

SAN DIEGO COMMUNITY COLLEGE DISTRICT
CONTINUING EDUCATION
COURSE OUTLINE

SECTION I

SUBJECT AREA AND COURSE NUMBER

DIES 400

COURSE TITLE

INTRODUCTION TO DIESEL TECHNOLOGY

TYPE COURSE

NON-FEE

VOCATIONAL

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. (FT)

LECTURE HOURS

36

LABORATORY HOURS

ADVISORY

NONE

RECOMMENDED SKILL LEVEL

NONE

INSTITUTIONAL STUDENT LEARNING OUTCOMES

1. Social Responsibility
SDCE students demonstrate interpersonal skills by learning and working cooperatively in a diverse environment.
2. Effective Communication
SDCE students demonstrate effective communication skills.

INSTITUTIONAL STUDENT LEARNING OUTCOMES (CONTINUED)

3. Critical Thinking
SDCE students critically process information, make decisions, and solve problems independently or cooperatively.
4. Personal and Professional Development
SDCE students pursue short term and life-long learning goals, mastering necessary skills and using resource management and self-advocacy skills to cope with changing situations in their lives.

COURSE GOALS

To provide classroom instruction in the operational theory of equipment maintenance and service for today's diesel-powered highway trucks, off-road heavy equipment, and stationary engines.

COURSE 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

COURSE CONTENT AND SCOPE

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.

1. Safety procedures
 - 1.1. Safe working habits
 - 1.2. Shop safety
 - 1.3. Tool safety.
2. Diesel-powered equipment application and design
 - 2.1. On-highway trucks
 - 2.2. Off-highway equipment.
3. Service shop
 - 3.1. Organization

COURSE CONTENT AND SCOPE (CONTINUED)

- 3.2. Procedures
- 3.3. Repair orders and service records.
- 4. Technician development
 - 4.1. Professional development
 - 4.2. Tool requirements.
- 5. Service tools
 - 5.1. Identification
 - 5.2. Usage.
- 6. Hydraulic fittings
 - 6.1. Identification
 - 6.2. Common fittings
 - 6.3. Common usage.
- 7. Industrial fasteners
 - 7.1. Identification
 - 7.2. Standard fasteners
 - 7.3. Metric fasteners
 - 7.4. Common application.
- 8. Measuring tools
 - 8.1. Identification
 - 8.2. Usage.
- 9. Overview of Diesel Technology Program
 - 9.1. Heavy Duty Transportation
 - 9.2. Heavy Equipment
 - 9.3. Heavy Repair Technology.

APPROPRIATE READINGS

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

- 1. Chapters from course textbook(s)
- 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
- 3. Reports, repair manuals, on-line resources, and laboratory guides associated with diesel technology.

WRITING ASSIGNMENTS

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

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

OUTSIDE ASSIGNMENTS

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

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

APPROPRIATE ASSIGNMENTS THAT DEMONSTRATE CRITICAL THINKING

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

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

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:

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

METHOD 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)
 1. Demonstration
 2. Field trips/or field assignments.

TEXTS AND SUPPLIES

Textbooks may include, but are not limited to:

TEXTBOOKS:

Deere & Company. Fasteners, 5th edition John Deere Publishing, 2000, ISBN: 0866912681
Deere & Company. Shop Tools, 5th edition, John Deere Publishing, 1999, ISBN: 0866911405
Deere & Company. Hoses, Tubing, and Connectors, 3rd edition. 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

PREPARED BY: Jane Signaigo-Cox DATE: April 22, 2008

REVISED BY: Instructional Services, SLOs added DATE: March 8, 2017

Instructors must meet all requirements stated in Policy 3100 (Student Rights, Responsibilities and Administrative Due Process), and the Attendance Policy set forth in the Continuing Education Catalog.

REFERENCES:

San Diego Community College District Policy 3100
California Community Colleges, Title 5, Section 55002
Continuing Education Catalog