

DET 82B Course Outline as of Spring 2008**CATALOG INFORMATION**

Dept and Nbr: DET 82B Title: DIESEL FUEL SYSTEMS

Full Title: Diesel Engine Fuel Systems

Last Reviewed: 1/22/2018

Units		Course Hours per Week		Nbr of Weeks	Course Hours Total	
Maximum	3.00	Lecture Scheduled	2.50	17.5	Lecture Scheduled	43.75
Minimum	3.00	Lab Scheduled	2.00	8	Lab Scheduled	35.00
		Contact DHR	0		Contact DHR	0
		Contact Total	4.50		Contact Total	78.75
		Non-contact DHR	0		Non-contact DHR	0

Total Out of Class Hours: 87.50

Total Student Learning Hours: 166.25

Title 5 Category: AA Degree Applicable

Grading: Grade Only

Repeatability: 00 - Two Repeats if Grade was D, F, NC, or NP

Also Listed As:

Formerly:

Catalog Description:

An in-depth study of heavy duty diesel engine fuel and electronic control systems. Students perform service, maintenance and diagnosis of current engine fuel systems.

Prerequisites/Corequisites:

Course Completion or Current Enrollment in DET 182A (or DET 82A)

Recommended Preparation:

Eligibility for ENGL 100 or ESL 100.

Limits on Enrollment:**Schedule of Classes Information:**

Description: Preparation and operation of live functioning internal combustion engines. Students will perform tune-ups and diagnostic procedures and analyze specific systems related to operating engines. (Grade Only)

Prerequisites/Corequisites: Course Completion or Current Enrollment in DET 182A (or DET 82A)

Recommended: Eligibility for ENGL 100 or ESL 100.

Limits on Enrollment:

Transfer Credit: CSU;

Repeatability: Two Repeats if Grade was D, F, NC, or NP

ARTICULATION, MAJOR, and CERTIFICATION INFORMATION:

AS Degree:	Area		Effective:	Inactive:	
CSU GE:	Transfer Area		Effective:	Inactive:	
IGETC:	Transfer Area		Effective:	Inactive:	
CSU Transfer:	Transferable	Effective:	Fall 2004	Inactive:	Fall 2014
UC Transfer:		Effective:		Inactive:	

CID:

Certificate/Major Applicable:

Both Certificate and Major Applicable

COURSE CONTENT

Outcomes and Objectives:

Upon successful completion of the course, students will be able to:

1. Summarize maintenance and repair methods related to diesel engines.
2. Carry out troubleshooting procedures to deduce necessary repairs and perform tune-up techniques to modify engine performance.
3. Identify and evaluate electronic systems components.
4. Perform diagnosis and prioritize repairs on an electronic control system.
5. Identify different types of engine fuel systems.
6. Safely and successfully start, operate and evaluate the final condition of an internal combustion engine.
7. Use engine tune-up and diagnostic tools and instruments effectively.
8. Identify and name specific engine accessories.
9. Discuss and apply personal, shop, and environmental safety procedures.

Topics and Scope:

1. Inspection and operation
 - a. Pre-operation inspection
 - b. Safety checks
 - c. Engine start-up
 - d. Engine operation
 - e. Engine shut-down procedures
2. Tune-up procedures
 - a. Four-stroke cycle
 - b. Standard tune-up procedures
 - c. Electronic engine tune-up procedures
 - d. Two-stroke cycle engine tune-up procedures
 - e. Electronic component testing
3. Diagnostic procedures

- a. Mechanical fuel system diagnostics
- b. Electronic fuel system diagnostics
- c. General engine diagnostics
- 4. Engine accessories
 - a. Engine accessories
 - b. Turbocharging and supercharging
 - c. Engine brakes and retarders
 - d. Heaters and coolers
 - e. Adaptive housings and devices
- 5. Safety
 - a. Personal
 - b. Shop
 - c. Environmental

Assignment:

May include:

1. Assigned textbook readings, 40-60 pages per week.
2. Perform engine tune-up procedures.
3. Perform diagnostic tests and procedures.
4. Perform engine analysis and evaluation.
5. Worksheets.
6. Research and prepare a written (3-5 pages) report on a topic related to modern diesel engines.

Methods of Evaluation/Basis of Grade:

Writing: Assessment tools that demonstrate writing skills and/or require students to select, organize and explain ideas in writing.

Written homework, report

Writing
5 - 15%

Problem Solving: Assessment tools, other than exams, that demonstrate competence in computational or non-computational problem solving skills.

Lab worksheets

Problem solving
10 - 20%

Skill Demonstrations: All skill-based and physical demonstrations used for assessment purposes including skill performance exams.

Structured lab activities

Skill Demonstrations
30 - 60%

Exams: All forms of formal testing, other than skill performance exams.

Multiple choice, true/false, matching items, tests (4)

Exams
25 - 50%

Other: Includes any assessment tools that do not logically fit into the above categories.

None

Other Category
0 - 0%

Representative Textbooks and Materials:

Diesel Technology: Fundamentals, Service, Repair. Norman, Corinchock, Goodheart-Wilcox Pub. 7th Ed., 2007.