

**Syllabus for the various posts in the Building, Physical & Planning
Department**

1. **Consultant Architect B-19**
2. **Senior Architect B-18**
3. **AD Architecture B-17**
4. **Architectural Assistant B-17**
5. **Assistant Architect B-17**
6. **Junior Architect B-17**
7. **Senior Draftsman B-16**

Advt. No.: 04/2021

Qualification: Bachelor's Degree in Architecture

1. HISTORY OF ARCHITECTURE:

A systematic survey of the arts and architecture of the major periods of history and regions of the world: Ancient Mesopotamia, Egypt, Indus Valley, Greece, Rome, Byzantine, Gandhara, Islamic, Gothic, Renaissance, Baroque, Pre-Modern, Modern, Contemporary including Architecture in Pakistan.

2. ARCHITECTURAL DESIGN:

Introduction to architectural design, design parameters and criteria (site, orientation, building form, and scale), design of the built environment involving simple functions and building materials. Distinction between client's brief and architect's brief, development of design concept, site analysis, functional and formal implications of a design brief, design proposals for small to medium-scale buildings to demonstrate understanding of functional relationships, materials, structures, technology, contextual issues, and climatic response inclusive of initial understanding of sustainable architecture.

3. MATERIALS AND CONSTRUCTION:

The study of building components, types of foundations, types of roofs, traditional construction with local materials such as bricks, stone, and timber. Types of floors, sub-floors/ screeds, floor finishes and laying techniques. Study of building construction in concrete, steel, glass, fiber glass and other materials, internal and external finishes, insulation techniques etc. The study of construction details of building components like windows, doors, and staircases. Expansion and construction joints. Preparation of working drawings.

4. URBAN DESIGN AND PLANNING:

Birth of urbanization; causes of urbanization; effects; case examples in urbanization from developed and developing world. Urban Planning: Evolution of the profession; town planning in UK; town planning in the Indo Pakistan Sub-continent. Types and Approaches of Urban Planning: Planning profession; role in development; approaches and types in planning.

5. STRUCTURES FOR ARCHITECTS:

Special attention has to be paid to both the integration of Architecture and structure to achieve an expressive quality of structure that becomes architecture itself. Special effort has to be made to use the modeling laboratory to demonstrate the relationships between structure and architecture. Historical development of structural systems in buildings, types of loads in buildings, structural requirements. Cantilever beams, simply supported beams, fixed and continuous beams, Post and lintel. The simple frame, multiple frames. Arches and arched roofs. Cables and cabled roofs. Trusses and space frames. Load transfer in two directions, rectangular beam grids and skew grids. Plates, ribbed plates, folded plates. Membranes stress, principal curvatures and stresses in membranes. Thin shells, form resistant structures and application to rotational surfaces, translational surfaces, complex surfaces, membrane action in domes, cylinders etc.

6. LANDSCAPE ARCHITECTURE:

Introduction to the basic concepts and historical developments in landscape design; alteration of the basic land forms through urbanization and rural development is studied.

7. HERITAGE CONSERVATION:

Historical development and background and Importance of conservation activities within international and national framework. Documentation and Familiarization with Historic Buildings Introduction to structural system, construction techniques and building materials (as well as common defects and problems of old buildings); documentation techniques and survey or analysis of historic moments.

8. CLIMATOLOGY:

Climate Friendly Building Materials, Building as a thermal system / thermal store house, passive design strategies and passive/renewable source of energy for an environmentally sustainable architecture for the various climatic zones of Pakistan. Insulation materials, screening systems, passive ventilation, issues of global warming, carbon trading, renewable energy etc.

9. SERVICES AND ENGINEERING SYSTEMS:

Introduction to different systems of heating, ventilation, air conditioning (HVAC), water supply, sanitation, firefighting system and equipment for buildings, safety and security systems. Access and facilities for disabled, provision of gender and age related facilities. Vertical and horizontal transportation systems such as elevators, escalators, conveyors/power walks, techniques for acoustics and noise control.

10. INTERIOR DESIGN:

Space planning, design, layouts and details of internal spaces of different categories. Concepts and theories in interior design. Dominant considerations in interior design including the pre-requisites. Choice of design themes, interrelationship of materials; furniture and fixture pieces. Design, drawing and scheduling modes in interior design.

NOTE: BOOKS ALREADY RECOMMENDED BY PEC/HEC CURRICULUM FOR BACHELORS OF ENGINEERING IN MECHANICAL WITH EMPHASIS ON ABOVE MENTIONED 13 SUBJECTS.