Instrumentation 1 (PTAC 1332 3B1)

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:	James Robinson
Email:	jrobinson2@lit.edu
Office Phone:	409-247-5376
Office Location:	PATC 205
Office Hours:	Tuesday and Thursday [3pm - 5pm]

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. Following is the policy for absences in all 16-week process technology classes and labs.

Miss 3 classes or less	receive calculated grade
Miss 4 classes	10 points dropped from calculated grade
Miss 5 classes	20 points dropped from calculated grade
Miss 6 classes	30 points dropped from calculated grade
Miss 7 or more classes	student receives an 'F'

Approved: Initials/date

2. A student is absent if they are not physically in the class room. 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.
4. 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.

COURSE CALENDAR

DATE	TOPIC	READINGS (Due on this Date)	ASSIGNMENTS (Due on this Date)
Module 1	Introduction, syllabus, expectations	Chapter 1	
Module 2	Pressure	Chapter 2	Pressure Conversion WS
	Temperature	Chapter 3	Temperature Conv. WS
Module 3	**TEST #1: Chapters 1-3**		
	Level	Chapter 4	Head Pressure WS
Module 4	Flow	Chapter 5	
	Analytic	Chapter 6	
Module 5	**TEST #2: Chapters 4-6**		
	Process Diagrams & Symbols	Chapter 7	
Module 6	Switches, Relays & Alarms	Chapter 8	
	Signal Transmission & Conversion	Chapter 9	Scaling WS
Module 7	**Test #3: Chapter 7-9**		
	Simple Loop Theory	Chapter 10	Loop Element WS
Module 8	Primary Sensor, Transmitter & Transducers	Chapter 11	
	Controllers & Final Control Elements	Chapter 12	
Module 9	Control Valves & Regulators	Chapter 13	
Module 10	**Test #4: Chapter 10-13**		

	Controllers	Chapter 14	
Module 11	Control Schemes	Chapter 15	
Module 12	Advanced Control Schemes	Chapter 16	
	ESD, Interlocks & Protective Devices	Chapter 21	
Module 13	**Test #5: Chapter 14-16, 21**		
	P&ID Review		
	P&ID Review		
	P&ID Review		
	P&ID Review		
	P&ID Review		
	P&ID Review		
	Lab Final		
Exam Week	Comprehensive Lecture Final		

Calendar subject to change due to unforeseen circumstances.

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

AI 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.

Spring 2026 PTAC 1332 Class Schedule		
Date		
1/20/2026	Introduction, syllabus, expectations	Chapter 1
1/22/2026	Pressure	Chapter 2
1/27/2026	Temperature	Chapter 3
1/29/2026	**TEST #1: Chapters 1-3**	
2/3/2026	Level	Chapter 4
2/5/2026	Flow	Chapter 5
2/10/2026	Analytic	Chapter 6
2/12/2026	**TEST #2: Chapters 4-6**	
2/17/2026	Process Diagrams & Symbols	Chapter 7
2/19/2026	Switches, Relays & Alarms	Chapter 8
2/24/2026	Signal Transmission & Conversion	Chapter 9
2/26/2026	**Test #3: Chapter 7-9**	
3/3/2026	Simple Loop Theory	Chapter 10
3/5/2026	Primary Sensor, Transmitter & Transducers	Chapter 11
3/10/2026	Spring Break	Chapter 12
3/12/2026	Spring Break	Chapter 13
3/17/2026	Controllers & Final Control Elements	
3/19/2026	Control Valves & Regulators	
3/24/2026	**Test #4: Chapter 10-13**	
3/26/2026		
3/31/2026	Controllers	Chapter 14
4/2/2026	Control Schemes	Chapter 15
4/7/2026	Advanced Control Schemes	Chapter 16
4/9/2026	ESD, Interlocks & Protective Devices	Chapter 21
4/14/2026	**Test #5: Chapter 14-16, 21**	

4/16/2026	P&ID Review	
4/21/2026	P&ID Review	
4/23/2026	P&ID Review	
4/28/2026	P&ID Review	
4/30/2026	P&ID Review	
5/5/2026	Lab Final/ Lecture Final	
5/7/2026		