

Introduction to Draughting

Course Duration : 12 Months
Time: Self Study - on your own time

This course will introduce you to the fundamentals of draughting, draughting tools, and various draughting disciplines.

Learning outcomes of this course

When you complete this learning unit, you as learner should be able to:

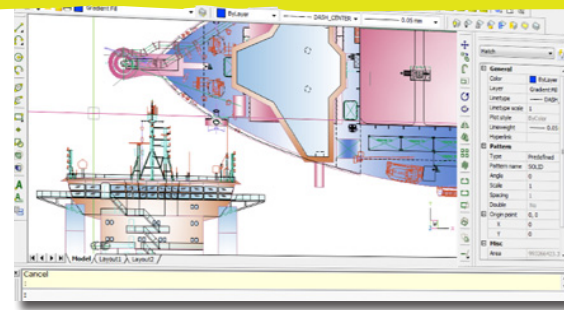
- Identify and describe the important functions of engineering drawings.
- Describe the purpose of engineering drawing in industry.
- Identify and correctly use the alphabet of lines used on an engineering drawing.
- Identify and correctly use freehand printing of letters and numbers according to the SABS code of practice for engineering drawing.
- Identify and correctly use the drawing instruments and equipment required for making engineering drawing.
- Know how to take care of drawing instruments and equipment.

Prerequisites

- Knowledge assumed to be in place before starting this unit:
- Basic communication skills

Draughting course
Drawing kit (if ordered)

NB: certificate to be issued on completion of course.



Course Outline:

Basic Principles of Engineering Drawing

- Introduction
- The History of Engineering Drawing
- What is Engineering Drawing?
- Engineering Drawing as a means of communication
- Important functions of Engineering Drawing
- The uses of Engineering Drawing
- The purpose of Engineering Drawing as a subject
- The drawing office
- Drawing equipment and instruments
- Drawing paper sizes
- The application of drawing instruments
- The alphabet of Engineering Drawing
- Printing letters and figures
- Examples of vertical capital letters and figures
- Dimensions

Free hand drawing

- Introduction
- Instruments used for freehand drawing
- Aspects of freehand drawing
- Freehand drawing of complex shapes
- Drawing horizontal lines
- Drawing vertical lines
- Drawing diagonal lines
- Freehand drawing of circles and arcs
- Freehand drawing using square-grid paper

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Introduction to Draughting

Geometrical Constructions

- Introduction
- Instrument requirements
- Construction to bisect a straight-line segment
- Construction to bisect a 45° angle
- Construction of a 60° angle
- Construction to bisect a 60° angle
- Construction to bisect a 30° angle
- Construction of a 75° angle
- Construction of a perpendicular line from a given point on a line
- Construction of a perpendicular line from a given point outside a given line
- Construction of a perpendicular line at the end of a given line segment
- Construction of a parallel to another line at a given distance
- Dividing a given line segment into any number of equal parts
- Construction of an arc of a circle to lines forming a right angle

Course Outline:

- Construction of an arc of a circle to lines forming an acute angle
- Construction of an arc of a circle to lines forming an obtuse angle
- Construction of an arc of a circle to a line and an arc or circle
- Construction of an arc of a circle to two arcs or circles
- Drawing a circle to pass through any points A, B and C
- Construction of an equilateral triangle
- Construction of a square: the inscribed-circle method
- Construction of a square: the circumscribed-circle method
- Construction of a hexagon: the across flats method
- Construction of a hexagon: the across-corners method
- Construction of a octagon: the across flats method
- Construction of a octagon: the across-corners method
- Construction of an ellipse

First-angle Orthographic Projection

- Introduction
- Visualisation
- What makes an orthographic view?
- Principles of first-angle orthographic projection
- Projection system symbol for first-angle orthographic projection
- Projection methods for first-angle for first-angle orthographic projection
- Reading an engineering drawing
- Setting up an orthographic projection drawing

