**Name of Faculty: Sh Rai singh and Rupinder Singh**

**Discipline: Electrical Engg.**

**Semester: 1st sem**

**Subject: Engg, Graphics**

**Lesson Plan Duration: ( From Sept 2022 to Jan 2023)**

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|  | **Week** | **Topic** |
|  |  |  |
|  | 1st | Introduction to Engineering Drawing and Graphics  Introduction to use and care of drawing instruments, drawing materials, layout and sizes  of drawing sheets and drawing boards.  b) Civil Engineering Sanitary fitting symbols  c) Electrical fitting symbols for domestic interior installations.  . |
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|  |  | 1.2 Symbols and conventions-  a) Conventions of Engineering Materials, Sectional Breaks and Conventional lines. |
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|  | 2nd | 1.3 Geometrical construction-geometrical figures such as triangles, rectangles, circles,  ellipses and curves, hexagons |
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|  |  | , pentagons bisecting a line and arc , division of line and  circle with the help of drawing instruments |
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|  | 3rd | Technical Lettering of Alphabet and Numerals  Definition and classification of lettering, Free hand (of height of 5,8,12 mm) and instrumental |
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|  |  | lettering (of height 20 to 35 mm): upper case and lower case, single and double stroke, vertical and inclined (Gothic lettering) at 75 degree to horizontal and with suitable height to width ratio 7:4. |
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|  | 4th | Revision and sheet check |
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|  |  | Dimensioning  3.1 Necessity of dimensioning, method and principles of dimensioning (mainly theoretical  instructions). |
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|  | 5th | 3.2 Dimensioning of overall sizes, circles, threaded holes, chamfered surfaces, angles,  tapered surfaces, holes, equally spaced on P.C.D., countersunk holes, |
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|  |  | counter bored  holes, cylindrical parts, narrow spaces and gaps, radii, curves and arches. |
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|  | 6th | Sessional test |
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|  |  | Scales  4.1 Scales –Needs and importance (theoretical instructions), Type of scales, Definition of  . |
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|  | 7th | Representative Fraction (R.F.) and Length of Scale.  4.2 To draw/construct plain and diagonal scales |
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|  |  | Revision and copy check |
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|  | 8th | Orthographic Projections  Theory of orthographic projections (Elaborate theoretical instructions).  Three views of orthographic projections of different objects of given pictorial view of a  block in 1st and 3rd angle.  . |
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|  |  | 1.3 Projection of Points in different quadrant |
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|  | 9th | Projection of Straight Line (1st angle)  i. Line parallel to both the planes.  ii. Line perpendicular to any one of the reference plane and parallel to others  iii. Line inclined to any one of the references and parallel to another plane.  Projection of Plane – Different lamina like square rectangular, triangular, circle and |
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|  |  | Hexagonal pentagon. Trace of planes (HT and VT).  Identification of surfaces |
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|  | 10th | Sectioning  Importance and salient features  Drawing of full section, half section, partial or broken out sections, |
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|  |  | Offset sections,  revolved sections and removed sections (theoretical only).  2.3 Orthographic sectional views of different objects. |
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|  | 11th | Sessional test |
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|  |  | Introduction of projection of right solids such as prism & pyramid (square, Pentagon,  Hexagonal) cube, cone & cylinder (Axes perpendicular to H.P and parallel to V.P.) |
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|  | 12th | pentagon pyramid, cylinder and cone (Section plane parallel to anyone reference planes  and perpendicular to V.P. and inclined to H.P.) |
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|  |  | . Development of Surfaces – Development of lateral surfaces of right solids like cone,  cylinder, pentagonal prism, pyramid and hexagonal pyramid (Simple problems) |
|  | 13th |  |
|  |  | Isometric Views  1 Fundamentals of isometric projections and isometric scale.  Isometric views of different laminas like circle, pentagon and hexagon. |
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|  |  | Isometric views of different regular solids like cylinder, cone, cube, cuboid, pyramid and  prism.  Isometric views from given different orthographic projections(front, side and top view) |
|  | 14th |  |
|  |  | Introduction to AutoCAD |
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|  |  | Revision and check |
|  | 15th |  |
|  |  | Basic introduction and operational instructions of various commands in AutoCAD. At least two |
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|  |  | sheets of different objects on AutoCAD (given pictorial/isometric view of a block). AutoCAD  skill of student is evaluated in internal assessment only not in external exam |
|  | 16th | Sessional Test |
|  |  | Revision |
|  |  | Revision |
|  |  | Revision |