

Semester 2

Building Planning and Drafting

Course Code	Teaching hours per week				Credits	Exam hours	Course type	CIE Marks	ESE Marks
	L	T	P	R					
26NNVES203	2	0	2	0	3	2.5	ESC	40	60

- Preamble:** This course provides the fundamental skills required for preparing and interpreting engineering drawings through manual drafting. It covers the basics of technical drawing, orthographic projections, sectional views, dimensioning standards, and BIS codes for 2D drafting. Students learn to apply NBC, KPBR and KMBR rules in planning buildings and preparing architectural drawings such as plans, sections, elevations, staircases, foundations, and building services layouts.

2. Prerequisites: NA

Module Number	Syllabus Description	Contact Hours
1	Engineering Graphics and Drafting Fundamentals -Relevance of technical drawing in the engineering field. Types of lines, Lettering, Dimensioning, BIS code of practice for technical drawing. Paper sizes. Concept of Scale. Types of Projections (Orthographic and oblique) - first and third angle projections - plan - elevation - section. Examples using simple solids.	8
2	Building Planning and Architectural Components - Building rules- NBC, KBR, Principles of building planning. Planning of building as per NBC & KBR (Room sizes and open space requirement). Draw plan, section and elevation of single-storeyed building from the given line sketch. Types of staircase, Planning and proportioning of dog-legged staircase. Draw plan, section and elevation of dog legged staircase, three quarter turn staircase.	9
3	Foundation Details and Residential Building Services - Draw sectional details of foundation- load bearing wall over random rubble foundation, RCC Column over isolated footing and pile foundation. Draw plan, section and elevation of two storeyed residential building from the given line sketch. Site plan- Prepare detailed drawing on building services (for single storey residential building) including septic tank and soak pit	8

4	Residential and Public Building Planning -Prepare Single storey residential building drawing for the given functional requirements with sloped roof. Vertical transport systems- Elevator, escalators and ramp. Prepare Multi storey building drawing with a lift for the given requirements. Planning requirements for public buildings- school, office, bank etc.	11
Total hours		36

3. Course Assessment Methods

Continuous Internal Evaluation Marks (CIE):

Attendance	Assignment/ Microproject	Internal Examination- 1 (Written)	Internal Examination- 2 (Written)	Total
5	15	10	10	40

End Semester Examination Marks (ESE):

Part A	Part B	Total
$4 \times 5 = 20$ 1 Questions from each module. - Total of 4 Questions, each carrying 5 marks	$1 \times 40 = 40$ - Each question carries 40 marks. - Two questions will be given out of which 1 question should be answered.	60

4. Course Outcomes

At the end of the course students should be able to:

Course Outcomes		Blooms Taxonomy Level
CO1	Describe the fundamentals of technical drawing and orthographic projection to create basic 2D drawings.	K2
CO2	Prepare drawings of building components and residential buildings conforming to a given line sketch.	K3
CO3	Illustrate foundation details and building services used in residential structures.	K3

CO4	Prepare drawings of residential and public buildings incorporating vertical transportation systems and functional requirements.	K4
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Note: K1- Remember, K2- Understand, K3- Apply, K4- Analyze, K5- Evaluate, K6- Create

5. Mapping of Course Outcomes with Program Outcomes

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11
CO1	3	1	-	-	-	-	-	-	2	-	1
CO2	3	2	3	-	-	1	2	-	2	-	1
CO3	3	2	2	-	-	1	2	-	2	-	1
CO4	3	2	3	-	-	1	2	1	2	-	1

6. Text Books

Sl No	Title of Book	Name of Author/s	Publisher	Edition and Year
1	Building Drawing and Detailing	Dr. Balagopal T.S. Prabhu	Spades Publishers, Calicut	Revised Edition 2022
2	Building Drawing With An Integrated Approach to Built Environment	Shah, M.G., Kale, C.M., and Patki, S.Y.	McGraw-Hill India	6th Edition 2020
3	Building Planning and Drawing	M.V. Chitawadagi, S.S. Bhavikatti	Wiley India	2021

7. Reference Books

Sl No	Title of Book	Name of Author/s	Publisher	Edition and Year
1	Engineering Graphics	Anilkumar K.N	Adhyuth Narayan Publishers	2022
2	Engineering Drawing	Agrawal, B. & Agrawal, C.M	McGraw Hill Education	3 rd edition, 2019
3	National Building Construction Standards	Bureau of Indian Standards	Bureau of Indian Standards	2026
4	Kerala Panchayat Building Rules	Government of Kerala	Government of Kerala	2019
5	Kerala Municipality Building Rules	Government of Kerala	Government of Kerala	2019
6	AutoCAD Essentials	Autodesk Official Press	Wiley Publications	2025

8. Video Links or any other Reference Materials

SI No	Details Like Weblink, Publication Details	Module
1	https://onlinecourses.nptel.ac.in/e-learning/preview/noc21_me128	1
2	https://onlinecourses.nptel.ac.in/e-learning/preview/noc25_ar20	All



Model Question Paper

Register No.....

Name:

FEDERAL INSTITUTE OF SCIENCE AND TECHNOLOGY (FISAT)
(Autonomous)
THIRD SEMESTER BTECH DEGREE EXAMINATION, <MONTH & YEAR>

Course Code : 26NNVES203
Course Name : Building Planning and Drafting

Total Marks : 60

Duration : 2.5 hours

PART A
(Answer all questions)

- | | | | |
|---|---|-----|---|
| 1 | Sketch and label any four types of lines as per BIS code of practice, and state the standard paper sizes (A0 to A4) | CO1 | 5 |
| 2 | Briefly outline the three key principles of building planning as per NBC and KPBR/KMBR. | CO1 | 5 |
| 3 | Sketch the sectional details of two types of foundations:
(i) load-bearing wall over random rubble foundation, and
(ii) RCC column over isolated footing. | CO2 | 5 |
| 4 | Explain the planning requirements for vertical transport systems (elevator and ramp) in multi-storey buildings as per NBC. | CO3 | 5 |

PART – B
Answer one full question

- | | | | |
|---|--|-----|----|
| 5 | Draw the plan, front elevation, and sectional elevation at a scale of 1:100 of a single-storey residential building with the provided functional requirements: <ul style="list-style-type: none">· Plinth area: 120 m² (living room 5m×4m, two bedrooms 4m×3.5m each, kitchen 3m×3m, one bathroom/toilet).· Sloped roof (gable type).· Dog-legged staircase (tread 300mm, riser 150mm). | CO4 | 40 |
|---|--|-----|----|

Show all dimensions, door/window symbols, and building services as per NBC/KPBR. Label all parts neatly. A single-storey residential building has the following functional requirements:

OR

6 A two-storey residential building has the following functional requirements: CO4 40

- Ground floor: Living room 6m×5m, dining 4m×4m, kitchen 3.5m×3m, car porch, staircase, one bedroom with attached bath.
- First floor: Two bedrooms (4m×3.5m each) with baths, family lounge.
- RCC column with isolated footings; flat roof.

Draw the plan of both floors, front elevation, and one sectional elevation at a scale of 1:100. Include foundation details for two columns. Show dimensions, projections (first angle), and labels as per BIS standards.

