

COURSE TITLE (Shop Safety and Procedures (DEMR 1401 3&5A1)

**CREDIT**

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

**MODE OF INSTRUCTION**

Face to Face

**PREREQUISITE/CO-REQUISITE:**

Co0 Requisite :DEMR 1306



**LAMAR INSTITUTE  
OF TECHNOLOGY**

**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 Location: ITC-2 103

Office Hours: Varies Tuesday / Thursday 6:00 – 10:10 pm

**REQUIRED TEXTBOOK AND MATERIALS**

1. Diesel Technology Fundamentals, Service, Repair  
Author: Norman, Corinchock, Scharff Publisher:  
Goodheart and Willcox Company, Inc.  
ISBN # 978-1-64564-685-3, 9<sup>th</sup> edition

2. Diesel Technology Workbook Fundamentals, Service, Repair  
Author: Norman, Corinchock, Scharff  
Publisher: Goodheart and Willcox Company, Inc  
ISBN # 978-1-64564-686-0, 9<sup>th</sup> edition
  
3. **Shop Tools** Fundamentals of Service  
Author: Deere and Company  
ISBN # 978-086691-389-0; 7<sup>th</sup> edition
  
4. **Fasteners** Fundamentals of Service  
Author: Deere and Company  
ISBN # 978-086691-349-1 ; 6<sup>th</sup> edition
  
5. **Hoses, Tubing, and Connectors** Fundamentals of Service  
Author: Deere and Company  
ISBN # 978-086691-388-2 ; 3<sup>rd</sup> 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

### **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**

| Date      | TOPIC  | READINGS<br>Due dates                           | ASSIGNMENTS<br>Due Dates  |
|-----------|--|---|---|
| 8-27-2024 | Course Introduction and<br>Class Policies  | Lecture / Handouts<br>8-29-2024                 | Review Handouts and<br>Class Quizzes<br>8-29-2024   |
| 9-3-2024  | Select and properly use<br>hand and power tools.<br>Shop and Personal Safety<br>Handling Hazard material.<br>Shop equipment use and<br>safety.   | Chapter 2 & 3<br>9-5-2024                       | Complete assigned<br><br>Review, ASE and<br>Workbook Questions.<br>Class Quizzes<br>9-5-2024                |
| 9-10-2024 | Use and take care of<br>special measuring tools  | Chapter 3 and Hand Out<br>Material<br>9-12-2024 | Complete assigned<br>Review, ASE and<br>Workbook Questions.<br>Class Quizzes<br>Chapter 3 Test<br>9-12-2024 |
| 9-17-2024 | Write out a service order<br>form.<br>Write out a parts order<br>form.<br>Use shop manual to find<br>repair procedures.<br>Use computer operations<br>(CD,DVD, and web<br>applications) to locate part<br>numbers. | As per hand-out Assignments<br>9-26-2024        | As per hand-out<br>Assignments<br>9-26-2024   |

|            |   |  |  |
|------------|---|--|--|
| 10-1       | <p>Threaded Fasteners</p> <ol style="list-style-type: none"> <li>1. Importance of Fasteners</li> <li>2. Bolts, Cap Screws and Nuts.</li> <li>3. Adhesives &amp; Sealants</li> <li>4. Tables, Torques, &amp; Metrics</li> <li>5. Test on material</li> </ol> | <p>Chapter 1,2,5,6 &amp; 7<br/>10-17-2024</p>                    | <p>Complete assigned<br/>Review, ASE and<br/>Workbook Questions.<br/>Class Quizzes<br/>Chapter 1,2,5,6 &amp; 7 Test<br/>10-17-2024</p> |
| 10-22-2024 | <p>Hose, Tubing and Connectors</p> <ol style="list-style-type: none"> <li>1. Hoses</li> <li>2. Pipes &amp; Tubes</li> </ol>   | <p>Chapters 1,2,3, &amp; 4<br/>10-31-2024</p>                    | <p>Complete assigned<br/>Review, ASE and<br/>Workbook Questions.<br/>Class Quizzes<br/>Chapter 1,2,3, &amp; 4 Test<br/>10-31-2024</p>  |
| 11-5-2024  | <p>Practice the use of shop tools</p> <ol style="list-style-type: none"> <li>1. Outside micrometer.</li> <li>2. Threaded tools.</li> <li>3. Fitting and tubing.</li> <li>4. Drill bits</li> </ol>   | <p>Text books and Fundamental Service Booklet<br/>11-21-2024</p> | <p>Complete assigned<br/>Review, ASE and<br/>Workbook Questions.<br/>Class Quizzes<br/>11-21-2024</p>                                  |
| 11-26-2024 | <p>Conclude shop projects.</p> <ol style="list-style-type: none"> <li>1. Finish group project</li> <li>2. Reorganize shop tools</li> <li>3. Battery testing and handling</li> </ol>   | <p>Shop tools and equipment<br/>11-3-2024</p>                    | <p>Complete assigned<br/>Review, ASE and<br/>Workbook Questions.<br/>Class Quizzes<br/>11-3-2024</p>                                   |
| 11-25-2024 | <p>Final Project<br/>Project and test<br/>Shop organization</p> <p>Review for final</p>   | <p>Prepare for final exam<br/>12-10-2024</p>                     | <p>Review semester<br/>Materials<br/>12-10-2024</p>  |

*Calendar dates are subject to change due to unforeseen circumstances.  
Check Blackboard for any changes in due dates*

### **COURSE EVALUATION**

Final grades will be calculated according to the following criteria:

|   |                    |
|---|--------------------|
| Daily work, quizzes, and homework assignment. | <b>45%</b>         |
| Test over Lecture and Chapters                | <b>30%</b>         |
| Attendance Test.                              | <b>5%</b>          |
| <u>Final Exam</u>                             | <u><b>20%</b></u>  |
| <b><i>Total</i></b>                           | <b><i>100%</i></b> |

## **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](mailto: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](http://www.lit.edu). Please note that the online version of the *LIT Catalog and Student Handbook* supersedes all other versions of the same document.

## **ARTIFICIAL INTELLIGENCE STATEMENT**

Lamar Institute of Technology (LIT) recognizes the recent advances in Artificial Intelligence (AI), such as ChatGPT, have changed the landscape of many career disciplines and will impact many students in and out of the classroom. To prepare students for their selected careers, LIT desires to guide students in the ethical use of these technologies and incorporate AI into classroom instruction and assignments appropriately. Appropriate use of these technologies is at the discretion of the instructor. Students are reminded that all submitted work must be their own

original work unless otherwise specified. Students should contact their instructor with any questions as to the acceptable use of AI/ChatGPT in their courses

## **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, except in special circumstances and it is approved by the instructor.  
*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. There is NO MAKE-UP for missing any quizzes or major test or exams.
13. 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.
14. Instructor will reply to students email in a reasonable time or within 3 working days.

### **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

1. Identify
2. Use of tools properly

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