

Oklahoma State University Institute of Technology
Face-to-Face Common Syllabus
Spring 2017

DHEC 2524 POWER TRAIN 1

This course will discuss the basic components and operations of power train systems used in Caterpillar machines. Included will be basic components, couplings, manual shift transmissions and power shift transmissions. Basic components and component function are explained as they relate to the operation of various power train systems.

Type of course: Theory/Lab

Credit Hours: 4; Total hours of theory per semester: 30;

Total hours of lab for the semester: 60.

Class length - Short Session

Class days and times: Monday – Friday, 12:30 PM – 4:25 PM

Prerequisites: None

Instructor Name: Chris Scharrer

Instructor Phone: (918) 293-4720

Office: Bldg. 500 Room #105

Instructor email: chris.scharrer@okstate.edu

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

Instructor's Office Hours: Monday-Friday – 7:30am to 9:30am

School of: Diesel & Heavy Equipment

School's Main Phone: 918-293-4710

REQUIRED TEXT, REFERENCES, AND MATERIALS

Texts: **Power Train 1**, Caterpillar Inc.

References: None

Materials: Notebook, colored pencils or markers (10 color minimum), calculator, 3 x 5 index cards and writing utensils, clip board, (1) 1GB Thumb/Jump drive.

Uniform/Tools: Company provided uniforms and required tool set

Estimated Cost for Materials: \$ 175.00

Estimated Cost for Uniform/Tools: \$ -

Upon completion of the course, students should:

Course Objectives	Assessment of Objectives
Demonstrate an understanding of basic power train components and theory of operation.	DHEC 2524 Final Exam*
Identify the components and explain the operation of flywheel clutches.	
Identify the components and explain the operation of torque converters and torque dividers.	
Identify the components and explain the operation of manual transmissions.	
Identify the components and explain the operation of power shift transmissions and transmission control systems.	
Disassemble and assemble a torque converter, torque divider, manual transmission, and power shift transmission.	
Demonstrate an understanding of basic power train components and theory of operation.	

Aspects of the course objective assessments may be used in the university's assessment of student learning. If applicable, an asterisk (*) above indicates this course is used in the university assessment program.

COURSE ACTIVITIES

In this course students will:

- Participate in discussions of readings...
- View videos that depict the various concepts...
- Participate in lab work during class...
- Participate in in-class activities...
- Make group and individual presentations...

EVALUATION - GRADES WILL BE BASED ON THE QUALITY AND COMPLETION OF THESE TASKS: (NOTE-Please indicate the course specific evaluations.)

Professionalism.....	20%
Lab Assignments.....	20%
Homework.....	20%
Unit Exams.....	20%
Final Exam*	20%

OSUIT Grading Scale
A = 90%-100%
B = 80%-89%
C = 70%-79%
D = 60%-69%
F = 59% & below

*The student’s grade for this assignment 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.

Daily and/or weekly quizzes, small weekly assignments and similar type projects: Normal return time to student by next class meeting or no later than one (1) week.

Extensive assignments, large lab projects, extensive quizzes, exams and similar type projects: Normal return time to students in one (1) to two (2) weeks.

AUTHORIZED TOOLS

Students may use any/all course materials, including books and notes, while participating in classroom activities. All quizzes and written assignments are to be completed independently; no collaboration with classmates is permitted and any instance of such will be considered academic dishonesty.

LATE WORK

General Policy: Deadlines are given for each assignment. All assignments must be turned in and all tests will be taken as scheduled. Assignments are all due at the beginning of the class period on the stated due dates.

Penalty: Late assignments will earn zero credit.

Make Ups: Makeup work is allowed only for absences due to college-sponsored activities, military duty, and jury duty. If a student is absent, it is his/her responsibility to complete assignments on time. It is the student's responsibility to arrange for makeup work with the instructor. When students are absent, they are responsible for obtaining homework assignments and class notes. There is no make-up for the final exam.

Turning In Assignments: All assignments must have complete headings, which include; Student Name, Date, Course number and section number.

TESTING

General Policy: Test dates will be provided at least 1 day before the exam. All test and quizzes must be completed as scheduled. Once the test begins you may not leave the classroom or you will receive a zero for a grade. Cell phone use will not be tolerated, if used a zero will be earned.

On the day of the test you will be informed of what resources (if any) may be used on the test or quiz.

Make Ups: Makeup quizzes are allowed only for absences due to college-sponsored activities, military duty, jury duty, and other instructor approved cases. If a student will be absent, it is his/her responsibility to notify the instructor ahead of time to complete assignments. It is the student's responsibility to arrange for makeup work with the instructor before being absent. There is no make-up for the final exam.

UNIVERSITY & COURSE EXPECTATIONS

It is the responsibility of each OSUIT student to read, abide by and maintain a copy of the syllabus for this course. Syllabi are available on the OSUIT website.

Students understand that excerpts or portions of their work may be utilized for institutional assessment purposes. The purpose of institutional assessment is for verification of student learning and program improvement. Every effort will be made to keep this information confidential.

AMERICANS WITH DISABILITIES ACT (ADA)

According to the Americans with Disabilities Act, 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 special accommodations, you should notify the instructor and request verification of eligibility for accommodations from the Office of Academic Accommodations/LASSO Center. Please advise the instructor of your disability as soon as possible, and contact The LASSO Center, located in the Noble Center for Advancing Technology – NCAT, top floor, and 918-293-4855 to ensure timely implementation of appropriate accommodations. Faculty have an obligation to respond when they receive official notice of a disability 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. (Fall 2013)

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.

ATTENDANCE POLICY FOR FACE-TO-FACE COURSES

A primary component of OSUIT's Mission is "to prepare and sustain a diverse student body as competitive members of a world-class workforce." Regular and consistent attendance not only

aids in academic success, dependable attendance is a requirement in today's real-world employment; therefore, regular and consistent attendance is a requirement in all OSUIT courses.

Definitions: Absent: Failing to attend all or a significant portion of a class or lab session.

A. Students may not be marked as absent if missing class for situations such as, but not limited to

1. participating in a required university activity such as a field trip;
2. fulfilling a military obligation;
3. a mandatory court appearance;
4. death in the immediate family;
5. Extreme illness or accident to oneself or immediate family. Instructors, at their discretion, may require proof of such events.

B. It is the responsibility of the student to contact and inform the instructor and/or department in advance of such excused absences whenever possible.

Tardy: Arriving late to class as defined by the individual class instructor. Faculty, at their discretion, may equate three tardies to equal one absence.

Procedures:

Early Intervention

- A. Any student who misses 10% of an individual course (or earlier at faculty discretion) during a regular fifteen-week semester, or the equivalent portion of time in a shorter session, will have their name submitted by that course instructor to the OSUIT Early Alert System for retention intervention.
- B. At the point the Early Alert is issued, the student must meet with their assigned faculty advisor or designated faculty/staff member within seven (7) academic calendar days for counseling on how to improve their attendance and academic success.

Excessive Absences

- A. The University reserves the right to administratively withdraw any student from an individual course who misses 20% of that course, whether excused or unexcused, and, in the opinion of the instructor, the student does not have a reasonable opportunity to be successful in the course.
- B. Students should be aware any of the following may impact their financial aid:
 1. being administratively withdrawn from a course
 2. dropping a course
 3. their last date of attendance in a course

Please see OSUIT Policy 2-021 for full details and procedures.

Course Schedule			
Course Outline Schedule	Topic	Assignment	Due Date
Week 1 1/20 – 1/20	Unit 1	Unit Exam	
Week 2 1/23 – 1/27	Unit 1, 2 and 3	Unit Exam	
Week 3 1/30 – 2/3	Unit 3		
Week 4 2/6 – 2/10	Unit 3		
Week 5 2/13 – 2/17	Unit 3		
Week 6 2/20 – 2/23	Unit 3	DPC Courses Due	2/20
Week 6 2/23	Final Exam	Final Exam	

Schedule is subject to change at instructor discretion.

OTHER LAB AND CLASSROOM POLICIES

All students are expected to: Complete all assigned readings and related homework. Come to all class and lab sessions on time. Bring appropriate and prescribed supplies, and materials, to class and lab sessions. Have their individual required tool set available in the lab for all class and lab sessions. The only exception is during the first half of the first semester, when the tool set has been ordered, but not received, from a vendor at the Auto and HEVi Technologies tool day.

It is the policy of the HEVi Department that all tests will be taken on the assigned date. Make up exams will be given only if arrangements are made prior to the original test date, or if the instructor determines that arrangements could not be made prior to the test date because of an emergency or illness. Missed examinations will be made up at the instructor's convenience. Once a test has started, students are not allowed to enter or leave the testing area.

All students are considered mature individuals by the faculty and staff. Students will be required to conduct themselves with utmost consideration of the rights and property of others. Any behavior on the part of a student that interrupts or impedes quality instruction shall not be permitted.

LABORATORY AND FIELD WORK

Labs are considered a major part of the class, and all students are expected to participate. Students may not leave the classroom or lab area without the instructor's approval. If an instructor deems an article of clothing unsafe or otherwise improper, the student will be required to change before attending class or lab. Horseplay will not be tolerated in the classroom or lab areas. Obscene, abusive, and/or profane language will not be tolerated. Lab work will not be considered as complete until all materials, tools and equipment have been stored properly and the work area cleaned. All tools and equipment will be cleaned and returned to their proper place

after use. Shop and lab areas are strictly for lab work approved by OSU-IT. Students may not work on their vehicles inside HEVi buildings nor in the industrial courtyard. Damaged or broken tools or equipment must be reported to the instructor. Students should keep their toolboxes locked at all times when they are not using them. OSU-IT and/or the Heavy Equipment and Vehicle Institute are not responsible for any damage, loss, or theft of student tools and/or equipment. Students may be considered absent if they do not have their individual HEVi required tool set available for lab exercises.