

**Clackamas Community College**

## Online Course/Outline Submission System

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**Section #1 General Course Information****Department:**Apprenticeship**Submitter**

First Name: shelly

Last Name: Tracy

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**Course Prefix and Number:**APR - 237PB

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**# Credits:**3**Contact hours**

Lecture (# of hours): 33

Lec/lab (# of hours):

Lab (# of hours):

Total course hours: 33

For each credit, the student will be expected to spend, on average, 3 hours per week in combination of in-class and out-of-class activity.

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**Course Title:**Plumbing Water Heater & Circuit Controls**Course Description:**

Plumbing concepts relative to energy, temperature, and heat transfer via conduction, convection, and radiation in gas, oil, electric and solar water heaters. Included are water treatment, basic motors & controls, circuit protection, and troubleshooting. Blueprint reading segment covers specifications, floor, site, structural, plumbing, electrical and HVAC plans.

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**Type of Course:**Career Technical Apprenticeship

Can this course be repeated for credit in a degree?

**No**

Does this course map to any general education outcome(s)?

**No**

Is this course part of an AAS or related certificate of completion?

**Yes**

**Name of degree(s) and/or certificate(s):**AAS.CONSTRUCTPB & CC.CONSTRUCTPB

Are there prerequisites to this course?

**Yes**

**Pre-reqs:**Successful completion of APR-227PB

**Have you consulted with the appropriate chair if the pre-req is in another program?**

**No**

Are there corequisites to this course?

**No**

Are there any requirements or recommendations for students taken this course?

**No**

Are there similar courses existing in other programs or disciplines at CCC?

**No**

Will this class use library resources?

**No**

Is there any other potential impact on another department?

**No**

Does this course belong on the Related Instruction list?

**No**

**GRADING METHOD:**

A-F Only

**Audit:Yes**

When do you plan to offer this course?

**✓ Not every term**

Is this course equivalent to another?

If yes, they must have the same description and outcomes.

**No**

Will this course appear in the college catalog?

**No**

Will this course appear in the schedule?

**No**

**Student Learning Outcomes:**

Upon successful completion of this course, students should be able to:

1. describe and apply the science of heat transfer to plumbing trade applications,
2. apply math skills to solve plumbing related issues,
3. understand the process by which gas, oil, electric and solar heat applies to water heating;
4. understand the water treatment process,
5. safely and logically troubleshoot motor & control issues relative to plumbing fixtures,
6. read a full set of blueprints to glean needed information for plumbing installation.

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***This course does not include assessable General Education outcomes.***

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**Major Topic Outline:**

1. Storm drains.
2. Related water systems.
3. Filters, softeners, fire sprinklers.
4. Review new code changes, week 1-5 review.
5. Electricity.
6. Blueprint reading and specifications.

**Does the content of this class relate to job skills in any of the following areas:**

- |                                      |           |
|--------------------------------------|-----------|
| 1. Increased energy efficiency       | <b>No</b> |
| 2. Produce renewable energy          | <b>No</b> |
| 3. Prevent environmental degradation | <b>No</b> |
| 4. Clean up natural environment      | <b>No</b> |
| 5. Supports green services           | <b>No</b> |

Percent of course:0%

**First term to be offered:**

**Next available term after approval**

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