G. NARAYANAMMA INSTITUTE OF TECHNOLOGY & SCIENCE

(For Women)

(AUTONOMOUS)

Shaikpet, HYDERABAD - 500 104

B.Tech. I year

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ENGINEERING GRAPHICS

(Common to EEE, ECE, CSE, IT & ETE)

Prerequisites: -

Course Objectives:

The course will enable the students

1. To impart skills of drawing instruments and their use to convey exact and complete information of any object.
2. To construct conics and cycloidal curves used for various engineering applications.
3. To impart knowledge about standard principles of orthographic projection of objects.
4. To develop different surfaces of simple solids.
5. To differentiate between isometric view and projection and conversion of isometric views to orthographic views vice-versa.

UNIT 1: (~ 4 Lecture Hours and 12 Practical Hours)

Introduction to Engineering Graphics: Principles of Engineering Graphics and their significance, Conic Sections-general and special methods, Cycloid, Epi-cycloid and Hypo- Cycloid.

UNIT 2: (~ 3 Lecture Hours and 9 Practical Hours)

Orthographic Projections: Principles of Orthographic Projections – Conventions - Projections of points, straight lines and planes.

UNIT 3: (~ 3 Lecture Hours and 9 Practical Hours)

Projection of Solids: Projections of solids in simple position (prisms, pyramids, cylinders and cone), axis inclined to one plane, Axis inclined to both the reference planes, Projection of solids using auxiliary plane method.

UNIT 4: (~ 3 Lecture Hours and 9 Practical Hours)

Development of Surfaces: Basic concepts of development of surfaces, Methods of development – Parallel line development and radial line development, Development of prisms, pyramids, Cylinders and cones.

UNIT 5: (~ 3 Lecture Hours and 9 Practical Hours)

Isometric & Orthographic Projections: Principles of Isometric Projection – Isometric Scale – Isometric Views – Conventions – Isometric views of Lines, Plane figures, Simple Solids – Conversion of Isometric Views to Orthographic Views.

1) N. Malleshaiah 5) — 9) 13)

2) T. Subbalakshmi 6) 10) 14)

3) 7) 11) 15)

4) 8) 12) — 16) R. Baksubramanian

Text Books:

1. Basanth Agrawal, Agrawal C.M., Engineering Graphics, First Edition, 2012, Tata McGraw Hill.
2. Bhatt N.D., Elementary Engineering Drawing, 2014, Charotar Publishers.

Reference Books:

1. K .L. Narayana and P.Kannaiah, Engineering Drawing, 2010, scitech.
2. Venugopal.K, Engineering Drawing and Graphics Plus Autocad, 2010, New Age International (P) Ltd., New Delhi.
3. Gill P.S., Engineering Drawing: Geometrical Drawing, 2012, SK Kataria & sons.
4. Dhananjay A Jolhe, Engineering Drawing, 2014, Tata McGraw Hill.

Online Resources:

1. www.engineeringdrawing.org
2. Virtual labs (www.vlab.co.in)

Course Outcomes:

At the end of the course, the students will be able to

1. Know and understand the conventions and methods of Engineering Graphics.
2. Construct the conics using different methods and cycloidal curves.
3. Draw and understand about orthographic projections of points, straight lines and planes.
4. Improve visualisation skills in different types of solids.
5. Draw and understand about the development of surfaces of various solids.
6. Ability to read, understand and interpret engineering drawings.