

Techno India NJR Institute of Technology



Course File

Building Planning (4CE4-07)

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For Techno India NJR Institute of Technology
पंकज पौरवाल
Dr. Pankaj Kumar Perwal
(Principal)



RAJASTHAN TECHNICAL UNIVERSITY, KOTA

SYLLABUS

II Year-IV Semester: B.Tech. (Civil Engineering)

4CE4-07: BUILDING PLANNING

Credits: 2

Max. Marks: 100 (IA:20, ETE:80)

2L+0T+0P

End Term Exam: 2 Hours

SN	CONTENTS	Hrs.
1	Introduction: to scope, objective and outcome of subject	1
2	Introduction: Types of buildings, criteria for location and site selection, site plan and its detail.	2
3	Sun Consideration : Different methods of drawing sun chart, sun shading devices, design of louvers.	3
4	Climatic and comfort Consideration: Elements of climate, global climate, climatic zones of India, thermal comfort, bi climatic chart,	3
5	Orientation: Meaning, factors affecting orientation, orientation criteria for tropical climate.	1
6	Building Bye Laws and NBC Regulations: Objective of by-laws, regulation regarding; means of access, lines of building frontages, covered area, floor area ratio, open spaces around buildings, height & sizes of rooms, plinth regulation.	3
7	Principles of Planning: Different factors affecting planning viz-aspect, prospect, furniture requirement, roominess, grouping, circulation, elegance, privacy etc.	3
8	Vastu Shastra In Modern Building planning: Factors considered in Vastu, site selection, orientation, planning and design of residential buildings, school/hospital	3
9	Functional Design And Accommodation Requirements Of Non Residential Buildings: viz-school buildings, rest house, primary health centers, post office etc.	3
10	Services in Buildings (A) Lighting and ventilation, doors and windows, lifts. (B) Acoustics, sound insulation and noise control. (C) Fire fighting provisions	6
TOTAL		28

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Course Overview:

Student will learn basics of Building Planning from this 28-hour course. They will be able to perform The course aims at providing a fundamental understanding of the physics related to buildings and to propose an overview of the various issues that have to be adequately combined to offer the occupants a physical, functional and psychological well-being. Students will be guided through the different components, constraints and systems of a work of architecture. These will be examined both independently and in the manner in which they interact and affect one another.

Building Planning is the basic requirement for the job role of Construction developer in the companies like, Architect Hafeez Contractor,Capsomere&Kalapa Consultantsetc.

Course Outcomes:

CO.NO.	Cognitive Level	Course Outcome
1	Comprehension	Identify the factors to be considered in planning and construction of building.
2	Application	Impart the ability to work with an architect and contractor.
3	Synthesis	Plan a building following the bye-laws.
4	Comprehension	Plan the buildings according the modern requirements such as sustainability, environment friendly etc.
5	Synthesis	Prepare drawings, foundation plans and others executable drawings with proper details for different building

Prerequisites:

1: Build an Articulated Plan. The obvious place to start during the planning process is building a plan.

2: Focus on Strategic Differentiation. Build a plan that's focused on your strategic differentiation.

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3: Align Your Organization.

4: To learn Building Bye laws for residential and public building

5: To gain knowledge about various building components, size, abbreviations, symbols used in drawing.

Course Outcome Mapping with Program Outcome:

Course Outcome	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO1 0	PO1 1	PO1 2	PSO 1	PSO 2	PSO 3
CO246.1	3	2	2	2	2	2	2	1	2	1	1	1	2	2	2
CO246.2	2	2	2	2	1	2	2	1	2	1	2	1	2	2	2
CO246.3	3	2	2	2	2	2	2	1	2	1	1	1	2	2	2
CO246.4	2	2	1	2	2	2	3	1	2	1	1	2	3	2	2
CO246.5	2	1	1	1	2	2	1	1	2	1	1	2	3	2	2
CO246 (AVG)	2.4	1.8	1.6	1.8	1.8	2	2	1	2	1	1.2	1.4	2.4	2	2

Course Coverage Module Wise:

Lecture No.	Unit	Topic
1	1	INTRODUCTION TO SCOPE, OBJECTIVE AND OUTCOME OF SUBJECT
2	2	INTRODUCTION: Types of buildings, criteria for location and site selection
3	2	Site plan and its detail
4	3	SUN CONSIDERATION: Different methods of drawing sun chart

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5	3	Sunshading devices
6	3	Design of louvers
7	4	CLIMATIC AND COMFORT CONSIDERATION: Elements of climate
8	4	Global climate, climatic zones of India, thermal comfort
9	4	Bioclimatic chart
10	5	ORIENTATION: Meaning, factors affecting orientation, orientation criteria for tropical climate
11	6	BUILDING BYE LAWS AND NBC REGULATIONS: Objective of by-laws, regulation regarding; means of access, lines of building frontages
12	6	Covered area, floor area ratio, open spaces around buildings
13		Height & sizes of rooms, plinth regulation
14	7	PRINCIPLES OF PLANNING: Different factors affecting planning viz- aspect
15		Prospect, furniture requirement, roominess, grouping
16		Circulation, elegance, privacy etc
17	8	VASTU SHASTRA In Modern Building planning: Factors considered in Vaastu, site
18		Orientation, planning and design of residential, buildings, school/hospital
19		Orientation, planning
20	9	FUNCTIONAL DESIGN AND ACCOMMODATION REQUIREMENTS OF

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21		Resthouse,primaryhealthcenters,postofficeetc
22		Resthouse,primaryhealthcenter's
23	10	SERVICES IN BUILDINGS (A)Lightingandventilation,doorsandwindows,lifts
24		(A)Lightingandventilation,doorsandwindows,lifts
25		(A)Lightingandventilation,doorsandwindows,lifts
26		(B)Acoustics,soundinsulationandnoisecontrol
27		(B)Acoustics,soundinsulationandnoisecontrol
28		(C)Firefightingprovisions

TEXT/REFERENCE BOOKS

- A. Building Drawing by M.G.Shah, C.M. Kala, S.Y.Patki , Tata Mc Graw Hills.
- B. Manual of Tropical Housing and Buildings by Koenigs Berger Orient and Longman.
- C. SP.41 (S&T)- Handbook on functional Requirements of Buildings Part-I
- D. National Building Code, BIS.

COURSE LEVEL PROBLEMS (TEST ITEMS):

CO.NO.	Problem description
1	A. Write about types of building. B. Write about site selection C. Write a note on sun consideration

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2	<p>A. Write a note on element of Climatecomfort consideration</p> <p>B. Write about comfort consideration</p> <p>C. Write a note on orientation of building</p>
3	<p>A. Write about Building by laws</p> <p>B. Write about FAR and OTS</p> <p>C. Write about Plinth Regulation</p>
4	<p>A. Write about principal of planning</p> <p>B. Write about factor affecting of planning</p> <p>C. Explain about privacy of building</p>
5	<p>D. Write about Vastu shastra in modern building</p> <p>E. Explain functional design and accommodation req.</p> <p>F. Write about Services in building</p>

Assessment Methodology:

1. Practical exam in lab where they have to Draw Plans (Once in a week)
2. Assignments one from each unit.
3. Midterm subjective paper where they have write about subject. (Twice during the semester)
4. Final paper at the end of the semester subjective.

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Teaching and Learning resources unit-wise:

Unit-1

Types of building

Video Tutorials:

<https://www.youtube.com/watch?v=xsuhqi5QjnI>

Theory concepts:

<https://ocw.mit.edu/courses/architecture/4-401-introduction-to-building-technology-spring-2006/lecture-notes/>

Sample Quiz:

https://mytutorialworld.com/objective-questions/questions_view.php?table_name=dm_civil_set_1_planning_of_building&title=Planning%20of%20Building%20Objective%20Questions%20with%20Answers

Unit-2

Sun Consideration

Video Tutorials:

<https://www.youtube.com/watch?v=GtnWqU2DwFk>

Theory concepts:

https://www.bput.ac.in/lecture-notes-download.php?file=lecture_note_403105181219180.pdf

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Sample Quiz:

https://mytutorialworld.com/objective-questions/questions_view.php?table_name=dm_civil_set_1_planning_of_building&title=Planning%20of%20Building%20Objective%20Questions%20with%20Answers

Unit 3

Orientation

Video Tutorials:

<https://www.youtube.com/watch?v=-ZPTRLPYXCE>

Theory concepts:

<https://digitalscholarship.unlv.edu/cgi/viewcontent.cgi?article=3592&context=thesisdissertations>

Sample Quiz:

https://mytutorialworld.com/objective-questions/questions_view.php?table_name=dm_civil_set_1_planning_of_building&title=Planning%20of%20Building%20Objective%20Questions%20with%20Answers

Unit-4

Building by laws

Video Tutorials:

<https://www.youtube.com/watch?v=Zl-AH1N5wrM>

Theory concepts:

<http://www.faadooengineers.com/online-study/post/ce/principals-of-town-planning-and-architecture/1585/building-by-laws>

Sample Quiz:

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https://mytutorialworld.com/objective-questions/questions_view.php?table_name=dm_civil_set_1_planning_of_building&title=Planning%20of%20Building%20Objective%20Questions%20with%20Answers

Unit 5

Principal of planning

Video Tutorials:

https://www.youtube.com/watch?v=FF_5w5hZav4

Theory concepts:

<https://www.vtpi.org/planning.pdf>

Sample Quiz:

https://mytutorialworld.com/objective-questions/questions_view.php?table_name=dm_civil_set_1_planning_of_building&title=Planning%20of%20Building%20Objective%20Questions%20with%20Answers

Unit-6

Vastu Shastra

Video Tutorials:

<https://www.youtube.com/watch?v=sHEjKhZMU8A>

Theory concepts:

<https://instapdf.in/vastu-shastra-book/>

Sample Quiz:

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https://mytutorialworld.com/objective-questions/questions_view.php?table_name=dm_civil_set_1_planning_of_building&title=Planning%20of%20Building%20Objective%20Questions%20with%20Answers

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4E1210	Roll No. _____	Total No of Pages: 3
<p>4E1210</p> <p>B. Tech. IV - Sem. (Main) Exam., May - 2019</p> <p>PCC Civil Engineering</p> <p>4CE4 – 07 Building Planning</p>		

Time: 2 Hours

Maximum Marks: 80

Instructions to Candidates:

Attempt all five questions from Part A, four questions out of six questions from Part B and two questions out of three from Part C.

Schematic diagrams must be shown wherever necessary. Any data you feel missing may suitably be assumed and stated clearly. Units of quantities used /calculated must be stated clearly.

Use of following supporting material is permitted during examination. (Mentioned in form No. 205)

1. half size sheet _____ 2. NIL _____

PART – A

(Answer should be given up to 25 words only)

[5×2=10]

All questions are compulsory

- Q.1 Define the term: - [2]
- (a) Built of area
- (b) Carpet area
- (c) Super built up
- Q.2 Write the different methods of drawing the sun chart. What is the utilization of sun chart? [2]
- Q.3 What are the acoustical defects in buildings? Explain in brief. [2]

[4E1210]

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<http://www.rtuonline.com>

- Q.4 Write short notes on:- [2]
- (a) Grouping
 - (b) Roominess
 - (c) Circulation
- Q.5 Write a short essay on Hot arid Zones. [2]

PART – B

(Analytical/Problem solving questions)

[4×10=40]

Attempt any four questions

- Q.1 Discuss the criteria for site selection for a building. How functions of a building affects site selection. <http://www.rtuonline.com> [10]
- Q.2 Write short notes on:- [2.5×4=10]
- (a) Biclimate chart
 - (b) Elegance
 - (c) Plinth regulation
 - (d) Global climate
- Q.3 What are the objectives of building by laws? [10]
- Q.4 Describe briefly the general principles underlying the noise control and various constructional measures adopted for achieving sound insulation in buildings. [10]
- Q.5 Which factors should be considered while purchasing a residential building according to the Vastu Shastra? Why we move towards Vastu? [10]

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- Q.6 Explain how do you classify doors and windows from their operational point of view. [10]

PART - C

(Descriptive/Analytical/Problem Solving/Design Questions) [2×15=30]

Attempt any two questions

- Q.1 Design and draw the plan of a residential building on a plot of 15m × 25m. Road is on the north side of the plot. [15]
- Q.2 Classify the buildings based on occupancy and types of construction. [15]
- Q.3 Discuss acoustical design of a cinema hall. Support your answer with neat sketch. [15]
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