| Course code | ES-109A | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Coursetitle | Engineering Graphics& Design | | | | | | | |
| Scheme and Credits | L | T | P | Credits | Major Test | Minor Test | Total | Time |
| | 1 | 2 | 0 | 3 | 75 | 25 | 100 | 3h |

**Course Outcomes**

| Objective- To expose students to the basics of Engineering Drawing , graphics and Projections. | |
|---|---|
| CO-1 | To learn about construction of various types of curves and scales. |
| CO-2 | To learn about orthographic projections of points, lines and planes. |
| CO-3 | To Learn about the sectional views and development of Right regular solids |
| CO-4 | To Learn about the construction of Isometric Projections and conversion of Isometric views to Orthographic views and vice-versa. |

**UNIT - I**

**IntroductiontoEngineeringDrawing**:

Principles of Engineering Graphics and their significance, usage of Drawing instruments, lettering, Conic sections including the Rectangular Hyperbola (General method only); Cycloid, Epicycloid, Hypocycloid and Involute; Scales – Plain, Diagonal and Vernier Scales;

**UNIT - II**

**Orthographic Projections:**

PrinciplesofOrthographicProjections-Conventions-Projections ofPointsandlinesinclined tobothplanes;Projectionsofplanesinclined to one principalPlane.

**ProjectionsofRegular Solids:**

Solid with axis inclinedtobothePlanes;

**UNIT - III**

**Sections andSectionalViewsofRightRegular Solids**:

Sectional views of simple right regular soilds like prism, pyramid, Cylinder and Cone. Development ofsurfacesofRightRegularSolids-Prism,Pyramid,CylinderandCone;

**UNIT - IV**

**Isometric Projections:**

Principles of Isometric projection – Isometric Scale, Isometric Views, Conventions; Isometric Views of lines, Planes, Simple and compound Solids; Conversion of IsometricViews to Orthographic Views and Vice-versa, Conventions;

**Suggested Books:**


1. Engineering Graphics using AUTOCAD 2000: T. Jeyapoovan, Vikas Publishing House.
2. Engineering Drawing: Plane and Solid Geometry: N.D. Bhatt and V.M.Panchal, Charotar Publishing House.
3. Engineering Drawing: Amar Pathak, Dreamtech Press, New Delhi.
4. Thomas E.French, Charles J.Vierck, Robert J.Foster, “Engineering drawing and graphic technology”, McGraw Hill International Editions.
5. Engineering Graphics and Drafting: P.S. Gill, Millennium Edition, S.K. Katariaand Sons.
6. A Primer on Computer aided Engineering Drawing-2006, published by VTU, Belgaum.
7. A.Yarwood, Introduction to AutoCAD 2017, Published by CRC Press.
8. O. Ostrowsky, Engineering Drawing with CAD applications, Butterworth Heinemann,1999.
9. BSI, Technical production documentation (TPD) – specification for defining, specifying and graphically reporting products, BS8888, 2002.
10. CorrespondingsetofCADSoftwareTheoryandUserManuals.


**Note: The paper setter will set the paper as per the question paper templates provided.**