

**SAN DIEGO COMMUNITY COLLEGE DISTRICT
MIRAMAR COLLEGE
ASSOCIATE DEGREE COURSE OUTLINE**

SECTION I

SUBJECT AREA AND COURSE NUMBER: Diesel Technology 100

COURSE TITLE: Introduction to Diesel Technology

Units: 2
Grade Only

CATALOG COURSE DESCRIPTION:

This beginning class introduces students to the field of diesel-powered trucks and equipment maintenance and service. Students learn about the common types of diesel powered trucks and equipment, shop safety, industrial fasteners, hydraulic fittings, technician tool requirements, service shop organization and procedures, and shop measuring tools. Students also receive an overview of the Miramar College Diesel Technology program.

REQUISITES:

NONE

FIELD TRIP REQUIREMENTS: May be required

TRANSFER APPLICABILITY: Associate Degree Credit & transfer to CSU and/or private colleges and universities

TOTAL LECTURE HOURS: 32 - 36

TOTAL LAB HOURS:

STUDENT LEARNING OBJECTIVES:

Upon successful completion of the course the student will be able to:

1. Choose and demonstrate appropriate safety procedures related to diesel service work
2. Explain diesel technician qualifications and tool requirements
3. Describe or demonstrate service shop organization and procedures
4. Describe and demonstrate proper tool usage
5. Identify hydraulic fittings
6. Identify industrial fasteners; examine and describe their proper application
7. Identify and compare common and precision measuring tools
8. Identify diesel-powered equipment application and design
9. Differentiate the degree and certificate programs offered in Diesel Technology at Miramar College.

SECTION II

1. COURSE OUTLINE AND SCOPE:

A. Outline Of Topics:

The following topics are included in the framework of the course but are not intended as limits on content. The order of presentation and relative emphasis will vary with each instructor.

- I. Safety procedures
 - A. Safe working habits
 - B. Shop safety
 - C. Tool safety.
- II. Diesel-powered equipment application and design
 - A. On-highway trucks
 - B. Off-highway equipment.
- III. Service shop
 - A. Organization
 - B. Procedures
 - C. Repair orders and service records.
- IV. Technician development
 - A. Professional development
 - B. Tool requirements.
- V. Service tools
 - A. Identification
 - B. Usage.
- VI. Hydraulic fittings
 - A. Identification
 - B. Common fittings
 - C. Common usage.
- VII. Industrial fasteners
 - A. Identification
 - B. Standard fasteners
 - C. Metric fasteners
 - D. Common application.
- VIII. Measuring tools
 - A. Identification
 - B. Usage.
- IX. Overview of Diesel Technology Program
 - A. Heavy Duty Transportation
 - B. Heavy Equipment
 - C. Heavy Repair Technology.

B. Writing Assignments:

Writing assignments are required and may include, but are not limited to, the following:

- I. 1. Preparing a shop notebook
- II. 2. Writing an essay about diesel technician qualifications and tool requirements
- III. 3. Responding to short essay questions about repair shop safety procedures.

C. Reading Assignments:

Reading assignments are required and may include but, are not limited to, the following:

- I. 1. Chapters from course textbook(s)
- II. 2. Articles related to diesel repair in professional journals such as Service Tech, Diesel Progress, Commercial Carrier Journal (CCJ), Utility Fleet, Fleet Owner, and Transportation Equipment News
- III. 3. Reports, repair manuals, on-line resources, and laboratory guides associated with diesel technology.

D. Appropriate Assignments that Demonstrate Critical Thinking:

Critical thinking assignments are required and may include, but are not limited to, the following:

- I. 1. Analyzing methods learned in class and utilizing appropriate methods for completing laboratory tasks
- II. 2. Choosing the proper precision measuring tools for evaluating the inside diameter of cylinder liners
- III. 3. Determining the proper application of industrial fasteners
- IV. 4. Calculating and solving mathematical problems.

E. Appropriate Outside Assignments:

Outside assignments may include, but are not limited to, the following:

- I. 1. Conducting research
- II. 2. Completing all reading and writing assignments, including a shop notebook
- III. 3. Completing field assignments/projects.

2. METHODS OF EVALUATION:

A student's grade will be based on multiple measures of performance unless the course requires no grade. Multiple measures may include, but are not limited to, the following:

- I. Performing manipulative skills as needed to complete laboratory assignments satisfactorily
- Successfully applying theory to laboratory assignments
- Performing on written and/or practical examinations
- Performing on out-of-class assignments including work- site visitation reports
- Contributing to class discussion
- Maintaining attendance per current department policy.

3. METHODS OF INSTRUCTION:

Methods of instruction may include, but are not limited to, the following:

- * Lecture
- * Lecture Discussion
- * Computer Assisted Instruction
- * Laboratory
- * Discussion Seminar
- * Lecture-Lab Combination
- * Learning Modules
- * Audio-Visual
- * Collaborative Learning
- * Shadowing
- * Other (Specify)
- * A. Demonstration
- * B. Field trips/or field assignments.

4. REQUIRED TEXTS AND SUPPLIES:

Textbooks may include, but are not limited to:

TEXTBOOKS:

1. Deere & Company. Fasteners, 5th ed. John Deere Publishing, 2000, ISBN: 0866912681
2. Deere & Company. Shop Tools, 5th ed. John Deere Publishing, 1999, ISBN: 0866911405
3. Deere & Company. Hoses, Tubing, and Connectors, 3rd ed. John Deere Publishing, 1998, ISBN: 086691224X

MANUALS:

PERIODICALS:

SOFTWARE:

SUPPLIES:

1. Shop notebook (8 1/2 x 11" spiral bound)
2. Safety glasses
3. Calculator
4. Appropriate clothing and footwear for shop work
5. Scantron answer sheets

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CO-CONTRIBUTOR(S)

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