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Building Planning and Drawings — Complete Syllabus

BTEUP Diploma in Civil Engineering • 3rd Semester • Session 2026-27
Subject 3.7 (Practicum/Practical) • Total 100 Marks • 3 Credits • L 1 - P 4

Examination Scheme

Code	Paper	Type	L - P	Credits	Internal	External	Total
3.7	Building Planning and Drawings	Practicum/ Practical	1 - 4	3	Practical 60	Practical 40 (3 hrs)	100
Building Planning and Drawings Total				3	60	40	100

What This Subject Aims To Do

To learn the basic principles of building planning and drawing, know the graphical representation of various components of buildings, draw a complete plan and elevation of a building, and learn the basics of perspective drawings and computer aided drawings.

Unit-Wise Complete Topic List

Unit	Topic	Periods	Marks Share
1	Planning of Building	4	20%
2	Drawings 1-3: Foundations, Wall Junctions, Arches	3	20%
3	Drawings 4-6: Doors, Small Building, Two-Room Building	3	20%
4	Drawings 7-8: Floors, Flat Roof	2	20%

5	Drawings 9-10: Damp Proofing	2	20%
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Unit 1 — Planning of Building (4 Periods, 20%)

Topics: Conventions as per IS 962, symbols for different materials such as earthwork, brickwork, stonework, concrete, woodwork and glass; graphical symbols for doors and windows, abbreviations, symbols for sanitary and electrical installations; principles of planning for residential and public building — aspect, prospect, orientation, grouping, privacy, elegance, flexibility, circulation, furniture requirements, sanitation, economy; space requirement and norms for minimum dimension of different units in the residential and public buildings as per IS 962; rules and bye-laws of sanctioning authorities for construction work; plot area, built up area, super built up area, plinth area, carpet area, floor area and FAR (Floor Area Ratio).

Unit 2 — Drawings 1-3: Foundations, Wall Junctions, Arches (3 Periods, 20%)

Topics: Drawing No. 1: Details of spread footing foundations for a load bearing and non-load bearing wall for given thickness of walls with the help of given data or rule of the thumb, showing offsets, position of DPC; the details of the concrete and brick apron have to be shown in the drawing. Drawing No. 2: Plans of 'T' and corner junction of walls of 1 brick, 1-1/2 brick and 2 brick thick in English bond. Drawing No. 3: Drawing plan, elevation of arches: circular arch, segmental arch.

Unit 3 — Drawings 4-6: Doors, Small Building, Two-Room Building (3 Periods, 20%)

Topics: Drawing No. 4: Elevation, sectional plan and sectional side elevation of flush door, fully glazed door, fully panelled door with wire gauge shutter, partly panelled and partly glazed door. Drawing No. 5: Drawing plan, elevation of a small building by measurement and foundation detail and sectional elevation. Drawing No. 6: Drawing detailed working plan, elevation and section of a two rooms residential building from a given line plan or given data showing details of foundations, roof and parapet.

Unit 4 — Drawings 7-8: Floors, Flat Roof (2 Periods, 20%)

Topics: Drawing No. 7: Drawings of following floors: (1) cement concrete floors at ground level and at first floor level; (2) brick floors — (a) diagonal bond, (b) herring bone bond; (3) bonded cement concrete flooring / marble flooring / terrazzo flooring; (4) ceramic/vitrified tile flooring. Drawing No. 8: Drawing of flat roof, showing the heat/thermal insulation provisions.

Unit 5 — Drawings 9-10: Damp Proofing (2 Periods, 20%)

Topics: Drawing No. 9: Drawing details of damp proofing arrangement of roofs and walls as per BIS Code; show the rain water drainage arrangement also. Drawing No. 10: Drawing damp proofing details in basement of buildings.

Practical Work

- Introduction to Computer Aided Drafting (2D) commands of any one software (Auto CAD, ProE, Solid works, Unigraphics etc.): concept of AutoCAD, tool bars in CAD software, coordinate system, snap, grid, and ortho mode (absolute, relative and polar), setting of units and layout; drawing commands — point, line, arc, circle, ellipse; editing commands — scale, erase, copy, stretch, lengthen and explode; dimensioning and placing text in drawing area; sectioning and hatching; inquiry for different parameters of drawing entity; create layers within a drawing; specifying Geometrical Dimensioning & tolerance (GD&T) parameters in drawing.
- 2-D plan of a two-room building.
- Isometric drawing by CAD using any part modeling software (3D) — drawings of: cone, cylinder, cube, sphere, isometric view of objects.
- Draw submission drawing to the scale of 1:100, of (G+1) framed structure residential building (2BHK) with flat roof and staircase showing using CAD software: (a) developed plan; (b) elevation; (c) section passing through staircase, W.C. and bath; (d) foundation plan; (e) site plan (1:200), area statement, schedule of openings and construction notes.
- Draw working drawing to the scale of 1:100, of (G+1) framed structure residential building (2BHK) with flat roof and staircase showing using CAD software: (a) foundation plan to the scale 1:50; (b) detailed enlarged section of RCC column and footing with plinth filling; (c) detailed enlarged section of RCC beam, lintel and chajjas; (d) detailed enlarged section of RCC staircase and slab.
- Draw two point perspective drawing of small objects — steps, monuments, pedestals (any one) scale 1:50 using CAD software: (a) draw plan, elevation, eye level, picture plane and vanishing points; (b) draw perspective view.

Reference Books (as listed in the syllabus)

- Shah. M.G. Kale, CM, Patki, S.Y., Building Drawing, Mcgraw Hill Publishing.
- Malik and Mayo, Civil Engineering Drawing, Computech Publication Ltd.
- M. G. Shah and C. M. Kale, Principles of Perspective Drawing, Mcgraw Hill.
- Swamy, Kumara; Rao, N, Kameshwara, A., Building Planning and Drawing, Charotar Publication, Anand.
- Bhavikatti, S. S., Building Construction, Vikas Publication House Pvt. Ltd., Delhi.
- Mantri, Sandip, A to Z Building Construction, Satya Prakashan, New Delhi.
- Singh, Ajit, Working with Auto CAD 2000, Mcgraw Hill Publishing company Ltd.

- M.K. Varshney, Building Drawing, Asian Publishers, Muzaffarnagar, ISBN: 978-93-91541-28-6.
- Sane, Y.S., Planning and design of Building, Allied Publishers, New Delhi.

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Source: BTEUP 2nd Year curriculum (folder2627), approved in C.D.C. meeting held on 16.07.2026. Topic lists follow the official syllabus; short explanations are the author's own plain-English summaries, not syllabus text.

Please confirm with your own polytechnic for any local changes.

