

Punyashlok Ahilyadevi Holkar Solapur University, Solapur



NAAC Accredited-2015

'B' Grade (CGPA 2.62)

Under the Faculty:

Science & Technology

CHOICE BASED CREDIT SYSTEM.

Syllabus: Bachelor of Architecture

Name of the Course: B.Arch. Part I- Sem. I and Sem. II

(Syllabus to be implemented from A.Y. 2021-22)

2 DETAILED SYLLABUS.

PUNYASHLOK AHILYADEVI HOLKAR SOLAPUR UNIVERSITY

Punyashlok Ahilyadevi Holkar Solapur University, Solapur																	
Faculty of Science and Technology																	
Choice Based Credit System structure of First Year B.Arch with effect from(w.e.f). 2021-22																	
As per Council of Architecture ,New Delhi (COA) Guidelines based on National Education Policy (NEP)																	
B.Arch. First year - Semester II																	
Subject Code	subject category	Subject Title	Teaching scheme in periods per			Examination Scheme										Total	credits
			60 minutes/ lecture			Theory				Practical/Viva-voce							
			lectures per week	practical/ studio per week	Total periods /week	paper duration in hours	ISE		ESE		ICA		ESE				
							L	P/S	T	Max.	Min.	Max.	Min.	Max.	Min.		
								50%		45%			50%		45%		
21 AR2-01	PC	Architectural Design- II	1	7	8						100	50	150	67	250	8	
21 AR2-02	BS & AE	Building Construction and Material-II	1	5	6	4			100	45	50	25	100	45	250	6	
21 AR2-03	BS & AE	Theory of Structure -II	2		2	3	30	15	70	31					100	2	
21 AR2-04	PC	History of Architecture -I	2		2	3	30	15	70	31					100	2	
21 AR2-05	PC	Architectural Graphics and Drawing -II	1	3	4	3	30	15	70	31					100	4	
21 AR2-06	PC	Basic Design and Visual Arts -II		3	3						100	50			100	3	
21 AR2-07	PC	Workshop-II		3	3						50	25			50	3	
21 AR2-08	EC/PAEC	Elective-II : A. Furniture Design B. Creative Writing C. Mud Architecture		2	2						50	25			50	2	
		Grand Total			30		90		310		350		250		1000	30	
		Democracy, Election & Good Governance	As Per PAH solapur university Guidelines														
Abbreviations: L- Lectures, P- Practicals, S- Studios, ISE- In Semester Exam., ESE - End Semester exam, ICA- Internal Continuous Assessment																	
Subject Categories : PC - Professional Core Courses ,BS & AE - Building Sciences and Applied Engineering , PE - Professional Elective , PAEC- Arofessional Ability Enhancement Courses , SEC - Skill Enhancement courses																	
Number of subjects / Head - 08			Number of Theory Examination - 04						Number of Oral Examination - 02								
EACH LECTURE / PRACTICAL /STUDIOS ARE OF 60 MINUTES DURATION .																	
Note :	1. Theory exam - ISE -Internal Tests - marks to be awarded by conducting Minimum Two Test by the subject teacher , ESE - University Theory examination																
	2. Oral exam - Prograsive marks (ICA) to be awarded by the subject teacher . Oral/ viva - voce examination (ESE - Oral) shall be conducted by one internal and two external examiner appointed by the university																
Pass percentage shall not be less than 50% in aggregate of the total marks of the year .																	

Grade and Grade Point Average:

A grade assigned to each head based upon marks obtained by the student in examination of the course.

CONVERSION OF MARKS INTO GRADES SGPA				
Sr.No.	Range of Marks	Grade	Grade Point	Description of Performance
1	80 onwards	O	10	EXCELLENT /OUTSTANDING
2	70-79	A+	9	VERY GOOD
3	60-69	A	8	GOOD
4	55-59	B+	7	FAIR
5	50-54	B	6	ABOVE AVERAGE
6	45-49	C+	5	AVERAGE
7	<45	F	0	FAIL
8		DR		DROPPED OUT

CONVERSION OF AVERAGE GRADE POINTS INTO GRADES		
Sr.No.	SGPA/CGPA	Grade
1	9.5-10	O
2	8.5-9.49	A+
3	7.5-8.49	A
4	6.5-7.49	B+
5	5.5-6.49	B
6	4.5-5.49	C+
7	<4.49	F

Computation of SGPA and CGPA

- 1) The University adopts absolute grading system wherein the marks are converted to grades, and every semester result will be declared with semester grade point average (SGPA) and Cumulative Grade Point Average (CGPA). The CGPA will be calculated for every semester, except for the first semester.
- 2) The grading system with the letter grades and the assigned range of marks under absolute grading system are as given below:

Computation of SGPA and CGPA

- A) The following expressions shall be used to compute the Semester Grade Point Average (SGPA) and Cumulative Grade Point Average (CGPA) respectively:

$$SGPA = \frac{\sum \text{Course Credits} \times \text{Grade Points for all the Courses in that Semester}}{\sum \text{Course Credits for all the Courses in that Semester}}$$

$$CGPA = \frac{\sum \text{Course Credits} \times \text{Grade Points for all Courses excluding those with F grades until that Semester}}{\sum \text{Course Credits for all Courses excluding those with F grades until that semester}}$$

The SGPA and CGPA shall be rounded off to 2 decimal points and reported in the grade cards.

Illustration for Computation of SGPA and CGPA**Sem. I**

(a) SGPA and CGPA Calculations: An Illustrative Example for one academic year							
Semester (Odd:I, Even:II)	Course Number	Credits	Marks scored	Grade Points	Grade	Credit points	SGPA
	1	2	3	4	5	(2x4) 6 (2x4)	7
SEM.I	21 AR1-01	8	45	0	F	8x0 =0	SGPA = 132/30 = 4.40
SEM.I	21 AR1-02	6	48	5	C+	6x5 = 30	
SEM.I	21 AR1-03	2	50	6	B	2x6 = 12	
SEM.I	21 AR1-04	2	50	6	B	2x6=12	
SEM.I	21 AR1-05	4	50	6	B	4x6=24	
SEM.I	21 AR1-06	3	64	8	A	3x8 = 24	
SEM.I	21 AR1-07	3	53	6	B	3x6 = 18	
SEM.I	21 AR1-08	2	54	6	B	2x6 = 12	SGPA = 4.40
		30 (*22)				132	

(22*): Total credits of the semester excluding the credits of the courses under F grade. Considered for the calculation of CGPA of the two consecutive semesters under consideration.

Sem.II

(a) SGPA and CGPA Calculations: An Illustrative Example for one academic year							
Semester (Odd:I,Even:II)	Course Number	Credits	Marks scored	Grade Points	Grade	Credit points	SGPA
	1	2	3	4	5	(2x4) 6 (2x4)	7
SEM.II	21 AR2-01	8	43	0	F	8X0=0	SGPA = 139/30 = 4.63
SEM.II	21 AR2-02	6	50	6	B	6x6 = 36	
SEM.II	21 AR2-03	2	54	6	B	2x6 = 12	
SEM.II	21 AR2-04	2	84	10	O	2x10=20	
SEM.II	21 AR2-05	4	50	6	B	4x6=24	
SEM.II	21 AR2-06	3	51	6	B	3x6= 18	
SEM.II	21 AR2-07	3	49	5	C+	3x5 = 15	SGPA= 4.64
SEM.II	21 AR2-08	2	55	7	B+	2x7 = 14	
		30 (*22)				139	

(22*): Total credits of the semester excluding the credits of the courses under F grade. Considered for the calculation of CGPA of the two consecutive semesters under consideration.

$$\text{CGPA} = 132 + 139 (\text{TOTAL SGPA SEM.I} + \text{SEM.II}) / 22+22 (\text{EARNEDCREDITS}) = 6.15$$

CGPA = 6.15

If the Student secures letter grades as detailed below after reappearance to SEE, then the SGPA and CGPA shall be calculated as indicated below.

Sem. I

(a) SGPA and CGPA Calculations: An Illustrative Example for one academic year							
Semester (Odd:I,Even:II)	Course Number	Credits	Marks scored	Grade Points	Grade	Credit points	SGPA
	1	2	3	4	5	(2x4) 6 (2x4)	7
SEM.I	21 AR1-01	8	50	6	B	8X6 =48	SGPA = 132+48/30 = 6.00
		30				148	SGPA = 6.00

Sem.II

(a) SGPA and CGPA Calculations: An Illustrative Example for one academic year							
Semester (Odd:I,Even:II)	Course Number	Credits	Marks scored	Grade Points	Grade	Credit points	SGPA
	1	2	3	4	5	(2x4) 6 (2x4)	7
SEM.II	21 AR2-01	8	55	7	B+	8X7 =56	SGPA = 139+56/30 = 6.50
		30				139	Sgpa = 6.50

$$\text{CGPA} = 180 + 195 (\text{TOTAL SGPA SEM.I} + \text{SEM.II}) / 30+30(\text{EARNEDCREDITS}) = 6.25$$

CGPA = 6.25

B) (b) CGPA Calculation of the Programme: An Illustrative Example

SEMESTER	IST YEAR	IIND YEAR	IIIRD YEAR	IVTH YEAR	VTH YEAR	TOTAL
CREDITS OF THE SEMESTER	60	60	60	50	40	270
CGPA	6.25	7.50	6.50	8.00	10.00	38.5

$$\text{CGPA} = (60 \times 6.25 + 60 \times 7.50 + 60 \times 6.5 + 50 \times 8 + 40 \times 10) / 270 = 2015/270 = 7.46$$

CGPA = 7.46

21 AR1 – 01: ARCHITECTURAL DESIGN- I

Teaching Scheme Per week		Credit	Examination Scheme				
Lecture - L	1	1	Theory Exam -		Practical / Oral Exam		Total
Practical/Studio P/S	7	7	ISE	ESE	ICA (MIN 50)	ESE (MIN 67)	
Total	8	8	--	--	100	150	250

Objective:

To initiate the concept of space making to suit the activities to be contained, to be enabled; introduction to design processes through storylines, enactment of acts, sketches and models; application of knowledge systems of allied subjects in architectural design.

End semester outcome:

1. At the end of the semester students must be well equipped and knowledgeable enough to read design.
2. Students will be able to assemble simple spatial elements in articulated concepts and visually represent them through hand-made 2D drawings and models.

Course Outline:

- Introduction to architecture, its scope, relation to the fields of Science& Technology, Mathematics, Philosophy, Religion, Sociology, Psychology, etc.
- Introduction to Anthropometry; minimum and optimum area requirements with respect to human body and its postures; movement and circulation spaces.
- Concepts of volume and scale, proportion; application of principles of composition.
- Introduction to design process; relationship between idea, concept, space- form and structure and functional requirements; various methods of idea generation with use of form, through study of nature and geometry, music, literature, other art forms.
- Understand space planning based on activity, which will involve human activity and movement.
- Application of the above processes to designing spaces for particular set of activities.

Design assignment:

- Study of local architecture with respect to their contexts in the form of sketches; exploration of principles of architecture. Observation and documentation of the built environment around and experiencing enclosures (field trips) to learn basics of architectural representation.
- Study of anthropometry as per standards and through case studies of a single functional, multi-functional and connecting spaces
- Generating of design through media like music, drama, stories, some form of performing art, nature or geometry
- Design of a single function space like pavilion, kiosk, bus stop, theatre stage, individual units in a residence.
- Measured drawing exercise of spaces – to get a grip of the functional and spatial aspects of the space, eg.- a classroom (mono functional), courtyard, library, canteen(focus will be understand drawing representation techniques by measure drawings of spaces in immediate environment and premises.

Time bound design assignment:

- Design - 4 hours and one day assignment
- Example: Product design, furniture element, Paper Art, Signage,etc.

Sketching:

- Freehand sketching with different media. Preferably outdoor cityscapes, monuments, objects with varying surfaces, volumes using various time modes. (Same object in two minutes to two hours/ outdoor or indoor)
- Sketch book size, papers, to be specified. (Preferable half of A4).
- Anthropometric sketches along with live models of units in design along with Interior furniture.

Submission format:

1. Sketch file.
2. Study documentation, reports and data collection in file form/drawing form.
3. Design portfolio.
4. Design Models, study models.

Reference Books:

- Anthony Di Mari and Nora Yoo, " Operative Design: A Catalogue of Spatial Verbs", BIS Publishers.
- Anthony Di Mari and Nora Yoo, " Operative Design: A Catalogue of Spatial Verbs", BIS Publishers.
- Bruno Munari, "Design as Art", Penguin UK, 25-Sep-2008
- Charles George Ramsey and Harold Sleeper, " Architectural Graphic Standards", 1992, Wiley
- Debkumar Chakrabarti, " Indian Anthropometric Dimensions for Ergonomic Design Practice", 1997
- Frank Ching, James F. Eckler, "Introduction to Architecture", 2012, John Wiley & Sons, US
- Frank D.K. Ching, " Architecture: Form, Space, and Order", 4th Edition, Sep. 2014, John Wiley & Sons
- John Hancock Callender, " Time-Saver Standards for Architectural Design Data", 1982, McGraw-Hill
- Neufert Architects' Data by Ernst Neufert
- Francis D.K. Ching –Elements of Architecture
- Rendering with pen and ink
- Walter Gropius – Total Architecture
- Prammar V.S. – Fundamentals in Architecture

21 AR1-02: Building Construction and Material- I

Teaching Scheme Per week		Credit	Examination Scheme				
Lecture - L	1	1	Theory Exam -		Practical / Oral Exam		Total
Practical/Studio P/S	5	5	ISE	ESE (MIN 45)	ICA (MIN 25)	ESE (MIN 45)	
Total	6	6	--	100	50	100	250

Course Objective:

To develop a fundamental understanding of basic building elements, their function and behavior under various conditions with specific reference to load bearing construction.

To study the principles of load bearing structures with respect to– foundation, plinth, wall using different materials suitable for load bearing construction.

To study and understand properties and uses of basic building materials.

End semester outcome:

Students should become conversant with different parts of structure specially load bearing construction with various material.

Course Outline:

Building Construction and Material

- Introduction to simple masonry structure, various components and materials used for construction.
- Different types of soils, properties, bearing capacity of soil with respect to foundation, angle of repose, soils best suited for building construction
- Brick: Types, properties, uses and manufacturing methods.
Brick Walls: Types of brick walls and bonds, mortar types, plasters, buttresses; tools used in brickwork
- Stone: Types, properties, quarrying and finishing.
Stone Walls: Various types of masonry walls; tools used in stonework
- Alternative materials for Wall construction: Concrete Masonry Unit, Clay Blocks, Fly Ash Blocks, Aerated Concrete Blocks, Stabilized Mud Blocks, Adobe, Cob, Composite Walls: Manufacture, uses and properties, wall construction and detailing.
- Masonry foundations: Simple load bearing foundations in brick and stone
Masonry foundations in black cotton soil; masonry retaining walls different types of soils, properties, bearing capacity of soil with respect to foundation, angle of repose, soils best suited for building construction

Assignments:

1. Building Construction: Student will be given drawing work to represent detailing, specification, technology aspect of the topic they are studying.
2. Building Material: Student will study and will be taught different materials their properties, market forms, uses, way to use them, manufacturing process etc.

Submission format:

1. Journal with sketches to cover the course outline, Building Material and midterm tests
2. Study documentation, reports and data collection in file form/drawing form.
3. Students are expected to draft sketches, detailing and specifications in drawing format
4. Construction portfolio of above-mentioned point 3.

References

- Dr. B.C Punmia (2012) Building Construction (10th edition) Laxmi Publications.
- W.B. McKay (2015) Building construction Vol. 1 (5th edition), Vol. 2 (4th edition) and Vol. 3 (5th edition).
- Roy Chudley, Roger Greeno (2016), Construction Technology, 11th Edition Routledge
- S.C.Rangwala (2013) Engineering materials (Fortieth edition), Charotar Publishing pvt.ltd.
- R. Barry, "Construction of Buildings" Vol 1., 1999 by Wiley-Blackwell
- Francis K Ching 'Building construction', Wiley; 5TH edition (February 17, 2014)

21AR1 – 03: THEORY OF STRUCTURE – I

Teaching Scheme Per week		Credit	Examination Scheme				
Lecture - L	2	2	Theory Exam -		Practical / Oral Exam		Total
Practical/Studio P/S	--	--	ISE (MIN 15)	ESE (MIN 31)	ICA	ESE	
Total	2	2	30	70	--	--	100

Objective:

To understand the Concept of simple load bearing and framed structure and load acting on structure.

End semester outcome:

Understanding of loads and load transfer on various structural component

Course Outline:

1. Introduction:

Terminology of common structural components from foundation to roof and their concept.

2. Loads:

Dead, live, wind, impact and earthquake, conceptual ideas and their effect on buildings as a whole, relevant I.S. Codes. Calculating Total Dead Loads of Walls Slabs etc. from densities.

3. FORCE

a) Applied Mechanics, Statics and Dynamics.

Importance of Study of Forces, its definition, Effects of Forces, Different Systems of Forces, Principle of Transmissibility and Super-position of Forces: Resolution and Composition of Forces:

b) Equilibrium of Concurrent and Non-Concurrent Forces.

Conditions of Equilibrium for a System of Concurrent Forces, Parallelogram, Polygonal & Triangular Law of Forces: Lami's Theorem: Resultant and Equilibrant of a System of Concurrent Forces: Moment as an Effect of a Force. Couple and Properties of Couple, Varignon's Principle, Conditions of Equilibrium for a System of Non-Concurrent Forces

c) Beam- Definition, Types of Supports, Types of Beams classified as Simply Supported, Cantilever, Over Hanging, Roller and Hinged beam:

Types of Load as U.D.L, Point Load & Varying Load.

Determination of Reaction of beam with different types of Loading.

d) Graphic Static- Space diagram, Vector Diagram, Polar and Funicular Polygon diagram, Bows Notation, Graphical condition of equilibrium. Determination of Resultant force, Beam reaction by graphical method

4) Concept of Centroid & Centre of Gravity: Definition, Formula of Centroid for

Rectangular, Triangular, Circular, Semi Circular, Hollow rectangular and

Hollow Circular section. Determination of Compound section by Analytical Method

Assignments:

Topic- wise Assignments, Topic- wise Presentations

Submission format:

Notes, assignments and midterm tests.

Study documentation, reports writeup in file form.

Reference books:

- Strength of Materials—Khurmi
- Strength of Materials—A.P. Dongre
- Strength of Materials—Ramamurtam and S Narayan.

21 AR 01 – 04: Human Settlement Planning

Teaching Scheme Per week		Credit	Examination Scheme				
Lecture - L	2	2	Theory Exam -		Practical / Oral Exam		Total
Practical/Studio P/S	--	--	ISE (MIN 15)	ESE (MIN 31)	ICA	ESE	
Total	2	2	30	70	--	--	100

Course Objective-

To study the patterns of human settlements and their relevance to architecture.

End semester outcome:

Students are made aware of human need for shelter and co habitation through the history of human settlement.

Student will be able to observe physical and social context in the built form and spaces.

Course Outline:

Man, and Environment;

Biological and behavioral responses to human settlements.

Design for living, natural and built- environment.

History of human settlements;

- Origin and growth of human settlement.
- Role of River Banks in growth of human settlement.
- Historical survey of the city as an expression of the vitality of a civilization.
- Western world: River valley settlements, Greek, Roman, Medieval, Renaissance and modern.
- Ancient texts and treatises on settlement and area planning in India.
- Comparative study of Indus Valley and town planning in ancient and medieval India.
- Study of ancient Indian settlements like Mohenjo-Daro, Taxila, Nalanda.
- Study of ancient Indian cave settlements of Ajanta, Ellora, Elephanta.
- Human settlements during ancient medieval and modern periods India, Europe and other parts of the world.

Assignments:

Topic- wise Assignments, Topic- wise Presentations

Submission format:

Sketch file.

Study documentation, reports writeup in file form.

References:

B. K. Gokhale; Introduction to Western Civilization.

JawaharlalNeharu: Glimps of World History.

S. R. Sharma: A Brief Survey of Human History.

J. E. Swain: A History of World Civilization.

H. A. Davies: An Outline History of the world.

Satish Kumar,Studies in World History (1500-1950).

21 AR 1 – 05: Architectural Graphics and Drawing –I

Teaching Scheme Per week		Credit	Examination Scheme				
Lecture	1	1	Theory Exam -		Practical / Oral Exam		Total
Practical/Studio P/S	3	3	ISE	ESE	ICA (MIN 50)	ESE	--
Total	4	4	--	--	100	--	100

Objective:

To help students to understand graphical language as tool for drawing as communication in Architecture.
Using different media, colour pencils etc.

End semester outcome:

Student will be well equipped for drafting and drawings with the help pencil and different media

Course Outline:

1. Introduction:
 - i) Introduction to different drawing instruments, paper, materials & Their uses.
2. Drawing Technics
 - i) Drawing line of different types, characteristics of lines with the help of different grades of pencils and mediums.
 - ii) Application of all types of lines in architectural drawings
 - iii) Making measured drawing of building & its parts.
 - iv) Presentation techniques.
3. Lettering
 - i) Introduction to architectural lettering, proportion of letter size as per scale
 - ii) Different styles of lettering
4. Scale
 - i) Introduction of various proportions and scales, necessary for drawing to a scale, Graphic scale.
 - ii) To understand Metric Scale
5. Building Components, Materials & Annotations
 - i) Representation of various building components such as doors, windows, steps, stairs, chajjas, porch, canopy, balcony, roofs.
 - ii) Symbolic representation of building materials with colour code as specified in Indian standard code of practice.

Assignments:

Graphical Drawings: Student will prepare drawings using different graphical method, lettering, scales, and symbolic way

Submission format:

1. Graphics portfolio of term work on drawing sheets

References Books:

Robert W. Gill, Rendering with Pen and Ink
The Thames and Hadson Manuals
Francis D. K. Ching "Architectural Graphics" Van Nostrand Reinhold Co. 1985

21 AR 1 – 06: Basic Design and Visual Arts- I

Teaching Scheme Per week		Credit	Examination Scheme				
Lecture	---	---	Theory Exam -		Practical / Oral Exam		Total
Practical/Studio P/S	3	3	ISE	ESE	ICA (min 50)	ESE	--
Total	3	3	--	--	100	--	100

Course Objective:

To develop a keen sense of observation and understanding of the basic elements and principles of design
 Introduction to methods of designing and expression through various materials of 2D and 3D forms
 Explore multi- sensory aspects of space
 Encourage to analyse Architectural Designs with respect to elements and principles of design

End semester outcome:

Students will become aware of composing and analyzing aesthetic values of compositions

Course Outline:

Study of visual elements of design- points, lines, planes, shapes, forms, space, color and texture
 Study of principles of design- axis, unity, balance, symmetry, contrast, scale, proportion, pattern, rhythm, hierarchy, focus
 Positive and negative spaces, Spatial relationships
 Study of material through texture and color
 Study of forms with respect to light and shade; solids and voids
 Sketching and visual representation of material in various media like paper, clay, plaster, wood, wire, wax, photography

Assignments:

Assignments to cover the above topics i.e., 2 dimensional compositions, 3 dimensional forms and material study

Submission Format:

1. Models of studio work. Communicating and explain their models.
2. Compositions made in studio work.
3. Documentation and portfolio of studio work.

References:

Architecture: Form Space and Order – Francis D. K. Ching
 Design fundamentals in architecture- V. S. Parmar
 Pattern Language – Christopher Alexander

21 AR 1 – 07: WORKSHOP – I

Teaching Scheme Per week		Credit	Examination Scheme				
Lecture	---	---	Theory Exam -		Practical / Oral Exam		Total
Practical/Studio P/S	3	3	ISE	ESE	ICA (min 25)	ESE	
Total	3	3	--	--	50	--	50

Objective:

The main objective is to encourage student to explore various materials and model making techniques.

End semester out come

Students will be well equipped and knowledgeable enough to select, handle and use different materials in model making.

Also, they must be able to make basic design and architectural design single unit model

Course Outline:

2. Introduction to masonry tools and carpentry tools.
3. Introduction to clay modeling tools for carving, sculpturing.
4. Introduction to modeling with various material like; paper, paper board, foam core board, wood, acrylic, plaster of Paris etc.
5. Model making techniques like surface development, paper folding, origami, hand cutting.
6. Basic model making manual techniques, different types of material and their techniques.
7. Various solid and hollow geometrical – forms making.

Submission Format:

1. Models of basic forms-cube, cone, dome and arch.etc. Communicating and explain their models.
2. Models of furniture units to scale of various elements like chair table rooms furniture units etc.
3. Sketch file and notes.
4. Models of their Architectural Design Studio Work and other allied subjects.

Reference Books:

1. Arjan Karssen& Bernard Otte, "Model Making: Conceive, Create and Convince", Frame Publishers (November 11, 2014)
2. David Neat, "Model-Making: Materials and Methods", CroWood Press, 2008
3. Jocqui Atkin, "250 tips, techniques, and trade secrets for potters", Barron's Educational Series, 2009
4. Matt Driscoll, "Model Making for Architects", The Crowood Press Ltd, 2013
5. Megan Werner, "Model making", Princeton Archit.Press,2010
6. Nick Dunn, "Architectural Model Making", Laurence King Publishing, 2014
7. Roark T. Congdon, "Architectural Model Building", Fairchild Books; 1 edition, 2010

21 AR 1 – 08: Elective- I

Teaching Scheme Per week		Credit	Examination Scheme				
Lecture	--	--	Theory Exam -		Practical / Oral	Total	
P/S	2	2	ISE	ESE	ICA (min 25)	ESE	--
Total	2	2	--	--	50	--	50

The student will opt for any one of the following courses

- A. Architectural Vocabulary
- B. Communication Skills
- C. Art and Art Forms

The detail syllabus for the above subjects is given hereby

A. Architectural Vocabulary

Course Objective-

To enable the student to understand the various terms used particularly in architectural design and practice.

To improve the vocabulary of the student to communicate one's design, ideas and details

End semester outcome:

Students will gain clarity of various terms used in Architectural Education and in practice

Course Outline

To introduce different elements of building

To introduce appropriate terms for architectural expression

To introduce technical terms used in building trade

To introduce terms specific to architectural styles

Assignments:

Assignments introducing alphabetically various terms

Submission Format:

- 1 Sketch file and write-ups and sketches involving the introduced terms.
- 2 PPT presentation on selected topics.

References

Francis D K Ching 'A visual dictionary of Architecture'

Alban Janson, Fundamental Concepts of Architecture: The Vocabulary of Spatial Situations Alban Janson

Edward T. White, A graphic vocabulary for architectural presentation

B. Communication Skills

Course Objective:

To develop skills in effective communication – both written and verbal

To explore the potential of media technology and the Internet to enhance communication.

End semester outcome:

Enhancement of student's abilities to communicate and explain their work in academic as well as profession.

Course Outline:

- a. Reading Comprehension
- b. Reading of a passage from famous books. Students to draw an image on A4 paper based on the read passage.
- c. Listening Comprehension:
Comprehension of lectures and speeches to locate key points.
- d. Verbal presentations:
Understanding the differences among seminars, conferences, convention, congress, debates, extempore speeches, panel discussions etc. Students to make brief oral and visual presentations on selected topics. Importance of gesture, posture and expressions in verbal presentations.
- e. Analytical / Technical Writing:
To develop the ability to write concisely and correctly and present ideas in a logical manner.
- f. Introduction and discussion on exploratory topic for a survey questionnaire:
To document a setting and to prepare a fifteen-point questionnaire with info- graphics and conduct survey.
- g. Interpretation of materials in true form
questionnaires, application forms, analysis of materials such as texts, reports, technical literature.
- h. Notes taking:
 - From spoken and written English.
 - Formal / Informal Communication
Understanding the difference between formal and informal letters etc. Students to Write /draw a letter to fellow architects, clients, public authorities, contractors, enquiries to industries, dealers.
 - Article writing; on a work of art, architecture
 - Introduction to Design Basis Report
 - Writing a term paper and book review:
 - An article or paper on a chosen topic. Writing of a review on a chosen book on art or architecture.
 - Using the Internet to enhance communication

Assignments:

Both written and spoken exercises as per the course out line

Submission Format:

- 1 Sketch file and write-ups and sketches involving the introduced terms.
- 2 PPT presentation on selected topics.

References

K Jain, A M Sheikh & Pravin S R Bhatia, " Professional Communication Skills", S. Chand Publishing, 2001
Jones Leo, "Working in English: Teachers Book", Cambridge University Press, 2001.
Marsha J. Ludden, "Effective Communication Skills", Jist Works; 2 editions, 2001
MudambadithayaG.S, "Communicative English for Professional Courses", Sapna Book House, 2002.
Taylor, Grant, "English Conversation Practice", McGraw Hill Education; 1 edition, 2001.

C. Art and Art Forms

Course Objective

- To introduce students to various art forms and their relation to architecture.
- To help students analyse, draw inspiration from and establish relations to various art forms
- To establish the relevance of architecture as the 'Mother of all arts'

End semester outcome:

Students will be able to appreciate different art form and their relation with space making.

Course Outline:

- Definition of Art; role and meaning of Art in Society
- various types of arts-fine arts, performing arts, commercial arts, industrial arts, folk arts, abstract art, visual arts, spatial arts, temporal arts, pop art etc.
- Relationship of architecture with other arts like Painting and Sculpture.
- The course may involve proponents of various art forms to display the methods of conveying ideas, exploring form and space, techniques to engage the mind

Assignments:

- Assignments exploring different art forms in the form of presentations, acts, art works
- To explore two to three art forms to convey ideas of architectural form and space

Submission Format:

- Acts, art works group activity to explain their theme
- File assignment notes
- Ppt presentation and videos to understand concept of art and art form

References

- Abid Husain, "National culture of India", National Book Trust, India, 1994
- Antony Mason, John T. Spike, "A History of Western Art: from prehistory to the 21st Century", McRae Books, 2007.
- Arthur Llewellyn Basham, 'The Wonder That Was India', Picador; Indian ed edition, 2004
- Fred S. Kleiner, "Art through the Ages", Cengage Learning; 14th edition, 2012
- Ilay Cooper, John Gillow, "Arts and Crafts of India", Thames and Hudson, 1996
- Jasleen Dhamija, "Indian Folk arts and Crafts", 2002
- Michael Braungart, William Mc Donough, "Cradle to Cradle: remaking the way we make things", North Point Press; 1 edition, 2002
- Paul Johnson, "Art: A New History", Weidenfeld & Nicolson, 2003
- Peggy Holroyde, "An ABC of Indian Culture", MapinLit, 2007
- Yashodhara Dalmia, "Contemporary Indian Art", Marg Publications, 2002

21 AR2 – 01: ARCHITECTURAL DESIGN- II

Teaching Scheme Per week		Credit	Examination Scheme				
Lecture - L	1	1	Theory Exam -		Practical / Oral Exam		Total
Practical/Studio P/S	7	7	ISE	ESE	ICA (MIN 50)	ESE (MIN 67)	--
Total	8	8	--	--	100	150	250

Objective:

To initiate the concept of multifunctional activity, entire building form along with site, also to generate solution to space form considering different variable like, movement, circulation, connectivity physical constraints and cultural context. Application of knowledge systems of allied subjects in architectural design

End semester outcome:

At the end of the semester students must be well equipped and knowledgeable enough to read design. Students will be able to assemble simple spatial elements in articulated concepts and visually represent them through hand-made 2D drawings and models.

Course outline:

1. It is expected from the students to collect data. Analyze the program and, areas using parameters like area, user, furniture etc.
2. It is expected that the students have to find alternative, block models, to reach to the conclusive design.
3. Introduction to zoning, bubble diagram, circulation and user analysis in design.
4. Introduction to material, load bearing and composite technology in design with relation to the shape and form
5. Understanding social context to Built-form and introducing different elements and spaces in design like landscape, courtyard, formal informal spaces, personal spaces etc.
6. Introduction to light, movement, transformation, scale, structure and skin and its impact in the space.

Design assignment:

The student should be introduced with a design problem with three to four functions of total area up to 150 sqm -200sqm.

Design development like Residences, Farm houses, Library, Cafeteria, gymnasium etc.

Time bound design assignment:

Design - 6 hours and one day assignment

Example: Kinder Garten, Doctors Clinic, Courtyard spaces, ticket counters, entrance plaza etc.

Submission format:

1. Sketch file
2. Case study reports and data collection in file form/drawing form
3. Design portfolio (as per choice)
4. Design Models

Reference Books:

- Anthony Di Mari and Nora Yoo, " Operative Design: A Catalogue of Spatial Verbs", BIS Publishers.
- Anthony Di Mari and Nora Yoo, " Operative Design: A Catalogue of Spatial Verbs", BIS Publishers.
- Bruno Munari,"Design as Art", Penguin UK, 25-Sep-2008
- Charles George Ramsey and Harold Sleeper, " Architectural Graphic Standards", 1992, Wiley
- Debkumar Chakrabarti, " Indian Anthropometric Dimensions for Ergonomic Design Practice", 1997
- Frank Ching, James F. Eckler, "Introduction to Architecture", 2012, John Wiley & Sons, US
- Frank D.K. Ching, " Architecture: Form, Space, and Order", 4th Edition, Sep. 2014, John Wiley & Sons
- John Hancock Callender, " Time-Saver Standards for Architectural Design Data", 1982, McGraw-Hill
- Neufert Architects' Data by Ernst Neufert
- Francis D.K. Ching –Elements of Architecture
- Rendering with pen and ink
- Walter Gropius – Total Architecture
- Pramod V.S. – Fundamentals in Architecture

21 AR 2- 02: Building Construction and Material- II

Teaching Scheme Per week		Credit	Examination Scheme				
Lecture - L	1	1	Theory Exam -		Practical / Oral Exam		Total
Practical/Studio P/S	5	5	ISE	ESE (MIN 45)	ICA (MIN 25)	ESE (MIN 45)	--
Total	6	6	--	100	50	100	250

Course Objective:

To develop a fundamental understanding of openings in both trabeated and arcuate construction methodologies

To introduce principles of design of doors and windows

To introduce principles of design of staircases and different types of staircases

End semester outcome:

Students should become conversant with different parts of structure with respect to material and technology and enable application in Architectural Design.

Course Outline:

Building Construction Technology

Introduction to openings, spanning of openings by types of arches and lintels, principles and terminology of arch construction spanning of openings using different materials

Simple timber doors such as ledged, ledged and braced, ledged, braced and battened.

Paneled doors and windows- hinged and pivoted; Introduction to joints in carpentry

Staircases- terminology and types of staircases

Types of roofs- terminology and types of roofs- flat, sloped, pitched, vaults, domes and others

Building Construction Material:

Sand- Sources, types, properties, grades, uses in construction

Lime- Lime ore stone, quarrying and collection; Composition and physical properties, method of burning of lime ore, quick lime, Fat lime, hydraulic lime; Lime- mortar -mix, methods of preparation, neeru plaster;

Efflorescence, peeling, flaking, blistering, use of surkhi; lime- wash, uses in constructions; I.S.I. standards.

Assignments:

1. Building Construction: Student will be given drawing work to represent detailing, specification, technology aspect of the topic they are studying.
2. Building Material: Student will study and will be taught different materials their properties, market forms, uses, way to use them, manufacturing process etc.

Submission format:

1. Journal with sketches to cover the course outline, Building Material and midterm tests
2. Study documentation, reports and data collection in file form/drawing form.
3. Students are expected to draft sketches, detailing and specifications in drawing format
4. Construction portfolio of above-mentioned point 3.

Reference Books:

Dr. B.C Punmia (2012) Building Construction (10th edition) Laxmi Publications.

W.B. McKay (2015) Building construction Vol. 1 (5th edition), Vol. 2 (4th edition) and Vol. 3 (5th edition).

Roy Chudley, Roger Greeno (2016), Construction Technology, 11th Edition Routledge

R. Barry, "Construction of Buildings" Vol 1., 1999 by Wiley-Blackwell

Francis K Ching 'Building construction', Wiley; 5th edition (February 17, 2014)

21 AR2-03 : THEORY OF STRUCTURES-II

Teaching Scheme Per week		Credit	Examination Scheme				
Lecture - L	2	2	Theory Exam -		Practical / Oral Exam		Total
Practical/Studio P/S			ISE (MIN 15)	ESE (MIN 31)	ICA	ESE	--
Total	2	2	30	70	--	--	100

Course Objective:

To understand the Concept of material and its behavior under external load

End semester outcome:

Students will be able to understand advantages, limitation of structural systems and will be able to select appropriate technology

Course Outline:

1. Stress and strain:
Linear Stresses and Strains. Hooke's Law. Stress Strain Diagram for Various Materials. Lateral Strain, Poisson's Ratio: Volumetric Strain, and Bulk Modulus. Shear Stress. Modulus of Rigidity. Relationship between various Moduli. Elastic, Plastic Brittle and Ductile Behavior. Composite Materials, Modular Ratio and Equivalent Area e.g., R.C.C Column with Steel Reinforcement:
2. Properties of sections:
Concept of center of gravity and Moment of Inertia: Formula of Moment of Inertia for rectangular, Triangular, Circular and Semi-Circular Shapes, Hollow Rectangular and circular section. Parallel and Perpendicular Axis theorem and Radius of Gyration: Formula for Radius of Gyration of a Rectangular Shape. Determination of Centroidal Moment of Inertia of Composite lamina
3. Bending moment and shear force:
 - i. Shear force and Bending moment at a section. relation between rate of loading, shear force and bending moment
 - ii Shear force and bending moment diagrams in case of simply supported beams, cantilevers, Overhang beam with distributed, Vertical point loads and moments.
 - iii Point of contra flexure
4.
 - a. Bending Stress in Beam-Assumptions in the Theory of Simple Bending, Moment of Resistance Flexural Formula: Stress Distribution across a Section, Moment of Resistance. Section Modulus
 - b. Shear Stresses-Shear Stress Formula, Stress Distribution across a Rectangular, Circular T, L, I, C Section: Differences between Bending Stress Distribution and Shear Stress Distribution across the Section, relation between maximum and average shear stress,
5. Frame and Trusses-Introduction to Plane Lattice Construction. Applications of Frames and Trusses with B.T Terminology of Rafters, Purlins etc.: Different Geometry of Trusses e.g. Howe Truss, Fink Truss, N Girder: Perfect Frames, Imperfect Frames, Redundant and Deficient Frames: Assumptions in the Solution of Frames:

Submission format:

Files / Notes / Sketch.

Reference books:

1. Strength of Materials – Khurmi
2. Strength of Materials – A. P. Dongre

21 AR 2 – 04: HISTORY OF ARCHITECTURE I

Teaching Scheme Per week		Credit	Examination Scheme				
Lecture - L	2	2	Theory Exam -		Practical / Oral Exam		Total
Practical/Studio P/S	--	--	ISE (MIN 15)	ESE (MIN 31)	ICA	ESE	--
Total	2	2	30	70	--	--	100

Course Objective:

- To provide an insight in to the architecture of prehistoric period and early civilizations.
- To discuss period during which particular style flourished; geographical, geological, climatic, social, religious influences on the architecture
- To discuss building materials and building construction technology, built form, structural system
- To undertake comparative study of plans, structural systems, openings, aesthetics and architectural compositions
- To study works depictive of the style and building types that flourished during the period
- Architecture of Pre- historic settlements; Indian Sub-Continent- Indus Valley, Vedic, Buddhist, Mauryan Period; Egyptian architecture; West Asiatic architecture

End semester outcome:

Students understand that Architecture of a period is a result of various factors like context, available resources, and materials to build.

Course Outline

- Pre- historic shelters, settlements, burial systems, megaliths and memorials.
Examples for study: Oval huts near Nice, Dolmen tomb, Houses at Catal Huyuk, Stonehenge, Passage Gallery, Gallery Graves
- Indus Valley Civilization- Town- planning
Vedic architecture- Vedic village, huts and Torana
Buddhist Architecture- Sanchi Stupa, Viharas and Chaityas- Ajanta, Ellora and Karli, Stambhas
Mauryan architecture- Pataliputra
- Egyptian architecture- Pyramid of Cheops, Temple of Khons at Karnak, Sphinx
- West Asiatic architecture- Sumerian Period- Ziggurat at Ur; Babylonian Period- City of Babylon; Assyrian Period- Palace of Sargon at Khorsabad; Persian Period- Palace of Percepolis

Submission format:

1. Journals with sketches
A3 size sheets with sketches- preferably plans and sections- of various buildings discussed in the above units. A minimum of two sheets per unit are required. Minimum twenty buildings should be represented in the sheets across the semester.
2. Models of examples studied in above theory in group work.

Reference Books:

- Brown, P. (2010). Indian Architecture: Buddhist and Hindu period. Mumbai: D. B. Taraporevala Sons and Co
Dutt, B. B. (2009). Town Planning in Ancient India. Delhi: Isha Books
Kimball, F. and Edgell, G. H. (2012). A History of Architecture. Amazon: Ulan Press.
Grover, S. (2003). Buddhist and Hindu Architecture in India. 2nd Ed. New Delhi: CBS Publishers.
Fletcher, B. (1996). A History of Architecture on the Comparative Method. 20th Ed. London: B.T. Batsford.
Pramar, V. S. (2005). A social history of Indian architecture. New Delhi: Oxford University Press India.

21 AR2- 05: Architectural Graphics and Drawing- II

Teaching Scheme Per week		Credit	Examination Scheme				
Lecture/Studio L/S	1	1	Theory Exam -		Practical / Oral Exam		Total
Practical/Studio P/S	3	3	ISE (MIN15)	ESE (MIN31)	ICA	ESE	--
Total--	4	4	30	70	--	--	100

Objective:

To help students to understand graphical language as tool for drawing as communication in Architecture.

End semester outcome:

Students will be able to understand, imagine, draw their design forms and draw **three-dimensional** representation

Course Outline:

Solid Geometry:

- Projection methods of representing the solids on drawing such as orthographic projection.
- Isometric views of plans, elevations & section of solids
- Study of complex, compound objects, their penetration, true cut portion of shapes.
- Surface development of objects.
- Application of such forms in architecture & their inter relationship
- Three-dimensional development of building block (Isometric & axonometric)
- Introduction to photography and videography for Environment/ Building

Assignments:

Graphical Drawings: Student will prepare drawings using different graphical method, lettering, scales, and symbolic way
Student will prepare three-dimensional drawings using different graphical methods given

Submission format:

Graphics portfolio of term work on drawing sheets

References Books:

Robert W. Gill, Rendering with Pen and Ink
The Thames and Hadson Mannals
Francis D. K. Ching "Architectural Graphics" Van Nostrand Reinhold Co. 1985

21 AR2 – 06: Basic Design and Visual Arts- II

Teaching Scheme Per week		Credit	Examination Scheme				
Lecture/Studio L/S	--	--	Theory Exam -		Practical / Oral Exam		Total
Practical/Studio P/S	3	3	ISE	ESE	ICA (min 50)	ESE	--
Total--	3	3	--	--	100	--	100

Course Objective:

- To introduce the varied methods to work with forms
- Introduction to principles of composition and organization
- To introduce to various sources of inspiration for creativity
- Encourage to analyse architectural designs with respect to principles of composition and organization

End semester outcome:

Students will be able to apply outcome and understandings from this subject in their design.

Course Outline:

- Study of composition of forms- regular- irregular, centralized, linear, radial, clustered, grid, rotated grid and articulation of form
- Study of organization of form and space- spatial, centralized, linear, radial, clustered and grid organization
- Study of architectural works to explore the principles of composition and organisation of forms
- Space making through basic elements of design and principles of composition.
- Space making through principals of spatial organization
- Role of experience, memory, fantasy, reality, imagination in design.
- Sources of inspiration such as nature, history, material, climate, geometry, paradox, etc. for creativity.

Assignments:

Assignments to cover the above topics i.e., two dimensional compositions, three dimensional forms and material study

Submission Format:

- Models of studio work. Communicating and explain their models.
- Compositions made in studio work.
- Documentation and portfolio of studio work.

References:

- Architecture: Form Space and Order – Francis D. K. Ching
- Design fundamentals in architecture- V. S. Parmar
- Pattern Language – Christopher Alexander

AR2 – 07: WORKSHOP - II

Teaching Scheme Per week		Credit	Examination Scheme				
Lecture/Studio L/S	--	--	Theory Exam -		Practical / Oral Exam		Total
Practical/Studio P/S	3	3	ISE	ESE	ICA (min 25)	ESE	--
Total--	3	3	--	--	50	--	50

Objective:

The main objective is to study various model making techniques to express Architectural Design concepts, perception and manipulate design.

End semester outcome:

Ability to make scale models of architectural designs, manually and mechanically and familiarity with carpentry, joinery, smithy and molding with different materials and techniques.

Course Outline:

- Models for basic design and basic architectural design elements. (Composite forms, Free Forms, Architectural forms).
- Practical exercises related to making models of simple buildings, furniture and everyday objects and Interior detail models of units.
- Models of BT Studio work and History of Architecture.
- Laser cutting and 3D printing etc. Making of block models and detail models.
- Models of multi activity spaces developing connection between them
- Introduction to site model

Submission Format:

- Brick bonds model, any historical building in group work.
- Presentation of Models into sketches, photos and live demo.
- Model of Architectural design studio work and some of the other subjects
 - In coordination with the Architectural Design, Basic Design and Building Construction and Technology studios

Need: Making models gives students and teachers the understanding of context, composition, material and structure. It also takes students closer to the actual process of understanding compositions and spaces especially scale.

Reference Books:

- Arjan Karssen & Bernard Otte, "Model Making: Conceive, Create and Convince", Frame Publishers (November 11, 2014)
- David Neat, "Model-Making: Materials and Methods", CroWood Press, 2008
- Jocqui Atkin, "250 tips, techniques, and trade secrets for potters", Barron's Educational Series, 2009
- Matt Driscoll, "Model Making for Architects", The Crowood Press Ltd, 2013
- Megan Werner, "Model making", Princeton Archit. Press, 2010
- Nick Dunn, "Architectural Model Making", Laurence King Publishing, 2014
- Roark T. Congdon, "Architectural Model Building", Fairchild Books; 1 edition, 2010

21 AR 2 – 08: Elective- II

Teaching Scheme Per week		Credit	Examination Scheme				
Lecture	--	--	Theory Exam -		Practical / Oral	Total	
P/S	2	2	ISE	ESE	ICA (min 25)	ESE	--
Total	2	2	--	--	50	--	50

The student will opt for any one of the following courses

- A. Furniture Design:
- B. Creative Writing
- C. Mud Architecture

The detail syllabus for the above subjects is given hereby

A. Furniture Design:

Course Objective:

To explore the scope of furniture design.

To explore integration of furniture design into building, street and landscape design.

End semester outcome:

Students become conversant with ergonomics and scope of furniture design

Course Outline:

A brief introduction to history of furniture design and contemporary practices- Indian traditions, Arts and Crafts Movemet, Bauhaus, Works by Saarinen, Alto, Reitweld, Charls and Ray Eames, Le Corbusier, Mies van der Rohe, Zaha Hadid.

Role of furniture, ergonomic factors of furniture design and materials used;

Design and types of furniture based on its style, characteristics and functional application;

Design for the speciallyabled; materials and methods of construction of furniture, design trends, innovations and ideas of furniture for specific types of interiors.

Assignments:

Assignments in the form of portfolio of sheets, journal with sketches to cover the course outline

Site visit to furniture showrooms, carpentry units and modular furniture factory

Submission Format:

1. Assignments in the form of portfolio of sheets.
2. Journal with sketches to cover the course outline
3. Site visit to furniture showrooms, carpentry units and modular furniture factory

Reference Books:

DeChiara, Joseph, Panero, Julius and Zelnik, Martin "Time Saver's Standards for Interior Design", McGraw-Hill Professional (2001)

Edited by the editors of Fine Woodworking Magazine. Fine Woodworking Techniques Book 1. Newtown, CT: Taunton Press, 1981. ISBN: 0918804027.

Frid, Tage. TageFrid Teaches Woodworking Book 3: Furnituremaking. Newtown, CT: Taunton Press, 1989. ISBN: 091880440X.

Greene, Jeffrey P. American Furniture of the 18th Century: History, Technique, and Structure. Newtown, CT: Taunton Press, 1996. ISBN: 1561581046.

The Soul of a Tree: A Master Woodworker's Reflections by George Nakashima

B. Creative Writing

Course Objective:

Overview and objectives of role of writing and journalism in architecture

End semester outcome:

Students are equipped to prepare report, document as-built architectural structure as well as their design

Course Outline:

Techniques and methods of expressing an architectural narrative or description through forms of creative writings such as fiction, poetry, travel writing, blogging which are based on architecture or employ architecture as a context.

Presentations on the techniques of writing different genres.

Discussions of various readings to familiarize and analyze the methods and styles of writing.

Writing assignments related to the genres culminating in a term paper.

Interactions with architectural writers and journalists to share their experience / perspective.

Assignments:

Assignments in the form of presentations, writings and term paper in the form of documentation of architect's work.

Visit to Publication / Media house to understand the process of publishing.

Submission Format:

Files: documents and papers.

PPT presentations.

Reference Books:

Wiseman, Carter (2014), "Writing Architecture: A Practical Guide to Clear Communication about the Built Environment", Trinity University Press

Lange, Alexandra (2012), "Writing About Architecture: Mastering the Language of Buildings and Cities", Princeton Architectural Press

Schmalz, Bill (2014), "The Architect's Guide to Writing: For Design and Construction Professionals", Images Publishing Dist Ac

Sykes, A. Krista (2007), "The Architecture Reader: Essential Writings from Vitruvius to the Present", George Braziller Inc.

C. Mud Architecture

Course Objective:

- To introduce the relevance of the material though history of building craft.
- To introduce the material and relevant technologies.
- To provide relevant examples.
- To discuss works by architect's works in mud architecture.

End semester outcome:

Students will be conversant with the scope and possibilities of mud architecture.

Course Outline:

History of mud architecture since river valley civilisations, middle ages and contemporary practices.
Different forms and technologies- Cob, Compressed Earth Block, Mud Brick, Rammed Earth, Wattle and Daub, Adobe; preparation, properties, specifications and application with examples.
To introduce works and technologies employed by Hassan Fathy, Laurie Baker, RevatiKamat, Didi Contractor, Auroville Earth Institute and others

Assignments:

Assignments in the form of presentations, writings and term paper in the form of documentation of architect's work.
Student will study and will be taught mud as construction material; its property, way to use it, treatment and processetc

Submission Format:

1. Files: Writeup, documents and papers.
2. PPT presentations.

Reference Books:

K S Jagadish, "Building with Stabilised Mud"; IK International Publishing House PVT Ltd.
Laurie Bakers work.
Documentation "Earth Architecture", Auroville.
Hassan Fathy's work.
KulbhushanJain,Meenaxi Jain, "Mud Architecture of the Indian Dessert "