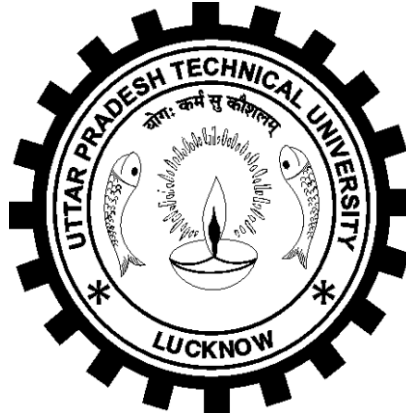


**UTTAR PRADESH TECHNICAL UNIVERSITY,
LUCKNOW**



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. N O.	SUB JEC T COD E	NAME OF THE SUBJECT	PERIODS			EVALUATION SCHEME						SUB JEC T TOT AL	CRE DIT S	DURA TION OF THEO RY PAPE R
			LEC TUR E	TUT ORIA L	PRAC TICAL / STUDI O	SESSIONAL ASSESMENT			ESE					
						C T	T A	TOT AL	THE ORY	VI V A	TO TA L			
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&TECHNIQUE S	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	

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SEMESTER - II

SCHEME OF TEACHING AND EXAMINATION

S. NO .	SUB JEC T COD E	NAME OF THE SUBJECT	PERIODS			EVALUATION SCHEME						SUB JEC T TOT AL	CRE DITS	DURA TION OF THEO RY PAPE R
			LEC TUR E	TUTO RIAL	PRAC TICAL / STUDI O	SESSIONAL ASSESMENT			ESE					
						C T	T A	TOT AL	THE ORY	VI V A	TO TAL			
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	

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SEMESTER - III

SCHEME OF TEACHING AND EXAMINATION

S. N O.	SUB JEC T COD E	NAME OF THE SUBJECT	PERIODS			EVALUATION SCHEME						SUB JEC T TOT AL	CRE DIT S	DURA TION OF THEO RY PAPE R
			LEC TUR E	TUT ORIA L	PRAC TICA L/ STUDI O	SESSIONAL ASSESMENT			ESE					
						C T	T A	TO TA L	THE OR Y	VI V A	TO TA L			
1	NAR -301	ARCHITECTURAL DESIGN - III	1	0	5	30	70	100	75	25	100	200	6	6 HRS.
2	NAR -302	CONSTRUCTION & MATERIALS - III	2	0	4	25	50	75	50	25	75	150	6	3 HRS.
3	NAR -303	ARCHITECTURAL STRUCTURES - III	2	1	0	15	35	50	50	0	50	100	3	3 HRS.
4	NAR -304	ARCHITECTURAL DRAWING - III	2	2	2	15	35	50	50	0	50	100	6	3 HRS.
5	NAR -305	ARTS & GRAPHICS - III	1	0	2	15	35	50	50	0	50	100	3	3 HRS.
6	NAR -306	ARCHITECTURAL SERVICES - II	1	1	0	15	35	50	50	0	50	100	2	3 HRS.
7	NAR -307	HISTORY OF ARCHITECTURE - II	2	1	0	15	35	50	50	0	50	100	3	3 HRS.
8	NAR -308	RESEARCH - II	1	1	0	15	35	50	0	0	0	50	2	
9	NAR -309	CLIMATOLOGY	1	1	0	10	15	25	25	0	25	50	2	3 HRS.
		HUMAN VALUES & PROFESSIONAL ETHICS	2	0	0	15	10	25	50	0	50	75*		2 HRS.
		TOTAL	15	7	13							950	33	
		GENERAL PROFICIENCY										50		
		GRAND TOTAL										1000	33	

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SEMESTER - IV

SCHEME OF TEACHING AND EXAMINATION

S. NO .	SUB JEC T COD E	NAME OF THE SUBJECT	PERIODS			EVALUATION SCHEME						SUB JEC T TOT AL	CRE DITS	DURA TION OF THEO RY PAPE R
			LEC TUR E	TUTO RIAL	PRAC TICAL / STUDI O	SESSIONAL ASSESMENT			ESE					
						CT	TA	TO TA L	THE ORY	VI V A	TO TA L			
1	NAR - 401	ARCHITECTURAL DESIGN - IV	1	0	5	30	70	100	75	25	100	200	6	6 HRS.
2	NAR - 402	CONSTRUCTION & MATERIALS - IV	2	0	4	25	50	75	50	25	75	150	6	3 HRS.
3	NAR - 403	ARCHITECTURAL STRUCTURES - IV	2	1	0	15	35	50	50	0	50	100	3	3 HRS.
4	NAR - 404	ARCHITECTURAL DRAWING - IV	2	2	2	15	35	50	50	0	50	100	6	3 HRS.
5	NAR - 405	ARTS & GRAPHICS - IV	1	0	2	15	35	50	50	0	50	100	3	3 HRS.
6	NAR - 406	ARCHITECTURAL SERVICES - III	1	1	0	15	35	50	50	0	50	100	2	3 HRS.
7	NAR - 407	HISTORY OF ARCHITECTURE - III	2	1	0	15	35	50	50	0	50	100	3	3 HRS.
8	NAR - 408	RESEARCH - III	1	1	0	15	35	50	0	0	0	50	2	
9	NAR - 409	BUILDING ECONOMICS	1	1	0	10	15	25	25	0	25	50	2	3 HRS.
		CYBER LAWS	2	0	0	15	10	25	50	0	50	75*		2 HRS.
	TOTAL		15	7	13							950	33	
	GENERAL PROFICIENCY											50		
	GRAND TOTAL											1000	33	

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SEMESTER - V

SCHEME OF TEACHING AND EXAMINATION

S. NO .	SUB JEC T COD E	NAME OF THE SUBJECT	PERIODS			EVALUATION SCHEME						SUB JEC T TOT AL	CRE DITS	DURA TION OF THEO RY PAPE R
			LEC TUR E	TUTO RIAL	PRAC TICAL / STUDI O	SESSIONAL ASSESMENT			ESE					
						CT	TA	TO TA L	THE ORY	VI V A	TO TA L			
1	NAR - 501	ARCHITECTURAL DESIGN - V	1	0	5	30	70	100	75	25	100	200	6	6 HRS.
2	NAR - 502	CONSTRUCTION & MATERIALS - V	2	0	4	25	50	75	50	25	75	150	6	3 HRS.
3	NAR - 503	ARCHITECTURAL STRUCTURES - V	2	1	0	15	35	50	50	0	50	100	3	3 HRS.
4	NAR - 504	INTERIOR DESIGN	2	2	2	15	35	50	50	0	50	100	6	3 HRS.
5	NAR - 505	ESTIMATION & SPECIFICATIONS	1	0	2	15	35	50	50	0	50	100	3	3 HRS.
6	NAR - 506	ARCHITECTURAL SERVICES - IV	1	1	0	15	35	50	50	0	50	100	2	3 HRS.
7	NAR - 507	HISTORY OF ARCHITECTURE - IV	2	1	0	15	35	50	50	0	50	100	3	3 HRS.
8	NAR - 508	RESEARCH - IV	1	1	0	15	35	50	0	0	0	50	2	
9	NAR - 509	DISASTER MANAGEMENT	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	

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SEMESTER - VI

SCHEME OF TEACHING AND EXAMINATION

S. NO .	SUB JEC T COD E	NAME OF THE SUBJECT	PERIODS			EVALUATION SCHEME						SUB JEC T TOT AL	CRE DITS	DURA TION OF THEO RY PAPE R
			LEC TUR E	TUTO RIAL	PRAC TICAL / STUDI O	SESSIONAL ASSESMENT			ESE					
						CT	TA	TO TA L	THE ORY	VI VA	TO TA L			
1	NAR - 601	ARCHITECTURAL DESIGN - VI	1	0	5	30	70	100	75	25	100	200	6	6 HRS.
2	NAR - 602	CONSTRUCTION & MATERIALS - VI	2	0	4	25	50	75	50	25	75	150	6	3 HRS.
3	NAR - 603	ARCHITECTURAL STRUCTURES - VI	2	1	0	15	35	50	50	0	50	100	3	3 HRS.
4	NAR - 604	LANDSCAPE DESIGN	2	2	2	15	35	50	50	0	50	100	6	3 HRS.
5	NAR - 605	BUILDING BYE - LAWS	1	0	2	15	35	50	50	0	50	100	3	
6	NAR - 606	ARCHITECTURAL SERVICES - V	1	1	0	15	35	50	50	0	50	100	2	3 HRS.
7	NAR - 607	HISTORY OF ARCHITECTURE - V	2	1	0	15	35	50	50	0	50	100	3	3 HRS.
8	NAR - 608	RESEARCH - V	1	1	0	15	35	50	0	0	0	50	2	
9	NAR - 609	THEORY OF ARCHITECTURE	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	

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SEMESTER - VII

SCHEME OF TEACHING AND EXAMINATION

S. NO .	SUBJ ECT C O D E	NAME OF THE SUBJECT	PERIODS			EVALUATION SCHEME						SUBJ ECT T O T A L	CRE DITS	DURA TION OF THEO RY PAPER
			LECT URE	TUTO RIAL	PRACT ICAL/ STUDI O	SESSIONAL ASSESMENT			ESE					
						CT	TA	TO TA L	THE ORY	VI VA	TO TA L			
1	NAR - 701	PRACTICAL TRAINING - I	-			-		500	-		500	1000		
								</						

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SEMESTER - VIII

SCHEME OF TEACHING AND EXAMINATION

S. N O.	SUB JEC T COD E	NAME OF THE SUBJECT	PERIODS			EVALUATION SCHEME						SUB JEC T TOT AL	CRE DITS	DURA TION OF THEO RY PAPE R
			LEC TUR E	TUTO RIAL	PRAC TICAL / STUDI O	SESSIONAL ASSESMENT			ESE					
						CT	TA	TO TA L	THE ORY	VI V A	TO TA L			
1	NAR - 801	ARCHITECTURAL DESIGN - VII	1	0	8	30	70	100	75	25	100	200	9	6 HRS.
2	NAR - 802	CONSTRUCTION & MATERIALS - VII	2	0	4	25	50	75	50	25	75	150	6	3 HRS.
3	NAR - 803	ADVANCED STRUCTURES	1	1	0	15	35	50	50	0	50	100	2	3 HRS.
4	NAR - 804	ELECTIVE - I (TOWN PLANNING)	1	2	0	15	35	50	50	0	50	100	3	3 HRS.
5	NAR - 805	ELECTIVE - II	1	2	0	15	35	50	50	0	50	100	3	3 HRS.
6	NAR - 806	ADVANCED SERVICES	1	1	0	15	35	50	50	0	50	100	2	3 HRS.
7	NAR - 807	PROFESSIONAL PRACTICE - I	2	1	0	15	35	50	50	0	50	100	3	3 HRS.
8	NAR - 808	DISSERTATION	0	5	0	-		50	-		50	100	5	
	TOTAL		9	12	12							950	33	
	GENERAL PROFICIENCY											50		
	GRAND TOTAL											1000	33	

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SEMESTER - IX

SCHEME OF TEACHING AND EXAMINATION

S. NO .	SUBJ ECT C O D E	NAME OF THE SUBJECT	PERIODS			EVALUATION SCHEME						SUBJ ECT T O T A L	CRE DITS	DURA TION OF THEO RY P A P E R
			LEC T U R E	T U T O R I A L	P R A C T I C A L / S T U D I O	S E S S I O N A L A S S E S S M E N T			E S E					
						C T	T A	T O T A L	T H E O R Y	V I V A	T O T A L			
1	NAR - 901	ARCHITECTURAL THESIS	1	0	23	-		400	-		250	650	24	
2	NAR - 902	PROFESSIONAL PRACTICE - II	2	1	0	15	35	50	50	0	50	100	3	3 HRS.
3	NAR - 903	ELECTIVE - III	1	2	0	15	35	50	50	0	50	100	3	3 HRS.
4	NAR - 904	ELECTIVE - IV	1	2	0	15	35	50	50	0	50	100	3	3 HRS.
	TOTAL		5	5	23							950	33	
	GENERAL PROFICIENCY											50		
	GRAND TOTAL											1000	33	

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SEMESTER - X

SCHEME OF TEACHING AND EXAMINATION

S. NO .	SUBJ ECT COD E	NAME OF THE SUBJECT	PERIODS			EVALUATION SCHEME						SUBJ ECT TOT AL	CRE DITS	DURA TION OF THEO RY PAPER
			LECT URE	TUTO RIAL	PRACT ICAL/ STUDI O	SESSIONAL ASSESSMENT			ESE					
						CT	TA	TO TA L	THE ORY	VI V A	TO TA L			
1	NAR - 1001	PRACTICAL TRAINING - II	-			-		500	-		500	1000		
											</			

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. Building process, Role of other professional in building. A general survey of the changes in habitat in history. 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. 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. 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 Bricks, 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 (Market 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 on 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. 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

- Nautiyal B. D., "Introduction to Structural Analysis", B.H.U.
- Punmia P. C., "Strength of Materials & Mechanics of Structures".
- Khurmi R. S., "Strength of Materials".
- Senol Utku , "Elementary Structural Analysis".
- 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. I.H. 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 uses, 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 Photogrammetry	Definition, Principles and application of photogrammetry 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 University Press, 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. Pre-Modern - Hunter's and Gathers, Pastoral agrarians and Traditional states. Modern. 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 EXERCISES

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 – Barry Volume 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

- Nautiyal B. D., "Introduction to Structural Analysis", B.H.U.
- Punmia P. C., "Strength of Materials & Mechanics of Structures".
- Khurmi R. S., "Strength of Materials".
- Senol Utku, "Elementary Structural Analysis".
- 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. I.H. 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. Baroque – Rambrandt. Realism –Rodin, Ingres. Impressionism – Monet, Renoir, Gauguin, Van gaugh, Fauvism – Matisse.
Module-2	Philosophy of Art	Cubism – Picasso, Henry Moore, Duchamp. Expressionism Paul klee, Chagall 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	Classical Period: Greece	Orders in architecture: Doric, Ionic, Corinthian - optical illusions in architecture, Domestic architecture; Public Buildings: Agora, Stoas, Theaters, Bouletrion and Stadias.
Module-9	Classical Period: Greece	Greek temple: evolution and classification - Parthenon and Erechthion, 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: Colosseum, 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.Samdstp, 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

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

REFERENCE BOOKS

- Raman Meenakshi and Sharma Sangeeta, "Technical Communications – Principles and Practices", Oxford University Press, 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 Mielder, 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.