DET 180 Course Outline as of Summer 2010

CATALOG INFORMATION

Dept and Nbr: DET 180 Title: MOBILE REFRIGERATION EQ.
Full Title: Mobile Refrigeration Equipment
Last Reviewed: 11/26/2001

Units		Course Hours per Week		Nbr of Weeks	Course Hours Total	
Maximum	2.00	Lecture Scheduled	3.00	8	Lecture Scheduled	24.00
Minimum	2.00	Lab Scheduled	3.00	8	Lab Scheduled	24.00
		Contact DHR	0		Contact DHR	0
		Contact Total	6.00		Contact Total	48.00
		Non-contact DHR	0		Non-contact DHR	0

Total Out of Class Hours: 48.00 Total Student Learning Hours: 96.00

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:	

Catalog Description:
The study of refrigeration technology as it applies to the transportation, shipping, and mobile cold storage industries. Students will be prepared to maintain and repair vehicle and self-powered refrigeration units.

Prerequisites/Corequisites:

Recommended Preparation:
DET 60, DET 65 or AUTO 56 and DET 64.

Limits on Enrollment:

Schedule of Classes Information:
Description: The study of refrigeration technology as it applies to the transportation, shipping, and mobile cold storage industries. Students will be prepared to maintain and repair vehicle- and self-powered refrigeration units. (Grade Only)
Prerequisites/Corequisites:
Recommended: DET 60, DET 65 or AUTO 56 and DET 64.
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:
Certificate Applicable Course

COURSE CONTENT

Outcomes and Objectives:
Upon completion of this course students will be able to:
1. Explain refrigeration theory and principles.
2. Describe refrigeration and refrigerant handling safety laws.
3. Describe refrigeration unit design and components.
4. Demonstrate safe handling of refrigeration equipment and refrigerants.
5. Read and interpret schematic diagrams.
6. Evaluate condition of electrical wiring and controls.
7. Repair or replace system or circuit components as required.
8. Test and evaluate refrigeration units for efficiency.
9. Charge, evacuate and re-charge chemical refrigerants in systems.
10. Perform mechanical maintenance and repairs on refrigeration units.
11. Discuss and apply personal, shop, and environmental safety procedures.

Topics and Scope:

1. Refrigeration theory
   a. refrigerants
   b. condensation and evaporation
   c. filtration
   d. compression
2. Refrigeration unit design and power
   a. vehicle powered systems
   b. self-propelled systems
   c. electrically driven systems
3. Unit testing and evaluation
   a. tools and equipment
   b. testing procedures
   c. out-of-service criteria
4. Electrical / electronic controls

a. schematics and symbols
b. wiring circuits
c. relays, switches, and temperature controls
5. System charging
a. tools and equipment
b. evacuation
c. lubricants and refrigerants charging
6. Maintenance and repair
a. scheduled maintenance
b. engine compartment repairs
c. refrigeration compartment repairs
7. Safety
a. personal
b. shop
c. environmental

Assignment:

1. Readings and report on theory of refrigeration.
2. Perform maintenance on different types of refrigeration units.
3. Evaluate and record discharge and recharge procedures.
4. Test electrical systems, and control and record results.
5. Make needed repairs to systems and maintain repair log.

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, Exams	Problem solving 10 - 30%

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

Class performances, Performance exams	Skill Demonstrations 20 - 40%

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

Multiple choice, True/false, Matching items, Completion	Exams 20 - 40%

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

Attendance and participation.	Other Category 5 - 10%

Representative Textbooks and Materials:
Instructor / industry provided handouts.