DET 185 Course Outline as of Fall 2018

CATALOG INFORMATION

Dept and Nbr: DET 185 Title: HEAVY DUTY CHASSIS
Full Title: Heavy Duty Chassis and Undercarriage Systems
Last Reviewed: 1/22/2018

Units		Course Hours per Week		Nbr of Weeks	Course Hours Total	
Maximum	3.00	Lecture Scheduled	2.25	17.5	Lecture Scheduled	39.38
Minimum	3.00	Lab Scheduled	2.25	8	Lab Scheduled	39.38
		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: 78.75 Total Student Learning Hours: 157.50

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 85

Catalog Description:
The study of heavy-duty chassis and undercarriage systems including steering, braking, and suspension systems utilized on trucks, agricultural equipment and construction equipment.

Prerequisites/Corequisites:

Recommended Preparation:
Eligibility for ENGL 100 or ESL 100 and Course Completion of DET 179

Limits on Enrollment:

Schedule of Classes Information:
Description: The study of heavy-duty chassis and undercarriage systems including steering, braking, and suspension systems utilized on trucks, agricultural equipment and construction equipment. (Grade Only)
Prerequisites/Corequisites:
Recommended: Eligibility for ENGL 100 or ESL 100 and Course Completion of DET 179
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

Student Learning Outcomes:
At the conclusion of this course, the student should be able to:
1. Inspect, evaluate and repair brakes systems
2. Inspect, evaluate and repair steering systems
3. Inspect, evaluate and repair suspension systems

Objectives:
At the conclusion of this course, the student should be able to:
1. Evaluate and repair steering and suspension systems for medium/heavy duty equipment.
2. Measure and adjust wheel alignment angles.
3. Inspect, assess and repair hydraulic brake systems.
4. Inspect, assess and repair air brake systems.

Topics and Scope:

I. Steering Systems
   A. Steering system components
   B. Steering geometry and function
   C. Mechanical and hydraulic steering systems
   D. Testing steering systems
II. Suspension Systems
   A. On highway transportation equipment
   B. Public transportation equipment
   C. Mobile heavy equipment
   D. System repair and maintenance
   E. Component repair and maintenance
III. Wheels, Tires, Tracks and Alignment Factors
   A. Wheel hubs and bearings
   B. Tire applications and types
   C. Steel and fiber tracks and components
   D. Truck and bus alignment basics

E. Equipment undercarriage alignment and wear factors
IV. Air Brake Systems
A. Air brake system operation dynamics
B. Air brake components, repair and maintenance
C. Foundation brake components and adjustment
D. Anti-lock brake systems
V. Hydraulic Brake Systems
A. Brake system operation
B. Brake system components, repair and maintenance
C. Foundation brake components, repair and maintenance
D. Anti-lock brake systems

All topics are covered in both the lecture and lab parts of the course.

Assignment:

Lecture-Related Assignments:
1. Read approximately 25 to 50 pages a week
2. Ten to fifteen tests to include final

Lab-Related Assignments:
1. Perform alignment checks on vehicles and equipment
2. Perform maintenance and repair procedures on chasis-related equipment
3. Perform brake inspections and adjustments on heavy vehicles
4. Complete NATEF (National Automotive Technicians Education Foundation) recommended task sheets
5. Daily work logs (work assigned, work completed)

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.

Daily work logs	Writing 0 - 25%

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

Task Sheets	Problem solving 15 - 30%

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

Lab repair work including alignments, inspections, and repairs	Skill Demonstrations 15 - 25%

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

Tests including final	Exams 40 - 50%

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

None	Other Category 0 - 0%

Representative Textbooks and Materials:
Fundamentals of Mobile Heavy Equipment CDX. Wright, Gus and Duffy, Owen and Heard, Scott. Jones and Bartlett. 2019
Fundamentals of Medium/Heavy Duty Commercial Vehicle Systems. Duffy, Owen and Wright, Gus. Jones and Bartlett. 2016
Instructor prepared materials