

GUJARAT TECHNOLOGICAL UNIVERSITY, AHMEDABAD, GUJARAT
Course Curriculum

ARCHITECTURAL DESIGN – III (PUBLIC BUILDING)

(Code: 3335001)

Diploma Programme in which this course is offered	Semester in which offered
Architectural Assistantship	3rd Semester

1. RATIONALE

In this course, the knowledge and appropriate application of the relationship between form & space helps the student to design multiple-volume buildings with relation to each other for a given site situation. Knowledge about characteristic of architectural spaces both built & open and their use allows them to create functional 'porosity' within the site. Also knowledge about interlocking spaces & spaces linked by a common space helps the student in spatial organization on site, and knowledge of repetitive spaces, radial spaces & clustered spaces helps the student to functionally organize a layout. Knowledge of disciplines of structure, design parameters, spatial order, structure as order, space –structure- form co-relation. Understanding about suitable structural systems as applicable to kinds of building help the student to know how a building practically stands. Knowledge of different types of openings and their locations in a building with respect to climate helps them to design suitable architectural elements as per provisions of code.

2. LIST OF COMPETENCIES (Programme Outcomes according to NBA Terminology):

The course content should be taught with the aim to develop different types of skills so that students are able to acquire following competency.

- i. Prepare building sketch based on design parameters, land-building relationship, environmental concerns and energy efficiency.
- ii. Develop the sketch design considering integration of space, structure, materials of construction.

3. TEACHING AND EXAMINATION SCHEME

Teaching Scheme (In Hours)			Total Credits (L+T+P)	Examination Scheme				Total Marks
L	S/T	P		Theory Marks		Practical Marks		
				ESE	PA	ESE	PA	
0	0	12	12	00	00	100	200	300

Legends: L-Lecture; S/T- Tutorial/Teacher guided theory Practice – Studio; P - Practical; C – Credit; ESE - End Semester Examination; PA - Progressive Assessment

4. DETAILED COURSE CONTENT

Design of a small public Building with multiple volume; projects like - Library, Primary School, High School, Old Age Home, Small Hospital (about 10 bed)

Unit	Major Learning Outcomes (Course Outcomes in Cognitive Domain according to NBA terminology)	Topics and Sub-topics
Unit – I Data Collection	1.a Analyze the design of a public building to identify primary and secondary data 1.b Analyze the form, functional clarity, circulation within the building 1.c Formulate design requirements for the given design project	1.1 Existing public buildings- topics, Library, Primary School, High School, Small Hospital, Old Age Home <ul style="list-style-type: none"> • Primary data collection : On Site • Secondary data collection : From Books, Magazines, Internet, etc.
Unit– II Development of Concept and locating the building on site	2.a Prepare conceptual alternatives and ideas considering various design parameters 2.b Develop the conceptual alternatives further based on design parameters. 2.c Prepare a functional relationship diagram based on requirements	2.1 Building orientation on site <ul style="list-style-type: none"> • Margins • Wind direction • Natural light & ventilation 2.2 Functional Relationship – principles for identifying the functions of a public building <ul style="list-style-type: none"> • Formulation of requirements • Derivation of the form keeping in mind the functional requirements
Unit – III Preparing Sketch Design	3a. Use spatial ordering principles for the given building project 3b. Prepare improved sketch design with respect to light, space and form.	4.1 Order of spaces based on organizing principles <ul style="list-style-type: none"> • Axial • Symmetrical • Clustered • Grid • Centralized • Linear 4.2 Light, space and form as essentials of architecture
Unit – IV Design & Development of Drawings	4a. Develop the sketch an appropriate scale as per requirements of building 4b. Develop the sketch showing elevations and sectional relationship 4c. Draw the necessary 3D building drawings to scale.	4.1. Development of floor plans, sections, elevations and spatial relationships at appropriate scale 4.2. Development of elevations and sections with respect to building finishes fenestrations and levels 4.3. Axonometric/isometric view of the designed building
Unit – V Space – Activity Relationship	5a. Prepare alternative furniture layout drawings for the designed building	5.1 Furniture layout drawings for various activities / functions of the building based on the requirements
Unit – VI Final Presentation of Drawings and Models	6a. Prepare a set of final presentation drawings including all of the above. 6b. Make a model of the designed project to a suitable scale with surrounding marked.	6.1. Final presentation drawings with rendering 6.2. Preparation of a model

5. SUGGESTED SPECIFICATION TABLE WITH HOURS (Theory)

- Not Applicable

6. SUGGESTED LIST OF EXERCISES/PRACTICAL

The practical/exercises should be properly designed and implemented with an attempt to develop different types of practical skills (**Course Outcomes in psychomotor and affective domain**) so that students are able to acquire the competencies (Programme Outcomes). Following is the list of practical exercises for guidance.

Note: Here only Course Outcomes in psychomotor domain are listed as practical/exercises. However, if these practical/exercises are completed appropriately, they would also lead to development of **Programme Outcomes/Course Outcomes in affective domain** as given in a common list at the beginning of curriculum document for this programme. Faculty should refer to that common list and should ensure that students also acquire those Programme Outcomes/Course Outcomes related to affective domain.

S. No.	Unit No.	Practical/ Exercises (Course Outcomes in Psychomotor Domain according to NBA Terminology)	Approx Hours Required
1	I	Collect data of an existing public building & analyze the same	24
2	II	Prepare conceptual sketches of given project	24
3	III	Prepare site plan with parking and other site features	12
4	IV	Prepare sketch design based on the given requirements	24
5	V	Prepare furniture layout	24
6	VI	Produce final presentation drawings; all floor plans, elevations, sections, 3d view of the building and model to suitable scale	60
TOTAL			168

Important Notes:

This subject has extensive theory component taught during practical classes; so as to develop and encourage subject related skills. Theory is to be taught during design process and in co-relation to other subjects.

- For this unique teaching process, each student needs to be attended by the concerned faculty individually and hence this subject should be treated as a “studio” subject.
- The design process is carried out with the help of individual discussions and design jury sessions arranged by the faculty.

7. SUGGESTED LIST OF STUDENT ACTIVITIES

Following is the list of proposed student activities like: interactive group discussions and practice wise course/topic based seminars, internet based assignments, teacher guided self learning activities, course/library/internet/lab based Mini-Projects, etc. These could be individual or group-based.

- Visit suggested public buildings
- Elaborate the concepts of designing a public buildings

8. SPECIAL INSTRUCTIONAL STRATEGIES (If Any)

- i. Arrange visit to different public buildings to show the features required in them and examples of good designs as well as defective designs and problems caused by the defects in the design.
- ii. Show Video films to explain features required in different type of public buildings and to show good and bad examples of design.

9. SUGGESTED LEARNING RESOURCES**A. List of Books**

Sr. No.	Title of Book/Journals	Author	Publication
1.	Architecture – Form, Space & Order	Francis D. K. Ching	John Wiley & Sons
2.	Visual Dictionary of Architecture	Francis D.K.Ching	John Wiley & Sons
3	Neufert Data Standards	Ernst Neufert	Archon Books
4	Contemporary Indian Architecture- After the Masters	Bhatt Vikram, Peter Scriver	Mapin Publication
5	Modern Architecture in India - Footprints in the sands of Indian architecture	Bagha Sarbajeet, Bagha Surinder,	Galgotia Publication

B. List of Major Equipment/ Instrument

Measuring Tape, Digital Camera, Architectural Drafting instruments

C. List of Software/Learning Websites

- i. Archnet.org
- ii. Greatbuildings.com

10. COURSE CURRICULUM DEVELOPMENT COMMITTEE**Faculty Members from Polytechnics**

- **Prof. Bhaskar J. Iyer**, H.O.D Architecture, Govt. Polytechnic, Vadnagar
- **Prof. Sangita Vaghasia**, Lecturer in Architecture, Govt. Girls Polytechnic, Surat
- **Prof. Vishal K. Mashruwala**, Lecturer in Architecture, Govt. Girls Polytechnic, Surat
- **Prof. N.M. Chhatwani**, Lecturer in Architecture, Govt. Girls Polytechnic, Ahmedabad

Coordinator and Faculty Members from NITTTR Bhopal

- **Dr. J. P. Tegar**, Prof. & Head, Department of Civil & Environment Engineering
- **Dr. V. H. Radhakrishnan**, Professor, Department of Civil & Environment Engineering