AMITY UNIVERSITY

UTTAR PRADESH

**FORMAT FOR COURSE CURRICULUM**

**Course Title: BUILDING DESIGN & DRAWING** **Credit Units: 02**

**Course Level: UG** **Course Code: CEE320**

| L | T | P/ S | SW/ FW | No. of PS DA | TOTAL CREDIT UNITS |
|---|---|---|---|---|---|
| 1 | - | 2 | - | - | 2 |

**Course Objectives:** The objective of the course is to develop the capability for carrying out independent planning, designing and drawing of residential & commercial building. The construction industries require implementation of projects exactly as per specification and dimensions shown in the drawings. Designing, preparing working drawings and interpretation of drawings on field for implementation of construction activity are the very basic requirements for students to acquire the knowledge and expertise.

**Pre-requisites: Nil**

**Course Contents/Syllabus:**

| | **Weightage (%)** |
|---|---|
| **Module I** | **30%** |
| **Introduction to Building Drawing**<br>Building Planning Natural and Built Environment, Ecology, Environment and Man relationship, Principles of planning for building, Integrated approach necessity, concept of building as Environmental Filter. Building Rules Regulations and Byelaws necessity, plot size, open space around the building. FSI, Building line, control line. Height, room size, Built up area, floor area, carpet area. Rules of lighting ventilation, Drainage and Sanitation. | |
| **Module II** | **15%** |
| **GUI of AutoCAD**<br>Basic Commands - 2D Drafting and Annotation - Sheets and Layouts - Blocks and Customizing AutoCAD. Introduction to Building Information Modeling. | |
| **Module III** | **25%** |
| **Design of Building**<br>Climate, elements of climate, global climate, thermal design Principles, comfort sectors, Heat exchange of building. Heat transfer loads – definition, calculation of U value of temperature gradient. Thermal insulation of | |

| | |
|---|---|
| roof and wall. Ventilation comfort factors, function of ventilation, stack effect wind effect. Mechanical ventilation, ventilation rate, Air conditioning-design data, cooling load, Air conditioning systems.<br>Lighting Principles of Day Lighting Design of Windows, Sky components, Noise and acoustics –Effect of noise, comfort standards, Noise control sound insulation, Acoustics reverberation Sabines formula acoustical defects conditions of good acoustics. Fire Protection – Fire safety, fire lood, grading of occupancies by fire load, fire escape elements. | |
| **Module IV** | **20%** |
| **Building Services:**<br>Constructional requirements for different building services, Electrical, Telecommunication services, Circulation-Lift escalators, Entertainment services plumbing services, Layout of water supply & drainage system, Rate of water supply, storage and distribution arrangement, Plumbing systems, septic tank, garbage disposal arrangement.<br><br>**Roof Types:** Flat and Pitched roofs. | |
| **Module V** | **10%** |
| **Planning of Residential and Hospital buildings :** Single bed room - double bed-room - multi-storey buildings - Hospitals buildings with Pharmacy and Dispensaries.<br>**Institutional, Commercial and Industrial buildings:** School Building with Hostel - Workshop and Factory buildings with steel truss. | |

**Student Learning Outcomes**: An ability to apply knowledge of planning, designing and preparation of sketch design for residential building, public building, septic tank & soak pit, plumbing, water supply and drainage on real time project.

**Pedagogy for Course Delivery:**

**(a) Lecture Plan/Session Plan :**

1. Class room teaching supported with field based examples.
2. Practical application based assignments

**(b) Lab/ Practicals:**

**List of Experiments**

**Preparation of line sketches in accordance with functional requirements and building rules for the following types of building as per National Building Code:**

1. Flat roof residential building
2. Pitched roof residential building
3. Multi-storeyed building
4. Industrial Building

**Detailed Drawings (Plan, Elevation and section for the following) by manual and by using AutoCAD:**

5 Detailed drawing for doors, windows.
6 Planning, design and detail drawings of staircase
7 Flat roof building with load bearing wall
8 Pitched roof with load bearing wall

**Assessment/ Examination Scheme:**

| **Theory L/T (%)** | **Lab/Practical/Studio (%)** |
|---|---|
| 50% | 50% |

**Theory Assessment (L&T):**

| **Continuous Assessment/Internal Assessment** | | | | | **End Term Examination** |
|---|---|---|---|---|---|
| **Components (Drop down)** | **A** | **S/V/Q** | **CT** | **HA** | **EE** |
| **Weightage (%)** | 5 | 8 | 10 | 7 | 70 |

**Lab/ Practical/ Studio Assessment:**

| **Continuous Assessment/Internal Assessment** | | | | | **End Term Examination** | | |
|---|---|---|---|---|---|---|---|
| **Components (Drop down** | **A** | **PR** | **LR** | **V** | **PR** | **V** | **Total** |
| **Weightage (%)** | 5 | 10 | 10 | 5 | 35 | 35 | 70 |

**Text & References:**


1. IS 962:1989 -Code of Practice for Architectural & Building drawing.
2. National Building Code of India 2005, Reprint edition, Bureau of Indian Standards, Govt. of India,2013.
3. Gurcharan Singh, “Civil Engineering Drawing”, Standard Publishers, New Delhi, 2009
4. Kumara Swamy N and Kameswara Rao A, "Building Planning And Drawing", Charotar
5. Publishing House Pvt. Ltd., 2013. 4. Merit, “Building Design and Construction”, Tata McGraw Hill Publishers
6. M. L. Shah, C. M. Kale, B. Y. Patki, “Building Drawing with integrated approach to Built Environment”, Tata McGraw Hill Publishers
7. Mark W. Huth Delmar, "Understanding Construction Drawings", Cengage Publishers, 2013.