



SATHYABAMA
INSTITUTE OF SCIENCE AND TECHNOLOGY
(DEEMED TO BE UNIVERSITY)
Accredited with "A" grade by NAAC
Jeppiaar Nagar, Rajiv Gandhi Salai, Chennai - 600 119
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DEPARTMENT OF ARCHITECTURE

SATHYABAMA INSTITUTE OF SCIENCE AND TECHNOLOGY

Board of Studies meeting for B.Arch. held on 30-06-2020

Venue: Virtual meet in ZOOM platform

Members present:

External Members	Signature	Internal Members	Signature
AR. PRAMOD BALAKRISHNAN Chief Architect, Edifice Chennai		DR. DEVYANI GANGOPHAHY Dean & Head Department of Architecture School of Building & Environment	
		DR. SURESH KUPPUSAMY Senior Professor & Design Chair Department of Architecture	
DR. MEGHAL ARYA Associate Professor Faculty of Architecture, CEPT University, Ahmedabad		AR. EBIN HARRISON Associate Professor	
		AR. ARULMALAR.R Associate Professor	
		AR.V. SHANKAR Associate Professor	

The Board of Studies approved the proposed Curriculum and syllabus of Regulation 2020 for B.Arch. course with incorporation of suggestions and feedback given by the external members. The suggestions made by the external members are presented in the minutes of meeting are given below.

A Board of Studies meeting was held as Virtual mode in ZOOM platform on 30th June 2020 with the following agenda:

1. Welcome address, opening remarks on the proposal to introduce REGULATION 2020 and the methodology adopted.
2. Comparative analysis of existing R 2015 and proposed R 2020 curriculum structure, R 2020 curriculum structure and Salient Features of Regulation 2020.
3. Detailed discussions on the proposed syllabus (from semester I to semester X) and proposed Regulation 2020.
4. Any other matter with the permission of Chair.

Minutes of the meeting:



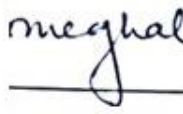



- Dr. Devyani Gangopadhyay presented the welcome address and briefed the agenda of the meeting
- Prof.SureshKuppusamy, discussed on the conceptual framework of the revisions in R2020 syllabus.
- Dr.DevyaniGangopadhyaydiscussed on the salient features of the proposed revised curriculum structure along with the analysis stating the intent of the revisions in curriculum structure and the content integrating with Design studios.
- The professional training was proposed to be shifted to eighth semester as per Council of Architecture Regulations 2017.
- Prof. Meghal, raised a query on COA's distribution of courses as it is mandatory to be followed or optional.
- Prof. Devyani Gangopadhyay, replied it as optional.
- Prof. Meghal asked on the necessity for **Applied mathematics**. She suggested that it could be Geometry instead of Trigonometry and suggested to reduce credits, asked to review on this.
 - Remove this subject and replace other subject or replace these credits to other subjects and integrate with Design.
 - Ar.Pramod said geometrical exercises already there in Architectural Drawing and hence the syllabus can be reoriented apart from geometry.
 - the internal team agreed upon this suggestion.
- Ar. Pramod, commented that **Soft skill development** cannot be just a theory subject for one semester and needs to be proposed in every semester with introduction in I semester, so that we can ensure continuous learning till 9th semester .
- Prof. Meghal, seconded on the above citing this will help the agenda of integration much more. She approved for introducing Soft skill development.
- The internal committee agreed to the external members' decision.
- Ar.Pramod insisted that **Society culture and environment** can't be dealt fully in one semester. He felt the society connect should be reflected in the semester Design studios.
- Prof.Suresh Kuppusamy replied that this can be strengthened and shall be proposed in third and fourth as SCE-I and SCE-II respectively. Lectures can be given in the studio hours on these and can integrate with design.
- Prof.Devyani briefed to the committee members that many students in 9thsem Dissertation project, took society related topics like- Public open spaces, Behavioural study in public spaces like parks, streets and walkability and pursued the dissertation successfully.
- Ar.Pramod and Prof. Meghal approved on introducing Society Culture and Environment upon insisting that the subject is interrelated with Architectural Design.
- Ar. Meghal presented her views on **History Of Architecture**. She commented that only styles are mentioned in the syllabus and deep thinking as a lens through approach needs to be done.
- Ar. Pramod presented his views on the subject -Material and Construction Studio- He suggested that a small- scale design exercise could be given to the students in order to understand the material in detail. Students must have the feel of the material through hands on training, apart from plates.

- Dr Devyani Gangopadhyay explained the strategy of integrating Materials and Construction with Architectural Design. He explained that the previous semester design proposal may be taken up for detailing in Materials and Construction for the following semester.
- Prof. Meghal, appreciated the idea of making students developing details from their previous semester design.
- Prof. Meghal emphasized on the need to integrate some sense of structure in the Materials and Construction. She proposed that the faculty of Structural Engineering and Architecture must work as a team for better understanding of the students. She proposed that preferably a Practicing Architect who has strong knowledge in Structures may take up Structure.
- Prof.Suresh Kuppuswamy/ internal committee agreed for this suggestion subject to availability of such a resource person.
- **Model making workshop-** Ar. Pramod advised to set up kiln for model making workshop within the campus for more activities.
- The internal committee replied that this proposal was already in the budget and will be carried over.
- Both the external members insisted on the Idea of strengthening infrastructure for workshops.
- Prof. Suresh Kuppuswamy, agreed on the recommendation of the externals and registered that Architectural model making can be dealt not as a separate subject, but can be an integral part of theory and design.
- Prof. Meghal agreed on the above and suggested that the Materials and Construction studio and Structure studio can incorporate model making.
- Prof. Meghal proposed that Architectural Education should stress on computational skills rather Computer skills and proposed that softwares like Sketch up, V-Ray can be learnt by the students themselves and need not be a part of the curriculum.
- Prof.Suresh Kuppuswamy, explained that the students need to equip themselves (based on orientation program on Practical training) for practical training. Hence the computer skills are proposed.
- Prof.Meghal suggested to use” **Design Communication**” to make the student equipped for internship.
- Practical Training- Ar.Pramod suggested that SIST must create relationship with practicing architects so that the students can be referred for Internship.
- Prof. Suresh asked the opinion of externals on having the Professional Training in the 10th semester.
- Ar.Pramod had no objection to this proposal, but Prof.Meghal , preferred the Professional Training in the middle of the curriculum so that the students can benefit from the internship and apply the knowledge gained in their academic exercises.
- Dr. Devyani Gangopadhyay asked for further suggestions on the revised syllabus and curriculum
- Ar. Pramod appreciated that voluminous work has been exercised in revising the syllabus. He pointed out that in few places it has become too much to grasp for a student in the limited period of time. He proposed that Design exercises need not be problem solving and the brief should involve the students to develop the design holistically as his/her contribution.

- Ar. Pramod pointed out that it is more important to articulate the design briefs in a manner which creates more interest within the student and makes the student think out of the box. He also forwarded some interesting Architectural Design Studio methodology to the committee as examples of methodology followed in Design studios practiced by him.
- Ar Pramod suggested that for design evaluation, the faculty members of other classes may be involved as internal jury.
- Prof.Devyani, replied that this practice of involving other faculty members is already in practice and agreed this will be implemented for all semesters.
- Prof.Meghal and Ar. Pramod suggested the same curriculum can be presented to the forthcoming Academic council with incorporation of suggestions made by the members.

Prof. Devyani concluded the meeting with acceptance that all the recommendations and observations of the external members will be carried over and incorporated and consequent BOS meeting shall be convened after incorporating the recommendations. Ar. Shankar delivered the vote of thanks, felicitating the external members.

Minutes approved by:

External Members	Signature	Internal Members	Signature
AR. PRAMOD BALAKRISHNAN Chief Architect, Edifice Chennai		DR. DEVYANI GANGOPHAHY Dean & Head Department of Architecture School of Building & Environment	
DR. MEGHAL ARYA Associate Professor Faculty of Architecture, CEPT University, Ahmedabad		DR. SURESH KUPPUSAMY Senior Professor & Design Chair Department of Architecture AR. EBIN HARRISON Associate Professor	
		AR. ARULMALAR.R Associate Professor	
		AR.V. SHANKAR Associate Professor	

SMTA1103	MATHEMATICS FOR ARCHITECTURE	L	T	P	Credits	Total Marks
		2	0	0	2	100

COURSE OBJECTIVES:

- To identify, reflect upon, evaluate and apply different types of information and knowledge to form independent judgments.
- To develop Analytical, logical thinking and conclusions based on quantitative information will be the main objective of learning this subject.

UNIT 1 MATHEMATICS IN DESIGN 10 Hours

Proportion, Golden ratio and Beauty, Scale, fractal design, Euclidean geometry, Understanding non-parallel surfaces, Symmetry and Anti-symmetry. Algebraic relations and its application in Egyptian pyramids, Fibonacci series. Sacred Geometry, Square root Proportions, Modular Proportions

UNIT 2 MATHEMATICS AND MEASUREMENTS 10 Hours

Methods to calculate areas and volumes for various geometrical shapes and volumes. SI Metric Units of measurements for angles, time, mass, distance, volume, force, energy, power, current, potential difference, resistance, pressure, frequency, thermodynamic temperature, luminous intensity

UNIT 3 STATISTICS & PROBABILITY 10 Hrs.

Measures of Central Tendency and Measures of Dispersion. Kurtosis, Curve fitting, Method of Least Squares (Straight Line and Parabola), Correlation and Regression. Elementary concepts of Probability.

UNIT 4 DIFFERENTIAL AND INTEGRAL CALCULUS 10 Hrs.

Tangent and Normal, Curvature (Cartesian and parametric forms), Taylor's and Mclaurin's expansion for one variable. Indeterminate forms, Maxima, Minima for a function of one variable. Reduction Formulae for $\sin^n x$, $\cos^n x$, $\tan^n x$ and $\sin^m x \cos^n x$. Use of double and triple integrals, Calculation of areas using multiple integrals.

UNIT 5 TRIGONOMETRY 5 Hrs.

Angles of intersection for components of structure using of trigonometry. Length of wall using trigonometry – Tangents - Pythagoras Theorem. Measure of Cube and other Solids – Applications of Trigonometry in Arches, Domes, Support Beams and Suspension bridges.

Max. 45 Hours

COURSE OUTCOME:

On completion of the course the student will be able to

- CO1** Define Golden ratio, measures, Taylor's and Maclaurins series. Concepts of probability.
- CO2** Explain the measures of central tendencies, dispersion, Golden ratio and Fibonacci series with illustrations. Explain addition and total theorem of probability with examples.
- CO3** Choose appropriate SI metric units for measurements.
- CO4** Distinguish correlation and regression, various types and methods of dispersion. Categorize the regression coefficients. Differentiate correlation and rank correlation. Estimate the maxima and minima of functions of one variable.
- CO5** Evaluate the coefficient of variation and correlation coefficients. Evaluate area using double integral.
- CO6** Produce the solution of integral using reduction formula. Designing architecture using golden ratio, Construct the curve using method of least squares.

TEXT / REFERENCE BOOKS

1. Kreyszig E., Advanced Engineering Mathematics, 8th Edition, John Wiley & Sons, 2001.
2. Grewal B.S., Higher Engineering Mathematics, 36th Edition, Khanna Publishers, 2002,
3. Vittal.P.R., Business Statistics, Margham publications, Chennai, 2008.
4. S.P.Gupta, Business Statistics, Sultan Chand & Sons, New Delhi, 2008.
5. Veerarajan T, Engineering Mathematics for First Year, 2nd Edition, Tata McGrawHill Publications, 2008
6. Kandasamy P & co., Engineering Mathematics for First Year, IX Revised Edition, S.Chand&Co Pub., 2010
7. New Mathematics of Architecture by Jane Burry and Mark Burry.
8. BIPM. (2014). The International System of Units (SI). 8 th Ed. Bureau International des Poids et Mesures.

SARA2101	ARCHITECTURAL GRAPHICS - I			L	T	P	Credits	Total Marks	
				1	0	3			2
Continuous assessment	End Semester Examination	Minimum pass marks							
		Continuous Assessment			End Semester Examination				
70	30	35			15				

COURSE OBJECTIVES:

- To outline the basic principles of drafting and rendering techniques
- To understand plane and solid geometry, isometric and axonometric view
- To familiarize with simple objects and building components through measured drawing.

UNIT 1 INTRODUCTION

12 Hrs.

Introduction to fundamentals of drawing/ drafting: Construction of lines, line value, line types, lettering, architectural notations & dimensioning. Basic rendering techniques, basics of sheet presentation drawing, drawing instruments, sheet layout. Use of scale, free hand and geometric construction of Lines

UNIT 2 GEOMETRICAL DRAWING - PLANE GEOMETRY

12 Hrs.

Construction of shapes - angles, circles, tangents. Construction of Plane Curves: Ellipse, Parabola and Hyperbola. Principles of orthographic projections, Construction and Multiview projection of - Points, lines, square, rectangle, polygon, etc.

UNIT 3 GEOMETRICAL DRAWING - SOLID GEOMETRY

16 Hrs.

Multi- view projection of solids – cube, prism, pyramids, cones, cylinders etc.; Sections of solids, true shape of solids.

UNIT 4 MEASURED DRAWING

8 Hrs.

Study of plan, section and elevation of simple objects, simple building components and furniture through documentation exercises.

UNIT 5 ISOMETRIC AND AXONOMETRIC VIEW

12 Hrs.

Isometric and Axonometric projection of planes, solids and combination of solid etc. Isometric and Axonometric projection of simple objects, building components etc.

Max. 60 Hours

COURSE OUTCOME:

On completion of the course the student will be able to

- CO1** Understand the concepts and fundamentals of architectural drawing.
- CO2** Develop representation skills and to generate geometrical forms and its projections.
- CO3** Ability to represent various solids and its sectional projection.
- CO4** Measure real objects and represent them graphically.
- CO5** Create three-dimensional solids and combination of solids
- CO6** Develop graphical skill to represent real time objects.

TEXT / REFERENCE BOOKS

1. Ching, F. D. (2015). Architectural graphics. John Wiley & Sons.
2. Reekie, R. F., & McCarthy, T. (1995). Reekie's architectural drawing. Edward Arnold.
3. Morris, I. H. (1912). Geometrical drawing for art students. Longmans, Green.
4. Martin L.C.(1978). Architectural Graphics, The Macmillan Company, New York.
5. Dinsmore.G.A. (1968). Analytical Graphics, Van Nostrand, Company Inc., Canada.

SARA9101	ART STUDIO - I			L	T	P	Credits	Total Marks	
				0	0	4	2	100	
Continuous assessment	End Semester Examination	Minimum pass marks							
		Continuous Assessment	End Semester Examination						
70	30	35			15				

COURSE OBJECTIVES:

- Develop sketching and visual representation in different media of different 2-dimensional art forms, painting and interior decoration of walls and floors.
- Correlate three-dimensional art and craft forms, natural forms, structure and learn to model the same in different media.
- Investigate the properties and appropriate use of materials in different craft forms.

UNIT 1 INTRODUCTION

16 Hrs.

Visual Art and Purpose - Expression of Imagination, Function, Ritualistic or Symbolic - Visual qualities and grammar of art; Imaginative thinking and creativity through hands on exercises – Visual effects, study of light and shadow, using lettering and combining lettering with image, in expressive and communicative modes.

UNIT 2 DRAWING AND SKETCHING

20 Hrs.

Sketching and visual representations using various media and tools – image-making, image manipulation and development, enlargement, cropping, reversing, abstraction, changes in colour and treatment, sequential imagery. Imagery from imagination, memory and direct observation

UNIT 3 THREE-DIMENSIONAL VISUALISATION

12 Hrs.

Study of outdoor objects /systems and observation of their scale and proportion, natural occurrence, relationships with context, form, structure, color and textures along with its functions

UNIT 4 VISUALIZATION TECHNIQUES AND STORYBOARDING

12 Hrs.

Storyboard/ Cartoon making Graphical representation in the form of illustrations or images displayed in sequence for the purpose of pre-visualizing the area of student's interest. A series of drawings that tells a story. Expressive and Communicative aspects. Implementing abstract or generic ideas.

Max. 60 Hours

COURSE OUTCOME:

On completion of the course the student will be able to

- CO1** Interpret and combine different art forms in different media while appreciating artistic expressions.
- CO2** Develop the ability to manipulate various types of images.
- CO3** Develop skills in image making, and development of sequential imagery.
- CO4** Understand the various techniques of three-dimensional modeling.
- CO5** Design and model craft forms using any medium.
- CO6** Adapt the properties and applications of materials in different craft forms like terracotta, metal craft etc.

TEXT / REFERENCE BOOKS

1. Jones, J. C. (1992). Design methods, Wiley.
2. Bielefeld, B., & El Khouli, S. (2017). Basics Design Ideas. Birkhäuser.
3. Frank W. (1994). The Artist guide to Composition, David & Charles, UK.
4. Ching, F. D. (2008). Drawing a creative process. Wiley.
5. Pipes, A. (2003). Foundations of art and design. Laurence King Publishing.
6. John, W. (1966). Mills-The Technique of Sculpture, BT Batsford Limited.
7. Bunchy, C.L. (1972). Acrylic for Sculpture and Design, 450, West 33rd Street, New York.
8. White, A. W. (2011). The elements of graphic design: space, unity, page architecture, and type. Skyhorse Publishing, Inc..
9. Elam, K. (2001). Geometry of design: studies in proportion and composition. Princeton Architectural Press.

SARA2202	ARCHITECTURAL GRAPHICS - II			L	T	P	Credits	Total Marks	
				1	0	3	2	100	
Continuous assessment	End Semester Examination	Minimum pass marks							
		Continuous Assessment	End Semester Examination						
70	30	35	15						

COURSE OBJECTIVES:

- To outline the basic principles of perspective drawing and sciography.
- To measure and document-built form and represent it graphically.
- To develop the skill required for constructing a complete rendered three-dimensional simple built form.

UNIT 1 INTRODUCTION OF PERSPECTIVE DRAWING 8 Hrs.

Study of concepts, types and terminologies such as picture plane, station point, vanishing point, eye level, ground level, Horizon line etc. Technical construction of one point, two point and three-point perspective drawings through exercises on simple objects like cube, prism, combination of shapes and views at various eye levels.

UNIT 2 PERSPECTIVE: SCIENTIFIC METHOD & OFFICE METHOD 16 Hrs.

One point, two and three-point perspective of building interiors and exteriors. Adding figures, trees, furniture etc., shade and shadows and applying rendering techniques. Introduction to office perspective method.

UNIT 3 SCIOGRAPHY 16 Hrs.

Principles of shade and shadow- construction of shadow of simple geometrical shapes - point, line and planes. Construction of sociography on Architectural elements.

UNIT 4 MEASURED DRAWING: DOCUMENTATION 10 Hrs.

Documentation of a complete building of a special interest in terms of history, building construction, architectural excellence or technology by using simple measuring tools like tapes, photographs etc.

UNIT 5 ARCHITECTURAL RENDERING 10 Hrs.

Techniques of rendering for various architectural drawings - plans, site plan, elevations, views etc, using mediums like pen and ink etc.,

Max. 60 Hours

COURSE OUTCOME:

On completion of the course the student will be able to

- CO1** Understand the concepts and fundamentals of perspective drawing.
- CO2** Construct the perspective drawings of the buildings and 3d views.
- CO3** Develop representation skills in three dimensional drawings and sociography.
- CO4** Develop the skill of architectural drawing through measured drawing of complex structures.
- CO5** Apply rendering techniques in architectural drawings.
- CO6** Construct a complete rendered three-dimensional drawing of a simple built form.

TEXT / REFERENCE BOOKS

1. Bernard Alkins, Architectural Rendering, Walter Foster Art Books, 1986
2. Claude Batley, Indian Architecture, D.B. Taraporevale Sons and Co. Ltd., Bombay
3. Ernest Norling, Perspective drawing, Walter Foster Art Books, California, 1986
4. Francis D.K. Ching, Architectural Graphics, Van Nostrand and Reinhold Company, NY 1975
5. George A. Dinsmore, Analytical Graphics, Van Nostrand, Company Inc., Canada, 1968
6. John M. Holmes, Applied Perspective, Sir Isaac Pitman and Sons Ltd., London, 1954
7. Leslie Martin C., Architectural Graphics, The Macmillan Company, New York, 1964
8. Robert W. Gill, Basic Perspective, Advanced Perspective, Thames and Hudson, London, 1974

SARA 9201	ART STUDIO - II			L	T	P	Credits	Total Marks	
				0	0	3	2	100	
Continuous assessment	End Semester Examination	Minimum pass marks							
		Continuous Assessment			End Semester Examination				
70	30	35			15				

COURSE OBJECTIVES:

- To utilize models as technique for design presentations
- To construct models as a way of representation and experimentation
- To gain an ability to integrate all the technical aspects of sculpture, modelling, and storytelling as means to realize creative ideas to shape into concrete and significant art forms.

MODULE 1 EXPLORING MATERIALITY

10 Hrs.

Selection of materials used in everyday life – textiles / earthenware terracotta / stone / paper / wax / glass / wood etc. and study their properties and characteristics, materiality and feeling. Processes of additive, subtractive and constructional form-making in expressive and functional modes.

MODULE 2 CREATIVE REPRESENTATIONS OF SPACES

15 Hrs.

Need for architectural models. Role of scale-models in design - Developing of surfaces and solids viz. Cubes, prisms, cylinders, pyramids, cones. Development of transition pieces, for spheres etc. using appropriate materials. Various materials and tools to be used in model making. Use of materials, viz. paper / mountboard / cardboard in architectural models.

MODULE 3 CREATIVE REPRESENTATIONS OF SPACES

20 Hrs.

Use of materials, viz. Snow-white board / mountboard / cardboard / Acrylic / Polystyrene (thermocoll) / softwood / metals in architectural models. Painting model surfaces with various finishes, development of topography and landscape elements, use of materials like cork, polyurethane foam, use of laser, acid etching, stereolithography for development of building envelopes.

Max. 45 Hours

COURSE OUTCOME:

On completion of the course the student will be able to:

- CO1 Develop the processes of 3-dimensional form making from concept to finish.
- CO2 Interpret different art forms in different media while appreciating artistic expressions.
- CO3 Observe and interpret different forms and qualities in built and natural environments and objects.
- CO4 Design and model craft forms using any medium.
- CO5 Develop a narrative approach to art work.
- CO6 Interpret the different stories communicated through visualizations of various types.

TEXT / REFERENCE BOOKS

1. Jones, J. C. (1992). Design methods, John Wiley & Sons
2. Bielefeld, B., & El Khouli, S. (2017). Basics Design Ideas. Birkhäuser.
3. Ching, F. D., & Juroszek, S. P. (2010). Design drawing. John Wiley & Sons.
4. Faimon, P., & Weigand, J. (2004). The nature of design. HOW Books.
5. Pipes, A. (2003). Foundations of art and design. Laurence King Publishing.
6. John, W. (1966). Mills-The Technique of Sculpture, BT Batsford Limited.
7. White A.W.(2011). The Elements of Graphic Design: Space, Unity, Page Architecture, and Type, Skyhorse Publishing, Inc.,
8. Elam, K. (2001). Geometry of design: studies in proportion and composition, Princeton Architectural Press.
9. Yarnell, J. (2002). Painting Techniques, North Light Books.
10. Anderson Turner, Pottery Making techniques: a pottery making illustrated handbook, American ceramic Society, 2004
11. Chapman G. and Robson P., Art from Rocks and Shells, Thomson Learning, 1995 6

12. Barnbaum, B. (2010). The Art of Photography, Wiley

SARA9102	DESIGN STUDIO I			L	T	P	Credits	Total Marks	
				1	2	9	7	300	
Continuous Assessment	End Semester Examination	Min Pass Marks							
200	100	Continuous Assessment	End Semester Examination						50

COURSE OBJECTIVES:

- The studio aims at widening the avenues of creativity and allows inquiring more on lateral thinking.
- The emphasis is on understanding the process of design as a proactive and analytical tool towards generating alternatives which forms the foundation for future design
- To introduce students to various ideas and techniques of creative thinking and communication; To provide students with a foundation in design through the comprehension of elements and principles of composition;

MODULE I ELEMENTS OF DESIGN, SHAPE AND ITS MANIPULATION 30 Hrs.

Introduction to elements and principles of design – Exploring the interrelationship between part and the whole - Shapes - Developing geometric and organic shapes and compositions - Texture - study of textures – role of texture in stimulating human senses Exploring use of colour and its application in stimulating human senses - symbolism using colors

MODULE II PRINCIPLES OF DESIGN - ORDERING PRINCIPLES AND SCALE/PROPORTION 36 Hrs.

Exploring spatial relationships through ordering principles – spatial transformation using Balance, Contrast, and Pattern Gestalts theory of Composition - Continuity, Similarity, Proximity, Closure, Figure ground. Human & Dramatic Scale - Anthropometrics - Anthropological studies and important dimension of man at different activities and reach. Proportioning systems - Classical orders, Golden Section - Types of proportion.

MODULE III FORM AND ITS COMPONENTS AND DERIVATION 48 Hrs.

Evolution of forms from planes - Study of solids and voids and their interdependence - 3d abstraction -Articulation and its role as a form modifier - edges and corners, surfaces - Transformation of form- dimensional, subtractive and additive-centralized, linear, radial, clustered and grid forms for arriving at new shapes and compositions. Interlocking of forms-interlock of forms differing in geometry or orientation (rotated grid).

MODULE IV CONCEPTS OF SPACE – SPATIAL RELATIONSHIPS & ORGANISATION 32 Hrs.

Concepts of space- form- space relationships- Visual & Emotional effects of geometrical forms & their derivatives - Spatial relationships - Space within a space, interlocking spaces, adjacent spaces and spaces linked by a common space, Spatial organization - centralized, linear, radial, clustered, grid.

TUTORIAL SESSION INTRODUCTION TO COMMUNICATION 14 Hrs.

Basics & Principles– Objectives of Communication – Types - Verbal and non-verbal communication - Barriers to communication - Communication techniques - Listening & understanding - The four essential Communication skills - Levels of Communication: Intrapersonal, Interpersonal, Group, Mass Communication - computer enabled Presentations - Public Speaking Techniques

Max. 165 Hours

COURSE OUTCOME:

On completion of the course the student will be able to

- CO1** Understand the basic characteristics of different techniques, mediums and its practical applications.
- CO2** Ability to comprehend the elements of space making through understanding the configuration of elements which can be unified as a whole in a composition.
- CO3** Apply the basic elements and principles of design and implement them in design compositions
- CO4** Analyze, visualize, communicate and represent design
- CO5** Create models /sculptures to understand the evolution of three-dimensional forms from two dimensional shapes
- CO6** Develop an insight towards sensibility and aesthetic appreciation.

TEXT / REFERENCE BOOKS

1. Pramar V.S., (1973). Design Fundamentals in Architecture, Somaiya Publication Pvt. Ltd.
2. Bloomer, C. M. (1990). Principles of visual perception. Herbert Press.
3. Ching, F. D. (2014). Architecture: Form, space, and order. John Wiley & Sons.
4. Gottfried, S. (1984). The four elements of Architecture, London. UK: Cambridge University press.

5. Catanese A.J. and. Snyder.J.C (1988) Introduction to Architecture, New York: Mc Graw Hill.
6. Dekay.M& Brown G.Z. (2014). Sun, wind and Light: Architectural design strategies, John Wiley and sons, 3rd edition

SARA9202	DESIGN STUDIO II			L	T	P	Credits	Total Marks
				0	1	9	6	300
Continuous Assessment	End Semester Examination	Min Pass Marks					Total	
		Continuous Assessment	End Semester Examination					
200	100	100	50			150		

COURSE OBJECTIVES:

- To enable the students, understand the principles of composition and its importance in Architecture and to understand role of transformation of form in Architecture
- To know the importance of spatial qualities and to experiment and understand the art of space arrangement
- To enable Conceptualization in architecture through creative thinking and to analyse the functional relationship between space, user and built environment

MODULE I PRINCIPLES OF COMPOSITION

30 Hrs.

Role of Principles of Design in a built form - Qualities of - Dominance, Unity, Harmony, Punctuating Effect, Dramatic Effect, Climax, Contrast, Accentuation, Fluidity. Analyzing compositions - balance, rhythm, movement etc. and its application.

MODULE II ANALYZING ARCHITECTURE

45 Hrs.

Concept /Content/Context -Understanding the response of a built form as a negotiation of its setting-climatic, social, economic, cultural and aesthetic. Study of built examples through documentation and analysis.

MODULE III EXPLORING ARCHITECTURE

60 Hrs.

The Art of Space Making - Analyzing spatial qualities - spatial in quest of a pavilion Design (e.g. Gazebo, Kiosk, Shop, Security Cabin, a Police Booth - developing the Tectonic Vocabulary.

TUTORIAL SESSION	DESIGN STORYTELLING AND NARRATIVES	15 Hrs.
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Elements of a good story: facts, situation, characters, plot and resolution of a design project; Building context in the design process: Emotional, Environmental, Social context; Organizing ideas- Personas, storyboards, and flowcharts; Documenting processes through writing.

Max. 150 Hours

COURSE OUTCOME:

On completion of the course the student will be able to

- CO1 Understand the principles of composition and its importance in architecture
- CO2 Document and analyze a modest design project that incorporates technical and environmental areas of study.
- CO3 Develop analytical and creative thinking.
- CO4 Ability to comprehend the transformation of forms through sketches and three-dimensional models
- CO5 Evolve from concept to pragmatic design within a specific timeline
- CO6 Present an architectural design project and justify the different approaches that rate their judgement for the final solution

TEXT / REFERENCE BOOKS

1. Brown, G. Z. (1985). Sun, wind, and light. Architectural design strategies, John Wiley and sons, 3rd edition.
2. Hamlin, T. (Ed.). (1952). Forms and Functions of Twentieth-century Architecture: Building types: buildings for commerce and industry, for public health, for transportation, for social welfare and recreation. The community as architecture (Vol. 4). Columbia University Press.
3. Prammar V.S., (1973). Design Fundamentals in Architecture, Somaiya Publication Pvt. Ltd.
4. Leland M. Roth, (2014) Understanding Architecture: Its Elements, History, and Meaning, Westview Press
5. Ching, F. D. (2014). Architecture: Form, space, and order. John Wiley & Sons.
6. Gottfried,S.(1984). The four elements of Architecture, London. UK : Cambridge University press.
7. Catanese A.J. and. Snyder.J.C(1988) Introduction to Architecture, New York: Mc Graw Hill.
8. Dekay.M& Brown G.Z. (2014). Sun, wind and Light: Architectural design strategies, John Wiley and sons, 3rd edition

SARA2201	MATERIALS AND CONSTRUCTION STUDIO - I			L	T	P	Credits	Total Marks	
				1	1	3	3	200	
Continuous Assessment	End Semester Examination	Min Pass Marks							
		Continuous Assessment	End Semester Examination						
150	50	75						25	

COURSE OBJECTIVES

- To comprehend the types of building materials and the appropriate applications in the built form and environment.
- To explore the fundamental components of the buildings, the role and purpose in the built forms including the necessary thumb rules for designing temporary shelters and single storied buildings.
- To incorporate appropriate materials while designing space enclosures.

MODULE I INTRODUCTION TO BUILDING MATERIALS

30 Hrs.

Introduction to building materials - Natural building materials – renewable and nonrenewable resources - Definitions, types and applications - soil, sand, aggregate, clay, gravel, timber, coconut leaf, reed, bamboo, Palmyra leaf, lime – Fencing and temporary shelters

Manufactured building materials - Definitions, types and applications - glass, paint/ polish, brick, terracotta products, stabilized mud blocks, polymer, steel, Basics of DPC.

MODULE II INTRODUCTION TO FUNDAMENTALS OF COMPONENTS OF BUILDINGS

45 Hrs.

Introduction to fundamental components of buildings (sub structure & super structure) – definitions and thumb rules based on soil types as well as the number of floors and height of the structure

Principles of load bearing Construction - simple brick footing - principles of bonding, English and Flemish bond, rat trap Brick bond, T-Junctions (1 and 1 1 / 2, 2 bricks), L - Junctions, Cross junction (2 bricks), Brick piers, Cavity walls, rat trap bond, plinth and Sill details, brick arches and lintels, compound walls.

Stone foundation - random rubble/ ashlar, copings, stone piers, plinth and sill details, stone arches and lintels, stone fencing, Dhajji wall construction

Flooring: rammed earth, Natural stones like Shahabad, Tandur, Kota, Kadappa, Marble, Granite, etc., athangudi tiles, red oxide, terracotta tiles (Laying details), brick paving, glazed ceramic tiles, Vitriified tiles - Finishes: pointing, grouting, pavement, mud plastering, PCC.

Max. 75 Hours

Modules	Assignments	Suggestive Outdoor / hands on Workshop	Construction plates	No.	Remarks
I	Collection of brochures, BM and applications in buildings, Case study presentation of temporary structures, specific to building materials and applications - Eraser models to explore types of Bonding	Handling Mud Brick bonding Bamboo Workshop	Construction techniques for temporary structures	1	Facilitates Architectural design III
			Brick bonding	2	
			Stone masonry	1	
			Compound wall section	1	
II	Sketches and pictures – rammed mud wall, stabilized mud wall		Building components (Shallow foundations, flooring, wall, sill, openings, lintel, slab, roof, parapet)	2	

COURSE OUTCOME:

On completion of the course the student will be able to

- CO1** Classify the building materials based on properties and applications in built forms and environment.
- CO2** Explain the applications of building materials in the sub and super structures.
- CO3** Design temporary as well as permanent elements for enclosing spaces both physically and visually.
- CO4** Devise ways to incorporate natural and manufactured materials in buildings.
- CO5** Generate ways to utilize diverse materials for temporary structures as well as single storied buildings.

TEXT / REFERENCE BOOKS

1. Arora S.P. and Bindra S.P., (2012). Text book of Building Construction, Dhanpat Rai & Sons, New Delhi.
2. Chudley R., (1999). Construction Technology (Volume 1), Longman publications 3rd Edition.
3. Ching, F.D.K. (2000). Building Construction Illustrated, John Wiley & Sons
4. McKay W.B. (1981). Building construction, Volume 1 and 2, Longman UK
5. Rangwala S.C. (2000). Building Construction, Anand Chartar Publishing House, India
6. Klans Dukeberg, Bambus - Bamboo, Karl Kramer Verlag Stuttgart Germany, 2000

SARA9202	DESIGN STUDIO II			L	T	P	Credits	Total Marks
				0	1	9	6	300
Continuous Assessment	End Semester Examination	Min Pass Marks						Total
		Continuous Assessment	End Semester Examination					
200	100	100	50			150		

COURSE OBJECTIVES:

- To enable the students, understand the principles of composition and its importance in Architecture and to understand role of transformation of form in Architecture
- To know the importance of spatial qualities and to experiment and understand the art of space arrangement
- To enable Conceptualization in architecture through creative thinking and to analyse the functional relationship between space, user and built environment

MODULE I PRINCIPLES OF COMPOSITION

30 Hrs.

Role of Principles of Design in a built form - Qualities of - Dominance, Unity, Harmony, Punctuating Effect, Dramatic Effect, Climax, Contrast, Accentuation, Fluidity. Analyzing compositions - balance, rhythm, movement etc. and its application.

MODULE II ANALYZING ARCHITECTURE

45 Hrs.

Concept /Content/Context -Understanding the response of a built form as a negotiation of its setting-climatic, social, economic, cultural and aesthetic. Study of built examples through documentation and analysis.

MODULE III EXPLORING ARCHITECTURE

60 Hrs.

The Art of Space Making - Analyzing spatial qualities - spatial in quest of a pavilion Design (e.g. Gazebo, Kiosk, Shop, Security Cabin, a Police Booth - developing the Tectonic Vocabulary.

TUTORIAL SESSION	DESIGN STORYTELLING AND NARRATIVES	15 Hrs.
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Elements of a good story: facts, situation, characters, plot and resolution of a design project; Building context in the design process: Emotional, Environmental, Social context; Organizing ideas- Personas, storyboards, and flowcharts; Documenting processes through writing.

Max. 150 Hours

COURSE OUTCOME:

On completion of the course the student will be able to

- CO1 Understand the principles of composition and its importance in architecture
- CO2 Document and analyze a modest design project that incorporates technical and environmental areas of study.
- CO3 Develop analytical and creative thinking.
- CO4 Ability to comprehend the transformation of forms through sketches and three-dimensional models
- CO5 Evolve from concept to pragmatic design within a specific timeline
- CO6 Present an architectural design project and justify the different approaches that rate their judgement for the final solution

TEXT / REFERENCE BOOKS

9. Brown, G. Z. (1985). Sun, wind, and light. Architectural design strategies, John Wiley and sons, 3rd edition.
10. Hamlin, T. (Ed.). (1952). Forms and Functions of Twentieth-century Architecture: Building types: buildings for commerce and industry, for public health, for transportation, for social welfare and recreation. The community as architecture (Vol. 4). Columbia University Press.
11. Pramdar V.S., (1973). Design Fundamentals in Architecture, Somaiya Publication Pvt. Ltd.
12. Leland M. Roth, (2014) Understanding Architecture: Its Elements, History, and Meaning, Westview Press
13. Ching, F. D. (2014). Architecture: Form, space, and order. John Wiley & Sons.
14. Gottfried,S.(1984). The four elements of Architecture, London. UK : Cambridge University press.
15. Catanese A.J. and. Snyder.J.C(1988) Introduction to Architecture, New York: Mc Graw Hill.
16. Dekay.M& Brown G.Z. (2014). Sun, wind and Light: Architectural design strategies, John Wiley and sons, 3rd edition

