

Civil Software Laboratory

Purpose: To provide students exposure to latest technology and software for developed for Civil Engineering as well as other disciplines of Engineering

Course: Engineering Graphics (CAD Section) (18B17GE173)

S. No.	Experiment Name	Software Used
1	CAD Introduction Using the main menu, Screen Menus Status Bar Settings: Ortho, Grid, Snap, Osanp, Dyn etc.	AutoCAD 2022
2	Setting up a drawing: Units, Limits etc.	
3	Basic Drawing Commands: Line, Point, Circle, Arc, Trace, Text, Dtext, Redraw, Zoom, Pan, Ortho, Coordinates, Grid, Snap, Ellipse, Polygon, etc.	
4	Editing Drawings: Select, Erase, Move, Copy, Break, Fillet, Measure, Divide, Explode, Undo, Redo, Trim, Extend, Rotate, Scale, Offset, Mirror, Stretch, Chamfer, Array etc.	
5	Intermediate Drawing Commands: Layers, Change, Rage, Fill, Solid, Hatch, Block, Insert, WBlock etc.	
6	Dimensioning: Associative, Baseline, Linear, Angular, Center mark, Diameter, Leader, radius, Setting Dimensioning Variables, Text Styles	
7	Advanced Drafting Commands: Pline, Pedit, Spline, Fit, Osanp etc.	
8	Plotting & Printing Basics	
9	3D Drafting: Iso commands, 3D Shapes, User Coordinate System, Elevation, Thickness, Viewpoint, Viewports, 3D Polylines, 3D Face, 3D Surfaces of Revolution, World Coordinate System, X/Y/Z Filters etc.	
10	3D commands and system variables: Commands: Extrude, Offsetedge, Presspull, Slice, Solidedit etc. System Variables: Implied Face, Preview Creation Transparency, Solid Check, etc.	
11	Advanced Display Modes: AutoCAD Rendering and Material Attachment	

Course: Computer Aided Civil Engineering Drawing

Course Objectives: 1. To learn the fundamentals of civil engineering drawings.

2. To develop knowledge of civil engineering software tools such as AutoCAD.

S. No.	Experiment Name	Software Used
1	Introduction and interpretation to concept of engineering drawings using AutoCAD (Basic drawing entity commands).	AutoCAD 2022
2	Entity modification commands, Layers, Text, and Dimensioning, Blocks. Drawing presentation norms and standards and other advance commands.	
3	Materials, Architectural, Structural, Electrical, and Plumbing symbols drawing and interpretation using AutoCAD.	
4	Rebar drawings and structural steel fabrication and connections drawing symbols, welding symbols; dimensioning standards.	
5	English Bond and Flemish Bond–Corner wall and Cross walls- One brick wall and one and half brick wall.	
6	Elements of planning building drawing, Methods of making line drawing, and detailed drawing.	
7	Site plan, floor plan, elevation, and section drawing of small residential buildings.	
8	Foundation plan. Roof drainage plans.	
9	Standard fittings, and fixtures, finishes.	
10	Principles of isometrics and perspective drawing, Perspective view of building.	
11	Fundamentals of Building Information Modelling (BIM).	

Course: Computer Aided Planning and Costing

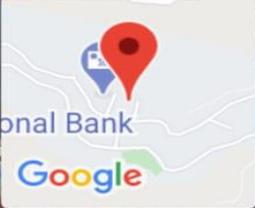
Course Objectives: 1. To learn the fundamentals of planning, designing and estimation of

different types of civil engineering structures using software like MS Excel and estimator.

2. Develop expertise in comprehending construction site drawings and generate bar bending schedules for same.

3. Learn to prepare detailed reports for construction projects.

S. No.	Experiment Name	Equipment Used
1	Introduction and estimation of quantities of materials from a plan of a residential building floor using Short wall and Long wall method using MS Excel Software.	MS Excel
2	Prepare section for a given Plan and hence Calculate quantities by Central Line method and Compare it with Long Wall/Short Wall Methods using MS Excel.	
3	Estimation of an underground masonry tanks and staircase	
4	Estimation of road works, culverts, bridges, wells, and irrigation works.	
5	Introduction to bar bending schedule, preparation of bar bending schedule for sketches given.	
6	Quantity estimation of residential building, culverts, bridges and road works.	
7	Cost analysis of residential building (Single Storey) as per latest CPWD rate analysis manual.	
8	Cost estimation of road works, culverts, bridges, wells, and irrigation works using estimator software as per latest CPWD rate analysis manual.	
9	Cost estimation of steel used in any project as per bar bending schedule using MS Excel.	
10	Introduction to contracts, Tenders, Bids and Legal Issues related to construction works.	
11	Preparation of different types estimation reports for various PWD works in MS Word.	
12	Introduction to Estimator Software	Estimator
13	Project Management through Estimator Software	



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Long E 77° 4' 13.296"

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