

Industrial Troubleshooting (INMT 2345)



**LAMAR INSTITUTE
OF TECHNOLOGY**

CREDIT

3 Semester Credit Hours (2 hours lecture, 4 hours lab)

MODE OF INSTRUCTION

Face to Face

PREREQUISITE/CO-REQUISITE:

CNSE 1371

COURSE DESCRIPTION

An advanced study of the techniques used in troubleshooting various types of industrial equipment to include mechanical, electrical, hydraulic, and pneumatic systems and their control devices. Emphasis will be placed on the use of schematics and diagrams in conjunction with proper troubleshooting procedures.

COURSE OBJECTIVES

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

1. Demonstrate a working knowledge of various troubleshooting techniques
2. Properly troubleshoot hydraulic, pneumatic, and electrical systems using schematics and diagrams
3. Troubleshoot mechanical drive systems

INSTRUCTOR CONTACT INFORMATION

Instructor: Michael Liedy

Email: mdliedy@lit.edu

Office Phone: 409-247-5043

Office Location: Tommy Williams 112

Office Hours: Monday-Thursday 8:00 a.m.- 9:00 a.m.; from 1:00 p.m.- 3:00 p.m.
additional hours posted on instructor's office door

REQUIRED TEXTBOOK AND MATERIALS

1. Audel Mechanics & Millwrights Guide by Davis & Nelson 5th
2. ISBN number is 0-7645-4171-1.
3. Equipment to be furnished by students: Required at instructor discretion.
 - a. Safety Glasses (Z 87+)
 - b. Gloves (leather or equal)
 - c. Long pants and long sleeve shirt
 - d. Shoes or Boots (substantial leather or equal w/ heels - no open toes)

Approved: **AMW 01/24/2023**

ATTENDANCE POLICY

I. Students are allowed to miss two days without penalty; each additional day will result in the student's grade being dropped by a letter grade.

Example: 1-3 days absent = If student has an A average no penalty

4 days absent = A drops to a B

5 days absent = B drops to a C

6 days absent = C drops to a D (student must retake class)

7 days absent = D drops to a F (student must retake class)

II. Absences are counted for unexcused, excused and coming to class late.

III. 3 tardies = 1 absence

A. Tardy- arriving within 15 minutes after class begins or leaving before the end of class.

B. More than 15 minutes late you will be counted absent.

C. If you go to sleep in class you will be counted absent.

IV. Excused absences. Only given to allow students to make up missed work.

A. Will be given for documented Injury or Illness. Doctor's excuse required showing proof. Will count toward total days missed.

B. Will be given for documented Death in immediate family. Will count toward total days missed.

C. Approved LIT school functions; E.g. SkillsUSA, SGA etc. Will not count toward total days missed

D. It is the student's responsibility to obtain from the instructor any handouts or assignments for classes missed. Lectures will not be repeated.

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 (Due on this Date)	ASSIGNMENTS (Due on this Date)
Week 1	Course introduction and policies	Handouts	<ul style="list-style-type: none">• Lecture• Lab: Practice
Week 2	Introduction to Troubleshooting	Chapter 1	<ul style="list-style-type: none">• Lecture• Lab: PracticeTest 1
Week 3	The Basic Toolbox	Chapter 3	<ul style="list-style-type: none">• Lecture• Lab: Practice
Week 4	Using Power Tools	Chapter 4 and 5	<ul style="list-style-type: none">• Lecture• Lab: PracticeTest 2

Week 5	1.Machinery and Equipment Inspection	Chapter 9	<ul style="list-style-type: none"> • Lecture • Lab: Practice Test 3
Week 6-8	1. Understanding Bearings	Chapter 10	<ul style="list-style-type: none"> • Lecture • Lab: Practice Test 4
Week 9-10	Application of Belts	Chapter 13 and 14	<ul style="list-style-type: none"> • Lecture • Lab: Practice Test 5
Week 11	Application of Chain Drives	Chapter 16	<ul style="list-style-type: none"> • Lecture • Lab: Practice Test 6
Week 12	Application of Gears	Handouts	<ul style="list-style-type: none"> • Lecture • Lab: Practice Test 7
Week 13-16	Troubleshooting Mechanical Drives	Handouts	<ul style="list-style-type: none"> • Lecture • Lab: Practice Final Exam

COURSE EVALUATION

Final grades will be calculated according to the following criteria:

Major test 75%

Class participation 25%

GRADE SCALE

- 90-100 A
- 80-89 B
- 70-79 C
- 60-69 D
- 0-59 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. Students are required to show Student ID. To enter and remain in class or lab.
2. No food, drinks, or use of tobacco products in class.
3. No foul or harsh language will be tolerated
4. Turn off all Cell Phones during lectures.
5. Headphones may be worn only upon Instructor approval
6. Do not bring children to class.
7. No Cheating of any kind will be tolerated. Students caught cheating or helping someone to cheat can and will be removed from the class for the semester. Cheating can result in expulsion from LIT.
8. If you wish to drop a course, the student is 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.
9. Proper Dress. Any intentional display of under garments will not be tolerated and can result in the student being removed from the class. Pants will be worn belted at the waist as to allow the

student to walk, climb, stoop and bend as required. It is the student's responsibility to dress for work as if in an industrial environment, long pants, shirts with sleeves, substantial footwear (full leather shoes or boots with heels, composition oil resistant soles, no sandals, flip flops, cloth shoes). Safety glasses and hard hats will be necessary as the class requires. Students will be required to be clean shaven to be able to achieve a seal in respirators and fresh air packs.

10. Internet Usage

- a. Classroom computers have access to the internet.
- b. Student usage of the internet will be monitored.
- c. Proper usage of the internet will be allowed. Used for classroom research or as directed.
- d. Any unauthorized use of the internet will not be tolerated.

11. Improper usage of the internet, such as profanity, pornography, gambling, etc. will result in disciplinary action not limited to expulsion from LIT

ACADEMIC DISHONESTY:

“Academic dishonesty, which includes but is not limited to cheating on an examination or other academic work to be submitted, plagiarism, collusion, or abuse of resource materials, is subject to disciplinary action.

“Students found responsible for an act or acts of academic dishonesty may be subject to either academic sanctions or disciplinary sanctions. Academic sanctions may include, but are not limited to one or more of the following: performance of additional work, withdrawal from the course with a grade of “F”, and/or a reduction of a grade in the course.”