

COURSE TITLE (Shop Safety and Procedures (DEMR 1401-9C1-90858)

CREDIT

4 Semester Credit Hours (3 hours lecture, 4 hour Lab)

MODE OF INSTRUCTION

Face to Face

PREREQUISITE/CO-REQUISITE:

DEMR 1306



COURSE DESCRIPTION

A study of shop safety, rules, basic shop tools, and test equipment.

COURSE OBJECTIVES

Upon completion of this course, the student will be able to

1. Identify and use basic hand tools.
2. Use and take care of special measuring tools.
3. Describe shop procedures.
4. Properly use personal protection equipment.
5. List procedure for handling and disposing of hazardous materials.

INSTRUCTOR CONTACT INFORMATION

Instructor: Troy Burnett

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Office Phone: 409-617-5451
409 247 5058

Office Location: CTEC 103

Office Hours: Varies Monday / Friday 8:00 – 4:30 pm

REQUIRED TEXTBOOK AND MATERIALS

1. Diesel Technology Fundamentals, Service, Repair
Author: Norman, Corinchock, Scharff Publisher:
Goodheart and Willcox Company, Inc.
ISBN # 979-8-89448-100-5, 10th edition

2. Diesel Technology Workbook Fundamentals, Service, Repair
Author: Norman, Corinchock, Scharff
Publisher: Goodheart and Willcox Company, Inc
ISBN # 979-8-89448-101-2, 10th edition

3. **Shop Tools** Fundamentals of Service

Author: Deere and Company
ISBN # 978-086691-389-0; 7th edition

4. **Fasteners** Fundamentals of Service

Author: Deere and Company
ISBN # 978-086691-349-1 ; 6th edition

5. **Hoses, Tubing, and Connectors** Fundamentals of Service

Author: Deere and Company
ISBN # 978-086691-388-2 ; 3rd edition

6. Notebook and 8.5" x 11" notebook paper
7. Blue and Black ink pens
8. Safety glasses and suitable work clothes

Recommended : Optional

1. **In-line 71 Series Service Manual**

Detroit Diesel Corporation
Dealer: Stewart and Stevenson
Service, Inc. Revision May 1994

4. Notebook and 8.5" x 11" notebook paper
5. Blue and Black ink pens

ATTENDANCE POLICY

1. Missing more than 20% of classes will result in an automatic "F" for the course.
2. Absences are counted for unexcused, excused and coming to class late.
3. Missing more than 20% of a class period will count as an absence.
4. Being tardy 3 times equals 1 absence.

DROP POLICY

If you wish to drop a course, you are responsible for initiating and completing the drop process.
If you stop coming to class and fail to drop the course, you will earn an "F" in the course.

COURSE CALENDAR

Week	TOPIC	READINGS	ASSIGNMENTS
1 24-28 Aug	Course Introduction and Class Policies	Lecture / Handouts	Review Handouts and Class Quizzes

2 31 Aug - 04 Sep	Select and properly use hand and power tools. Shop and Personal Safety Handling Hazard material. Shop equipment use and safety.	Chapter 3	Complete assigned Review, ASE and Workbook Questions. Class Quizzes Chapter 3 test
3-4 7 – 18 Sep	Use and take care of special measuring tools	Chapter 6 and Hand Out Material	Complete assigned Review, ASE and Workbook Questions. Class Quizzes Chapter 6 Test
5-6 21 Sep - 02 Oct	Write out a service order form. Write out a parts order form. Use shop manual to find repair procedures. Use computer operations (CD,DVD, and web applications) to locate part numbers.	As per hand-out Assignments	As per hand-out Assignments

7-9 05-16 Oct	Threaded Fasteners 1. Importance of Fasteners 2. Bolts, Cap Screws and Nuts. 3. Adhesives & Sealants 4. Tables, Torques, & Metrics 5. Test on material	Chapter 1,2,5,6 & 7	Complete assigned Review, ASE and Workbook Questions. Class Quizzes Chapter 1,2,5,6 & 7 Test
10-11 19 – 30 Oct	Hose, Tubing and Connectors 1. Hoses 2. Pipes & Tubes	Chapters 1,2,3, & 4	Complete assigned Review, ASE and Workbook Questions. Class Quizzes Chapter 1,2,3, & 4 Test
12-14 02 -13 Nov	Practice the use of shop tools 1. Outside micrometer. 2. Threaded tools. 3. Fitting and tubing. 4. Drill bits	Text books and Fundamental Service Booklet	Complete assigned Review, ASE and Workbook Questions. Class Quizzes
15 16 – 20 Nov	Conclude shop projects. 1. Finish group project 2. Reorganize shop tools 3. Battery testing and handling	Shop tools and equipment	Complete assigned Review, ASE and Workbook Questions. Class Quizzes
16 30 Nov – 04 Dec	Final Project Project and test Shop organization Review for final	Prepare for final exam	Review semester materials

COURSE EVALUATION

Final grades will be calculated according to the following criteria:

Daily work, quizzes, and homework assignment. **45%**

Test over Lecture and Chapters	30%
Attendance Test.	5%
<u>Final Exam</u>	<u>20%</u>
<i>Total</i>	<i>100%</i>

GRADE SCALE

- 90-100 A
- 80-89.9 B
- 70-79.9 C
- 60-69.9 D
- 0-59.9 F

TECHNICAL REQUIREMENTS

The latest technical requirements, including hardware, compatible browsers, operating systems, etc. can be online at <https://lit.edu/online-learning/online-learning-minimum-computer-requirements>. A functional broadband internet connection, such as DSL, cable, or WiFi is necessary to maximize the use of online technology and resources.

DISABILITIES STATEMENT

The Americans with Disabilities Act of 1990 and Section 504 of the Rehabilitation Act of 1973 are federal anti-discrimination statutes that provide comprehensive civil rights for persons with disabilities. LIT provides reasonable accommodations as defined in the Rehabilitation Act of 1973, Section 504 and the Americans with Disabilities Act of 1990, to students with a diagnosed disability. The Special Populations Office is located in the Eagles' Nest Room 129 and helps foster a supportive and inclusive educational environment by maintaining partnerships with faculty and staff, as well as promoting awareness among all members of the Lamar Institute of Technology community. If you believe you have a disability requiring an accommodation, please contact the Special Populations Coordinator at (409)-951-5708 or email specialpopulations@lit.edu. You may also visit the online resource at [Special Populations - Lamar Institute of Technology \(lit.edu\)](#).

STUDENT CODE OF CONDUCT STATEMENT

It is the responsibility of all registered Lamar Institute of Technology students to access, read, understand and abide by all published policies, regulations, and procedures listed in the *LIT Catalog and Student Handbook*. The *LIT Catalog and Student Handbook* may be accessed at www.lit.edu. Please note that the online version of the *LIT Catalog and Student Handbook* supersedes all other versions of the same document.

STARFISH

LIT utilizes an early alert system called Starfish. Throughout the semester, you may receive emails from Starfish regarding your course grades, attendance, or academic performance. Faculty members record student attendance, raise flags and kudos to express concern or give praise, and you can make an appointment with faculty and staff all through the Starfish home page. You can also login to Blackboard

or MyLIT and click on the Starfish link to view academic alerts and detailed information. It is the responsibility of the student to pay attention to these emails and information in Starfish and consider taking the recommended actions. Starfish is used to help you be a successful student at LIT.

ADDITIONAL COURSE POLICIES/INFORMATION

1. **No Cell Phone or Electronic Devices** allowed in class, unless it is known to the instructor, for a special reasoning.
All cell phones must be put away in the classroom cell phone lock box.
2. **No** smoking or use of any **tobacco** products allowed
3. Do not bring any **food** or **drinks** in class
4. No visitor allowed in class including children
5. **Do not disturb lecture for any reason. If you must leave class or come in late, do so without disturbing class.**
6. **DRESS CODE: Proper work attire only, NO Open shoes, Short pants, low riding, or sleeveless shirts, will be allowed in any program classrooms.**
7. **No** grades will be **dropped**, No homework or assignments can be made up or accepted after instructor has taken up for grading.
8. **Homework** must be done **in proper outline form, neat and legible**, prepared on **loose leaf (8.5" X 11") note book paper**, written only on **one** side.
9. Assignment must be turn in at the beginning of class
10. Any student caught cheating will be dropped from class and given an F for the semester grade.
11. Students are required to be present for all examinations and lectures.
12. Learning activities will be subjectively graded by the instructor. Students assigned to a group must be present at all times when the project is being worked on.

NOTE:

Students who violate any of these policies will be asked to leave class and given an absent for the class period. Students who are continuing disturbing classes will be suspended from class for the remainder of the semester and given an grade of F.

Students may vary in their competency levels on these abilities. You can expect to acquire these abilities only if you honor all course policies, attend classes regularly, complete all assigned work in good faith and on time, and meet all other course expectations of you as a student.

Course Outline

A.) Introduction

1. Introduction of faculty and students
2. Review Syllabus
3. Review Class Policies
4. Reviewing Student Enrollment

B.) Shop Orientation

1. Lab policies
2. Tool room duties
3. Housekeeping assignment

C.) Shop Safety

1. General shop safety regulation
2. Personal Safety

D.) Proper Handling of Hazardous Material

1. Classification
2. MSDS sheets
3. Disposal of waste material

E.) Tools and Shop Equipment

2. Use of tools properly

1. Identify

F.) Precision measuring tools

1. Outside micrometer
2. Inside micrometer
3. Dial micrometer
4. Miscellaneous measuring tool

G.) Types of Hand Tools

1. Wrenches
2. Sockets

H.) Types of Power Tools

1. Electrical
2. Air operated

I.) Types of Pullers

1. Hand
2. Power

J.) Shop Equipment

1. Presses
2. Hoists
3. Jacks
4. Vises
5. Cleaning Equipment

K.) Threaded Fasteners

1. Importance of Fasteners
2. Bolts, Cap Screws & Nuts

3. Adhesives & Sealants
4. Tables, Torques, & Metrics

L.) Metal Drilling

1. Drill bit types
2. Sharpening

M. Tubing and Fittings

1. Bending Flaring
2. Steel and Copper

N. Batteries

1. Testing and Charging
2. Connections and Circuits

O. General engine information

1. Use of manuals
2. Checking specification
3. General description
4. Model description
5. Engine serial, model, and optional plate numbers
6. General procedure for disassembly
7. Parts inspection
8. Use of tools for disassembly
9. Safety precautions
 1. Personal
 2. Shop