

**DET 181 Course Outline as of Fall 2014****CATALOG INFORMATION**

Dept and Nbr: DET 181 Title: PREVENT. MAINT. &amp; INSPC.

Full Title: Preventive Maintenance and Inspection

Last Reviewed: 12/9/2019

<b>Units</b>	<b>Course Hours per Week</b>		<b>Nbr of Weeks</b>		<b>Course Hours Total</b>	
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 81

**Catalog Description:**

The study of preventive maintenance and inspection practices as related to diesel vehicles and machinery. Preventive maintenance inspections are practiced.

**Prerequisites/Corequisites:****Recommended Preparation:**

Eligibility for ENGL 100 or ESL 100 and Course Completion of DET 80

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

Description: The study of preventive maintenance and inspection practices as related to diesel vehicles and machinery. Preventive maintenance inspections are practiced. (Grade Only)

Prerequisites/Corequisites:

Recommended: Eligibility for ENGL 100 or ESL 100 and Course Completion of DET 80

Limits on Enrollment:

Transfer Credit:

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

## **ARTICULATION, MAJOR, and CERTIFICATION INFORMATION:**

<b>AS Degree:</b>	<b>Area</b>	<b>Effective:</b>	<b>Inactive:</b>
<b>CSU GE:</b>	<b>Transfer Area</b>	<b>Effective:</b>	<b>Inactive:</b>
<b>IGETC:</b>	<b>Transfer Area</b>	<b>Effective:</b>	<b>Inactive:</b>
<b>CSU Transfer:</b>		<b>Effective:</b>	<b>Inactive:</b>
<b>UC Transfer:</b>		<b>Effective:</b>	<b>Inactive:</b>

**CID:**

**Certificate/Major Applicable:**

Both Certificate and Major Applicable

## **COURSE CONTENT**

### **Outcomes and Objectives:**

Upon successful completion of this course students will:

1. Describe maintenance and inspection procedures for industrial machinery.
2. Evaluate symptoms of potential machine failure.
3. Perform and assess preventive maintenance inspections on the following:
  - a. tracks, tires and wheels
  - b. engine and powertrain components
  - c. electrical/electronic components
  - d. chassis and undercarriage components
4. Evaluate conditions and determine remedies.
5. Utilize digital media for service information.
6. Discuss and apply personal, shop, and environmental safety procedures.

### **Topics and Scope:**

1. Maintenance and inspection procedures
  - a. scheduled maintenance
  - b. preventive maintenance
2. Using technical manuals
  - a. hard copy
  - b. computerized
3. Lubrication
  - a. solid and liquid lubricants
  - b. lubrication procedures
  - c. rating symbols
4. Failure analysis
  - a. metallic parts failures
  - b. failures due to neglect/lack of maintenance
5. Tracks, tires and wheels
  - a. condition and wear
  - b. rims, wheels, rollers
6. Engine compartment

- a. fluid levels
  - b. leak inspection
  - c. belts and hoses
  - d. component mounting
  - e. wiring and clamps
  - f. air intake system
  - g. fuel systems
  - h. cooling systems
7. Electrical and Electronic systems
- a. inspect/test batteries
  - b. battery cables and terminals
  - c. starting system tests
  - d. lighting system check
  - e. gauges and instruments
  - f. diagnostic display
  - g. computer malfunction lamp diagnosis
8. Power Train
- a. transmission service
  - b. rear axle service
  - c. driveline inspection
  - d. clutch adjustment
9. Chassis/Undercarriage
- a. steering system
  - b. suspension inspection
  - c. brake adjustment and inspection
  - d. anti-lock brake malfunction diagnosis
  - e. springs and attachments
  - f. component mounts
10. Hydraulic systems
- a. fluid type and level indicators
  - b. filters and maintenance
11. Safety
- a. personal
  - b. shop
  - c. environmental/hazardous material handling

**Assignment:**

1. Read 25 to 40 pages per week
2. Perform preventive maintenance inspections and prepare written reports
3. Complete inspection and evaluation worksheets
4. 3 to 5 exams including final exam

**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.

Preventive maintenance inspection reports
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Writing 0 - 20%
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**Problem Solving:** Assessment tools, other than exams, that demonstrate competence in computational or non-computational problem solving skills.

Inspection and evaluation worksheets

Problem solving  
10 - 25%

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

Perform preventive maintenance inspections

Skill Demonstrations  
20 - 40%

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

3 to 5 exams including final exam

Exams  
30 - 50%

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

None

Other Category  
0 - 0%

**Representative Textbooks and Materials:**

Heavy Duty Truck Systems, Bennett ed. 5, 2011