# UTTAR PRADESH TECHNICAL UNIVERSITY, LUCKNOW

Syllabus
for
Session 2013-14
(B. Arch.)

# Bachelor of Architecture (B.Arch.)

**UTTAR PRADESH TECHNICAL UNIVERSITY, LUCKNOW**

**FACULTY OF ARCHITECTURE**

**BACHELOR OF ARCHITECTURE**

**SEMESTER - I**

## SCHEME OF TEACHING AND EXAMINATION

| S. NO. | SUBJECT CODE | NAME OF THE SUBJECT | PERIODS | | | EVALUATION SCHEME | | | | | | SUBJECT TOTAL | CREDITS | DURATION OF THEORY PAPER |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | LECTURE | TUTORIAL | PRACTICAL/ STUDIO | SESSIONAL ASSESMENT | | | ESE | | | | | |
| | | | | | | CT | TA | TOTAL | THEORY | VIVA | TOTAL | | | |
| 1 | NAR - 101 | ARCHITECTURAL DESIGN - I | 1 | 0 | 5 | 30 | 70 | **100** | 75 | 25 | **100** | **200** | 6 | 6 HRS. |
| 2 | NAR - 102 | CONSTRUCTION & MATERIALS - I | 2 | 0 | 4 | 25 | 50 | **75** | 50 | 25 | **75** | **150** | 6 | 3 HRS. |
| 3 | NAR - 103 | ARCHITECTURAL STRUCTURES - I | 2 | 1 | 0 | 15 | 35 | **50** | 50 | 0 | **50** | **100** | 3 | 3 HRS. |
| 4 | NAR - 104 | ARCHITECTURAL DRAWING - I | 1 | 0 | 5 | 15 | 35 | **50** | 50 | 0 | **50** | **100** | 6 | 3 HRS. |
| 5 | NAR - 105 | ARTS & GRAPHICS - I | 1 | 0 | 2 | 15 | 35 | **50** | 50 | 0 | **50** | **100** | 3 | 3 HRS. |
| 6 | NAR - 106 | SURVEYING & LEVELING | 1 | 0 | 2 | 15 | 35 | **50** | 50 | 0 | **50** | **100** | 3 | 3 HRS. |
| 7 | NAR - 107 | COMMUNICATION SKILLS&TECHNIQUES | 1 | 1 | 0 | 15 | 35 | **50** | 50 | 0 | **50** | **100** | 2 | 3 HRS. |
| 8 | NAR - 108 | COMPUTERS | 1 | 1 | 0 | 15 | 35 | **50** | 0 | 0 | **0** | **50** | 2 | - |
| 9 | NAR - 109 | SOCIOLOGY | 1 | 1 | 0 | 10 | 15 | **25** | 25 | 0 | **25** | **50** | 2 | 3 HRS. |
| | | | | | | | | | | | | | | |
| | | **TOTAL** | **11** | **4** | **18** | | | | | | | **950** | **33** | |
| | | **GENERAL PROFICIENCY** | | | | | | | | | | **50** | | |
| | | **GRAND TOTAL** | | | | | | | | | | **1000** | **33** | |

**UTTAR PRADESH TECHNICAL UNIVERSITY, LUCKNOW**

**FACULTY OF ARCHITECTURE**

**BACHELOR OF ARCHITECTURE**

**SEMESTER - II**

## SCHEME OF TEACHING AND EXAMINATION

| S. NO. | SUBJECT CODE | NAME OF THE SUBJECT | PERIODS | | | EVALUATION SCHEME | | | | | | SUBJECT TOTAL | CREDITS | DURATION OF THEORY PAPER |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | LECTURE | TUTORIAL | PRACTICAL/ STUDIO | SESSIONAL ASSESMENT | | | ESE | | | | | |
| | | | | | | CT | TA | TOTAL | THEORY | VIVA | TOTAL | | | |
| 1 | NAR - 201 | ARCHITECTURAL DESIGN - II | 1 | 0 | 5 | 30 | 70 | **100** | 75 | 25 | **100** | **200** | 6 | 6 HRS. |
| 2 | NAR - 202 | CONSTRUCTION & MATERIALS - II | 2 | 0 | 4 | 25 | 50 | **75** | 50 | 25 | **75** | **150** | 6 | 3 HRS. |
| 3 | NAR - 203 | ARCHITECTURAL STRUCTURES - II | 2 | 1 | 0 | 15 | 35 | **50** | 50 | 0 | **50** | **100** | 3 | 3 HRS. |
| 4 | NAR - 204 | ARCHITECTURAL DRAWING - II | 2 | 2 | 2 | 15 | 35 | **50** | 50 | 0 | **50** | **100** | 6 | 3 HRS. |
| 5 | NAR - 205 | ARTS & GRAPHICS - II | 1 | 0 | 2 | 15 | 35 | **50** | 50 | 0 | **50** | **100** | 3 | 3 HRS. |
| 6 | NAR - 206 | ARCHITECTURAL SERVICES - I | 1 | 1 | 0 | 15 | 35 | **50** | 50 | 0 | **50** | **100** | 2 | 3 HRS. |
| 7 | NAR - 207 | HISTORY OF ARCHITECTURE - I | 2 | 1 | 0 | 15 | 35 | **50** | 50 | 0 | **50** | **100** | 3 | 3 HRS. |
| 8 | NAR - 208 | RESEARCH - I | 1 | 1 | 0 | 15 | 35 | **50** | 0 | 0 | **0** | **50** | 2 | - |
| 9 | NAR - 209 | ECOLOGY & ENVIRONMENT | 1 | 1 | 0 | 10 | 15 | **25** | 25 | 0 | **25** | **50** | 2 | 3 HRS. |
| | | | | | | | | | | | | | | |
| | **TOTAL** | | **13** | **7** | **13** | | | | | | | **950** | **33** | |
| | **GENERAL PROFICIENCY** | | | | | | | | | | | **50** | | |
| | **GRAND TOTAL** | | | | | | | | | | | **1000** | **33** | |

**B. ARCH. SEMESTER – I**
**NAR – 101, ARCHITECTURAL DESIGN - I**

| PERIODS | | | EVALUATION SCHEME | | | | | | SUBJECT TOTAL | CREDITS | DURATION OF THEORY PAPER |
|---|---|---|---|---|---|---|---|---|---|---|---|
| LECTURE | TUTORIAL | PRACTICAL/ STUDIO | SESSIONAL ASSESMENT | | | ESE | | | | | |
| | | | CT | TA | TOTAL | THEORY | VIVA | TOTAL | | | |
| 1 | 0 | 5 | 30 | 70 | **100** | 75 | 25 | **100** | **200** | 6 | 6 HRS. |

**OBJECTIVES**

- Orientation of students to the profession of architecture.
- Introduction to basic design and the basic understanding of form and space in architecture.

| | | |
|---|---|---|
| **Module-1** | **Orientation to the Architecture Profession** | Role of an Architect in the built environment.<br>Building process, Role of other professional in building.<br>A general survey of the changes in habitat in history.<br>Architects act, C.O.A., I.I.A., NASA. |
| **Module-2** | **Space and Architecture** | Understanding design as to create for a particular purpose and architectural design as to create space – exercise in terms of simple drawing and sketching of objects available in nature and surroundings.<br>Form created through lines (columns) and planes (volumes), combination thereof. |
| **Module-3** | **Form and Transformations** | Additive, Dimensional, Subtractive - exercises primarily through 3-D models of simple geometrics. |
| **Module-4** | **Scale in Architecture** | Simple measurement exercises. |
| **Module-5** | **Order in Architecture** | Geometrical, Structural, Dimensional, Material, Spatial order - through observation of surroundings as well as simple exercises in 2-D and 3-D.<br>Exercises in order and transformations of form and space. |

**REFERENCE BOOKS**


1. Ching, Francis D. K. “Architecture : Form, Space and Order”, John Wiley and Sons Inc.
2. Lidwell, William, Holden, Kestina, Butler, Jill, “Universal Principles of Design”, Rockport – Publications, Massachussets.

**B. ARCH. SEMESTER – I**
**NAR – 102, CONSTRUCTION & MATERIALS – I**

| PERIODS | | | EVALUATION SCHEME | | | | | | SUBJECT TOTAL | CREDITS | DURATION OF THEORY PAPER |
|---|---|---|---|---|---|---|---|---|---|---|---|
| LECTURE | TUTORIAL | PRACTICAL/ STUDIO | SESSIONAL ASSESMENT | | | ESE | | | | | |
| | | | CT | TA | TOTAL | THEORY | VIVA | TOTAL | | | |
| 2 | 0 | 4 | 25 | 50 | **75** | 50 | 25 | **75** | **150** | 6 | 3 HRS. |

**OBJECTIVES**

- To familiarize the students with constituents, properties and uses of traditional building materials used in construction.
- To understand the use of these traditional building materials in simple building works.
- To develop skills in understanding the complexities & constrains of brick masonry and joinery in carpentry.
- To familiarize the student with the basic building construction practices on site.

**SECTION – A, BUILDING MATERIALS AND SCIENCES**

| | | |
|---|---|---|
| **Module-1** | **Clay & Clay Products** | Mud including stabilised earth, Burnt Brinks, Brick Tiles, Brick Ballast and Surkhi. |
| | **Stone** | Classification, Availability, Characteristics and Uses. |
| **Module-2** | **Lime** | Availability, Preparation and Uses |
| | **Cement** | Manufacture and Properties. |
| **Module-3** | **Sand &Surkhi** | Characteristics, Availability and Uses. |
| | **Mortar** | Mud, Lime, Cement. |
| **Module-4** | **Concrete** | Lime, Cement. |

**LIST OF ASSIGNMENTS (Markrt Surveys, Seminars & Report)**

1. To study the availability, constituents, properties, manufacturing processes, storage, transportation and applications of above mentioned materials.
2. To visit brick kiln/ lime kiln/ cement factory etc. for better understanding and submit report.

**WORKSHOP/CONSTRUCTION YARD PRACTICE & SITE EXPOSURE**

| | | |
|---|---|---|
| **Module-5** | **Workshop/Construction Yard Practice** | Practicing in construction yard by making the examples of brick masonry works etc. |
| **Module-6** | **Site Exposure** | Exposure to building construction practices on site of various items of work from foundation to roof and finishes. |

**LIST OF ASSIGNMENTS**

1. To study the various tools, equipments used in masonry works.
2. To construct examples of brick & stone masonry works in construction yard.
3. To survey construction work on site and submit report.

**SECTION – B, BUILDING CONSTRUCTION TECHNOLOGY**

| | | |
|---|---|---|
| **Module-1** | **Element of Building** | Terminology, Nomenclature of various parts of building from foundation to roof. |
| **Module-2** | **Brick Work** | Brick Terminology, Simple Bonds e.g. English bond & Flemish (single and double) bond in brick work for up to two brick thick walls. |
| **Module-3** | **Brick Work** | Details at quoins and junctions in English bond and Flemish bond for up to two brick thick walls. |
| **Module-4** | **Brick Work** | Details of piers (attached and detached), Buttresses, Lintel and Sill. |
| **Module-5** | **Stone Work** | Elementary Stone Masonry, Types of joints.<br>Random, Course and Ashlar Stone Work. |
| **Module-6** | **Foundation** | Need, Design criteria, Foundation concrete, Details of simple spread foundations for load bearing walls of various thicknesses up to two brick thick. |

**CONSTRUCTION PLATES**

1. To understand the terminology used in buildings, through face section.
2. To understand square stopped ends of said bonds in brick masonry.
3. To understand L, T and X Junctions of said bonds in brick masonry.
4. To understand of piers (attached and detached), Buttresses, Lintel and Sill.
5. To understand square stopped ends of Random, Course and Ashlar stone masonry.
6. To understand spread foundation for masonry load bearing walls.

**APPROACH**

- The students would be familiarized with vernacular terminology as prevalent in this part of the country.
- The emphasis will be construction details as applicable to Indian climatic conditions.
- Site visits and market surveys will be an integral part of sessional work.

**REFERENCE BOOKS**


1. McKay, W.B., "Building Construction Volume I, II, III and IV", Longmans, 1955.
3. Ching, Francis D. K. and Adams, Cassandra, "Building Construction Illustrated", Wiley and Sons, 2000.
4. The Construction of Buildings – Barry Volume I, II, III and IV
5. Chudley, Roy, "Construction Technology", Longman, 2005.
6. Building Construction_Mitchell (Elementary and Advanced)
7. Rangwala, S. C., "Building Construction", Charotar Publishing House, 2007
8. Building Construction-Bindra&Arora.
9. Punmia B. C., Jain A. J., and Jain A.J., Building Construction, Laxmi Publications, 2005.
10. Building Materials by SC Rangwala: Charotar Pub. House, Anand
11. M. Gambhir, NehaJamwal, Building Materials Products, Properties and Systems, Tata McGraw Hill
12. Publishers, New Delhi, 2011.
13. R.K.Gupta, Civil Engineering Materials and Construction Practices, Jain brothers, New Delhi, 2009.
14. National Building Code of India (Latest Edition), Bureau of Indian Standards.
15. Engineering Materials-Deshpande.
16. Engineering Material-Roy Chowdary
17. Designing with models – Criss. B. Mills.
18. Morris, M., "Architecture and the Miniature: Models", John Wiley and Sons, 2000.
19. Mills, Criss B., "Designing with Models: A Studio Guide to Making and Using Architectural Models", Thomson and Wadsworth, 2000.
20. Raghuwanshi, B.S., "A Course in Workshop Technology - Vol. I and II", Dhanpat Rai and Co, 2001.
21. Wenninger (Magrus.J.) Spherical Models, Cambridge University Press, 1979

**B. ARCH. SEMESTER – I**
**NAR – 103, ARCHITECTURAL STRUCTURES - I**

| PERIODS | | | EVALUATION SCHEME | | | | | | SUBJECT TOTAL | CREDITS | DURATION OF THEORY PAPER |
|---|---|---|---|---|---|---|---|---|---|---|---|
| LECTURE | TUTORIAL | PRACTICAL/ STUDIO | SESSIONAL ASSESMENT | | | ESE | | | | | |
| | | | CT | TA | TOTAL | THEORY | VIVA | TOTAL | | | |
| 2 | 1 | 0 | 15 | 35 | **50** | 50 | 0 | **50** | **100** | 3 | 3 HRS. |

**OBJECTIVES**:

- To understand the basic principles of structural mechanics so that it forms the basis for study of structural design.

| | | |
|---|---|---|
| **Module-1** | **Simple Stresses and Strains** | Elasticity, Stress, Strain, Types of stresses, Elastic limit, Hook's Law, Modulus of Elasticity, Stresses in Composite Bars. Primary or Linear Strain, Poison's ratio, Shear stress, Principal stresses and strains. |
| **Module-2** | **Centre of Gravity** | Definition, Methods of finding out centre of gravity of simple figures, Centre of parallel forces. |
| **Module-3** | **Moment of Inertia** | Definition, Important theorems, Calculation of moment of inertia by first principles and its application, Moment of inertia of composite sections. |
| **Module-4** | **Elements of Statics** | Simple beams bending, Section modulus, Direct and bending stress. Shear stress in section of beam, Shears centre. |
| **Module-5** | **Shear Force and Bending Moments** | Beams shearing force and bending moment, Moment of resistance. Shear force and Bending moment diagrams. |

**REFERENCE BOOKS**


1. Nautiyal B. D., "Introduction to Structural Analysis", B.H.U.
2. Punmia P. C., "Strength of Materials & Mechanics of Structures".
3. Khurmi R. S., "Strength of Materials".
4. Senol Utku , "Elementary Structural Analysis".
5. Rama Armarutham S., "Strength of Materials".

**B. ARCH. SEMESTER – I**
**NAR – 104, ARCHITECTURAL DRAWING - I**

| PERIODS | | | EVALUATION SCHEME | | | | | | SUBJECT TOTAL | CREDITS | DURATION OF THEORY PAPER |
|---|---|---|---|---|---|---|---|---|---|---|---|
| LECTURE | TUTORIAL | PRACTICAL/ STUDIO | SESSIONAL ASSESMENT | | | ESE | | | | | |
| | | | CT | TA | TOTAL | THEORY | VIVA | TOTAL | | | |
| 1 | 0 | 5 | 15 | 35 | **50** | 50 | 0 | **50** | **100** | 6 | 3 HRS. |

**OBJECTIVES**

- To familiarize with drawing tools and accessories.
- To give a basic knowledge of good drafting and lettering techniques.
- To develop comprehension and visualization of geometrical forms.
- To familiarize with the concept of enlarging and reducing scales.

**SECTION – A, ARCHITECTURAL DRAWING (MANUAL)**

| | | |
|---|---|---|
| **Module-1** | **Free Hand Drawing and Lettering** | Free hand and mechanical lettering. |
| **Module-2** | **Basic Technical Drawing** | Concept and types of line, Division of lines and angles, Drawing polygons, Inscribing and circumscribing circles in polygons, Drawing geometrical curves helix, Conoid etc. |
| **Module-3** | **Orthographic Projections** | Definition, Meaning and concept, Planes of Projections, First angle projections, Projection of points, Lines and planes in different positions. |
| **Module-4** | **Orthographic Projections** | Projection of regular rectilinear and circular solids (prisms, pyramids, cones, cylinders, spheres etc.) in different positions. Sections of regular rectilinear and circular solids (prisms, pyramids, cones, cylinders, spheres etc.) in varying conditions of sectional plane. |
| **Module-5** | **Development of Surfaces** | Development of surfaces of cubes, prisms, cylinders, pyramids, cones and spheres. |
| **Module-6** | **Solid Geometry** | Construction of section, Intersection and interpenetration of solid. |

**REFERENCE BOOKS**


1. IH. Morris, Geometrical Drawing for Art Students - Orient Longman, Madras, 2004.
2. Francis Ching, Architectural Graphics, Van Nostrand Rein Hold Company, New York, 1964.
3. N.D.Bhatt, Elementary Engineering Drawing (Plane and Solid Geometry), Charotar Publishing House, India
4. George K.Stegman, Harry J.Stegman, Architectural Drafting Printed in USA by AmericanTechnical Society, 1966.
5. C.Leslie Martin, Architectural Graphics, The Macmillan Company, New York, 1964

**B. ARCH. SEMESTER – I**
**NAR – 105, ARTS AND GRAPHICS - I**

| PERIODS | | | EVALUATION SCHEME | | | | | | SUBJECT TOTAL | CREDITS | DURATION OF THEORY PAPER |
|---|---|---|---|---|---|---|---|---|---|---|---|
| LECTURE | TUTORIAL | PRACTICAL/ STUDIO | SESSIONAL ASSESMENT | | | ESE | | | | | |
| | | | CT | TA | TOTAL | THEORY | VIVA | TOTAL | | | |
| 1 | 0 | 2 | 15 | 35 | **50** | 50 | 0 | **50** | **100** | 3 | 3 HRS. |

**OBJECTIVES**

- Introduction to art and appreciation of art and its philosophies.
- To familiarization with principles and theories and graphic and architectural composition
- Development of art and graphic skills.

| | | |
|---|---|---|
| **Module-1** | **Philosophy of Art** | Relevance of art of life - Art and artist, Art and society, Art and religion, Art and mysticism. |
| **Module-2** | **Appreciation of Art** | Painting, Sculpture. |
| **Module-3** | **Art in Architecture** | Psychological and emotional aspect of aesthetics. |
| **Module-4** | **Theory of Design** | Elements of Design - Line, Direction, Shape, Size and Form. |

**DRAWING PLATES**

1. To develop free hand skills - Drawing lines, Joining points, Drawing curves,
2. To develop comprehension of scale,
3. To understand still life drawing - from Observation
4. To drawing nature - shrubs, trees, grass, plants, flowers, rocks, water.

**REFERENCE BOOKS**


1. Arnold Dana, “Art History – A Very Short Introduction” , Oxford University Press.
2. Stallabrass, Julian, “Contemporary Art – A Very Short Introduction” , Oxford University Press.

**B. ARCH. SEMESTER – I**
**NAR – 106, SURVEYING & LEVELING**

| PERIODS | | | EVALUATION SCHEME | | | | | | SUBJECT TOTAL | CREDITS | DURATION OF THEORY PAPER |
|---|---|---|---|---|---|---|---|---|---|---|---|
| LECTURE | TUTORIAL | PRACTICAL/ STUDIO | SESSIONAL ASSESMENT | | | ESE | | | | | |
| | | | CT | TA | TOTAL | THEORY | VIVA | TOTAL | | | |
| 1 | 0 | 2 | 15 | 35 | **50** | 50 | 0 | **50** | **100** | 3 | 3 HRS. |

**OBJECTIVES**

- To develop knowledge and skills related to surveying and levelling principles and practice.

| | | |
|---|---|---|
| **Module-1** | **Introduction** | Definition, classification, principles of surveying, Units of measurement, Scale, Signs convention. |
| **Module-2** | **Chain Survey** | Instruments used, Types of chain, Instruments for ranging, Setting out angles, Erecting perpendiculars, Selection of station, Methods of taking offset, Obstacles in chaining. |
| **Module-3** | **Plane Table Survey** | Plane table and accessories, Methods of plane table survey, Radiation, Intersection, Traversing and resection, Two point and three point problems and their solution. |
| **Module-4** | **Levelling** | Definition, Classification, Booking and reduction of levels, Profile & cross section leveling, Errors in leveling. |
| **Module-5** | **Theodolite** | Study of instruments, Definition of different terms, Temporary adjustments, Uses, Measuring horizontal and vertical angles, Method of repetition, Extension of lines. |
| **Module-6** | **Contouring** | Characteristics of contours, Direct and indirect methods of contouring, Interpolation, Uses of contours, Calculation of area & volume. |
| **Module-7** | **Compass Survey** | The prismatic compass, Surveyor compass and its construction and **u**ses, Reduced and whole circle bearing, Magnetic declination, Effect of local attraction. |
| **Module-8** | **Traverse Survey** | Introduction and different methods of traversing, Error of closure. |
| **Module-9** | **Total Station Survey** | Introduction, Working principle of total station and its use. Use of software for different applications. |
| **Module-10** | **Photogrammatery** | Definition, Principles and application of photogrammatery in surveying. |

**LIST OF ASSIGNMENTS (Field Exercises & Drawings)**

1. To find out horizontal distance between two points and plotting the details on lateral side of chain line using chain, tape, ranging rod & cross staff etc.
2. Two point problem & three point problem.
3. Making L-section & Cross section of a profile.
4. Making grids on ground using theodolite & taking spot level &drawing contour lines.
5. Making a regular polygon in field and finding error of closure using different equipment.
6. Preparing topographical map of given area using total station.
7. Study various aerial images.

**REFERENCE BOOKS**


1. Surveying Volume I & II by Dr. B.C. Punmia
2. Surveying and Leveling (Part – 1) by Kanetkar TP and Kulkarni SV
3. Surveying Volume -1 by Dr. K.R.Arora.

**B. ARCH. SEMESTER – I**
**NAR – 107, COMMUNICATION SKILLS & TECHNIQUES**

| PERIODS | | | EVALUATION SCHEME | | | | | | SUBJECT TOTAL | CREDITS | DURATION OF THEORY PAPER |
|---|---|---|---|---|---|---|---|---|---|---|---|
| LECTURE | TUTORIAL | PRACTICAL/ STUDIO | SESSIONAL ASSESMENT | | | ESE | | | | | |
| | | | CT | TA | TOTAL | THEORY | VIVA | TOTAL | | | |
| 1 | 1 | 0 | 15 | 35 | **50** | 50 | 0 | **50** | **100** | 2 | 3 HRS. |

**OBJECTIVES**

- To development in students communicative, writing and presentation skills.
- To enable them to record, report analyzes, evaluate and understand architecture, both in its theoretical and practical form.

| | | |
|---|---|---|
| **Module-1** | **Revision** | Sentence, Phrase, Clause and parts of speech - Noun-gender, Number case, Pronoun-personal' reflexive, Emphatic, Demonstrative, Indefinite, Distributive, Reciprocal, Adjective, Article, Preposition, Conjunction and Interjection. Vocabulary, Word building and word formation, Phrases and idioms, Proverbs, Reading a dictionary, Using a thesaurus. |
| **Module-2** | **Composition and Comprehension** | Essay, Story and letter writing, Summarizing, Comprehension - unseen passages. |
| **Module-3** | **Technical Communication** | Objective, Process, Levels and Flow of communication, Communication networks, Visual aids, Group communications. |
| **Module-4** | **Effective Presentation Strategies** | Effective speaking, Types of speaking, Presentation with electronic aids. |

**REFERENCE BOOKS**

1. Raman Meenakshi and Sharma Sangeeta, "Technical Communications – Principles and Practices", Oxford UniversityPress, New Delhi.

**B. ARCH. SEMESTER – I**
**NAR – 108, COMPUTERS**

| PERIODS | | | EVALUATION SCHEME | | | | | | SUBJECT TOTAL | CREDITS | DURATION OF THEORY PAPER |
|---|---|---|---|---|---|---|---|---|---|---|---|
| LECTURE | TUTORIAL | PRACTICAL/ STUDIO | SESSIONAL ASSESMENT | | | ESE | | | | | |
| | | | CT | TA | TOTAL | THEORY | VIVA | TOTAL | | | |
| 1 | 1 | 0 | 15 | 35 | **50** | 0 | 0 | **0** | **50** | 2 | - |

**OBJECTIVES**

- Introduction to basic knowledge of computers - operating system, software and hardware.
- To familiarize with software associated with text formatting, spread-sheets and presentation.
- Development of effective presentation techniques.

**Module-1** **Introduction**
Introduction to computers and hardware's, General idea about popular operating systems and software, Basics of Internet.

**Module-2** **MS Office - MS Word**
Create a document that can be used by previous versions of word, Saving Options.
Create a document -
Open a new document and start typing, Start a document from a template, Delete a document, Add a heading, Adjust the spaces between lines or Paragraphs, Insert a page break, Insert a picture or clip art, Insert or create a table, Headers, Footers, and Page numbers, Create a table of contents, Apply themes to Word documents, Add a cover page.
Read documents in Word -
Read a document, Mark up a document, Find or look up words and phrases, Turn on or off - full screen reading view.

**Module-3** **MS Office – MS Excel**
Getting Started with Excel -
Create a workbook, Enter data in a worksheet, Format a worksheet, Format numbers in a worksheet, Print a worksheet, Create an Excel table, Filter data by using an auto filter, Sort data by using an auto filter, Apply conditional formatting, Apply data validation, Create a formula, Use a function in a formula, Chart your data, Create a macro, Create a pivot table report, Activate and use an add-in
Keyboard shortcuts in Excel 2010 -
Keyboard access to the ribbon, CTRL combination shortcut keys, Function keys, Other useful shortcut keys.

**Module-4** **MS Office – MS Power point**
Create a basic PowerPoint presentation -
Name and create a new presentation, Open a presentation, Save a presentation, Insert a new slide, Add, Rearrange and delete slides, Add text to a slide, Apply a template to your presentation, Apply a theme to add color and style to your presentation, Insert a picture or clip art and insert content or insert a screenshot, Add, Change, or Delete shapes, Create a smart art graphic, Add slide numbers, Page numbers, Date and time, Create a hyperlink, Deliver and distribute your presentation, View a slide show and View your speaker notes privately, while delivering a presentation on multiple monitors, Print out a presentation, Tips for creating an effective presentation.

**REFERENCE BOOKS**


1. "Microsoft Office – 2013".
2. Dr. Paolo Coletti, "Basic Computer Course Book", Free University of Bolzano Bozen.

**B. ARCH. SEMESTER – I**
**NAR – 109, SOCIOLOGY**

| PERIODS | | | EVALUATION SCHEME | | | | | | SUBJECT TOTAL | CREDITS | DURATION OF THEORY PAPER |
|---|---|---|---|---|---|---|---|---|---|---|---|
| LECTURE | TUTORIAL | PRACTICAL/ STUDIO | SESSIONAL ASSESMENT | | | ESE | | | | | |
| | | | CT | TA | TOTAL | THEORY | VIVA | TOTAL | | | |
| 1 | 1 | 0 | 10 | 15 | **25** | 25 | 0 | **25** | **50** | 2 | 3 HRS. |

**OBJECTIVES**

- To expose the students to the relationship between man and environment.
- To familiarize the students with basic concepts, theories and issues of Sociology and its relevance to architecture

| | | |
|---|---|---|
| **Module-1** | **Introduction** | Story of Sociology, Sociology and Architecture, Basic concepts of society - Group, Community (Rural and Urban), Association, Institution. |
| **Module-2** | **Culture and Society** | Concept of culture, Cultural identity, Cultural diversity, Cultural change. |
| **Module-3** | **Process of Socialisation** | Types of society.<br>Pre-Modern - Hunter's and Gathers, Pastoral agrarians and Traditional states.<br>Modern.<br>Third world / Traditional Society. |
| **Module-4** | **Social Demography** | Population growth, Population subsistence & Migration. |
| **Module-5** | **Social Institutions** | Family, Marriage, Religion. |
| **Module-6** | **Social Infrastructure** | Education, Health, Recreation. |

**REFERENCE BOOKS**


1. An Introduction to Sociology by Vidya Bhushan and D.R. Suchdeva
2. Sociology: A Systematic Introduction by Harry M. Jhonson
3. Indian Society and Culture – Continuity & Change by Nadeem Husnain
4. Principles of Population Studies by Asha A. Bhende & Tara Kanitkar

**B. ARCH. SEMESTER – II**
**NAR – 201, ARCHITECTURAL DESIGN - II**

| PERIODS | | | EVALUATION SCHEME | | | | | | SUBJECT TOTAL | CREDITS | DURATION OF THEORY PAPER |
|---|---|---|---|---|---|---|---|---|---|---|---|
| LECTURE | TUTORIAL | PRACTICAL/ STUDIO | SESSIONAL ASSESMENT | | | ESE | | | | | |
| | | | CT | TA | TOTAL | THEORY | VIVA | TOTAL | | | |
| 1 | 0 | 5 | 30 | 70 | **100** | 75 | 25 | **100** | **200** | 6 | 6 HRS. |

**OBJECTIVES**

- Introduction to human activity and spaces required for activities.
- Introduction to basic building components and their dimensions.
- To appreciate the elements in architectural design of single unit built-up structures.

| | | |
|---|---|---|
| **Module-1** | **Anthropometrics Studies** | Studies and introduction to human dimensions and functions, Space-activity relationships, Measure drawings of simple living units. |
| **Module-2** | **Living Spaces and Building** | Measuring, Drawing and dimensioning of simple building components. Designing for basic functions of human beings, e.g. living, eating, sleeping, cooking etc. |
| **Module-3** | **Building Design** | Design of mono-cellular-unit/structure on a level plane, Designing of simple activity spaces, Designing of multiple but simple activity spaces involving primarily horizontal circulation. |

**SUGGESTED STUDIO EXCERCISES**

Small space structures such as Kiosks/Small shops, Milk booths, Bus shelters, Petrol pumps, Gazebo, Florists shop, Entrance gates, Exhibition stalls, ATMs, Chowkidar's hut etc.

**REFERENCE BOOKS**


1. Ching, Francis D. K. "Architecture : Form, Space and Order", John Wiley and Sons Inc.
2. Lidwell, William, Holden, Kestina, Butler, Jill, "Universal Principles of Design", Rockport – Publications, Massachussets.
3. "Neufert Architect's Data", Blackwell Publishing.
4. Donald Watson and Michael J. Crosbie, "Time – Saver Standards for Architectural Design, Technical Data for Professional Practice", McGRAW - HILL.

**B. ARCH. SEMESTER – II**
**NAR – 202, CONSTRUCTION & MATERIALS – II**

| PERIODS | | | EVALUATION SCHEME | | | | | | SUBJECT TOTAL | CREDITS | DURATION OF THEORY PAPER |
|---|---|---|---|---|---|---|---|---|---|---|---|
| LECTURE | TUTORIAL | PRACTICAL/ STUDIO | SESSIONAL ASSESMENT | | | ESE | | | | | |
| | | | CT | TA | TOTAL | THEORY | VIVA | TOTAL | | | |
| 2 | 0 | 4 | 25 | 50 | **75** | 50 | 25 | **75** | **150** | 6 | 3 HRS. |

**OBJECTIVES**

- To acquaint the students to building materials such as Timber, Reinforced Cement Concrete and Reinforced Brick Work.
- To familiarize the students with construction techniques for use of the above materials in building works.
- To familiarize the student with the basic building construction practices on site/yard.

**SECTION – A, BUILDING MATERIALS AND SCIENCES**

| | | |
|---|---|---|
| **Module-1** | **Timber** | Classification, Characteristics, Defects, Preservation. |
| **Module-2** | **D.P.C** | Asphalt, Bitumen, Synthetic, etc. |
| **Module-3** | **Reinforced Cement Concrete** | Types, Mixing, Curing, Water Cement Ratio, Qualities and Workability. |
| **Module-4** | **Reinforced Brick Work** | Types, Mixing, Curing, Water Cement Ratio, Qualities and Workability. |

**LIST OF ASSIGNMENTS (Market Surveys, Seminars & Report)**

1. To study the availability, constituents, properties, manufacturing processes, storage, transportation and applications of above mentioned materials.
2. To visit Timber depot/Ready mix concrete plants etc. for better understanding and submit report.

**WORKSHOP/CONSTRUCTION YARD PRACTICE & SITE EXPOSURE**

| | | |
|---|---|---|
| **Module-5** | **Workshop / Construction Yard Practice** | Practicing in construction yard by making the examples of brick masonry works, Carpentry works, etc. |
| **Module-6** | **Site Exposure** | Exposure to building construction practices on site of various items of work from foundation to roof and finishes. |

**LIST OF ASSIGNMENTS**

1. To study the various tools, equipments used in masonry and carpentry works.
2. To construct examples of brick masonry works in construction yard.
3. To construct examples of timber joints in workshop and study the various hardware commonly used in doors.
4. To survey construction work on site and submit report

**SECTION – B, BUILDING CONSTRUCTION TECHNOLOGY**

| | | |
|---|---|---|
| **Module-1** | **Brick Work** | Arches in brick and stone, Elementary principles, Centering. |
| **Module-2** | **Brick Work** | Corbelling, Coping, String courses, Brick jalis. |
| **Module-3** | **Brick Work** | Special Bonds - Rat Trap Bond. |
| **Module-4** | **Timber** | Elementary carpentry, Common joints, |
| **Module-5** | **Timber** | Details of framed, ledged, braced and batten doors. |
| **Module-6** | **D.P.C.** | Horizontal and vertical D.P.C. |

**CONSTRUCTION PLATES**

1. To understand the terminology of arches and the various type of arches in brick.
2. To understand Corbelling, Coping, String Courses, Brick jalis.
3. To understand Special Bonds - Rat Trap Bond.
4. To understand various types of joints in timber.
5. To understand wooden Framed, Ledged, Braced and Batten Door.
6. To understand horizontal and vertical DPC for load bearing walls.

**APPROACH**

- The students would be familiarized with glossary of vernacular terminology as prevalent in this part of the county
- The emphasis will be on construction details as applicable to Indian conditions.
- Site visits to Timber market and Construction sites.
- Knowledge about rates of materials should be given.

**REFERENCE BOOKS**


1. McKay, W.B., "Building Construction Volume I, II, III and IV", Longmans, 1955.
2. Ching, Francis D. K. and Adams, Cassandra, "Building Construction Illustrated", Wiley and Sons, 2000.
3. The Construction of Buildings – BarryVolume I, II, III and IV
4. Chudley, Roy, "Construction Technology", Longman, 2005.
5. Building Construction_Mitchell (Elementary and Advanced)
6. Rangwala, S. C., "Building Construction", Charotar Publishing House, 2007
7. Building Construction-Bindra&Arora.
8. Punmia B. C., Jain A. J., and Jain A.J., Building Construction, Laxmi Publications, 2005.
9. Building Materials by SC Rangwala: Charotar Pub. House, Anand
10. M. Gambhir, NehaJamwal, Building Materials Products, Properties and Systems, Tata McGraw Hill
11. Publishers, New Delhi, 2011.
12. R.K.Gupta, Civil Engineering Materials and Construction Practices, Jain brothers, New Delhi, 2009.
13. National Building Code of India 2005, Bureau of Indian Standards, 2005.
14. Engineering Materials-Deshpande.
15. Engineering Material-Roy Chowdary
16. Designing with models – Criss. B. Mills.
17. Morris, M., "Architecture and the Miniature: Models", John Wiley and Sons, 2000.
18. Mills, Criss B., "Designing with Models: A Studio Guide to Making and Using Architectural Models", Thomson and Wadsworth, 2000.
19. Raghuwanshi, B.S., "A Course in Workshop Technology - Vol. I and II", Dhanpat Rai and Co, 2001.
20. Wenninger (Magrus.J.) Spherical Models, Cambridge University Press, 1979

**B. ARCH. SEMESTER – II**
**NAR – 203, ARCHITECTURAL STRUCTURES - II**

| PERIODS | | | EVALUATION SCHEME | | | | | | SUBJECT TOTAL | CREDITS | DURATION OF THEORY PAPER |
|---|---|---|---|---|---|---|---|---|---|---|---|
| LECTURE | TUTORIAL | PRACTICAL/ STUDIO | SESSIONAL ASSESMENT | | | ESE | | | | | |
| | | | CT | TA | TOTAL | THEORY | VIVA | TOTAL | | | |
| 2 | 1 | 0 | 15 | 35 | **50** | 50 | 0 | **50** | **100** | 3 | 3 HRS. |

**OBJECTIVES**:

- To understand the basic principles of structural mechanics so that it forms the basis for study of structural design.

| | | |
|---|---|---|
| **Module-1** | **Stresses in Trusses** | Definitions, Forces in members, Analytical method, Method of sections, Graphical method, Link polygon. |
| **Module-2** | **Torsional Stress** | Simple cases. |
| **Module-3** | **Plain Concrete** | Concrete mix, Curing and strength of concrete, Effect of temperature, Shrinkage, Fatigue. |
| **Module-4** | **Deflection of Beams** | Double Integration, Moment area, Method consistent deformation. |
| **Module-5** | **Column** | Definition, End conditions, Buckling and critical loads, Slenderness ratio, Various column theories. |

**REFERENCE BOOKS**


1. Nautiyal B. D., “Introduction to Structural Analysis”, B.H.U.
2. Punmia P. C., “Strength of Materials & Mechanics of Structures”.
3. Khurmi R. S., “Strength of Materials”.
4. Senol Utku , “Elementary Structural Analysis”.
5. Rama Armarutham S., “Strength of Materials”.

**B. ARCH. SEMESTER – II**
**NAR – 204, ARCHITECTURAL DRAWING - II**

| PERIODS | | | EVALUATION SCHEME | | | | | | SUBJECT TOTAL | CREDITS | DURATION OF THEORY PAPER |
|---|---|---|---|---|---|---|---|---|---|---|---|
| LECTURE | TUTORIAL | PRACTICAL/ STUDIO | SESSIONAL ASSESMENT | | | ESE | | | | | |
| | | | CT | TA | TOTAL | THEORY | VIVA | TOTAL | | | |
| 2 | 2 | 2 | 15 | 35 | **50** | 50 | 0 | **50** | **100** | 6 | 3 HRS. |

**OBJECTIVES**

- To familiarize the student with theoretical, practical and pictorial aspects of architectural drawing.
- To develop perception and presentation of simple architectural forms and buildings.
- To develop or upgrade an understanding about AutoCAD 2D, as an important tool for drafting, designing, analyzing and representation of the drawings in a desired manner.

**SECTION – A, ARCHITECTURAL DRAWING (MANUAL)**

| | | |
|---|---|---|
| **Module-1** | **Metric Drawing** | Introduction, Types, Uses and advantages, Isometric, Axonometric and Pictorial view. |
| **Module-2** | **Metric Drawing** | Metric drawing and projection and their dimensioning. |
| **Module-3** | **Metric Drawing** | Metric of plane figures composed of straight lines. |
| **Module-4** | **Metric Drawing** | Metric of circles. |
| **Module-5** | **Metric Drawing** | Metric of simple and complex blocks. |
| **Module-6** | **Perspective Drawing** | Introduction, Purpose and use, Differences with metric projections, Anatomy of a perspective – cone of vision, Station point, Picture plane, Eye level, Horizon line, Ground line, Vanishing point, etc., Types of perspective - One point, Two points, and Three point perspectives. |
| **Module-7** | **Perspective Drawing** | One Point Perspective - Perspectives of simple and complex box blocks. |
| **Module-8** | **Perspective Drawing** | One Point Perspective - Perspective of simple curved surface. |
| **Module-9** | **Perspective Drawing** | One Point Perspective - Perspective of simple household furniture items. |
| **Module-10** | **Perspective Drawing** | Two Point Perspective - Perspectives of simple and complex box blocks. |
| **Module-11** | **Perspective Drawing** | Two Point Perspective - Perspective of simple curved surface. |
| **Module-12** | **Perspective Drawing** | Two Point Perspective - Perspective of simple household furniture items. |

**SECTION – B, ARCHITECTURAL DRAWING (COMPUTER)**

| | | |
|---|---|---|
| **Module-1** | **Exploring the Interface** | Installation and launching autocad, Using Application menus, Using ribbons, Expanding panels, Understanding flyouts, Pick point in the drawing area, Saving a file and working with multiple files. |
| **Module-2** | **Creating your First Drawing** | Starting from scratch, Understanding paper area, Unit, Scale, Planes, Using the UCS icon, Design templates, Types and use of 2D Drafting tools, Dimensioning, 2D keyboard commands. |
| **Module-3** | **Organisation of Drawing** | 2D isometric views, Materials and textures, Reference other drawing files, Link and embed data (OLE), Work with data in other formats and exporting 2D drawings to various software, Extract data from drawings and spread sheets, Access external databases. |
| **Module-4** | **Effective Presentation** | Layer management, Plotting and publishing the drawing in modal space and paper space. |

**REFERENCE BOOKS**


1. IH. Morris, Geometrical Drawing for Art Students - Orient Longman, Madras, 2004.
2. Francis Ching, Architectural Graphics, Van Nostrand Rein Hold Company, New York, 1964.
3. N.D.Bhatt, Elementary Engineering Drawing (Plane and Solid Geometry), Charotar Publishing House, India
4.. George K.Stegman, Harry J.Stegman, Architectural Drafting Printed in USA by AmericanTechnical Society, 1966.
5. C.Leslie Martin, Architectural Graphics, The Macmillan Company, New York, 1964
6. Introducing AutoCAD and AutoCAD LT - GeorgeOmura
7. Mastering AutoCAD - GeorgeOmura
8. AutoCAD 2013 and AutoCAD LT 2013 “BIBLE” - Ellen Finkelstein

**B. ARCH. SEMESTER – II**
**NAR – 205, ARTS AND GRAPHICS - II**

| PERIODS | | | EVALUATION SCHEME | | | | | | SUBJECT TOTAL | CREDITS | DURATION OF THEORY PAPER |
|---|---|---|---|---|---|---|---|---|---|---|---|
| LECTURE | TUTORIAL | PRACTICAL/ STUDIO | SESSIONAL ASSESMENT | | | ESE | | | | | |
| | | | CT | TA | TOTAL | THEORY | VIVA | TOTAL | | | |
| 1 | 0 | 2 | 15 | 35 | **50** | 50 | 0 | **50** | **100** | 3 | 3 HRS. |

**OBJECTIVES**

- Introduction to art and appreciation of art and its philosophies.
- Familiarization with principles and theories and graphic and architectural composition
- Development of art and graphic skills.

**SECTION – A, ARTS AND GRAPHICS**

| | | |
|---|---|---|
| **Module-1** | **Philosophy of Art** | Renaissance - Giotto, Leonardo da vinci, Michael Angelo.<br>Baroque – Rambrandt.<br>Realism –Rodin, Ingres.<br>Impressionism – Monet, Renoir,Gauguin, Van gaugh,<br>Fauvism – Matisse. |
| **Module-2** | **Philosophy of Art** | Cubism – Picasso, Henry Moore, Duchamp.<br>Expressionism Paul klee, Chagall<br>Surrealism- Dali |
| **Module-3** | **Theory of Design** | Unity, Elements of Unity, Texture, Colour, Tone Direction, Proportion, Form and shape, Solids and Voids. |
| **Module-4** | **Theory of Design** | Aspects of Unity- Dominance, Harmony, Proportion, Rhythm, Vitality. |

**DRAWING PLATES**

1. To develop free hand skills - Drawing People, Furniture, Fabric and Transport from imitation, observation recapitulation.
2. To develop Rendering Techniques – Texture of materials and finishes, using equipment's like transfers and airbrush.
3. To develop Rendering Techniques – rendering architectural drawings.

**SECTION – B, PHOTOGRAPHY**

| | | |
|---|---|---|
| **Module-1** | **Introduction to Photography** | Development of photography, Historical background, Different types of cameras. |
| **Module-2** | **Photography Techniques** | Lighting techniques, Digital photography with DSLR. |

**LIST OF ASSIGNMENTS (Field Exercises & Drawings)**

1. To understand the techniques of photographing various subjects - Landscape, Portrait, and Building etc.

**REFERENCE BOOKS**


1. Arnold Dana, "Art History – A Very Short Introduction" , Oxford University Press.
2. Stallabrass, Julian, "Contemporary Art – A Very Short Introduction" , Oxford University Press.

**B. ARCH. SEMESTER – II**
**NAR – 206, ARCHITECTURAL SERVICES – I**

| PERIODS | | | EVALUATION SCHEME | | | | | | SUBJECT TOTAL | CREDITS | DURATION OF THEORY PAPER |
|---|---|---|---|---|---|---|---|---|---|---|---|
| LECTURE | TUTORIAL | PRACTICAL/ STUDIO | SESSIONAL ASSESMENT | | | ESE | | | | | |
| | | | CT | TA | TOTAL | THEORY | VIVA | TOTAL | | | |
| 1 | 1 | 0 | 15 | 35 | **50** | 50 | 0 | **50** | **100** | 2 | 3 HRS. |

**OBJECTIVES**

- To understand the basic principles of water supply and sanitation.
- To make them enable to draw the piping system (pipe above ground and underground) for different types of buildings.
- To familiarize the student with plumbing bye laws as per BIS.

**SECTION – A, WATER SUPPLY**

**Module-1 Water Supply**

Need to protect water supply, Requirements of water supply to different types of buildings.
Sources of water supply, Quantity and quality of water.
Conveyance and distribution of water, Overhead tank, Underground tanks, Pipe appurtenances.
Hot and cold water supply system in a low rise and high rise buildings. Distribution system in campus, Pipes their size, Jointing and different fittings.

**SECTION – B, SANITATION**

**Module-2 Sanitary Engineering**

Purpose and principles of sanitation, Collection and conveyance of waste matter.
Quantity and Quality of refuse, Design and construction of sewer's and sewer appurtenances.
Garbage and sewage disposal.
Roof and surface water drainage. Rain water storage and water harvesting principles and methods.
Sanitary appliances, Traps their variety, Pipes and joints, Sanitary pipes works below and above ground level.

**SECTION – C, APPLICATION**

**Module-3 Plumbing & Sanitary Drawing**

The plumbing and sanitary system for individual spaces e.g. kitchen, toilet, wash area, utility etc.
The plumbing and sanitary system for a residence.

**REFERENCE BOOKS**


1. The construction of building by Barry-vol.-5
2. Water supply and Sanitation by Charanjit Shah
3. Water supply & sanitary Engineering by S.C.Rangawala
4. Water supply & sanitary Engineering by S. K.Hussain

**B. ARCH. SEMESTER – II**
**NAR – 207, HISTORY OF ARCHITECTURE – I**

| PERIODS | | | EVALUATION SCHEME | | | | | | SUBJECT TOTAL | CREDITS | DURATION OF THEORY PAPER |
|---|---|---|---|---|---|---|---|---|---|---|---|
| LECTURE | TUTORIAL | PRACTICAL/ STUDIO | SESSIONAL ASSESMENT | | | ESE | | | | | |
| | | | CT | TA | TOTAL | THEORY | VIVA | TOTAL | | | |
| 2 | 1 | 0 | 15 | 35 | **50** | 50 | 0 | **50** | **100** | 3 | 3 HRS. |

**OBJECTIVES**

- To inform about the development of architecture in the ancient western world and the cultural and contextual determinants that produced that architecture.
- To understand architecture as evolving within specific cultural contexts including aspects of politics, society, religion and climate
- To gain knowledge of the development of architectural form with reference to technology, style and character in the prehistoric world and in ancient Egypt, West Asia, Greece and Rome.

| | | |
|---|---|---|
| **Module-1** | **Prehistoric Age** | Introducing concepts of culture and civilization - Paleolithic and Neolithic culture - art forms and evolution of shelter - megaliths - agricultural revolution and its impact on culture and civilization with examples from Carnac and Stonehenge. |
| **Module-2** | **Birth of Civilization** | In reference to the Asia-minor region with nascent cities like Jericho, Catalhoyuk, and Hattasus etc. |
| **Module-3** | **Ancient River Valley Civilizations: Egypt** | Landscape and culture of Ancient Egypt- history - religious and funerary beliefs and practices - monumentality tomb architecture: evolution of the pyramid from the mastaba – Great Pyramid of Cheops, Gizeh etc. |
| **Module-4** | **Ancient River Valley Civilizations: Egypt** | Temple architecture: mortuary temples and cult temples - Temple of Ammon Ra, Karnak, Khons - Temple of Abu Simbel (Rock Cut) etc. |
| **Module-5** | **Ancient River Valley Civilizations: Mesopotamia** | Urbanization in the fertile crescent - Sumerian, Babylonian, Assyrian and Persian culture, Evolution of city-states and their character, law and writing , theocracy and architecture - Ninveh, Khorsahbad, Marie, Babylon etc. |
| **Module-6** | **Ancient River Valley Civilizations: Mesopotamia** | Evolution of the ziggurat - Ziggurat of Ur, Urnamu etc., Evolution of the palaces - Palace of Sargon, Khorsabad - Palace at Persepolis. |
| **Module-7** | **Ancient Civilizations: Aegean** | With reference to cities in Aegean like Troy, Sparta, Mycenae, which formed the basic of Greek civilization? |
| **Module-8** | **Classicial Period: Greece** | Orders in architecture: Doric, Ionic, Corinthian - optical illusions in architecture, Domestic architecture; Public Buildings: Agora, Stoas, Theaters, Bouletrion and Stadias. |
| **Module-9** | **Classicial Period: Greece** | Greek temple: evolution and classification - Parthenon and Erecthion, Geometry and symmetry of individual buildings and their relationship with others based on different organizing principles and conditions of site. |
| **Module-10** | **Classical Period: Rome** | Roman history: Republic and Empire- Roman religion and the Roman temple - Roman character - lifestyle, Roman urban planning - art and architecture as imperial propaganda: forums and basilicas. |
| **Module-11** | **Classical Period: Rome** | Orders in architecture: Tuscan and Composite, Domestic architecture – structural forms, materials and techniques of construction. |
| **Module-12** | **Classical Period: Rome** | Rome: Forum Romanum and other Imperial forums, Enclosure and manipulation of space: Pantheon - Public buildings: Colloseum, Circus Maximus, Thermae of Caraculla. |

**REFERENCE BOOKS**


1. Sir Banister Fletcher, A History of Architecture, University of London, The AntholonePress, 1996.
2. Spiro Kostof - A History of Architecture - Setting and Rituals, Oxford UniversityPress, London, 1985.
3. Leland M Roth; Understanding Architecture: Its elements, history and meaning; Craftsman House; 1994
4. Pier Luigi Nervi, General Editor - History of World Architecture - Series, Harry N.Abrams,
5. Inc.Pub., New York, 1972.

6. S.Lloyd and H.W.Muller, History of World Architecture - Series, Faber and Faber Ltd.,
7. London, 1986.
8. Gosta,E.Samdstrp, Man the Builder, Mc.Graw Hill Book Company, New York, 1970.
9. Webb and Schaeffer; Western Civilisation Volume I; VNR: NY: 1962
10. Vincent Scully: Architecture; Architecture – The Natural and the Man Made: Harper Collins Pub: 1991.

**B. ARCH. SEMESTER – II**
**NAR – 208, RESEARCH - I**

| PERIODS | | | EVALUATION SCHEME | | | | | | SUBJECT TOTAL | CREDITS | DURATION OF THEORY PAPER |
|---|---|---|---|---|---|---|---|---|---|---|---|
| LECTURE | TUTORIAL | PRACTICAL/ STUDIO | SESSIONAL ASSESMENT | | | ESE | | | | | |
| | | | CT | TA | TOTAL | THEORY | VIVA | TOTAL | | | |
| 1 | 1 | 0 | 15 | 35 | **50** | 0 | 0 | **0** | **50** | 2 | - |

**OBJECTIVES**

- Understanding basic principles of any research with special reference to architectural research and applications.

| | | |
|---|---|---|
| **Module-1** | **Introduction** | Importance of architectural research and writing. |
| **Module-2** | **Technical Writing** | Language, Impersonal and formal language, Elements of style, Techniques. |
| **Module-3** | **Book Reviews** | Basics of reviewing a book. |

**LIST OF ASSIGNMENTS**

1. Review of an architectural book/books prescribed by subject teacher.
2. Report on ongoing architectural project.

**REFERENCE BOOKS**

1. Raman Meenakshi and Sharma Sangeeta, “Technical Communications – Principles and Practices”, Oxford UniversityPress, New Delhi.

**B. ARCH. SEMESTER – II**
**NAR – 209, ECOLOGY & ENVIRONMENT**

| PERIODS | | | EVALUATION SCHEME | | | | | | SUBJECT TOTAL | CREDITS | DURATION OF THEORY PAPER |
|---|---|---|---|---|---|---|---|---|---|---|---|
| LECTURE | TUTORIAL | PRACTICAL/ STUDIO | SESSIONAL ASSESMENT | | | ESE | | | | | |
| | | | CT | TA | TOTAL | THEORY | VIVA | TOTAL | | | |
| 1 | 1 | 0 | 10 | 15 | **25** | 25 | 0 | **25** | **50** | 2 | 3 HRS. |

**OBJECTIVES**

- To inform about the fundamentals related to Ecosystem.
- To develop understanding of the Environment and Environmental issues, their causes and mitigation measures.
- Finally, the application of ecological and environmental principles and guidelines to their architecture/planning projects.

| | | |
|---|---|---|
| **Module-1** | **Introduction** | Definition and origin of ecology, Basic concepts of ecology, Major divisions of ecology, Definition of environment, Interaction among ecological factors – light & temperature, precipitation, humidity, gases/wind, topography. |
| **Module-2** | **Soil – Edafic Factors** | Definition of soil, Formation of soil, Soil profile, Classification, Soil complex, Soil depletion, degradation and conservation. |
| **Module-3** | **Water Regimes** | Water in nature, Water balance problem, Surface / ground water, Sources of water pollution, Ground water pollution, Marine pollution, Prevention / control of pollution, Conservation & management. |
| **Module-4** | **Biotic Factors** | Concept of species, Plants – Propagation, Animals – Extinction, Human population dynamics, Ecological succession, Ecosystem development, Climate concept, formation of biomes. |
| **Module-5** | **Ecosystem** | Kinds of ecosystem – natural and artificial, Structure, function and energy flow of ecosystem. |
| **Module-6** | **Air Pollution** | Kinds of air pollution, Sources of air pollutants, Effects – Depletion of Ozone, Acid Rain, Prevention & control of air – pollution, Noise pollution |
| **Module-7** | **Global Environmental Issues** | Global warming & climate change, Loss of bio-diversity, Desertification, Deforestation, |

**REFERENCE BOOKS**


1. Sharma P.D., "Ecology and Environment", Rastogi Publications, Meerut, India.
2. Perlman, D. and Miclder, J., "Practical Ecology for Planners Developers and Citizens", Island Press.
3. Platt, R.H., "The Ecological City: Preserving and Restoring Urban Bio diversity", N.Y.Academy of Sciences.
4. Register, R., "Ecocities: Building cities in balance with Nature", New Society Publishers.
5. Todd, N.J. and Todd, J., "Principles of Ecological Designs", North Atlantic Book.
6. Paolo, S., "Arcology: The City in the Image of Man", Rev. Edn. MIT Press
7. Voula, M., "Sustainable Development, Energy and the city: A Civilization of Concepts and Actions",Elsevier.