**Techno India NJR Institute of Technology**



**Course File**

**Building Planning (4CE4-07)**

 Rakesh Yadav

(Assistant Professor)

**Department of CE**



**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.

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** | **PO1** | **PO2** | **PO3** | **PO4** | **PO5** | **PO6** | **PO7** | **PO8** | **PO9** | **PO10** | **PO11** | **PO12** | **PSO1** | **PSO2** | **PSO3** |
| **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:**

|  |  |  |
| --- | --- | --- |
|  LectureNo. | Unit |  Topic |
| 1 | **1** | **INTRODUCTIONTOSCOPE,OBJECTIVEANDOUTCOMEOFSUBJECT** |
| 2 | **2** | **INTRODUCTION:**Typesofbuildings,criteriaforlocationandsiteselection |
| 3 | 2 | Siteplananditsdetail |
| 4 | **3** | **SUNCONSIDERATION:**Differentmethodsofdrawingsunchart |
| 5 | 3 | Sunshadingdevices |
| 6 | 3 | Designoflouvers |
| 7 | **4** | **CLIMATICANDCOMFORTCONSIDERATION**:Elementsofclimate |
| 8 | 4 | Globalclimate,climaticzonesofIndia,thermalcomfort |
| 9 | 4 | Bioclimaticchart |
| 10 | 5 | **ORIENTATION**: Meaning,factorsaffectingorientation,orientationcriteriaFortropicalclimate |
| 11 | 6 | **BUILDING BYE LAWS AND NBC REGULATIONS**:Objectiveofby-laws,regulationregarding;means ofaccess, linesofbuildingfrontages |
| 12 | 6 | Coveredarea,floorarearatio,openspacesaroundbuildings |
| 13 |  | Height &sizesofrooms,plinthregulation |
| 14 | 7 | **PRINCIPLES OF PLANNING**: Differentfactorsaffectingplanningviz-aspect |
| 15 |  | Prospect,furniturerequirement,roominess,grouping |
| 16 |  | Circulation,elegance,privacyetc |
| 17 | 8 | **VASTU SHASTRA**InModernBuildingplanning:FactorsconsideredinVaastu,site |
| 18 |  | Orientation,planninganddesignofresidential,buildings,school/hospital |
| 19 |  | Orientation,planning |
| 20 | 9 | **FUNCTIONAL DESIGN AND ACCOMMODATION REQUIREMENTS Of** |
| 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**

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

**COURSE LEVEL PROBLEMS (TEST ITEMS):**

|  |  |
| --- | --- |
| **CO.NO.** | **Problem description** |
| **1** | 1. Write about types of building.
2. Write about site selection
3. Write a note on sun consideration
 |
| **2** | 1. Write a note on element of Climatecomfort consideration
2. Write about comfort consideration
3. Write a note on orientation of building
 |
| **3** | 1. Write about Building by laws
2. Write about FAR and OTS
3. Write about Plinth Regulation
 |
| **4** | 1. Write about principal of planning
2. Write about factor affecting of planning
3. Explain about privacy of building
 |
| **5** | 1. Write about Vastu shastra in modern building
2. Explain functional design and accommodation req.
3. Write about Services in building
 |

**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.

**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>

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=thesesdissertations>

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-bye-laws>

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 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:

<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>





