

FIRST YEAR B. ARCH.

Subject Code No. : 113425
Name of Subject. : Arch. Drawing & Graphic -I
Subject Teacher :
Submission Details/Lecture Details :

TEACHING SCHEME			EXAMINATION SCHEME						
Lecture Periods	Studio Periods	Total contact Periods	Sessional Internal	Sessional External	Viva-voce	Total Sessional	Paper	Total	Credits
1	6	7	50	50	-	100	-	100	

OBJECTIVE

To help students to understand graphic language for communications, and develop their own skills through learning of manual and computer aided drawing techniques.

COURSE OUTLINE

1. SCALE DRAWING

- A Introduction to drawing instruments and drawing materials and their use.
- B DRAWING TECHNIQUES:
- Drawing a line. Different types, characteristics of lines.
 - Application of all types of lines in architectural drawings.
 - Making measured drawing of building and its parts.
 - Presentation using two non-conventional presentation techniques (water colours, crayons, Pastels etc.)
- C LETTERING
- Introduction to architectural lettering proportions of letter size as per scale.
 - Different styles of lettering.
- D SCALE:
- Introduction of various proportions of scales, necessary for drawing a scale drawing. Graphic scale.
 - To understand metric scale.
- E BUILDING COMPONENTS, MATERIALS AND ANNOTATIONS:
- Representation of various building components such as doors, windows, steps, chajjas, porch, canopy, balcony, roofs, graphic indication of difference of levels, furniture, fittings such as sanitary fittings etc.
 - Symbolic representation of building material with colours code as specified in Indian standard code of practice.

2. FREE HAND SKETCHING

- Importance of free hand sketching in architectural drawings.
- Introduction of various mediums used for sketching such as pencils, charcoal, crayons, chalk pastels, dry pastels, etc.
- Perspective in sketching.

3. SOLID GEOMETRY

- Projection methods of representing the solids on drawings such as orthographic projection methods.
- Isometric views of plan, elevations, and sections of solids.
- Horizontal vertical and inclined sections of solids.
- Study of complex; compound objects, their penetration through one another, true shape of sections etc.
- Application of such forms in architecture and their inter relationship.
- Understanding as a case study, complex building structures such as shells, vaults, saddles etc.

4 COMPUTERS

- Introduction of hardware of computers and softwares used for drafting and presentation of an architectural drawing.
- Introduction to CAD software, 2D and basic commands used for architectural drawing.
- Introduction to layers, editing techniques, printing and plotting.
- Drawing simple 3D forms.

SESSIONAL WORK:

Sufficient number of projects to cover the topics mentioned above should be worked in class.

Recommended Readings:

- Architectural Graphics - Ching Frank.
- Engineering Drawing - N. D. Bhat.
- A.J. Metric Hand book
- Essentials of Drafting - B.James
- Rendering with Pen and Ink.
- Practical Plane and Solid Geometry - H.Joseph and Morris.
- Architectural Graphics - Martin C.Leslie.
- Manuals of AUTOCAD - AUTODESK inc.
- Computer and common sence - Hunt and Shelly.

Name of Topic :

FIRST YEAR B.ARCH.

Subject Code No. : 113421
Name of Subject. : Architectural Design I
Name of Subject Teacher :
Submission Details/Lecture Details :

TEACHING SCHEME			EXAMINATION SCHEME						
Lecture Periods	Studio Periods	Total contact Periods	Sessional Internal	Sessional External	Viva-voce	Total Sessional	Paper	Total	Credits
1	5	6	100	100	-	200	-	200	

Name of Topic :

OBJECTIVES: -

Introduce students to Architectural Design as core subject of architecture studies. Progressively introduce design process as synthesis of variety of factors analyzed and studied. Develop perception of space and sense of visualization with the help of tools like sketches, drawings, models, Computer animation, etc.

COURSE OUTLINE:

1. Introduction to Architectural design as a core subject and its relationship with other studies & subjects.
2. Scope and study of Architecture in relation to Art and Technology
3. Scope and study of Building and Climate.
4. Passive Design Policies for Indian Climate.
5. Scope and study of Building and Site.
6. Scope and study of orientation of internal spaces of buildings.
7. Scope and study of circulation.
8. Conceptual outline of scope of Architectural Structure.
9. Brief outline of Basic components of Architectural Structure.
10. Conceptual comparison of various structural systems.
11. Process of Architectural Designing, underlining its implicit need to match the emphasis on technical and aesthetical components.
12. Analyzing single activity, single space structures its context of form, construction, anthropometrical data, space layout, relationship with surrounding environment, etc.
13. Designing single activity, single spaces e.g. gate cabins, entrance gates, bus shelters, monuments, kiosks, children play areas, etc.

14. Analyzing relationship of more than one activities in a building of simple nature and understand the same in context to form, construction, anthropometrics data, space and furniture layout, etc.
15. Designing progressively complex spaces & buildings e.g. – snack bars, exhibition stalls, weekend cottages, bandstand, etc.
16. Study of settlement environment- visit to nearby settlement to study spaces in the cluster environment. Study of life style, climate and social structure. Study of houses, their relationship with common spaces, Public buildings of the settlement with residential clusters, etc. study of various categories of open spaces of the settlement and their inter relationship with each other as well as built spaces around.

SESSIONAL WORK:

1. Sufficient number of projects to cover the topic. One design project of term II should be related to settlement study carried out.
2. Stress should be given on three-dimensional study and communicating the design/study through effective two and three-dimensional drawings/ sketches and models, rather than words.

RECOMMENDED READINGS:

1. A pattern Language by Alexander Christopher
2. Structure in Architecture – Heller Robert and Salvadori Mario
3. Total Architecture- Walter Gropius
4. Design Fundamentals in Architecture- Prammar
5. Structure in Nature- Strategy for Design – Peter Pearce
6. Patterns in Nature- Peter Streens
7. Elements of Architecture – Meiss Pieree Von
8. Visual Thinking- Am heim Rudolf
9. Architecture: form, space and order - Francis D.K.Ching

REFERENCE MATERIAL:

1. A.J. Metric Handbook, editors, Jan Bilwa and Leslie fair weather
2. Architectural Graphic standards editor- Boaz Joseph
3. Planning- the Architect's handbook by E and O.E.
4. Dernst Neufert's Architect's data
5. Time saver standards for Architectural Design Data, Editor John Callender
6. Time saver standards for building types, editor Joseph D.C. and John Callender.

FIRST YEAR B. ARCH.

Subject Code No. : 113422
Name of Subject. : Basic Design I
Subject Teacher :
Submission Details/Lecture Details :

TEACHING SCHEME			EXAMINATION SCHEME						
Lecture Periods	Studio Periods	Total contact Periods	Sessional Internal	Sessional External	Viva-voce	Total Sessional	Paper	Total	Credits
2	3	5	50	50	50	150	-	150	

OBJECTIVES:

To help the students grasp the fundamentals of design as a basic creative activity. The students will learn about the basic elements of design such as the point, line, planes, volumes and masses, colour, texture etc. through exercises aimed at experimentation. The final exercises will culminate in application of all the knowledge and skill gained during the term.

COURSE OUTLINE:

It should contain exercises that will cover the following topics.

- 01) Lines (Their Visual Qualities).
- 02) Composition of 2 Dimensional Forms.
- 03) Forms in Nature (Animate and Inanimate)
- 04) Material and Texture Colour, Light.
- 05) Anthropometry.
- 06) Positive and Negative Spaces.
- 07) Activation of spaces through Stables/Mobiles.
- 08) Design of an object in Everyday use.
- 09) Understanding Architectural Aesthetics.
- 10) Elements of Visual Aesthetics.
- 11) Attributes of Form and Space.
- 12) Platonic Forms. (Derivatives forms and transformation)
- 13) Scale, Proportion, Contrast.
- 14) Alignment, Repetition, Pattern, Rhythm.
- 15) Principles of Organization of Form & space.
- 16) Study of Building by application of principles of Aesthetic Appraisal.

SESSIONAL WORK:

Sufficient number of projects to cover the topics mentioned above should be worked in class. Stress should be given on three-dimensional study and communicating the design/study through effective two and three-dimensional drawings/ sketches and models, rather than words.

REFERENCE BOOKS:

Ching Francis D.K : Architecture : Form Space & Order.
Pramar V.S. : Fundamentals in Architecture.
Walter Gropius : Total Architecture.

Name of Topic :

FIRST YEAR B. ARCH.

Subject Code No. : 113423
Name of Subject. : Building Construction & Material -I
Subject Teacher :
Submission Details/Lecture Details :

TEACHING SCHEME			EXAMINATION SCHEME						
Lecture Periods	Studio Periods	Total contact Periods	Sessional Internal	Sessional External	Viva-voce	Total Sessional	Paper	Total	Credits
2	5	7	50	50	50	150	100	250	

OBJECTIVES

To help students understand the basic building elements, their function and behavior under various conditions with specific reference to 'Load bearing Construction' and simple non RCC frame structure.

Main aim of this study is to develop strong sense of intuition, understanding the basic principles of construction and materials and to develop analytical and logical sequence in thinking.

The emphasis should be on teaching the fundamental principles and constructional details suitable for Indian Conditions rather than copying from foreign books.

Students will be encouraged to study both in classroom and also outside at work sites in order to get the practical exposure.

COURSE OUTLINE

1. Introduction to various elements of building from foundation to roof.
2. Introduction to various building materials, which are commonly used in Load bearing construction.
3. Introduction to various tools and equipment commonly used in
(a) Excavation (b) Masonry construction. (c) Carpentry work
4. Study of following building materials with their characteristics, available market forms, preservation, appropriate use and common tests
 - 4.1 Stone, Brick, Cement concrete blocks, Stabilized Mud blocks
 - 4.2 Lime and Lime Mortar.
 - 4.3 Timber, bamboo. Thatch.
 - 4.4 Roofing tiles.
- 5.0 Following standard construction methods shall be covered.
 - 5.1 **Foundations.**
 - 5.1.1 Strip foundation suitable for load bearing structure in stone and brick up to plinth level including plinth formation, P.C.C. coping (reinforced and unreinforced) to act as damp proof course.
 - 5.1.2 Foundation for brick pillars, pilasters, entrance steps, etc.
 - 5.2 **Superstructure.**

5.2.1 Load bearing /non-load bearing masonry construction using following materials shall be studied.

5.2.2 Stone, Bricks, Cement concrete blocks, Stabilized mud blocks.

5.3 **Spanning of Openings**

5.3.1 Introduction to evolution of arches, terminology of arch construction and load transfer in arches.

5.3.2 Spanning of openings using brick and stone in the form of Flat arch, Segmental arch, Semi circular arch, Corbelled arch.

5.3.3 Form work for Arches

5.4 **Timber work.**

5.4.1 Tools for carpentry, simple timber joinery.

5.4.2 Doors – Frameless, ledged, braced, battened, panelled, glazed, solid and hollow core flush and their combinations.

5.4.3 Windows – frameless, ledged, battened, glazed, etc.

5.4.4 Staircases – terminology and construction.

5.4.5 Roofs – sloping – Lean to, coupled, collar, etc. Fixing of clay tiles for roofs.

5.4.6 Framed construction – Single and double floors, balconies.

SESSIONAL WORK:

Sufficient number of projects to cover the topics mentioned above should be worked in class. Stress should be given on self study and site visits to understand the basics of construction technology together with drawings.

Reference Readings.

A) To understand basic fundamental principles in construction following books are recommended

1. Elements of structure by Morgan
2. Structure in Architecture by Salvadori

B) Studying standard building construction

1. Building construction by McKay W.B., Vol. 1 to 4
2. Construction of Building by Barry, Vol. I to V
3. Construction Technology by Chudley R. vol.I to IV
4. Building Construction Illustrated – Ching Francis D.k.
5. Elementary Building construction by Michell

C) To study building materials

1. Engineering Material - Chaudhary
2. Building Construction Materials - M.V.Naik
3. Civil engineer's Hand book - Khanna
4. Vastu Rachana - Shri Sane
5. National Building code and ISI specifications.

Name of Topic :

FIRST YEAR B. ARCH.

Subject Code No. : 113426
Name of Subject. : H. A. & H. S. -I
Subject Teacher :
Submission Details/Lecture Details :

TEACHING SCHEME			EXAMINATION SCHEME						
Lecture Periods	Studio Periods	Total contact Periods	Sessional Internal	Sessional External	Viva-voce	Total Sessional	Paper	Total	Credits
3	-	3	50	-	-	50	100	150	

Name of Topic :

OBJECTIVES

The essence of learning history of architecture and human settlements should be to appreciate and understand, building as a process than simply as product. Architecture is to be seen as reflection of cultures and environment of various societies, economic systems, values and aesthetical perceptions and last but not the least scientific and technological advances of the society.

It is also essential to understand concurrent happenings in various parts of the world at a given time thereby appreciating Inter Cultural exchange and comparative study of growth of various civilization.

To teach students to respect architecture from value point of view than function alone.

Along with Architecture, students should study and understand different aspects of a civilization such as environment, social history, philosophy, art, landscape design, and town planning, and also their influences on one another.

COURSE OUTLINE

The first year course shall focus upon broadly two time spans:

- i. Upto 1000 BC.
- ii. 1000 BC to approx. 500 AD.

The geographical locations under study shall be referring to the following salient events/ important milestones. :

- A. The Indian Sub-Continent
 - Bronze age, Indus valley civilization.
 - Aryan Invasion in India.
 - Tribal republics rise of Magadha, Upanishads, Jainism, Buddhism.
 - Spread of Buddhism Under the Mauryans, Stupa at Sanchi.

- Brahmanical resurgence in India.
 - Buddhist monuments, Cave architecture, Gupta periods.
- B. The West Asiatic
- Neanderthal rituals, settled farming.
 - Catal Huyuk
 - Sumerian river Valley Civilisation.
 - Hittites, Babylonians, Assyrians, Persians, Parthians, Hammurabi's Code, Hanging Gardens of Babylon, Beginning of Iron Age.
 - Judaism First Persian Empire.
 - Christianity.
 - Trade between India, Asia, Europe, Zoroastrians in Iran.
 - Buddhism in Afghanistan, Sassanic rule in Persia.
- C. East Asia
- Yellow river settlements in China
 - River Valley civilisation begins, Copper age, Xia and Shang Periods.
 - Iron Age, Literature and City planning developed in China. First Chinese settlement in Korea.
 - Confucianism and Taoism Great Wall Begun, Zhou Period.
 - Great Wall of China Completed, Han Period.
 - Buddhism in China, Sri Lanka, Chinese language in Japan.
 - Buddhism, Chinese art and architecture in Japan.
- D. Africa
- Hunter Gatherers.
 - Egyptian Civilisation
 - Iron Age in Egypt.
- E. Europe
- Terra Amata, Lascaux Cave in France, Stone Henge etc.
 - Bronze age, Minoan and Cretan Civilisation.
 - Mycenaean Civilization-Archaic period Greece.
 - Etruscan Architecture. Iron age in Greece and Rome.
 - Roman Empire.
 - Christianity spreads in Roman Empire.
 - Fall of Roman Empire, Holy Roman Empire split.
- F. Pre Colombian America
- Copper Age.
 - Civilization of Mexico and Central America.

- Peruvian Civilisation, Mexican Pyramids Peruvain Temples.

SESSIONAL WORK

Sufficient number of projects to cover the topics mentioned above should be worked in class. Stress should be given on self-study, research through library and field visits. Journals and sketches/drawings together with reports shall form sessional work.

Recommended Readings:

- 1 Pt. Jawaharlal Nehru "Glimpses of World History".
- 2 Geoffrey and Susan Jellicoe, "Landscape of Man".
- 3 A.B.Gallion, "Urban Pattern"
- 4 Sir. Bannister Fletcher, "The History of Architecture"
- 5 Spiro Kostof "History of Architecture".
- 6 Markus Hattsein Peeter Delius ed' "Islamic Art and Architecture".
- 7 J E Swain "History of World Civilisation".
- 8 H G Well "A short History of the World".
- 9 J Bronowski "The Ascent of Man".
- 10 Satish Gover "Buddhist and Hindu Architecture in India".
- 11 Percy Brown "Indian Architecture".
- 12 Sybil Moholy Nagy, "The Matrix of Man".
- 13 Dora Crouch, "History of Architecture".
- 14 Arnold Toynbee, "A Study of History".
- 15 Dora Crouch, "Traditions in Architecture".

FIRST YEAR B. ARCH.

Subject Code No. : 113427
Name of Subject. : Workshop Practical & Model Making
Subject Teacher :
Submission Details/Lecture Details :

TEACHING SCHEME			EXAMINATION SCHEME						
Lecture Periods	Studio Periods	Total contact Periods	Sessional Internal	Sessional External	Viva-voce	Total Sessional	Paper	Total	Credits
-	3	3	50	50	-	100	-	100	

OBJECTIVES

To help students learn the importance of model making and acquire the skills in constructing three dimensional forms using different model making materials and equipment, using different scale and also develop dexterity of hand in manipulation of different materials.

COURSE OUTLINE

- Introduction to various materials used for model making.
- Use of various instruments required for model making.
- Use of various adhesives and joining techniques.
- Importance of appropriate use of colors in model making and methods of coloring the models.
- Experiments with various materials and equipment in terms of preparation of basic forms / geometrical forms with appropriate scale and dimensions.
- Introduction to various types of models such as site model, study model, block model and finished presentation models.
- Importance of various types of models to appropriate stages of Architectural Design.
- Use of appropriate scales, suitable to various types of models.
- Study and preparation of model of a complete built structure.
- Elementary joinery in wood and plywood.
- Working with metal sheets, wires, etc.
- Tools used for stone and brick masonry and surface covering.

SESSIONAL WORK:

Sufficient number of projects to cover the topics mentioned above should be worked in class.

RECOMMENDED READINGS

- New Origami Arts.
- Model building for Architects & Engineers by John Taylor.
- Architectural Models by Rolf Janke.

Name of Topic :

