



CAT® Equipment Technician

COURSE INFORMATION

Fall '99

David Clark

TITLE

MAG 10 - Power Trains

CATALOG DESCRIPTION

A study of the power train from the clutch through the final drive. Topics will include the theory of operation, maintenance, diagnosis, and repair of torque converters and hydraulic transmissions, differentials, and final drives. Safety will be stressed.

UNITS & HOURS

5 Units		3 hours lecture and 6 hours lab per week
Tuesday & Thursday		7:45 - 11:50 a.m.
7:45 - 9:00	Lecture	AGR 2
9:00-9:20	Break	
9:20-11:50	Lab	AGM 2 & 3

TEXTBOOKS

Power Trains, John Deere Publishing
Caterpillar 3-Ring Binder + CAT materials

REQUIRED MATERIALS

- Approved eye protection/safety glasses (Z87.1 A.N.S.I.)
- Approved footwear
- Two work shirts (Approximately \$35)
Reedley College Caterpillar Equipment Technician shirt @
A.V. Uniform, 2930 N. Blackstone, Fresno 93703 Phone: 224-1199

ASSIGNMENTS & GRADES

The class is designed to develop equipment technician skills to service and repair Caterpillar power train components. Laboratory skills (i.e., power train disassembly, measurement, re-assembly, operation) will constitute approximately one-half of the student's grade. The remaining one-half of the grade will be determined by organizing lecture notes, handouts, and assignments/homework, 4 tests, and the final exam.

Point Distribution: 90% = A, 80% = B, 70% = C, 60% = D, Less = F

<u>Lecture</u>	Homework	50		
	4 tests @ 50/each	200		
	Notebook	150		
	Final Exam	<u>100</u>	Lec. Total	500
<u>Lab</u>	Participation 18 @ 15/each	270		
	<small>(Timeliness, clean-up, work ethic)</small>			
	Assignment	<u>230</u>	Lab Total	<u>500</u>
			Total	<u>1000</u>

FINAL EXAM

Thursday, December 16, 1999 at 8:00 a.m.

GRADE POLICY

On separate sheet

*drop date
attendance*

WORK ETHIC

On separate sheet

OFFICE HOURS

Monday, Wednesday, Friday
Ag Shop Office (AGM 5)

1:00-2:00 p.m.
Telephone: RC Ext. 3317 or off-campus - 638-0317

COURSE OUTLINE

Introduction to Power Trains

Clutch

1. Purpose
2. Dry Type Assemblies
3. Oil Type Assemblies
4. Adjustment

Torque Converter

1. Application, Theory, Components
2. Operation Principles
3. Torque Dividers

TEST Chapters 1, 2, 6

Introduction to Transmissions

1. Power Flow
2. Transmission Design & Components
3. Operating Principles & Functions

Transmission Types

1. Manual
2. Planetary
3. Countershaft
4. Hydrostatic

TEST Chapters 3, 4, 5

Differentials

1. Operation
2. Differential Locks
3. Adjustments

Final Drive

1. Straight Axle
2. Pinion Axle
3. Planetary Drive

TEST Chapters 7, 8, 9

Steel Track Undercarriage

1. Track Disassembly
2. Carrier Roller Inspection
3. Front Idler Inspection
4. Track Service & Reassembly

Rubber Track Undercarriage

1. Accumulator Discharge
2. Track Removal
3. Drive/Tire Inspection
4. Roller/Bogie Inspections

TEST Instructor prepared materials

FINAL EXAM