VI - SEM

AA - 630 ARCHITECHTURAL DESIGN V

	L	T	P
Hours / Week	2	-	11

1. **Design of a public building on two or more floors/ split-levels such as hostel, club, group housing (limited to four floors), nursing home, holiday resort, cultural centre, motel, Old age home, Delhi haat etc.**

1.1 **Study report of an existing building including**:

- Site study,
- Analysis of area requirements of different spaces and activities,
- Circulation
- Parking
- Critical Analysis

1.2 **Presentation drawing**:

- Preparation of concept note
- Site analysis
- Floors plans,
- Site plan,
- Elevations,
- Sections,
- Views

1.3 Detailed Model

2. **Two time Problem on Public Building Design on above mentioned topics**

AA – 631 WORKING DRAWING AND DETAILING- II

	L	T	P
Hours/week	3	-	7

DETAILED CONTENTS

To prepare a complete set of working drawing for a public building dealt in earlier Semester.

S. No.	Detail of Drawings	No. of sheets to be prepared.
1.	Site plan showing the building and the point of demarcation for getting out the excavation mark.	1 Sheet
2.	Foundation plan and details including excavation plans	2 Sheet
3.	All upper floor plans as per design	1 Sheet each
4.	Ground floor plan with surface and soil waste drainage services.	Drawings as per requirement
5.	Terrace floor plan showing rain water drainage and disposal	1 Sheet
6.	Elevation- all elevations as required for explaining the scheme.	Drawings as per requirement
7.	Sections- as many sections as required for explaining the scheme.	Drawings as per requirement
8.	Doors and windows details	Drawings as per requirement
9.	Staircase details	1 Sheet
12.	Kitchen details including plan and internal sectional elevation	Drawings as per requirement
13.	Complete toilet details	Drawings as per requirement
14.	Entrance gate, boundary wall, external paving and railing details	Drawings as per requirement
16.	Electrical layout plans	Drawings as per requirement
17	Any other drawing necessary to explain the scheme.	

AA - 632 ARCHITECTURAL PROFESSIONAL PRACTICE

	L	T	P
Hours / Week	2	-	-

1. **Tenders**
   - 1.1 Essential characteristics of a tender notice,
   - 1.2 Types of tenders and tender documents.
   - 1.3 single and limited tenders
   - 1.4 open and e - tenders
   - 1.5 Dual tendering – technical and financial bids.

2. **Contract**
   - 2.1. General principles of a contract.
   - 2.2. Types of contract.
   - 2.3. Architect duties and liabilities under the contract.
   - 2.4. Duties and liabilities from contract documents.
   - 2.5. Contractor's duties and liability.
   - 2.6. Architect's liabilities to the contractor.
   - 2.7. Employer's duties and liabilities.

3. **Architect and his work**
   - 3.1. Structure of an architect's office.
   - 3.2. Office and management.
   - 3.3. Architect duties to his employees under the labor welfare provision.

4. **Code composition and fees-**
   - 4.1 Architectural competitions, professional conduct, conditions of engagement and scale of professional fees and charges.

5. **Awareness about architect Act, 1972, National Building Codes, Delhi Master plan and Building Byelaws.**

6. **Entrepreneurship**
   - 6.1. Concepts of Entrepreneurship.
   - 6.2. Need of entrepreneurship in the context of prevailing employment and economic conditions of the country.
   - 6.3. Successful entrepreneurship.
   - 6.4. Training for entrepreneurship development.
   - 6.5. Basics resources
     - Financial
     - Technical
     - Human and Information recourses
   - 6.6. Human relations and relations with subordinates, equals and supervisors,
   - 6.7. Characteristics of group behaviour.

AA – 633 ENVIRONMENT AND ECOLOGY

Hours / Weeks 2

Objective

To develop the awareness in students that buildings have a huge environmental impact, accounting for an estimated 48% of all green house emissions. To develop the understanding in students that, with such an alarming figure, the architectural community should awaken to its responsibilities. To build awareness that challenge of sustainable architecture is to improve climatic comfort while simultaneously reducing energy expenses, consumption of fossil fuels and resulting generation of greenhouse gases. In the future there will not be sustainable/ non sustainable architecture, but there will be only responsive design.

Contents:

1. **Environment and Ecology**: Definition, Scope and Importance, ecosystem, balanced ecosystem, energy flow in ecosystem, Human activities and their impact on environment
2. **Natural resources**: Water resources, mineral resources, forest resources, energy resources, food resources etc. Definition, extent, importance, associated problems and issues.
3. **Energy**- different types of energy, conventional and non conventional energy sources. Their importance and advantages.
4. **Environmental pollution and their effects**- Water pollution, land pollution, noise pollution, air pollution, solid waste management
5. **Current environmental issues of Importance**- Population growth, climate change, global warming, acid rain, loss of bio diversity, depletion of resources etc
6. **Environmental protection**: Sustainable development, conservation of resources, alternative sources of energy, etc.
7. **Sustainable Architecture**

7.1 Importance and Fundamentals of sustainable architectural design- economy of resources, life cycle design, cost effective design, humane design

7.2 Introduction to active strategies - solar power, wind power, other renewable energy sources. – Need, issues and examplers.

7.3 Introduction to Passive strategies of cooling and heating of building- needs, issues and exemplars

- 7.3.1 Orientation and configuration of spaces
- 7.3.2 Built-form- size and shape of building, design of openings
- 7.3.3 Building envelope- materials and construction techniques- walls, roof, ceiling, terraces, surface finishes, building services
- 7.3.4 Landscaping

7.4 Introduction to ecofriendly building materials and construction techniques- need, characteristics, some exemplars of eco friendly materials/techniques for walls, roof, flooring, finishing, doors and windows, foundation, building services

7.5 Introduction to the concept of LEED and GRIHA ratings

AA - 634 ESTIMATION AND SPECIFICATION WRITING

	L	T	P
Hours / Week	3	--	-

1. **Specification writing**: principles of specification writing, writing broad specification of items with special reference to two-storey building.
   - plain cement concrete of different proportions,
   - brick masonry in cement and lime mortar
   - stone masonry in cement and lime mortar,
   - plastering and pointing with cement mortar in different proportions,
   - white washing.

2. **Introduction to estimating**. Types of estimates.

3. **Different methods of taking out quantities**- centrelines, in to in, out to out.

4. **Units of measurement and units of payment of different items of work including building services**

5. Preparation of a rough cost estimate, detailed estimate, abstract of cost and material statement for a small residential building with a flat roof.

6. **Calculation of material and analysis of rates** for

   - plain cement concrete of different proportions,
   - brick masonry in cement and lime mortar
   - stone masonry in cement and lime mortar,
   - plastering and pointing with cement mortar in different proportions,
   - White washing.

7. **Exercise involving choosing of relevant specifications**

8. **Accounts,** explanation of ordinary terms used in bookkeeping, cashbook, work order, measurement book, petty cash and imprest.

AA – 635 FIELD BASED MAJOR PROJECT II

	L	T	P
Hours/Week	-	-	2

OBJECTIVE: To expose students to the real world of building construction and design. Students get valuable practical exposure to the dynamics of implementation of building projects, which can complement and supplement their theoretical knowledge. It also helps in development of observation, analytical and evaluative skills of students. This kind of exposure will be of immense value in enhancing the market value of the students.

METHODOLOGY

- The student shall buy a scrap book (10" x 8") of about100 pages
- The student shall identify simple residential building(s) under construction near his/her houses for the purpose of the study.
- The student shall be in constant touch with the faculty/guide, owner of the residence and the contractor working on the site.
- The student shall make regular, ongoing recordings about the following and get them countersigned weekly.The students should observe all the stages of construction.
- The students should take information about the building materials and their rates.
- Sketches shall be free hand but to the scale.
- Students should also study the code of practice of Bureau of Indian Standards for various topics that they study in the project work to get an understanding of the correct field practice that should be followed on site.
- The submission of the project shall be in the form of a report enhanced with sketches/ photographs etc. Marks shall be rewarded for periodic reviews

CONTENTS

Students ahall be given a project brief at the start of the semester

1. **Doors and windows**
   - When is the door and window frame fixed in the sequence of works being followed on site?
   - Precautions being followed in the fixing of door and window frame on site
   - Procedure followed in fixing the door and window shutters to the frame
   - Hardware and fixtures being used in door and windows fabrication and their fixing
   - Finishing of doors and windows
   - Materials used in the construction of doors and windows and what are their specifications/ cost per unit of the materials
   - Tools and equipments being used
2. **Plasters and finishes**
   - When is the internal and external plastering done in the sequence of work being followed on site
   - Precautions being followed in the plastering of walls on site
   - Measuring and maintaining thickness of plaster measured on the site
   - Materials used in the plastering and what are their specifications/ cost per unit of the materials
   - Tools and equipments being used
3. **RCC work**
   - Shuttering, scaffolding of beams, columns and slabs
   - Fixing of reinforcement
   - Concrete mixes are used on site/ cost per unit
   - Precautions being followed on site

4. **RCC Staircase**

- How are the markings for the staircase made on the site?
- Procedure of marking staircase on site
- Fixing of railings to the tread/ riser. Fixing of balustrade to the railing
- Precautions to be followed while making staircase on the site
- materials being used for making staircase/ cost per unit of the materials being used on site
- Tools and equipments being used on the site for making staircases

AA-636 COMPUTER GRAPHICS IV

	L	T	P
Hours/ week	-	-	4

1. **Preparation of drawings through the use of a graphics package such as ACAD. It is recommended that the students be made to practice on the latest release of the graphic package(ACAD) .**

2. **Working Drawings**
   - 2.1 Dimensioning
   - 2.2 Detailing

3. **Presentation Drawings**
   - 3.1 Site plan
   - 3.2 Floor plans
   - 3.3 Sections
   - 3.4 Elevations

4. **Generating of Views by 3D softwares (latest software in the market).**
   - 4.1 Use of 3D softwares for generating views of simple buildings
   - 4.2 Use of 3D softwares for generating views of any relevant project

5. **Printing of Drawings on different scales.**
   - 5.1 Submission will be printed drawings

(ELECTIVE II)

AA-640 INTERIOR DESIGN

	L	T	P
Hours/week	2	-	-

1. **Importance of Interior Design in buildings**

2. **Principles and elements of Design as applied to Interiors -** Line, plane, color, texture, pattern, shape etc unity, rhythm, proportion, balance, harmony, contrast etc

3. **Psychology and application of colour, light, form and texture in interiors**

4. **Lighting in interior,**

   4.1 Light as a design element
   4.2 artificial and natural lighting,
   4.3 requirement of light for specific purpose,
   4.4 different types of lighting and their effects,
   4.5 planning lighting layouts

5. **Interior Designing of**
   5.1 house
   5.2 Small public spaces like shops, clinics, eating joints, etc

6. **Considerations of design in interiors**
   6.1 Interior surface and materials- wall, floor, ceiling surface materials
   6.2 Structures
   6.3 Lighting
   6.4 Design themes
   6.5 Functional aspects
   6.6 Budget

7. **Role of plant material in design of interiors.**

8. **Role of art work in the enhancement of interiors in domestic and commercial areas**

9. **Role of drapery and furniture in the design of interiors of buildings.**

(ELECTIVE II)

AA - 641 HOUSING

	L	T	P
Hours/week	2	-	-

1 Introduction to housing

1.1 Definition of Housing
1.2 Types of housing – as per Delhi city
1.3 Population Growth and Migration
1.4 Traditional housing and its relevance to mass housing
1.5 Housing density and related terms

2 Rural and Urban Housing

2.1 Introduction to urban and rural housing
2.2 Impact of high density development
2.3 Housing need and demand
2.4 Slums and Squatters
2.5 Group housing and Flatted development

3 Types of Housing

3.1 Housing Typology
3.2 Types based on social, economic mixing. Their merits and demerits.
3.3 Mass housing (group housing of various income groups) - their advantages and disadvantages
3.4 Plotted development,

4 Physical layout

4.1 Linear cluster (row housing)
4.2 Chowk cluster
4.3 Open court cluster
4.4 Neighbourhood concept

5 Introduction to housing policies and programmes of the government.

6. Introduction to housing finance

7. Low cost housing

8. Low income housing and housing for urban poor

9. Definition of slums. Difference between slums and squatters.