ENGINEERING GRAPHICS

Semester	**: I/II**	**CIE Marks**	**: 40**
Course Code	**: 18EGDL15/25**	**SEE Marks**	**: 60**
Teaching Hours/week (L:T:P)	**: 2:0:2**	**Exam Hours**	**: 03**
	Credits : 03		

Course Learning Objectives:

This course will enable students to

CLO1 To expose the students to standards and conventions followed in preparation of engineering drawings.

CLO2 To make them understand the concepts of orthographic and isometric projections.

CLO3 Develop the ability of conveying the engineering information through drawings.

CLO4 To make them understand the relevance of engineering drawing to different engineering domains.

CLO5 To develop the ability of producing engineering drawings using drawing instruments.

CLO6 To enable them to use computer aided drafting packages for the generation of drawings.

MODULE-I

Introduction to Computer Aided Sketching:

Introduction, Drawing Instruments and their uses, relevant BIS conventions and standards. Lettering, line conventions, dimensioning, material conventions, and free hand practicing.

Computer screen, layout of the software, standard tool bar / menu and description of most commonly used tool bars, and navigational tools.

Co-ordinate system and reference planes HP, VP, RPP & LPP of 2D/3D environment. Selection of drawing sheet size and scale.

Commands and creation of Lines, coordinate points, axes, poly-lines, square, rectangle, polygons, splines, circles, ellipse, text, move, copy, off-set, mirror, rotate, trim, extend, break, chamfer, fillet, curves, constraints viz., tangency, parallelism, inclination and perpendicularity.

MODULE-II

Orthographic projections of points, straight lines and planes:

Introduction, Definitions - Planes of projection, reference line and conventions employed. First angle and Third angle projection.

Projections of points in all the four quadrants.

Textbooks:

1. **Engineering Drawing** – N.D. Bhatt & V.M. Panchal, 48th edition, 2005-Charotar Publishing House, Gujarat.
2. **Engineering Graphics** – K.R. Gopalakrishna, 32nd edition, 2005-Subash Publishers Bangalore.
3. **Computer Aided Engineering Drawing** - by Dr. M H Annaiah, Dr C N Chandrappa and Dr. B Sudheer Premkumar, Fifth edition, New Age International Publishers.

Reference Books:

1. **Computer Aided Engineering Drawing** – S. Trymbaka Murthy, – I.K. International Publishing House Pvt. Ltd., New Delhi, 3rd revised edition-2006.
2. **Engineering Drawing**-by N.S.Parthasarathy & Vela Murali, Oxford University Press, 2015
3. **Fundamentals of Engineering Drawing with an Introduction to Interactive Computer Graphics for Design and Production-** Luzadder Warren J., Duff John M., Eastern Economy Edition, 2005- Prentice-Hall of India Pvt. Ltd., New Delhi.
4. **A Primer on Computer Aided Engineering Drawing**-2006, Published by VTU, Belgaum.
5. **Publications of Bureau of Indian Standards**
   a) **IS 10711 – 2001:** Technical products documentation – Size and lay out of drawing sheets.
   b) **IS 9609 (Parts 0 & 1) – 2001:** Technical products documentation – Lettering.
   c) **IS 10714 (Part 20) – 2001 & SP 46 – 2003:** Lines for technical drawings.
   d) **IS 11669 – 1986 & SP 46 – 2003:** Dimensioning of Technical Drawings.
   e) **IS 15021 (Parts 1 to 4) – 2001:** Technical drawings – Projection Methods.

Course Outcomes:

Upon completion of this course, students will be able to

1. Apprehend the concepts of interference of light, diffraction of light, Fermi energy and magnetic effect of current
2. Understand the principles of operations of optical fibers and semiconductor devices such as Photodiode, and NPN transistor using simple circuits
3. Determine elastic moduli and moment of inertia of given materials with the help of suggested procedures
4. Recognize the resonance concept and its practical applications
5. Understand the importance of measurement procedure, honest recording and representing the data, reproduction of final results

Scheme of Evaluation

(with effect from 2018-19 Scheme)

Subject : Engineering Physics Lab **Code : 18PHYL16/26**

The student has to perform **TWO** experiments during the practical examination of **THREE** hours duration. The scheme of valuation shall be as follows.

Sl. No.	Description	Max.Marks	Part:A Marks for First experiment	Part:B Marks for Second experiment
01	Write up: Formula, Tabular column and Circuit diagram/Ray Diagram	16	4+2+2=08	4+2+2=08
02	Experimental set up/Circuit connection	10	05	05
03	Conduction and reading	40	20	20
04	Graph, Calculations, Results and accuracy	20	2+4+2+2=10	2+4+2+2=10
06	Viva-Voce	14	07	07
	Total	100	50	50

Note: The student is required to obtain a minimum of 40 % Marks in the practical examination to pass.

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