Lesson Plan for Building Planning & Drawing (S-26)

Total Duration: 60 Hours | Format: 15 Sessions × 4 Hours Each

FACULTY – Siphon Pandey and Soubhagya Ranjan Mohanty

Session / Hours	Unit & Topic Breakdown	Pedagogy & Learning Activities	Assessment / Deliverables
Session 1 (Hours 1-4)	UNIT I: Introduction & IS 962 Standards • Introduction to engineering drawing conventions as per IS 962. • Standard lines, lettering, scaling. • Graphical symbols for materials (concrete, brick, wood, earth). • Symbols for doors, windows, and fixtures.	Interactive lecture using slideshows, step-by-step whiteboard drafting demonstrations, and hands-on studio drawing practice on standard sheets.	Sheet Submission 1: Practice sheet covering lines, material textures, door/window symbols.
Session 2 (Hours 5-8)	UNIT I: Installations, Abbreviations & Architectural Review • Standard symbols for sanitary fittings, water supply layout, and electrical installations. • Standard abbreviations used in civil blueprints. • Group Activity Setup: Review of a real professional 1 BHK / 2 BHK architectural drawing blueprint. • Documenting	Group workshop (4 students/group). Analysis of actual industry blueprints. Guided discussion on interpreting structural, electrical, and plumbing callouts.	Technical Report: Comprehensive summary report of blueprint observations submitted by each group.

Session 3 (Hours 9-12)	UNIT I & II: Public Building Line Plans & Planning Principles • Drafting line plans to an appropriate scale for 5 public facilities (School, Health Centre, Bank, Post Office, Hostel, Restaurant, Community Hall, Library). • Core Principles of Planning: Aspect, Prospect, Orientation, Grouping.	Studio drafting session for public building line plans. Concept lecture with real-world case studies on building orientation and environmental microclimates.	Sheet Submission 2: Scaled line plans for 2 selected public buildings. In-class pop quiz on planning principles.
Session 4 (Hours 13-16)	UNIT II: Advanced Planning Principles & Spatial Norms • Principles of Planning: Privacy, Elegance, Flexibility, Circulation, Furniture requirements, Sanitation, and Economy. • Minimum dimensional requirements and space optimization standards as per IS 962 guidelines.	Illustrated lecture with visual slide presentations. Interactive space layout exercises using standard furniture mock-ups.	Workbook Exercise: Dimensioning and optimal furniture arrangements for various residential zones.

Session 5 (Hours 17-20)	UNIT II: Building Bye-Laws & Legal Sanctions • Rules, regulations, and bye-laws of municipal and local sanctioning authorities. • Legal requirements for building plan approvals. • Setbacks, height restrictions, and ventilation mandates.	Expert-led discussion or lecture on local municipal codebooks. Case studies highlighting legal layout violations and standard compliance metrics.	Case Analysis: Evaluating a sample building plan for regulatory approval/rejection.
Session 6 (Hours 21-24)	UNIT II: Area Classifications & Area Statements • Mathematical definitions and calculations of Plot Area, Built-up Area, Super Built-up Area. • Plinth Area, Carpet Area, Floor Area, and Floor Area Ratio (FAR) / Floor Space Index (FSI).	Problem-solving session focused on area math. Step-by-step computation exercises for an actual multi-story building layout.	Problem Set: Computation of Carpet Area and FAR calculation sheet from a provided layout.
Session 7 (Hours 25-28)	UNIT II & III: Line Plans to Scale & Intro to Load Bearing • Drawing compliant line plans for a multi-room residential unit	Practical studio drafting session. Individual instruction on transforming a programmatic brief into a functional line	Sheet Submission 3: Finalized residential line plan incorporating staircase layout.

	(min. 3 rooms + WC, bath, staircase). • Introduction to Load Bearing Structure: Load path mechanics, wall thicknesses, foundation realities.	plan layout.	
Session 8 (Hours 29-32)	UNIT III: Load Bearing 2 BHK Plan Layout • Developing a detailed 2 BHK residential plan for a single-story load-bearing masonry building. • Wall thickness configurations, sizing of openings, structural load alignment.	Step-by-step drawing demonstration. Instructing on centerline layout development and drawing precise structural cross-walls.	Drafting Practice: Preliminary layout framework of the single-story 2 BHK plan.
Session 9 (Hours 33-36)	UNIT III: Vertical Circulation & Staircase Design • Structural planning and design of staircases: Rise and Tread math. • Headroom requirements, landing widths for residential vs. public infrastructure. • Complete Schedule of Openings and Area Statement.	Blackboard formulation for rise/tread calculations. Designing custom stairwells given specific floor-to-floor heights.	Calculation Sheets: Staircase geometry sheet and completed Schedule of Openings.

Session 10 (Hours 37-40)	UNIT III: Sectional Elevation & Foundation Details • Drawing a cross-sectional view passing through critical areas (Staircase or WC/Bath). • Foundation plan details for load-bearing stepped brick masonry footings. • General construction notes and specifications.	Detailed structural drafting session. Group review of section-cutting techniques to visualize hidden vertical configurations.	Sheet Submission 4: Complete Working Drawing set for Load Bearing Structure (Plan, Section, Foundation).
Session 11 (Hours 41-44)	UNIT IV: Introduction to Framed Structures (G+1) • Structural behavior of Reinforced Concrete (RCC) Framed Structures. • Grid layout lines, column placement logic, load distribution pathways. • Drafting the developed plan of a G+1 Two-Storey 2 BHK residential building.	Comparative presentation (Load Bearing vs. Framed systems). Grid-line generation and drafting on sheets.	Drafting Practice: Developed Column Grid and Ground Floor layout design.

Session 12 (Hours 45-48)	UNIT IV: First Floor Layout & Elevation Aesthetics • Drafting the First Floor plan of the G+1 framed structure. • Developing front and side architectural elevations. • Ensuring spatial uniformity, vertical duct alignment for plumbing.	Studio session focusing on elevation projection lines from the floor plans. Individual drafting reviews.	Sheet Submission 5: Ground and First Floor Plans with complete Elevation views.
Session 13 (Hours 49-52)	UNIT IV: Cross-Sections & Framed Stairwells • Cross-section details passing through the staircase or WC/Bath of the framed building. • Designing a reinforced concrete dog-legged or open-	Advanced sectional drafting guidance. Demonstration of waterproofing detailing in WC/bath sections.	Drafting Practice: Multi-story section view highlighting beam-column intersections.

	newel staircase.		
Session 14 (Hours 53-56)	UNIT IV: RCC Structural Details & Foundation Plan • Column Footing layout plan for a framed building. • Detailed reinforcement drafting configurations for RCC isolated footings, columns, beams, lintels, chajjas, and slabs.	Technical drafting of reinforcement details. Interpretation of structural bar bending and schedules.	Sheet Submission 6: Comprehensive Working Drawing set for Framed Structure (Plan, Section, RCC Footing Details).
Session 15 (Hours 57-60)	UNIT V: Perspective Drawing Concepts & Applications • Principles and fundamentals of perspective projection. • Definitions: Picture Plane, Station Point, Horizon Line, Vanishing Points. • Executing Two-Point Perspective drawings of small objects (Steps, monuments, pedestals).	Visual demonstration of visual ray and vanishing point methods. Interactive individual studio drawing work.	Sheet Submission 7: Two-Point Perspective drawing of a stepped masonry block or pedestal.

Faculty Civil: S. Pandey 12/12/25 12/12/25 **HOD Civil:** 12/12/25