Advanced Pipe Practices
(PFPB 2343: xxx)

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

MODE OF INSTRUCTION
Face to Face

PREREQUISITE/CO-REQUISITE:
None

COURSE DESCRIPTION
Identification, installation, and testing of steam traps and steam trap station components valve identification, application, and maintenance identification, storage, and handling of in-line specialties hydrostatic testing of process piping. (From WECM)

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

- Perform pre-test and post-tests on various types of piping and plumbing apparatus
- Install and troubleshoot steam traps
- Install and troubleshoot in-line specialties

Additional Outcomes:

- Student will understand and learn the appropriate installation of a tankless water heater
- Student will understand and learn the appropriate installation of and use of Veiga Tools and Fittings

INSTRUCTOR CONTACT INFORMATION

Instructor:	Henry LaRocca		
Email:	hlarocca@lit.edu		
Office Phone:	(409) 245-8758	Cell:	(409) 998-0528
Office Location:	PATC 210		
Office Hours:	Monday and Wednesday: 8:30 a.m. – 9:00 a.m. Tuesday and Thursday: 12:00 p.m. – 1:00 p.m. Friday: 8:00 a.m. – 10:00 a.m.		

REQUIRED TEXTBOOK AND MATERIALS
PFPB 2343: Advanced Pipe Practices
Textbook: Plumbing Level 2 (Fifth Edition)
Author: NCCER, Publisher: Pearson, ISBN 978013744698

Approved: Initials/date

Materials/Tools

Item	Quantity
3”-3 ring notebook and notebook paper	1
25 ft. min. steel tape/6 ft. plumbers folder ruler	1 each
Safety glasses	1
Leather gloves	1 pair
Safety Shoes	1 pair
Calculated Industries Calculator	1
Required PFPB Shirt	2 minimum
Screwdriver, flat tip, 6 inch	1
Screwdriver 10 inch	1
Screwdriver Phillips #2 tip, 6 inch	1
Adjustable Wrenches – 6 inch and 12 inch	1 each
Pipe wrench – 14 inch	1
Pliers – Needlenose pliers, 7 inch	1
Pliers – Adjustable or ARC joint	1
Hammer – ball peen, 16 ounce	1
Hacksaw, adjustable angle	1
Hacksaw 18 TPI B=blades	3-5

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:
2 days absent = If student has an A average no penalty
3 days absent = A drops to a B
4 days absent = B drops to a C
5 days absent = C drops to a D (student must retake class)
6 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 absences
   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 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. The 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

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	TOPICS	READINGS (Due on this Date)	ASSIGNMENTS (Due Date)
Week 1	**Module 1: Hangers, Supports, Structural Penetrations and Fire Stopping I:** • Students will identify proper locations for cutting, boring, and sleeving based on applicable codes. • Students will identify the restrictions of holes and notches using the appropriate tools. • Students will identify proper reinforcement techniques using the appropriate tools. • Identify the hangers and supports used and installed for DWV and water supply systems. • Identify the various applications of insulation materials	Hangers, Supports, Structural Penetration, And Fire Stopping I	Review Questions: End of Week Lab 1: PVC Model Mock Up Lab - End of Class Lab 1a: Cast-Iron Rough in Lab – End of Class Quiz 1 : Know Your Fittings – End of Week
Week 2	**Module 1: Hangers, Supports, Structural Penetrations and Fire Stopping II:** • Students will identify proper locations for cutting, boring, and sleeving based on applicable codes. • Students will identify the restrictions of holes and notches using the appropriate tools. • Students will identify proper reinforcement techniques using the appropriate tools. • Identify the hangers and supports used and installed for DWV and water supply systems. • Identify the various applications of insulation materials.	Hangers, Supports, Structural Penetration, And Fire Stopping II	Lab 2: Cast-Iron Pipe Hanging and Rough In Lab Assignment – End of Class Lab 2a: Cast-Iron Pipe Hanging and Rough In Lab Assignment II– End of Class Quiz 2: Chapter 17 Exam – End of Week Quiz 2a: Structural Penetrations, Insulation and Fire Stopping Exam Quiz

Week 3	**Module 2: Installing and Testing DWV Piping** • Develop a material takeoff from given set of plans • Install a building drain and sewer • Test an above ground DWV System • Locate the residential water closet and lavatory	Installing & Testing DWV Piping	Review Questions: End of Week Lab 3: Testing PVC Rough In Drains Lab Assignment – End of Class Lab 3a:45 and 22.5 Degree Off-set lab – End of Class
Week 4	**Module 2: Installing and Testing DWV Piping II** • Develop a material takeoff from given set of plans • Install a building drain and sewer • Test an above ground DWV System • Locate the residential water closet and lavatory	Installing & Testing DWV Piping II	Lab 4: Testing PVC Rough End Drains Lab Assignment – End of Class Quiz 3: Installing and Testing DWV Piping Exam – End of Week
Week 5	**Module 3: Sizing DWV and Storm Systems** • Develop a material takeoff from given set of plans • Install a building drain and sewer • Install a trap primer	Sizing DWV and Storm Systems	Review Questions – End of Week Quiz 4: Installing Roof, Floor and Area Drains Exam Quiz
Week 6	**Module 4: Installing and Testing Water Supply Piping I** • Learn various Veiga installation methods and tools, • Determine the location of fixtures, the routing of the water supply piping, and the location of the water heater and hose bibbs • Locate and size a water meter • Install a water distribution system using appropriate hangers • Install shower and tub valves • Perform a hydrostatic test	Installing & testing Water Supply Piping	Review Questions – End of Week Lab 5: PureFlow Model Mock-up Lab Assignment – End of Class Lab 5a: Test soldering Ability on Water Lines Lab Assignment – End of Class Lab 5b: Cooper Model Mock-up Lab Assignment – End of Class
Week 7	**Module 4: Installing and Testing Water Supply Piping II** • Learn various Veiga installation methods and tools,	Installing & testing Water Supply Piping	Quiz 5: Installing and Testing Water Supply Piping Exam Quiz Installing & testing Water

	• Determine the location of fixtures, the routing of the water supply piping, and the location of the water heater and hose bibbs • Locate and size a water meter • Install a water distribution system using appropriate hangers • Install shower and tub valves • Perform a hydrostatic test		Supply Piping – End of Class Lab 6: Test Soldering Ability on Copper Manifold Lab Assignment – End of Class Lab 6a: ProPress Model Mock-up Lab Assignment – End of Class
Week 8	**Module 5: Sizing Water Supply Piping** • Develop a material takeoff from given set of plans • Install building drain and sewer • Install a trap primer •	Sizing Water Supply Piping	Lab 7: Water Pip Sizing Lab Assignment – End of Class
Week 9	**Module 6: CSST Certification** • Identify the physical properties • Identify the safety precautions and potential hazards	CSST Certification	Lab 8: Certification of Gastite – End of Class Lab 8a: Gastite Link (Optional) – End of Semester
Week 10	**Tankless Water Heaters** • Discuss Tankless sizing methods • Discuss Installation methods • Discuss Various aspects of Tankless Water Heaters	Tankless Water Heaters	Training: Rinnai Level 2 Training – End of Class
Week 11	**Module 7: Fuel Gas System I** • Identify major components of a fuel gas system • Describe proper techniques for working with gas piping • Describe the steps necessary to place an appliance in service • Describe the advantages of propane over natural gas • Explain the pipe sizing procedure for LP gas • Explain how to pressure test an LP gas system and how to correct a faulty flame • Identify the safety precautions and potential hazards of natural gas	Fuel Gas System I	Lab 9: Gas Fusion Lab – End of Class Lab 9a: MegaPress Lab – End of Class Quiz 6: Chapter 10 Exam – End of Week Quiz 6a: MegaPress Exam – End of Week

	• Identify the properties and uses of natural gas • Identify the proper fuel gas connection techniques and testing procedures • Discuss the proper procedure and safety for MegaPress systems		
Week 12	**Module 7: Fuel Gas System II** • Identify major components of a fuel gas system • Describe proper techniques for working with gas piping • Identify the properties and uses of natural gas • Identify the safety precautions and potential hazards of natural gas • Identify the proper fuel gas connection techniques and testing procedures • Describe the advantages of propane over natural gas • Explain the pipe sizing procedure for LP gas • Explain how to pressure test an LP gas system and how to correct a faulty flame	Fuel Gas System II	Review Questions – End of Week Lab 10: Black Steel Lab – End of Class Lab 10a: Gas Pipe Sizing Lab: End of Class Quiz 7: Chapter 14 – End of Week Quiz 7a: Fuel Gas and Fuel Oil Systems Exam Quiz – End of Week
Week 13	**Module 8: Protection of the Water Supply** • List situations that could compromise the safety of the potable water system • Explain the different conditions that could cause blackflow • Discuss backflow prevention devices and their characteristics	Protection of the Water Supply	Lab 11: Water Protection Lab – End of Class Quiz 8: Chapter 7 – End of Week
Week 14	**Module 9: Final** • Test the knowledge of what was learned throughout the semester	Final	Lab Final: Perform Pre-test and Post-test on various types of piping and plumbing apparatus – End of Week
Week 15	**Module 10: Final** • Test the knowledge of what was learned throughout the semester • Final Exam Practical • Final Exam Written	Final	Final Exam – To test the knowledge of what was learned throughout the semester.

			Fitting Final Exam: To test the knowledge of what was learned throughout the semester.

ADDITIONAL COURSE INFORMATION
SKILLMILL will be incorporated in class readings and coursework.

COURSE EVALUATION
Final grades will be calculated according to the following criteria:

Quizzes	15%
Exams	25%
Lab/Projects	40%
Final	20%

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.\

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.