Lesson Plan

Name of Faculty : Jagjeet Singh, Assistant Professor
Discipline : Civil Engineering
Semester : 1st
Subject : **ESC/2-P, Engineering Graphics & Design**
Lesson Plan Duration: 15 weeks
Work Load (Lecture/Practical) per week (in hours): Practical 04 hours

Week	Topic	%Syllabus Covered	Remarks
1st	**Introduction to Engineering Drawing** Principles of Engineering Graphics and their significance, usage of Drawing instruments, lettering, Conic sections including the Rectangular Hyperbola (General method only); Cycloid, Epicycloid, Hypocycloid, and Involute; Scales – Plain, Diagonal and Vernier Scales		
2nd	**Orthographic Projections** Principles of Orthographic Projections-Conventions- Projections of Points and lines inclined to both planes; Projections of planes inclined Planes-Auxiliary Planes		
3rd	**Projections of Regular Solids** Solids inclined to both the Planes-Auxiliary Views; Draw simple annotation, Dimensioning and Scale		
4th	**Sections and Sectional Views of Right Angular Solids** Prism, Cylinder, Pyramid, Cone–Auxiliary Views; Development of Surfaces of Right Regular Solids- Prism, Pyramid, Cylinder and Cone; Draw the sectional orthographic views of geometrical solids, Objects from industry and dwellings (foundation to slab only)		
5th	**Isometric Projections** Principles of Isometric projection– Isometric Scale, Isometric Views, Conventions; Isometric Views of lines, Planes, Simple and compound Solids; Conversion of Isometric Views to Orthographic Views and Vice-versa, Conventions		
6th	**Internal Viva-Voce-I**		
7th	**Minor Test- I**		

8th	**Overview of Computer Graphics covering** Listing the computer technologies that impact on graphical communication, Demonstrating knowledge of the theory of CAD software [such as: The Menu System, Toolbars (Standard, Object Properties, Draw, Modify and Dimension), Drawing Area (Background, Crosshairs, Coordinate System), Dialog boxes and windows, Shortcut menus (Button Bars), The Command Line (where applicable), The Status Bar, Different methods of zoom as used in CAD, Select and erase objects.; Isometric Views of lines, Planes, Simple and compound Solids]		
9th	**Customization & CAD Drawing** Consisting of set up of the drawing page and the printer including scale settings, setting up of units and drawing limits; ISO and ANSI standards for coordinate dimensioning and tolerancing; Orthographic constraints, Snap to objects manually and automatically; Producing drawings by using various coordinate input entry methods to draw straight lines, Applying various ways of drawing circles		
10th	**Annotations, layering & other functions** Applying dimensions to objects, Applying annotations to drawings; Setting up and use of Layers, Layers to create drawings, Create, Edit and Use customized layers; Changing line lengths through modifying existing lines (extend/lengthen); Printing documents to paper using the print command; Orthographic projection techniques; Drawing sectional views of composite right regular geometric solids and Project the true shape of the sectioned surface;		
11th	**Annotations, layering & other functions** Drawing annotation, Computer-aided design(CAD) software modelling of parts and assemblies. Parametric and non-parametric solid, Surface and Wire frame models. Part editing and two-dimensional documentation of models. Planar projection theory, including sketching of Perspective, Isometric, Multiview, Auxiliary and Section views. Spatial visualization exercises. Dimensioning guidelines, Tolerancing techniques; Dimensioning and Scale multi views of dwelling.		

12th	**Demonstration of a simple team design project** Geometry and topology of engineered components: Creation of engineering models and their presentation in standard 2D blue print form; Geometric dimensioning and Tolerancing		
13th	**Demonstration of a simple team design project** Use of solid-modelling software for creating associative models at the component and assembly levels; Floor plans that include: Windows, Doors and Fixture such as Wash Cabin (WC), Bath, Sink, Shower etc. Applying colour coding according to building drawing practice; Drawing sectional elevation showing foundation to ceiling; Introduction to Building Information Modelling (BIM)		
14th	**Minor Test- II**		
15th	**Internal Viva-Voce-II**		