

BARSTOW COMMUNITY COLLEGE COURSE OUTLINE –**IMMT 71****Dept & Nbr:** IMMT 71**Abbrev Title:** Introduction to Piping**Full Title:** Introduction to Piping**Old Number:****Title 5 Category:** Associate Degree Applicable**Certificate Applicable:**

Units	Course Hrs per Week	Nbr of Weeks	Course Hrs Total
Max: 1.0	Lecture .75	18	Lecture 13.5
Min: 1.0	Lab .25		Lab 13.5
	Contact DHR 0.0		Contact DHR 0.0
	Contact Total 1.5		Contact Total 27.0
	Non-contact DHR 0.0		Non-contact DHR 0.0

Delivery method: Lecture and Online**Selected Topic:** No**Grading:** Option (A-F) (P/NP)**Concurrent Course:** None**Repeat Code:** May be taken two times with a grade of less than "C".**Basic Skills** 0: This is not a basic skills class**CATALOG DESCRIPTION:**

Designed to give the student the fundamental skills necessary to work with various types of piping on the jobsite. Covered in this course are copper and plastic piping and introduction to ferrous metal piping practices.

PREREQUISITES: None**COREQUISITES:** None**RECOMMENDED PREPARATION:** None**CONTENT:**

- A** Types of piping systems
- B** Copper and Plastic piping practices
- C** Ferrous Metal Piping Practices

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

- 1 Identify and explain the types of piping systems.
- 2 Identify piping systems according to color-coding.
- 3 Explain the effects and corrective measures for thermal expansion piping systems.
- 4 Explain types and applications of pipe insulation.
- 5 Identify types of materials and schedules of copper and plastic piping.
- 6 Identify proper and improper applications of copper and plastic piping.
- 7 Identify the material properties, storage, and handling requirements of copper piping.
- 8 Identify types of fittings and valves used with plastic piping.
- 9 Identify types of fittings and valves used with copper piping.
- 10 Identify and determine the types of hanging and supporting copper and plastic piping.
- 11 Identify the various techniques used in hanging and supporting copper and plastic piping.

- 12 Properly measure, cut and join copper and plastic piping.
- 13 Explain proper procedures for the safe handling, storage, and protection of copper and plastic pipes.
- 14 Identify the types of ferrous metal pipes.
- 15 Measure the sizes of ferrous metal pipes.
- 16 Identify the common malleable iron fittings.
- 17 Cut, ream, and thread ferrous metal pipe.
- 18 Join lengths of threaded pipe together and install fittings.
- 19 Describe the main points to consider when installing pipe runs.
- 20 Describe the method used to join grooved piping.

COURSE-LEVEL STUDENT LEARNING OUTCOMES:

1. Identify the type of piping system designated by the following:

- Red color-code
- Yellow color-code
- Green color-code
- Bright blue color-code

Assessment Method(s): Performance Evaluation

- Communication
- Critical Thinking
- Global Awareness
- Personal/Professional Development.

2. Correctly complete the following tasks:

- Measure the diameter of copper tubing.
- Cut and ream copper tubing using a tube cutter.
- Correctly bend copper tubing using bending tools.
- Make a swage joint in a section of copper tubing.
- Make and join single flare connections.
- Join two sections of tubing using a compression fitting.
- Cut and join two sections of plastic pipe using appropriate fittings.

Assessment Method(s): Performance Evaluation

- Communication
- Critical Thinking
- Global Awareness
- Personal/Professional Development.

3. Correctly identify the following:

- Types of carbon steel pipe.
- Pipe sizes and weights.
- Various pipe fittings.

Assessment Method(s): Performance Evaluation

- Communication
- Critical Thinking
- Global Awareness
- Personal/Professional Development.

B. Critical Thinking Tasks/Assignments:

Critical thinking assignments include (but are not limited to) the following:

1. Identify options for using various types of pipe used by industrial Maintenance Mechanics.
2. Solve problems related to various situations.

Other outside class assignments include (but are not limited to) the following:

C. Measurement of Student Learning Outcomes:

1. Substantial writing assignments, including:
 - Written homework
 - The course primarily involves skill demonstrations or problem solving.
2. Computational or non-computational problem-solving demonstration, including:
 - Exam(s)
 - Quizzes
 - Homework problems
3. Skill demonstration, including:
 - Class performance(s)
4. Objective examinations, including:
 - Multiple choice
 - Completion
5. Other
 - Attendance/Participation
 - Observation

REQUIRED READING, WRITING AND OTHER OUTSIDE-OF-CLASS ASSIGNMENTS:

Over an 18-week presentation of the course three hours of study are required for each unit of credit. Two hours of independent work done out of class are required for each hour of lecture. Outside of the regular class time the students in this class will be doing the following:

- Study
- Answer questions
- Required reading
- Problem solving activity or exercise
- Written work

BASIS FOR GRADES:

Writing Assignments	20%
Problem-Solving	20%
Skill Demonstrations	20%
Objective Examinations	20%
Attendance & Participation	20%
Total	100%

TEXTS/MATERIALS

Contren, Industrial Maintenance Mechanic Level1, Prentice-Hall 2007

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=====Instructional Office Use Only - Signatures and Codes=====

Instructional Vice President Approval: Steven Eaton, AAVP

Curriculum Committee Approval Date: 11May12

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