DET 182B Course Outline as of Fall 2014

CATALOG INFORMATION

Dept and Nbr: DET 182B 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:	DET 82B

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

Prerequisites/Corequisites:
Course Completion of DET 182A

Recommended Preparation:
Eligibility for ENGL 100 or ESL 100

Limits on Enrollment:

Schedule of Classes Information:
Description: An in-depth study of heavy duty diesel engine fuel and electronic control systems. Students perform service, maintenance and diagnosis of diesel engine fuel systems. (Grade Only)
Prerequisites/Corequisites: Course Completion of DET 182A
Recommended: Eligibility for ENGL 100 or ESL 100
Limits on Enrollment:
Transfer Credit:

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:	Effective:	Inactive:
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. Carry out diagnostic procedures to deduce necessary repairs and perform tune-up procedures to correct engine performance.
2. Identify and evaluate electronic systems components.
3. Perform diagnosis and repairs on an electronic control system.
4. Identify different types of engine fuel systems.
5. Use engine tune-up and diagnostic tools and instruments effectively.
6. Discuss and apply personal, shop, and environmental safety procedures.

Topics and Scope:

1. Engine inspection and operation
   a. Pre-operation inspection
   b. Safety checks
   c. Engine start-up
   d. Engine operation
   e. Fuel system
2. Tune-up procedures
   a. Four-stroke cycle
   b. Standard tune-up procedures
   c. Electronic engine tune-up procedures
   d. Electronic component testing
3. Diagnostic procedures
   a. Mechanical fuel system diagnostics
   b. Electronic fuel system diagnostics
   c. General engine diagnostics
4. Engine accessories
   a. Turbocharging and supercharging
   b. Engine brakes and retarders

c. Heaters and coolers
d. Adaptive housings and devices
5. Safety
a. Personal
b. Shop
c. Environmental

Assignment:

1. Read 40 to 60 pages a week
2. Perform engine diagnostic tests
3. Evaluate engine performance and correct deficiencies
4. Document engine performance repairs with written lab report
5. 3 to 5 exams

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.

lab report	Writing 0 - 30%

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

Engine performance evaluation	Problem solving 10 - 30%

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

Engine diagnostic tests	Skill Demonstrations 10 - 30%

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

2 to 5 exams	Exams 20 - 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. (classic)