Course Name	**Water Heaters**
Credit Hours	4 Hours
Instructor(s)	Randy Drake
Fee	$40.00
Reference Materials	2021 Edition of the International Plumbing Code

Course Description

The course includes an overview of the general components and operation of residential water heaters - gas and electric - and is followed by a brief examination of relevant codes and resource identification, discussion of common safety and maintenance concerns, and sections dedicated to energy conservation, renewable energy, and commercial applications for new energy-saving technology.

Learning Objectives:

At the end of this class students will be able to:

- Understand the various types of water heaters available and determine the appropriate selection for different applications.
- Identify current and projected changes to federal energy regulations and guidelines for water heater installation.
- Demonstrate knowledge of how gas and electric water heaters function, including their fundamental processes and mechanisms.
- Ensure compliance with local, state, and national codes and standards when installing and maintaining water heaters.
- Identify how pressure affects the operation and safety of water heaters.
- Select the correct size of water heaters based on specific requirements and usage.
- Understand the importance of maintenance to ensure the longevity and efficient operation of water heaters.
- Understand the potential safety hazards and conduct proper testing to ensure the safe operation of water heaters.
- Explain the role of renewable energy technologies and energy conservation methods in modern water heating systems.
- Identify (generally) the unique challenges and requirements involved in installing and maintaining water heaters in commercial settings.

Equipment Requirements

You must have an active, working internet connection to access this course online, as well as a platform to access the internet, such as a computer, tablet, or phone. All popular web browsers are supported, including Google Chrome, Mozilla Firefox, Safari, and Opera. No specialized software, speaker, microphone, or web camera is required.

Schedule and Location

This course is available online at any time at www.TradesmanCE.com. Upon enrolling in the course, Learners will have six (6) months from the date of enrollment to complete their course. However, this time frame may be shortened or lengthened if course expiration dates or regulatory requirements dictate otherwise.

Student Support

Both general and technical support is available to the student before, during, and after taking the course online. Students have access to general customer support via phone, chat, and email. Students have access to the course instructor via email. All questions, concerns, and comments received will be responded to within one business day.

Definition of Attendance

To be considered as "attending" a course, learners must log in to the Learning Management System (LMS) and complete all course materials, including any mandatory quizzes, exams, and interactive components. Simply logging in is not sufficient; active engagement with all required elements is essential. Learners will have six (6) months from the date of enrollment to complete their course. However, this time frame may be shortened or lengthened if course expiration dates or regulatory requirements dictate otherwise.

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Participation Guidelines

All learners are expected to:

- Complete 100% of the required components of the course.
- Adhere to any specified deadlines within the course timeline.
- Engage with course materials in a consistent and timely manner to remain in good standing.

Failure to complete required components within the designated timeframe may result in loss of access to the course or forfeiture of any certifications or credit hours.

Accountability Measures

To ensure academic integrity and compliance with regulatory standards:

- Each learner must access the LMS using a unique username and password.
- Additional security measures, such as security questions or biometrics, may be implemented based on regulatory requirements.
- An inactivity timer is in place within the LMS. Learners who are not actively engaging with course content will be automatically logged out after a period of inactivity.

Water Heaters Timed Outline

Section	Title	Questions	Minutes
1	Introduction to Water Heaters	1	7
2	Types of Water Heaters Overview	3	17
3	Important Terms/Glossary	2	19
4	Water Heater Parts: Gas & Electric (General Overview)	3	18
5	Basics of Operation	3	18
6	Codes & Standards	3	15
7	Pressure	3	19
8	Water Heater Sizing	3	20
9	Maintenance	3	20
10	Safety	3	21
11	Hydronic Systems	3	17
12	Energy Conservation	3	20
13	Commercial Water Heaters	3	13
14	Innovation in Commercial Materials and Technology	3	12
15	Conclusion	1	2
	Totals:	**40**	**237**
	Student Time Minimum Requirement:		**200**