

**Uttarakhand Tech. University, Dehradun**  
**Faculty of Architecture**

**B. ARCH. (Fourth Year) SEMESTER – VIII**  
**AR – 801 ARCHITECTURAL DESIGN – VIII**

| Schedule of Teaching and Examination |      |    |       |     |     |     |       | Examination Duration |
|--------------------------------------|------|----|-------|-----|-----|-----|-------|----------------------|
| L                                    | P/TV | ST | TOTAL | S   | T   | P/V | TOTAL |                      |
| 1                                    | -    | 10 | 11    | 100 | 100 | 50  | 250   | 3x6 Hours            |

**OBJECTIVES**

- Understanding design as a function of specific agenda of complex services. acoustics, building byelaws and structure.
- To understand design as a process: of problem identification, space analysis, formulation of requirements, evolution of design criteria and design
- Incorporating elements of site planning and landscape in the design process: Preparation of computer aided presentation drawings.

**CONTENTS**

**Services and Byelaws in low-rise buildings** : Suggested design exercise

**Services and Byelaws in high-rise buildings** : Suggested design exercises: Hospitals, Hostels, Super Markets etc.

*Note: The subject will be taught by at least one teacher for every 15 students.*

**APPROACH**

- Students will develop the programs after prototype studies.
- Computer drawings will be produced for at least one of the design programs.
- Time problems between major studio programs shall be given to prepare students for the examinations.

**Conduct of Examinations:**

- The duration of examination for this subject is  $6 \times 3 = 18$  hours. The examination shall be held over three days. The drawings completed on the first and the second days shall be left in the examination hall and shall be completed and submitted on the third day.

**Uttarakhand Tech. University, Dehradun**  
**Faculty of Architecture**

**B. ARCH. (Fourth Year) SEMESTER – VIII**  
**AR – 802 CONSTRUCTION & MATERIALS – VIII**

Schedule of Teaching and Examination

Examination Duration

| L | P/TV | ST | TOTAL | S   | T  | P/V | TOTAL |
|---|------|----|-------|-----|----|-----|-------|
| 1 | -    | 5  | 6     | 100 | 50 | 50  | 200   |

3 Hours

**OBJECTIVES**

- To introduce and familiarize the students with advanced and speedy building techniques.
- The understanding for the system to be adopted for the construction of large span structures.

**CONTENTS**

**CONSTRUCTION**

|                                |   |  |
|--------------------------------|---|--|
| <b>Prefabrication</b>          | : | System – open prefab system, large panel prefab system. Joints, pre-casting methods, materials, on-site and off-site prefabrication, components, etc.  |
| <b>Pre-stressed Concrete</b>   | : | Introduction, methods of pre-stressing and their application to large-space structures.  |
| <b>Speedy Construction</b>     | : | Methods.<br>Types of floor construction: Beam & Slab. Waffle Grid Slab, Drop Beam & Slab. Flush Slab, Lift Slab Construction.<br>Cast-in-situ service & stair cores.<br>Cross wall & Box frame construction. |
| <b>Industrial Construction</b> | : | Structural Steel Works: Portal Frame Construction. North – Light truss and Lattice Girder roof with various roof coverings.  |

**APPROACH**

- The students would be familiarized with vernacular terminology prevalent in this part of the country.
- The emphasis will be on construction details.
- Site visits will be integral part of sessional work.

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**B. ARCH. (Fourth Year) SEMESTER – VIII**  
**AR – 803 ARCHITECTURAL STRUCTURES – VIII**

| Schedule of Teaching and Examination |      |    |       |    |    |     |       | Examination Duration |
|--------------------------------------|------|----|-------|----|----|-----|-------|----------------------|
| L                                    | P/TV | ST | TOTAL | S  | T  | P/V | TOTAL |                      |
| 2                                    | 1    | -  | 3     | 50 | 50 | -   | 100   | 3 Hours              |

**OBJECTIVES**

- To understand the basic of soil mechanics and foundation engineering.
- To understand the design of steel structures.

**CONTENTS**

**CONSTRUCTION**

|  |   |   |
|--|---|---|
| <b>Elements of soil Mechanics &amp; foundation engineering</b> | : | Properties of Soil, Safe bearing Capacity, Active & passive Earth Pressure.   |
| <b>Types of foundations and their Design</b>                   | : | Spread, Piles & raft foundation.  |
| <b>Steel Structures</b>  | : | Riveted & welded connections (Simple cases only), Tension & Compression members, Beam & Plate Girder, Introduction to grillage foundation, Trusses. |

**APPROACH**

- The lectures by the experts in the field will be arranged to make the students do independent design of foundation of steel structures elements.

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**B. ARCH. (Fourth Year) SEMESTER – VIII**  
**AR – 804 TOWN PLANNING – VIII**

| Schedule of Teaching and Examination |      |    |       |    |    |     |       | Examination Duration |
|--------------------------------------|------|----|-------|----|----|-----|-------|----------------------|
| L                                    | P/TV | ST | TOTAL | S  | T  | P/V | TOTAL |                      |
| 1                                    | -    | 3  | 4     | 50 | 50 | -   | 100   | 3 Hours              |

**OBJECTIVES**

- Introduction to elementary art and science of town planning including traffic and transportation planning.
- Introduction to evolution and development of planning thought through history.

**CONTENTS**

**CONSTRUCTION**

|  |   |  |
|--|---|--|
| <b>Introduction to Principles and Techniques Town Planning Terminology</b> | : | Town planning and architecture, role of a town Planner.  |
| <b>The Planning Process</b>  | : | Land use, Concept of F.A.R. and Density, Zoning and Subdivision Regulations, Master Plan             |
| <b>Evolution of planning thought</b>                                       | : | Town planning surveys, Preparation of MASTER PLAN for old and new towns, Planning Standards          |
| <b>Historical and analytical account of cities in history</b>              | : | Beginning of settlements.  |
|  | : | Traffic and urban environment. Traffic design Elements. Traffic control devices, road intersections. |

**APPROACH**

- The course of evolution of planning thought shall be conducted through audiovisual lectures. Expert lectures on specialized topics. 15 days study programme to ascertain and enunciate the town planning problems of chosen area.

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**B. ARCH. (Fourth Year) SEMESTER – VIII**  
**AR – 805 ACOUSTICS – VIII**

| Schedule of Teaching and Examination |      |    |       |    |    |     |       | Examination Duration |
|--------------------------------------|------|----|-------|----|----|-----|-------|----------------------|
| L                                    | P/TV | ST | TOTAL | S  | T  | P/V | TOTAL |                      |
| 1                                    | 1    | -  | 2     | 50 | 50 | -   | 100   | 3 Hours              |

**OBJECTIVES**

- To initiate students into theory and practice of Acoustics.

**CONTENTS**

|  |   |  |
|--|---|--|
| <b>Introduction &amp; Terminology</b>                            | : | Properties of audible sound, intensity & loudness, frequency & pitch, quality.   |
| <b>Behavior of audible sound</b>                                 | : | Reflection of sound, absorption, transmission.   |
| <b>Common acoustical defects</b>                                 | : | Echo, sound foci, dead spots, sound shadows, resonance, Insufficient loudness, external noise, reverberation & reverberation time. |
| <b>Noise control</b>   | : | Indoor noise, planning against indoor noise, outdoor noise, planning against outdoor (traffic & buildings in built-up area) noise. |
| <b>Constructional measures for sound insulation of buildings</b> | : | Materials, hollow & composite wall construction, flooring & ceiling.   |
| <b>Sound system – a brief study</b>                              | : | Sound reinforcement system, public address system, sound system equipment specification.   |
| <b>Acoustic design considerations for the following</b>          | : | Auditorium, conference rooms   |

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**B. ARCH. (Fourth Year) SEMESTER – VIII**  
**AR – 806 LANDSCAPE ARCHITECTURE – VIII**

Schedule of Teaching and Examination

| L | P/TV | ST | TOTAL | S  | T  | P/V | TOTAL |
|---|------|----|-------|----|----|-----|-------|
| 2 | -    | 2  | 4     | 50 | 50 | -   | 100   |

Examination Duration

3 Hours

**OBJECTIVES**

- To make the students aware of the plantscape around them.
- To familiarize the students with techniques of preparation of simple landscape presentations.

**CONTENTS**

**CONSTRUCTION**

|                                  |   |  |
|----------------------------------|---|--|
| <b>Introduction to Landscape</b> | : | Meaning of landscape and its relevance to architecture.  |
| <b>Landscape graphics</b>        | : | Tools and materials,<br>Graphic techniques : drawing trees with different textures.<br>Foliage patterns, tone, contrast and balance, rock and water.<br>Conventional symbols in landscape presentations<br>Conceptual drawings<br>Preliminary landscape plans<br>Planting plans and drawings |
| <b>Plants</b>                    | : | Plant Identification: Botanical and vernacular names of trees. Shrubs, grasses and flowers and their ideal use.  |
| <b>Construction Technique</b>    | : | Details of pavements, retaining walls, grass laying, wooden decks and outdoor furniture.   |
| <b>Planned landscape</b>         | : | Small landscape design proposal incorporating the basics covered above, including circulation.   |

**APPROACH**

- Emphasis would be on drawing in studios.
- Site visits to the Botanical garden and flower shows for plant identification.

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**B. ARCH. (Fourth Year) SEMESTER – VIII**  
**AR – 807 ELECTIVE – I**

Schedule of Teaching and Examination

| L | P/TV | ST | TOTAL | S  | T | P/V | TOTAL |
|---|------|----|-------|----|---|-----|-------|
| 1 | -    | 2  | 3     | 50 | - | 50  | 100   |

Examination Duration

Only Viva Voce

**General Guidelines :**

- The electives of B. Arch VIII and IX Semesters have been broadly classified into three parts: Communication skills and Humanities (Elective I, which will run in VIII Semester), Design and Technology (Elective 2), and Independent Directions (Elective 3), Elective 2 and 3 will run in IX Semester. These electives will enable students to initially suit their interests at the undergraduate level and later assist them pursue their specific interests at the postgraduate level. Students are expected to choose one elective from each part, having one elective in Semester VIII and two electives in Semester IX. The outlines of each electives have been broadly outlined to suit the availability and interests of faculty in different institutions. Considering the broad outline for each elective in which only viva-voce examinations is to be held. Students are expected to submit a minimum of 5 studios/ written assignments or equivalent, depending on the type of elective chosen, so as to enable uniformity in awarding sessional marks to the student in different institutions of the university.

**Semester VIII (Communication Skills and Humanities)**

**Electives Available :**

- Graphic Design** : Graphic design as means to explore understanding, development and communication of visual form with emphasis on symbology, typography, organization and signage.
- Ceramics** : Introduction to basic properties and techniques of clay including all hand building techniques as well as glaze applications.
- Drawing and painting** : An introduction to textiles aimed to develop understanding and skills for surface design through different dyeing techniques as well as beginning experiences in weaving with different media and looms.
- Photography** : An intensive introduction to photography including darkroom techniques to develop visual perception through observation, composition, colour and light interaction, shades, as well as positive negative space relationships.
- Advanced Computer Applications** : Development of further skills and understanding on specific interests and aspects of computer technology for visual communication, applied to 2D 3D design and animation, as well as computing of data related to architecture.
- Human Values** : Exploring human values that make 'good' human being and society through study of work and personal lives of modern Indian professionals.

