

UNDERGRADUATE PROGRAMME IN HOME SCIENCE

Paper No-16: SPACE PLANNING AND DESIGN

SEMESTER VI

THEORY

Paper No.	: 16
Maximum Marks	: 100
Credits	: 4
Teaching Periods	: 4 Theory + 1 Interactive period / week
Teaching Load	: 56 Theory Periods + 14 Interactive periods / semester

Objectives

1. To understand the fundamentals of house planning and space articulation.
2. To acquire knowledge regarding materials, building construction techniques and technologies, and interior services.

Content

Periods

Unit I: Basic Concepts in Space Planning and Design

16

- Concept of house, housing, architecture;
- Functions and concept of adequacy of space
- Characteristics of space, principles of planning spaces; planning and designing
- Types of house plans: floor, elevation, structural drawings and perspective plans
- Types of houses: Row, Semi-detached, detached, independent houses or flats/apartments, multi-storeyed buildings
- Basic norms and space standards in operation – NBC and MPD
- Structuring spaces: indoor and outdoor; space articulation: zones in spatial planning.
- Analysis of furniture needs of different zones in a house/workstations
- Green rating systems – GRIHA and LEED.

Unit II: Building Construction Techniques And Technologies: Innovations For Sustainable Development

24

- Classification of building materials – Conventional/Non-Conventional
- Site selection – Factors
- Foundation – Purpose, types of foundations, reasons for failure of foundation
- Damp-proofing and water-proofing - defects, sources and treatment.
- Masonry- types
- Flooring - types
- Roofs- types
- Lintels and Arches- definitions and purpose

- Doors and Windows- types
- Staircase - types
- Partitions and Panelling - types
- Cost economy in construction
- Concept and scope of pre-fabrication and modular housing

Unit III: Interior Environment and Services: Climatic Considerations

16

- HVAC
- Lighting: types of lighting systems, energy efficient lighting systems, user specific lighting for specific areas.
- Water and Plumbing systems: water supply system, waste water disposal, water harvesting.
- Insulation: sound and thermal – materials used and types of insulation
- Safety systems: fire protection – materials and systems used
- Security systems

Recommended Readings

- Adler, David., 2004, Metric HandBook planning & Design, Architectural press.
- Kumar, Sushil, 2008, Building Construction, Standard publisher.

SPACE PLANNING AND DESIGN

PRACTICAL

Paper No.	:
Maximum Marks	: 50
Credits	: 2
Teaching Periods	: 4 / week
Teaching Load	: 14 Practicals / semester (4 periods each)

Objectives

1. To understand the procedures involved in the preparation of house plans, furnishing plans, drawings of service specifications.
2. To learn the techniques of preparing designs using computer-aided-design.

Content

Practicals

- Housing by-laws and symbols (architectural, plumbing, electrical, furniture), Steps in house planning, Different types of plans (site plan, layout plan, floor plan, elevation, section plan) **2**
- Critical Evaluation of independent houses and apartments. **2**

- Identification of building materials and evaluation concerning their characteristics (favourable and unfavourable features), uses and applications, cost and environment friendliness. **2**
- Evaluation of buildings on energy efficiency parameters using green rating systems like GRIHA and LEED. **2**
- Observe and prepare house plans for different income groups up to 100 sq.m area (Computer aided /manual). **6**