

Instrumentation 1 (PTAC 1332 3B1, 5E1, 5F1)

CREDIT

3:2:3

MODE OF INSTRUCTION

Face to Face

PREREQUISITE/CO-REQUISITE:

None

COURSE DESCRIPTION

Study of the instruments and control systems used in the process industry including terminology, process variables, symbology, control loops, and basic troubleshooting.

COURSE OBJECTIVES

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

- Explain the function of the various instruments used in the process industry;
- Diagram the process control elements in a control loop;
- Utilize terms and symbols in instrumentation;
- Interpret process flow diagram and piping and instrumentation drawing

INSTRUCTOR CONTACT INFORMATION

Instructor:	Brian Parrack
Email:	bsparrack@lit.edu
Office Phone:	409-247-5129
Office Location:	ExxonMobil PATC 211
Office Hours:	Monday/Wednesday 3:00-5:00 pm, and Friday 10-11am.

REQUIRED TEXTBOOK AND MATERIALS

Process Instrumentation, 2nd Edition; Pearson 2020 ISBN: 978-0-13-521392-6

ATTENDANCE POLICY

1. According to campus policy, students must be in attendance for 80% of class days. The following is the policy for absences in all 16-week process technology classes and labs.
2. A student is absent if they are not physically in the classroom. An excused absence simply means that the student can make-up any missed work.
3. Three student tardies will be considered one absence. A student is considered to be tardy once the instructor has completed taking roll.

Approved: **Initials/date**



**LAMAR INSTITUTE
OF TECHNOLOGY**

- Class attendance and participation is an individual student responsibility. Students taking traditional face-to-face courses are expected to attend class and to complete all assignments by stated due dates.

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.

DATE	TOPIC	READINGS	ASSIGNMENTS
1/21/2025	Introductions, Syllabus, Expectations		
1/23/2025	Intro to Instrumentation	Chapter 1	
1/28/2025	Pressure	Chapter 2	
1/30/2025	Temperature	Chapter 3	
2/4/2025	Test 1 Review		
2/6/2025	Testing		Test 1
2/11/2025	Level	Chapter 4	
2/13/2025	Flow	Chapter 5	
2/18/2025	Analytics	Chapter 6	
2/20/2025	Test 2 Review		
2/25/2025	Testing		Test 2
2/27/2025	Diagrams and Symbols	Chapter 7	
3/4/2025	Switches and Alarms	Chapter 8	Homework 1 Due
3/6/2025	Signal Conversion	Chapter 9	
3/18/2025	Test 3 Review		
3/20/2025	Testing		Test 3
3/25/2025	Control Loops	Chapter 10	
3/27/2025	Sensors and Transmitters	Chapter 11	
4/1/2025	Final Control Elements	Chapter 12	
4/3/2025	Control Valves	Chapter 13	
4/8/2025	Test 4 Review		
4/10/2025	Testing		Test 4
4/15/2025	Controllers	Chapter 14	
4/17/2025	Control Schemes	Chapter 15	
4/22/2025	Advanced Control Schemes	Chapter 16	
4/24/2025	Emergency Shutdown	Chapter 21	
4/29/2025	Test 5 Review		
5/1/2025	Testing		Test 5
5/6/2025	Final Exam Review		
5/8/2025	Testing		Final Exam

Dates are subject to change due to undetermined events

COURSE EVALUATION

Final grades will be calculated according to the following criteria:

Attendance/HW	5%
Lab	15%
Tests:	40%
Final Exam:	40%

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