

DRAFTING

BASIC DRF 651, INTER. DRF 751
ADV. DRF 851

Course Name

Course Number

PHILOSOPHY/GOALS:

1. To develop an understanding of drawings as a means of Communication.
2. To appreciate the need for clear, legible drawings, and be able to produce such drawings in a simple form.

METHOD OF ASSESSMENT (GRADING METHOD):

Projects shall be each graded and marked as A, B, or C.

TEXTBOOK(S):

Drafting Fundamentals by Jensen and Mason

Steamfitter - Pipefitter Apprenticeship Manual by Nat. Joint Steamfitter-Pipefitter Apprenticeship

Pipefitters Manual I.T.T.

BASIC DRF 651
PERFORMANCE OBJECTIVES

General Objectives:

1. To develop an understanding of the use of drawings as a means of communication.
2. To appreciate the need for clear, legible drawings, and be able to produce such drawings in a simple form.

Specific Objectives:

UNIT I

1. Identify the objectives of a drawing office.
2. Demonstrate ability to use and take care of drafting equipment.
3. Identify the usage of various types of leads.
4. Identify the need for the use of guidelines for lettering work.
5. Demonstrate ability to letter clearly and legibly.

UNIT II

6. Identify the various types of lines used in line convention.
7. Demonstrate ability to produce lines identified in (6).

UNIT III

8. Identify the need for title blocks.
9. Identify the need for notes and sub-titles.
10. Demonstrate ability to produce (8) and (9) correctly.

UNIT IV

11. Identify the need for scaled dimensions.
12. Demonstrate ability to use a scale rule.
13. Demonstrate ability to produce lines of required length using a scale rule.

UNIT V

14. Identify the use of geometric constructions.
15. Identify the need for accuracy with respect to geometric constructions.
16. Demonstrate ability to produce various geometric shapes by construction.
17. Demonstrate ability to solve a variety of problems by using geometric constructions.

UNIT VI

18. Develop a reasoning for the use of multiview drawings.
19. Identify the need for third angle orthographic projection.
20. Demonstrate ability to place views in correct positions for third angle projection.
21. Demonstrate ability to produce simple drawings in third angle projection.
22. Identify the number of views required in a third angle projection in order to adequately describe a component.

UNIT VII

23. Develop a reasoning for correct method of dimensioning drawings.
24. Demonstrate ability to interpret (23) and produce a dimensional drawing of a simple component.

UNIT VIII

25. Identify the need for pictorial drawings: Isometric and oblique.
26. Demonstrate ability to produce isometric: squares, angles, cubes and ellipses.
27. Demonstrate ability to produce an isometric drawing of a simple component and pipe run.

UNIT IX

28. Identify the need for symbols on a piping drawing.
29. Demonstrate ability to apply correct symbols to a simple drawing.
30. Demonstrate ability to correctly read a simple drawing.

INTERMEDIATE DRF 751 PERFORMANCE OBJECTIVES

General Objectives:

1. To further develop the appreciation of drawings as a means of communication.
2. To develop the skill of accurate interpretation of given information in the form of working drawings.
3. To develop an appreciation of related work with respect to plumbing installations.

Specific Objectives:

UNIT I

1. To identify the necessity of converting from orthographic to isometric drawing and vice-versa.
2. To demonstrate the ability to convert drawings from orthographic to

isometric.

UNIT I - Continued

3. To demonstrate ability to convert drawings from isometric to orthographic.
4. To identify various methods of show piping offsets on isometric drawings.
5. Demonstrate ability to show (by various methods) offsets clearly on an isometric drawing.
6. Demonstrate ability to produce more complex isometric pipe drawings.
7. Demonstrate ability to produce drawings similar to those in (6) but including the placement of correct piping symbols.
8. Demonstrate ability to dimension an isometric pipe drawing.
9. Identify the need to interpret drawing.
10. Demonstrate ability to read an orthographic piping drawing.
11. Demonstrate ability to read an isometric drawing.

UNIT III

12. Identify the need for double line pipe drawings.
13. Demonstrate ability to produce a double line pipe drawing.
14. Demonstrate ability to convert a double line pipe drawing to a single line pipe drawing.

UNIT IV

15. Identify the need for transit levelling in conjunction with steam-fitting and piping installations.
16. Identify the need to understand the elements of transit levelling.
17. Identify methods of interpreting levelling conventions used on drawings related to piping.
18. Demonstrate ability to define terminology used on drawings with respect to levelling.
19. Demonstrate ability to solve a simple transit levelling problem.
20. Demonstrate ability to read a simple site plan with respect to levelling and grading a type of piping system.

UNIT V

1. Identify the need for architectural symbols on a drawing related to piping.
2. Demonstrate ability to recognize architectural symbols on a drawing related to piping.
3. Demonstrate ability to produce a simple drawing showing correct use and placement of architectural symbols.

STEAMFITTING ADVANCED - DRAFTING - DRF 851-4

PERFORMANCE OBJECTIVES

General Objectives:

1. To further develop the realization of the need for good quality drawings as a means of communication.
2. To further develop the need for accurate interpretation of given drawings.

UNIT I

1. To consolidate information gained in previous drafting work.
2. Demonstrate knowledge of past work by completing a review of orthographic drawing.
3. Demonstrate knowledge of past work by completing a review of isometric drawings.

UNIT II

1. Identify need for knowledge of heating symbols used on drawings.
2. Identify need for knowledge of welding symbols used on drawings.
3. Identify need for knowledge of electrical symbols used on drawings.
4. Demonstrate ability to identify various heating symbols and apply them to simple drawings.
5. Demonstrate ability to identify various welding symbols and apply them to drawings.
6. Demonstrate ability to identify various electrical symbols and apply them to drawings.

UNIT III

7. Identify the need to use the knowledge gained in steamfitting and drafting departments to be related.
8. Demonstrate ability to produce drawings (orthographic) of monoflo systems.

NOTE: The above assignments will be checked by both the drafting and steamfitting department.

9. As per (8) excepting orthographic will be isometric.

UNIT IV

10. Demonstrate knowledge of past work on transit levelling by completing a review assignment.
11. Demonstrate ability to complete a more complex levelling assignment, including the determination of inverts.

UNIT V

12. Demonstrate ability (using steamfitting and drafting knowledge) to produce drawings of a two pipe heating system.
13. Demonstrate ability to accurately read a drawing of a heating system.

UNIT VI

14. Demonstrate ability to read isometric and orthographic drawings with respect to steamfitting.
15. Demonstrate ability to read isometric and orthographic drawings of various public buildings with respect to steamfitting.