ASSAM SCIENCE AND TECHNOLOGY UNIVERSITY

Guwahati

Course Structure and Syllabus
For
B.ARCH

Semester II / B.ARCH

THEORY						
Sl. no.	**Subject Code**	**Subject**	**L**	**T**	**P**	**C**
1	AR141201	History of Architecture-I	2	0	0	2
2	AR141202	Structural Analysis	2	0	0	2
3	AR141203	Building Materials-II	3	0	0	3
4	AR141204	Art Appreciation	1	0	0	1
STUDIO						
1	AR141215	Basic Design -II	0	2	10	6
2	AR141216	Building Construction-II	0	2	8	5
3	AR141217	Graphics-II	0	0	6	3
4	AR141218	Workshop-II (Model Making)	0	0	4	2
					TOTAL	**24**

SECOND SEMESTER:

AR141201	HISTORY OF ARCHITECTURE-I	L= 2 T= 0 P= 0 C= 2
Module-1	• The origins of Architecture. The Houses, the temple and the tomb. The sciences connected with ancient Architecture, lick cosmology, Geometry, etc. Houses from various regions of the Earth. • Definition of space, form and time. Study of architecture and critical appreciation of the Indian History.	4 hours
Module-2	• ANCIENT INDIA - Impact of; Aryan culture, Vedic religion. The Mauryan Dynasty, The emergence of Empire, Trade routes and communication.	6 hours
Module-3	• Buddhist Architecture: Mauryan dynasty, wooden palace and fort, productions of Ashokan school, Buddhist monuments, Ashokan pillar, Sarnath, Sanchistupa. Rock cut Architecture, Viharas and chaitya halls in the Hinayana and Mahayana periods	8 hours
Module-4	• JAIN PERIOD - General planning, sitting and decorative treatment of Jain Temples.	4 hours
Module-5	• HINDU PERIOD - The role of the Guptas. Trade and social aspects of the culture. Changes in Hinduism. Philosophical schools. Early shrines of the Gupta period. Evolution of principle features of Hindu temples.	8
Module-6	• INDO ARYAN STYLE TEMPLE plan and form, Orissa Temples at Bhubaneswar, Sun temple Konark.	4
	Total	**34 hours**

Reference books:

1. Sir Banister Fletcher, A History of Architecture, University of London, The Antholone Press.

2. G. K. Hiraskar, World History of Architecture, DhanpatRai and Sons, Delhi.

3. Percy Brown, Indian architecture.

4. Satish Grover, Architecture in India

AR141202	STRUCTURAL ANALYSIS	L= 2 T= 0 P= 0 C= 2
Module-1	• Introduction to Statically determinate/ indeterminate Structures with reference to 2D and 3D structures. • Free body diagram of structures. • B.M. and S.F. diagrams for different loading on simply supported beam, cantilever, propped cantilever and overhanging beams. • Three hinged arches, tangential shear and normal thrust	10 hours
Module-2	• Deflection: Different methods, Castigliane's theorems, Reciprocal theorems, Conjugate beam method, Unit load method. (a) Deflection of joints /supports for trusses. (b) Application of Clapeyron's three moment theorem; Continuous beams.	8 hours
Module-3	• ILD for determinate structure for reactions at supports, S. F at a given section, B.M. at a given section, maximum shear and maximum B. M at a given section; problems relating to series of wheel loads, udl less than or greater than the span of the beam, • ILD for B.M., S.F normal thrust and radial shear of a three hinged arch.	8 hours
Module-4	• Suspension cables, 3 hinged stiffening girders • Introduction to space frames.	8 hours
	Total	**34 hours**

Reference books:

1. Structural Analysis - C. S. Reddy, TMH Publisher

2.Structural Analysis - Norvis and Wilber

3. Mechanics of Materials - J. M Gere and S. P. Timoshenko, CBS Publishers and Distributors.

AR141203	BUILDING MATERIALS-II	L= 3 T= 0 P= 0 C= 3
Module-1	• Timber: Uses and characteristics of timber, cutting, seasoning, and preservation of timber. Types of Timber and defects in timber. Protection from termites. Manufacturing process and uses of laminated timber.	6 hours
Module-2	• Iron and Steel: cast iron, Steel and wrought iron with properties, brief idea of manufacturing process and use of iron work in buildings.	8 hours
Module-3	• Paints and Varnishes: Composition, manufacture and properties and uses of ordinary paints, Varnishes and wood preservatives, method of distempering wall surfaces, and painting of timber and iron work.	8 hours
Module-4	• Glass: Types of glass like plate, decorative, tinted, heat absorbing etc. structural glass bricks and glasscrete, fibre glass, wool etc.	6 hours
Module-5	• Corrugated galvanized iron sheets and asbestos cement sheets with accessories and wood preservatives, methods of their fixing, clay tiles – Mangalore, Allahabad and Country type.	6
	Total	**34 hours**

Reference books:

1S.C. Rangwala, Engineering Materials ,Charotar publishing house, Anand, 1982

2. W.B. Mckay. Building construction. Vol-1,Vol-IV

3...S.C. Rangwala, Building Construction , Charotar publishing house, Anand.

4. R. Barry. The construction of Buildings.Vol –I, Vol –IV , The English Language book society, Crospy Lockwood staples ,London.

AR141204	ART APPRECIATION		L= 1 T= 0 P= 0 C= 1
Module no.	**Heading**	**Details of the given heading**	**Hours to teach**
Module 1	Understanding of Art	The definition of art and art forms – the need and meaning. Technical language of art - Appreciation of art forms	2 Hours
Module 2	Various types of Arts	Significance and meaning of various forms of art: Fine Art, Performing Art, Commercial Art, Industrial Art, Folk Art, Abstract Art, Visual Art, Pop Art, etc	4 Hours
Mid- Semester			
Module 3	Art in Western World	Cave paintings of pre-historic period –Art forms and shapes in Egyptian, Mesopotamian, Greek, Roman and Italian Renaissance periods –Birth of Modern arts, definitions of-Impressionism and post-impressionism, art nouveau, cubism Dadaism, surrealism, Abstract art, expressionism, futurism, constructivism, etc	3 Hours
Module 4	Art in India	Cave art, Indus valley civilization, Vedic civilization, Buddhist, Hindu (Indo Aryan and Dravidian), rock - cut art,. Islamic art, Imperial style, Post-independent, Mughal, etc. Recent developments in Indian Art.	3 Hours

Module 5	Art Forms	Nature and Characteristics of different Art Forms: Painting, Sculpture, Architecture, Dance, Drama, Music, Photography, Film, etc	4 Hours
Module 6	Art and Architecture	Relation of Architecture with Art and Art Forms, Latest development in Art- Use of modern materials and technique Study on life and work of regional, National and International Artist (atleast two)	2 Hours

Text Books

1. Helen Gardner, Fred S. Kleiner, Christin J. Mamiya , "Art Through The Ages: The Western Perspective" , Cengage Learning, 2005
2. Humanities the Arts" by F.David Martin and Lac A. Jacobys.

References:

1. Peter and Linda Murray, " The penguin Dictionary of Art and Artist", Penguin Books – 1997.
2. Opdyke H.G. "Art and Nature Appreciation", Macmillan 1932(digitized -2008).
3. Judith Collins, "Techniques of Modern Artists", Chartwell Books – 1997.
4. H. Horvard Arnason, Marla F. Prather, Daniel Wheeler," History of Modern Art: Painting, Sculpture, Architecture, Photography", Prentice Hall Press, 1998

AR141215	BASIC DESIGN -II	L= 0 T= 2 P= 10 C= 6
Aim: Understanding of elements of visual –design translated into detailed drawings & drafting techniques for Architectural-design presentation i.e. Plan, Elevation, Section, Perspectives, Site plan & Model.		
Module-1	• Measured drawings of different furniture types, doors, windows etc. • Dimensional compositions using repetitively the same forms to create different arrangements incorporating, understanding of Activity, Users circulation etc. • Dimensional composition resulting into spaces.	84 hours
Module-2	• Quantitative & qualitative analysis of 3-dimensional space. • Perception of space in terms of mundane, vibrant, soothing, irritating, free flowing etc. • Indoor and Outdoor space relationship.	60 hours
Module-3	• Simple imaginative problems – Memorials, bus Shelter, park furniture etc. Model of the design problems in appropriate scale. • Characteristics of built form – Hi-tech, Urban, Rural, Simulation of different built forms in landscape setting. Model and building visualization.	72 hours
	Total	**216 hours**

Reference books:

1. V.S. Parmer, Design fundamentals in Architecture, Somaiya {publications private limited, New Delhi.

2. Francis D. K. Ching, Architecture-Form, space and order, Van, Nostrand Reinhold company, New York.

AR141216	BUILDING CONSTRUCTION-II	L= 0 T= 2 P= 8 C= 5
Module-1	Lintel and Arches: Brick, stone, timber and RC.C. lintels Arches: Flat, segmental, semicircular, parabolic, elliptical in brick and stone masonry, Joggle joint.	48 hours
Module-2	Simple Timber Doors- Ledged braced battened and paneled door.	26 hours
Module-3	Simple Timber Roofs: Roof layout, ridge. hip, valley, gable etc., Lean to, couple and collar roof with tile and sheet covering.	40 hours
Module-4	Cladding in walls. Prefabricated building components.	30 hours
	Total	**144 hours**

Reference books:

1. W.B. Mckay. Building construction. Vol-I, Vol-IV

2. R Barry. The Construction of Buildings. VoI.1-Vol-IV, The English Language book society, Crospy Lockwood staples, London

AR141217	GRAPHICS-II	L= 0 T= 0 P= 6 C=3
Module-1	• Scaling objects, Composition of drawings on different sizes of sheets • Study of objects in light and shade, sketching techniques and its applications	24 hours
Module-2	• Development of surfaces • Intersection of surfaces	30 hours
Module-3	• Interpenetration of solids and representation in two-dimension. • Analysis of complex forms (mouldings, vaults etc) at different intersections. • Surface development of simple solid forms leading to complex forms including interpenetration.	48 hours
Module-4	• Representation of Floor **plans**, elements above & below plan cut, reflected ceiling plan, site plan with contours, site sections, building **elevations**, building **sections**.	30 hours
	Total	**132 hours**

Reference books:

1. Engineering Graphics/N.D. Bhatt
2. Architecture in Pen and Ink/Chen John S M

AR141218	WORKSHOP-II (MODEL MAKING)	L= 0 T= 0 P= 4 C= 2
Module-1	• Preparation of Block model of geometrical objects using various types of materials like paper, hardboard, soft board, plastic pvc sheet, thermocole, clay, plaster of Paris etc).	24 hours
Module-2	• Different types of arches roof structures like dome, vault, hipped roof, pitched roof etc.	20 hours
Module-3	• Clay and sand modeling of organic forms.	18 hours
	Total	**62 hours**

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