Mechanical Drawing: Board & CAD Techniques

Chapter 10 Descriptive Geometry

Chapter Summaries

Section 10.1 Basic Descriptive Geometry and Board Drafting
- A point is used to identify the intersection of two lines or corners on an object.
- The basic types of lines are normal (perpendicular to one of the three reference planes), inclined (perpendicular to one of the three reference planes but does not appear as a point in that plane), and oblique (inclined in all three reference planes).
- The basic types of planes are normal (parallel to one of the normal reference planes and perpendicular to the other two planes), inclined (perpendicular to one reference plane and inclined to the other two), and oblique (inclined to all three reference planes).
- Understanding basic geometric constructions is crucial to solving 3D problems in descriptive geometry.

Section 10.2 Solving Descriptive Geometry Problems with CAD
- CAD programs allow drafters to work directly in 3D space, offering an alternative to traditional geometry methods.
- Preparation for solving descriptive geometry problems using CAD involves creating a 3D model and applying the appropriate commands related to the specific problems.
- Methods of drawing objects in 3D space using CAD include drawing objects with a specified thickness, extruding 2D objects, specifying XYZ coordinates, and using solid primitives.
- In AutoCAD, a user coordinate system command can be used to align a new UCS with any planar object, allowing you to create a special UCS to use with any auxiliary plane you need.