S POLICY ON ABSENCES

Please advise me when you have a problem with which I can help you. If you have a medical or personal problem that necessitates missing class, please handle that in the appropriate manner and contact me only if you need information about how to stay caught up with your work and succeed in this course. Missing a few class periods should not be devastating to your grade if you stay caught up with the work, but many absences or missing major assignments and activities will heavily impact your success in this course.

The only “excused absences” are the same that you will encounter in the workforce: **jury duty** (bring me a copy of your letter from the judge), **military duty** (bring me a copy of your orders), **sickness** (bring me a memo from your doctor), and required activities in another department (your department advisor must send me a memo). It is your responsibility to plan and turn your work in early if these events cause you to miss class.

INSTRUCTOR’S HOMEWORK POLICY

You are encouraged to work in groups when working on homework. I hope that you will use this as a vehicle for cooperative teaching and learning as well as a timesaving device. Homework will tend to test your problem solving ability but only if you first attempt to solve the problems yourself.

Regarding working in groups, some students fall into a trap of letting other members of their group do the hard intellectual work and think that they can catch up in time to take the exams. Of course, this is not only a mistake it also is not an effective way to learn. It is also bad manners. You must contribute and test your skills and knowledge if you want to master the material.

INSTRUCTOR’S LATE WORK POLICY

UNIT EXAMS AND FINAL EXAM CANNOT BE MADE UP WITHOUT STRICT APPROVAL AND PENALTY! If you know in advance that you will miss an exam, special arrangements may be possible for hardship circumstances.

1. **NO LATE WORK WILL BE ACCEPTED.**
2. All work **MUST** be submitted to D2L in PDF form. No JPEG or other type image files will be accepted. Any type of image files submitted will receive 0 points and will not be graded.
3. Following the return of graded assignments and exams, you will have one week to question the grading and to bring mistakes to the attention of the instructor.
4. The final exam will be comprehensive.

INSTRUCTORS CLASSROOM AND LABORATORY CONDUCT POLICY

Students will be expected to stay focused on the material being presented during lecture and lab and not to engage in any activity that will distract them or anyone else around them from the material being presented. Texting and inappropriate use of electronic devices is detrimental to the learning process.

Therefore, TEXTING and other such activities will not be permitted during both lecture and lab. If you choose to do so anyway, I will document this fact and deduct points accordingly with the date and time of the occurrence. So, please do not do these activities. If you feel you must respond to an emergency text, then please leave the area then return when you have finished your texting.

STUDENT CONDUCT

Students are expected to cooperate in maintaining a classroom environment conducive to learning. Courteous and respectful behavior will be expected from all students each day. **All pagers, cellular phones, CD and MP3 players will be disabled before entering class and will not be visible during class time (consistent with current Oklahoma Law for classrooms in Public Schools).** The use of tobacco in any form in University buildings is prohibited.

AMERICANS WITH DISABILITIES ACT (ADA)

According to the ADA, each student with a disability is responsible for notifying the University of his/her disability and requesting accommodations. If you think you have a qualified disability and need classroom accommodations, contact the Access Services Office located in the College Readiness Center. Please advise the instructor of your disability as soon as possible, to ensure timely implementation of appropriate accommodations. Faculty have an obligation to respond when they receive official notice of a disability from the Access Services Office but are under no obligation to provide retroactive accommodations. To receive services, you must submit appropriate documentation and complete an intake process during which the existence of a qualified disability is verified and reasonable accommodations are identified. Call 293.4988 for more information.

ACADEMIC DISHONESTY

Academic dishonesty or misconduct is neither condoned nor tolerated at OSUIT. Any student found guilty of academic dishonesty or misconduct shall be subject to disciplinary action. Academic dishonesty and/or misconduct includes, but is not limited to, the following actions: (1) Plagiarism: the representation of previously written, published, or creative work as one's own; (2) Unauthorized collaboration on projects; (3) Cheating on examinations; (4) Unauthorized advance access to exams; (5) Fraudulent alteration of academic materials; (6) Knowing cooperation with another person in an academically dishonest undertaking. Students are required to actively protect their work against misuse by others. For details, refer to The OSUIT Student Handbook (Student Rights and Responsibilities Governing Student Behavior) available online at http://www.osuit.edu/academics/forms/student_rights_responsibility.pdf.

Course Outline Schedule	Topic	Assignment	Due Date
<i>Week 1</i>	Introduction to Fluid Power	Homework 1	5/19/17
<i>Week 2</i>	Basic Hydraulic Concepts	Homework 2	5/26/17
<i>Week 3</i>	Hydraulic Pumps	Homework 3 Lab 1	6/2/17 6/2/17
<i>Week 4</i>	Hydraulics Pumps	Homework 4 Exam 1	6/2/17 5/25/17
<i>Week 5</i>	Hydraulic Motors	Lab 2	6/9/17
<i>Week 6</i>	Hydraulic Motors	Homework 5 Lab 3	6/16/17 6/23/17
<i>Week 7</i>	Hydraulic Cylinders	Exam 2	6/15/17
<i>Week 8</i>	Directional Control Valves	Homework 6 Lab 4	6/23/17 7/21/17
<i>Week 9</i>	Pressure Relief Valves	Lab 5	8/11/17
<i>Week 10</i>	Flow Control Valves	Homework 7	7/21/17
<i>Week 11</i>	Electrohydraulics	Exam 3	7/27/17
<i>Week 12</i>	Electrohydraulics	Homework 8	8/18/17
<i>Week 13</i>	Ancillary Devices Review		
<i>Week 14</i>	Review		
<i>Week 15</i>	Exam Review Final Grade	Final Exam	8/22/17 8/24/17

*Schedule is subject to change at instructor discretion.

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I have read and understand this syllabus, and agree to abide by the policies, procedures and guidelines specified therein.

Printed Name

Student CWID Number (this is not your SSN)

Signature

Date

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Student Assessment Release

I agree that Oklahoma State University Institute of Technology may excerpt some of my work to be utilized for institutional assessment purposes. The purpose of institutional assessment is for verification of student learning and program improvement. I recognize that every effort will be made to keep this information confidential and that my name will not be associated with my work.

Printed Name

Student ID Number (this is not your SSN)

Signature