I B.Tech I Sem

15AME01-ENGINEERING DRAWING

(Common for EEE, ECE and CSE)

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Course Objective:

- By studying the engineering drawing, a student becomes aware of how industry communicates technical information. Engineering drawing teaches the principles of accuracy and clarity in presenting the information necessary about objects.
- This course develops the engineering imagination i.e., so essential to a successful design, By learning techniques of engineering drawing changes the way one things about technical images.
- It is ideal to master the fundamentals of engineering drawing first and to later use these fundamentals for a particular application, such as computer aided drafting. Engineering Drawing is the language of engineers, by studying this course engineering and technology students will eventually be able to prepare drawings of various objects being used in technology.

UNIT I

Introduction to Engineering Drawing: Principles of Engineering Graphics and their Significance-Conventions in Drawing-Lettering - BIS Conventions. Curves used in Engineering Practice.

a) Conic Sections including the Rectangular Hyperbola- General method only,
b) Cycloid, Epicycloids and Hypocycloid
c) Involutes

UNIT II

Projection of Lines: Inclined to one or both planes, Problems on projections, Finding True lengths. **Projections of Planes**: Projections of regular plane surfaces/figures, Projection of lines and planes using auxiliary planes.

UNIT III

Projections of solids: Projections of regular solids inclined to one or both planes – Auxiliary Views. **Sections of Solids**: Section Planes and Sectional View of Right Regular Solids- Prism, cylinder, Pyramid and Cone. True shapes of the sections.

UNIT IV

Development of Surfaces: Development of Surfaces of Right Regular Solids-Prism, Cylinder, Pyramid, Cone and their Sectional Parts.

UNIT V

Isometric and Orthographic Projections: Principles of isometric projection- Isometric Scale-Isometric Views- Conventions- Isometric Views of lines, Planes Figures, Simple and Compound Solids-Conversion of isometric Projections/Views of Orthographic Views-Conventions.

Text Books:

1. Engineering Drawing, N.D. Bhat, Charotar Publishers
2. Engineering Drawing, K.L. Narayana& P. Kannaih, Scitech Publishers, Chennai

Reference Books:

1. Engineering Drawing, Johle, Tata McGraw-Hill Publishers
2. Engineering Drawing, Shah and Rana,2/e, Pearson Education
3. Engineering Drawing and Graphics, Venugopal/New age Publishers
4. Engineering Graphics, K.C. John, PHI,2013
5. Engineering Drawing, Basant Agarwal/ C.M.Agarwal

Suggestions:

1. Student is expected to buy a book mentioned under Text books " for better understanding.
2. Students can find the applications of various conics in engineering and application of involute on gear teeth. The innovation for drawing can be had on line from introduction to engineering drawing with tools-youtube http-sewor,Carleton.ca/-g,kardos/88403/drawings.html conic sections-online, red woods.edu

This subject also paves the way for learing Auto Cad, CAD / CAM, CATIA and Pro E which are advanced software packages needed for every mechanical engineer (To be taught & examined in First angle projection). The skill acquired by the student in this subject is very useful in conveying his ideas to the layman easily.

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