DET 84 Course Outline as of Spring 2002

CATALOG INFORMATION

Dept and Nbr: DET 84 Title: MOBILE HYDRAULICS
Full Title: Mobile Hydraulics
Last Reviewed: 1/22/2018

Units		Course Hours per Week		Nbr of Weeks	Course Hours Total	
Maximum	3.00	Lecture Scheduled	4.50	17	Lecture Scheduled	76.50
Minimum	3.00	Lab Scheduled	4.50	8	Lab Scheduled	76.50
		Contact DHR	0		Contact DHR	0
		Contact Total	9.00		Contact Total	153.00
		Non-contact DHR	0		Non-contact DHR	0

Total Out of Class Hours: 153.00 Total Student Learning Hours: 306.00

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 63

Catalog Description:
The study of fluid power as it applies to the use and function of mobile machinery and vehicles. Includes a study of the technical language of fluid power, including graphical symbols and industrial standards. Lab exercises cover the inspection and repair of hydraulic systems and components.

Prerequisites/Corequisites:

Recommended Preparation:
Completion of DET 80.

Limits on Enrollment:

Schedule of Classes Information:
Description: The study of fluid power as it applies to the use and function of mobile machinery and vehicles. Includes a study of the technical language of fluid power, including graphical symbols and industrial standards. Lab exercises cover the inspection and repair of hydraulic systems and components. (Grade Only)
Prerequisites/Corequisites:

Recommended: Completion of DET 80.
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 1981	Inactive:	Fall 2014
UC Transfer:		Effective:		Inactive:	

CID:

Certificate/Major Applicable:
Certificate Applicable Course

COURSE CONTENT

Outcomes and Objectives:
Upon successful completion of this course students will be able to:
1. Explain the operating principles of fluid power systems.
2. Describe and diagram hydraulic system design.
3. Apply the nomenclature of hydraulics and use and interpret the proper symbols.
4. Identify hydraulic system components.
5. Examine and evaluate faulty hydraulic components.
6. Change components in the system and reconnect and test for proper operation.
7. Interpret instructions and repair manuals in order to diagnose systems and perform basic repair and maintenance procedures.
8. Discuss and apply personal, shop, and environmental safety procedures.

[Outcomes and objectives meet or exceed NATEF Applied Academic & Workplace Skills for Medium/Heavy Truck Technicians (Reference Standard 6.5, ASE Program Certification Standards manual, 1998.)]

Topics and Scope:

Unit 1: Principles of Hydraulics
- a. basic laws of fluids
- b. graphic symbols
- c. system operation

Unit 2: System Design
- a. block type system
- b. open and closed systems
- c. hydraulic circuits

Unit 3: Hydraulic Components

a. reservoirs, filtration, and conduit
b. pumps and motors
c. valves
d. actuators
e. accessories
f. component compatibility

Unit 4: Maintenance & Repair
a. basic troubleshooting
b. cleaning procedures
c. failure analysis
d. general maintenance
e. component repairs

Unit 5: Safety
a. personal
b. shop
c. environmental

Assignment:

1. Complete readings and exercises related to the theory and operation of mobile hydraulic systems.
2. Perform maintenance and repair procedures for hydraulic systems and components.
3. Research and report on a specific hydraulic system.
4. Practice examining and evaluating faulty hydraulic components.
5. Solve problems related to mobile hydraulic systems.

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.

None, This is a degree applicable course but assessment tools based on writing are not included because problem solving assessments and skill demonstrations are more appropriate for this course.	Writing 0 - 0%

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

Homework problems, Lab reports, Quizzes	Problem solving 10 - 25%

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

Class performances, STRUCTURED LAB EXERCISES	Skill Demonstrations 20 - 60%

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

Multiple choice, Completion, Essay	Exams 20 - 60%

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

Attendance and participation.	Other Category 10 - 20%

Representative Textbooks and Materials:
Fundamentals of Service, Hydraulics: Deere & Co., 2nd Ed. 1998