**GURU TEGH BAHADUR INSTITUTE OF TECHNOLOGY**

**G-8 AREA, RAJOURI GARDEN, NEW DELHI**

**B.Tech. (Common to all Branches) Semester: IInd Course: Engineering Graphics II Subject Code: ES158**

**Credit: 1, Period: 2**

**Course Outcomes (CO):**

CO1: Ability to do draw sectional diagrams of solids.

CO2: Ability to do draw 3D projections (Isometric and Oblique).

CO3: Ability to do draw perspective projections.

CO4: Understand and use a CAD tool.

**Programme outcomes (level)**

PO1: Engineering Knowledge

PO2: Problem Analysis

PO3: Design/Development of solutions

PO4: Conduct Investigations of complex problems

PO5: Modern Tool Usage

PO9: Individual and Team Work

PO10: Communication

PO11: Project Management and Finance

PO12: Lifelong learning

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| **Course outcomes to Programme outcomes mapping:**  **Scale1: Low, Scale2: medium, Scale3: High.** | | | | | | | | | |
| **CO/PO** | **PO1** | **PO2** | **PO3** | **PO4** | **PO5** | **PO9** | **PO10** | **PO11** | **PO12** |
| **CO1** | 3 | 3 | 3 | 3 | 2 | 1 | 2 | 1 | 2 |
| **CO2** | 3 | 3 | 3 | 3 | 2 | 1 | 2 | 1 | 2 |
| **CO3** | 3 | 3 | 3 | 3 | 2 | 1 | 2 | 1 | 2 |
| **CO4** | 3 | 3 | 3 | 3 | 2 | 1 | 2 | 1 | 2 |

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**Lab Plan**

**Course: Engineering Graphics II**

**B.Tech. (Common to all Branches)**

**Semester: IInd Subject Code: ES158**

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| **Unit** | **Topic** | **No of Lectures** |
| **1** | **Section of Solids: Definition of Sectioning and its purpose, Procedure of Sectioning, Illustration through examples, Types of sectional planes-application to few examples.** | **04** |
| **2** | **Isometric Projection: Classification of pictorial views, Basic Principle of Isometric projection, Difference between isometric projection and drawing, Isometric projection of solids such as cube, prism, pyramid and cylinder. Oblique Projection: Principle of oblique projection, difference between oblique projection and isometric projection, receding lines and receding angles, oblique drawing of circle, cylinder, prism and pyramid.** | **06** |
| **3** | **Perspective Projection: Principle of perspective projection, definitions of perspective elements, visual ray method, vanishing point method.**  **Conversion of 3D to 2D figures.** | **04** |
| **4** | **Introduction to CADD: Interfacing and Introduction to CAD Software, Coordinate System, 2D drafting: lines, circles, arc, polygon, etc., Dimensioning, 2-D Modelling, Use of CAD Software for engineering drawing practices.** | **06** |
| **Note: The sheets to be created shall be notified by the concerned teacher.** | | |

**Textbooks:**

1. Engineering Drawing by N.D. Bhatt, 53rd Ed., Charotar Publishing House Pvt. Ltd., Gujarat, 2017.

**References:**

1. Engineering Drawing by P.S. Gill, S.K Kataria & Sons, New Delhi, 2013.

2. Technical Drawing with Engineering Graphics by Frederick E. Giesecke, Shawna Lockhart, Marla Goodman, and Cindy M. Johnson, 15th Ed., Prentice Hall, USA, 2016

3. Engineering Drawing by M.B. Shah and B.C. Rana, 3rd Ed., Pearson Education, New Delhi, 2009.

4. AutoCAD 2017 for Engineers & Designers by Sham Tickoo,, Dreamtech Press 2016.