

VEER NARMAD SOUTH GUJARATI JN.VER\$IW,SURAT:

B. Arch I SEMI
COURSE AR101

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STUDIO I - Basic & Architectural Design

Teaching Scheme (No. of Contact hours)			Examination Scheme				Credits	Total	Grand Total	
Theory	Tutorials	Studio	Theory Exam		Practical					
			Duration - Hours	Marks	End Semester Exam	Continuous Internal Evaluation				
-	-	09	-	-	500	'	400	09	900	900

Architectural Design SEMI

Emphasis: Developing basic skill of expression that involves the ability to perceive, abstract and create the design of objects and spaces. Introduction to the principles and elements of TDesign'

Contents: Principles of 2D and 3D composition, function specific design solutions, developing aesthetical and technical understanding of space making, Introduction of the form and function, order and variations, basic organizational principles, human scale, abstractions, sensory stimuli as components of architectural design

Projects: Space making and place making, theme based compositions, volumetric studies, fcrea studies, Literature Review

Basic Design SEM I

Emphasis: Developing visual literacy and basic expressional skill that involves the ability to perceive, abstract and create as a process of the design of objects and spaces.

Contents: Principles of 2D and 3D composition and introduction of basic terminologies related to it, Introduction to the Colour theories, Elements of Composition, Explorations of various materials and medias, developing visual literacy through the process oriented exerci-es and lateral thinking

Projects: Compositions of positive and negative, 2D compositions based on geometrical forms and other objects. Design exercises for developing abstract reasoning, model making and volumetric compositions

References:

1. Ching, Francis D. K. - Form, Space and Order
2. Rasmussen, Stein Eiler - Experiencing Architecture
3. Berger, John - Ways of Seeing
4. Kamiya Takeo - A Guide to the Architecture of the Indian Subcontinent
5. Corbusier, Le - Towards New Architecture
6. Gill, Robert - Rendering with pen and ink
7. ---- Art in everyday life
8. Raskin, Eugene - Architecture: Scale and proportion
9. Gill, Robert - Basic Rendering
10. Ching, Francis D. K. - Graphics in Architecture
11. De Bono, Edward - Lateral thinking

B. Arch I SEMI
COURSE AR102
Technical Representational Drawings I

Teaching Scheme (No. of Contact hours)			Examination Scheme				Credits	Total	Grand Total
Theory	Tutorials	Studio	Theory Exam		Practical				
			Duration - Hours	Marks	End Semester Exam	Continuous Internal Evaluation			
1	-	4	-	-	250	250	5	500	500

Emphasis: Developing skills for representation of geometric forms and compositions as a tool of design

Contents:

- Familiarization with drawing materials and equipments,
- Lettering and architectural abbreviations, calligraphy,
- basic principal of geometry, orthographic projections of points, lines, planes and solids,
- Section of solids and development of surfaces of the solids,
- 3D representations of solids like isometric and axonometric diagrams

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References:

1. Leaseua, Paul: Graphic Thinking for Architects and Designers
2. Ching, Francis D. K. - Graphics in Architecture
3. Bhatt, N. D. - Engineering Drawings

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B ARCH -I SEM-I
COURSE-AR103
Building Material & Construction- I

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/Teaching Scheme (No. of Contact hours)			Examination Scheme				Credits	Total	Grand Total
Theory	Tutorials	Studio	Theory 1	Sxam	Practical		*.		
			Duration - Hours	Marks	' End Semester Exam	Continuous Internal Evaluation			
3	-	2	5	100	30	20	5	50	150

Emphasis: Understanding of building materials & basic building components in construction.

I^mtent:

- Study of basic materials of construction such as sand cement lime aggregates, brick stone metal, glass etc. the structural & physical behavior with respect to its properties & application in building.
- Study of all the types of masonry in stone construction
- Study of brick masonry.
- Introduction to the various components of building like floors, roofs, openings, staircase etc.

Projects: Study through practical site visits, presentations, case studies & workshop based on the application of theory to construction field.

Reference:

1. Mackey W.L -Building Construction,,Vol -I,II,III,
2. Arora S.P. & Bindra S.P. -Building Construction
3. Barry .R - The Construction of Building
4. Cowan Henry J -Handbook of Architectural Technology
5. Allen Edward -Fundamentals of Building Construction

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**B. Arch I SEMI
COURSE C104
Structure-I**

Teaching Scheme (No. of Contact hours)			Examination Scheme				Credits	Total	Grand Total
Theory	Tutorials	Studio	Theory	Sxam	Practical				
			Duration - Hours	Marks	End Semester Exam	Continuous Internal Evaluation			
2	1	2	3	100	30	20	5	50	100

Emphasis: Engineering Mechanics (Static)

Contents:

1. Introduction:

Introduction to fundamental principles of Engineering Mechanics, Newton's Laws of motion, law of parallelogram of forces, principles of forces, principles of transmissibility & concept of rigid body, particle.

2. Natural forms:

Understanding Nature a creative base for understanding structures, correlating natural & man-made structures.

3. Forces:

Types of forces, Static loading, time dependent loading & impact loading. causes & effect of various forces like dead load, imposed load, wind load, earthquake load, Hydrostatic load, erection force etc on building. Forces acting through point, distributed forces on line, area & body.

4. Forces system:

Free body diagram, resolution of forces into components, types of force systems, concurrent, coplanar nonconcurrent etc. forces in planes & space Calculation of resultant for various types force system, calculation of moments, couple equivalent force system.

5. Equilibrium:

Equilibrium conditions of equilibrium for force system, basic types of supports determinacy, Basic behavior of elements" in load transformation. Bending torsion shear tension members compression members etc.

6. Beam:

Introduction as a flexural element, simply supported, overhanging & cantilever beams, determinacy. calculation of reaction at supports for beam, application.

7. Truss:

Introduction, types of truss, analysis of Plane truss & space truss, application.

Graphical Methods:

Graphical methods for resolution of forces, Bow's notation, Force polygon for coplaner force system, Funicular polygon, Analysis of beam & plane truss by graphical method.

8. Distributed forces:

Determination of Centroid , calculation of centre of gravity for line element, area element & volume .calculation of Moment of inertia of area element .parallel axis theorem.

1. Tutorial based on course contents.
2. Practical in lab based on -understanding of forces, equilibrium, beam & truss.
3. Making models based on - stability, forces in members & centre of gravity.
4. Creative exercise based on course content.

1. Bear & Johnston - Vector mechanics for engineers- static
2. Desai & Mistry- Engineering mechanics, static & Dynamics
3. Junarkar & HJ. Shah- Applied Mechanics
4. Jeffery Cook -Seeking structures from nature.

B ARCH -I SEM-I

COURSE-AR105 History of Culture I

Teaching Scheme (No. of Contact hours)			Examination Scheme				Credits	Total	Grand Total
Theory	Tutorials	Studio	Theory Exam		Practical				
			Duration - Hours	Marks	End Semester Exam	Continuous Internal Evaluation			
3	-	-	3	100	-	-	3	-	100

Emphasis: Elementary concept of society, culture and its articulation in Architecture & built form.

Contents: Society & its institutions, culture & cultural elements, traits, attributes, important theories of society & change, urbanization its impact on various cultural attributes & o built form.

- Prehistoric shelters - evolutionary stages of man
- Indus valley civilization
- Egyptian & Mesopotamian civilization

References:

1. Metta Spencer, Alex Inkeles- Foundations of modern society.
2. A.L. Basham-The Wonder that was India
3. Michal Coogan-Worlds Religion -The illustrated guide
4. R.E.M.Wheelers-The Indus Valley Civilization
5. Encyclopedia of Vernacular Architecture, Vol I



B. Arch I SEMI
COURSEAR106
Photography and Graphical Representational Skills

Teaching Scheme (No. of Contact hours)			Examination Scheme				Credits	Total	Grand Total
Theory	Tutorials	Studio	Theory] Duration - Hours	Exam Marks	Practical				
					End Semester Exam	Continuous Internal Evaluation			
-	-	4	-		50	50	4	100	100

Emphasis: Use of different medias and techniques as tools to develop visual and perceptual skills

Contents:

- Observations and representation through drawings with different media as pencil, charcoal, paint brush, crayon, dry pastels etc.
- Object drawings and shading techniques.
- Drawings of simple geometric objects.

Observation and representation through camera

- Introduction to camera and various lenses and filters.
- Shutter speed, aperture, field of depth.
- Frames of reference, framing a composition.
- Various types of photography such as nature, architecture, portrait, landscape, urban landscape etc.
- Presentation and display of the photographs, printing and developing.

References:

1. Thames & Houdson- Pen & Ink Rendering
2. Gill, Robert - Basic Rendering
3. Ching, Francis D. K. - Graphics in Architecture

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B. Arch I SEMII
COURSE AR 201 STUDIO II - Basic
& Architectural Design

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Teaching Scheme (No. of Contact hours)			Examination Scheme				Credits	Total	Grand Total
Theory	Tutorials	Studio	Theory Exam		Practical				
			Duration - Hours	Marks	End Semester Exam	Continuous Internal Evaluation			
-	-	10	-	-	500	500	10	1000	1000

Architectural Design SEM II

Emphasis: Introduction to the fundamentals of architectural design like form, space, scale and proportions, functions and anthropometrics, structure and materials, sensory qualities

Contents: Anthropometric studies, human physiology and ergonomics, understanding of interrelationships of functions, Design parameters like spatial order, basic modulation, space-structure-form correlation, principles of abstractions, spatial scales, ordering mechanism, evolution of form

Projects: Detailed Study of Anthropometrics, Small scale design projects, Design of small structures and spaces with specific functions, theme based compositions, volumetric studies, area studies, literature Review

Basic Design SEM II Emphasis: Introduction to the principles design like function and form, scale and proportions, colour and texture, materials and surfaces

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Contents: Application of colour theories and cycles, Study of various textures and colours with its inherent expressions and effects, Study of natural forms like leaf, shell, tomato etc., Application of various materials like Clay, Paper Mache, Timber, Steel etc, Application of various graphic techniques and development of abstract reasoning

Projects: Theme based compositions, volumetric studies, Literature Review



Drawing & Painting

Developing visual and perceptual skills with the help of different medias and techniques

- Observations and representation through drawings with different media as pencil, charcoal, paint brush, crayon, dry pastels etc.
- * Object drawings and shading techniques
- Drawings of simple geometric objects, complex geometries, objects in nature
- Abstraction of perceived images
- Rendering techniques and use of colours
- * Human figure studies in line drawings, shade and sculptural mass

1. Ching, Francis D. K. - Form, Space and Order
2. Rasmussen, Stein Eiler - Experiencing Architecture
3. Berger, John-Ways of Seeing
4. Kamiya Takeo - A Guide to die Architecture of the Indian Subcontinent
5. Oorbusier, Le - Towards New Architecture ' *
6. Scriver, Peter and Bhatt, Vikram - After die Masters
7. Gill, Robert-Rendering with pen and ink
8. Ruskin, Eugene - Architecture: Scale and proportion
9. Gill, Robert - Basic Rendering
10. Ching, Francis D. K. - Graphics in Architecture •-
11. De Bono, Edward - Lateral dunking -i
12. Thames & Houdson- Pen & Ink Rendering

B. Arch I SEMII
COURSE AR 202 Technical Representational
Drawings II

Teaching Scheme (No. of Contact hours)			Examination Scheme				Credits	Total	Grand Total*
Theory	Tutorials	Studio	Theory Exam		Practical				
			Duration - Hours	Marks	End Semester Exam	Continuous Internal Evaluation			
1	-	4	-	-	250	250	5	500	500

Emphasis: Developing the skill for visualization & representation of geometric forms and compositions as a tool of design

Contents:

Auxiliary projections, perspectives — one point and two points
 Rendering techniques
 Development of lateral surfaces in sections
 Interpenetration of geometric solids and conditions of intersections
 Sciography — methods to represent shadow and depth of an object in 2D and 3D projections with introduction to sun movements

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References:

1. Leaseua, Paul: Graphic Thinking for Architects and Designers
2. Ching, Francis D. K. - Graphics in Architecture
3. Bhatt, N. D. - Engineering Drawing

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B ARCH -I SEM-II
COURSE-AR203
Building Material & Construction- II

Teaching Scheme (No. of Contact hours)			Examination Scheme				Credits	Total	Grand Total
Theory	Tutorials	Studio	Theory Exam		Practical				
			Duration - Hours	Marks	End Semester Exam	Continuous Internal Evaluation			

Topic:

Content:

3	-	2	5	100	30	20	5-	50	100
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Study of building systems & various building components.

- Understanding the concept of load bearing & framed structures & composite structures
- Study of building components such as foundations, walls, floors, openings etc .in Load bearing & framed structures.
- Forming of opening in various materials for the building types such as lintels arches etc.
- Types of footings & shallow foundations.
- Study the various RCC construction equipment
- Study of joinery in timber & metal.

Projects: Study through practical site visits, presentations, case studies & workshop based on the application of theory to construction field.

Ref:

Reference:

1. Mackey W.L -Building Construction, Vol -I,II,III,
2. Arora S.P. & Bindra S.P. -Building Construction
3. Barry .R-The Construction of Building
4. Cowan Henry J -Handbook of Architectural Technology
5. Allen Edward -Fundamentals of Building Construction

B. Arch I SEMI
COURSE C204
Structure-II

Teaching Scheme (No. of Contact hours)			Examination Scheme				Credits	Total	Grand Total
Theory	Tutorials	Studio	Theory Exam		Practical				
			Duration - Hours	Marks	End Semester Exam	Continuous Internal Evaluation			
2	1	2	3	100	30	20	5	50	100

Emphasis: Strength of Material
Contents:

1. Simple stress & strain:

Introduction behavior of material under loading , stress & strain due to axial force, Hook's law working stress, Ultimate stress, factor of safety, permissible stress, lateral strain, Poission's ratio, volumetric strain, Young's modulus, Modulus of rigidity & their interrelationship , stress due to temperature..

2. Principle Stress & strain:

Biaxial stresses, complimentary shear, calculation of Principle stresses & strain, principle planes . Analytical & graphical method of finding Principle stresses, strains & principal planes.

3. Shear Force & bending Moment diagram for Determinate beams: Introduction to shear, bending, calculation of Shear force & bending moment for beams subjected to various types of load combination i.e. point load, distributed load with various types of support conditions like simply supported, overhanging, cantilever etc. Relationship between bending moment & shear force diagram, determination of point of contraflexure, Application of Shear force & bending moment diagram.

4. Shear force & Bending moment diagram for Indeterminate Beams: Calculation of shear force & bending moment for Fixed & Continuous beams using theorem of three moments. Shear force & bending moment diagrams, interpretation of diagram & its application.

5. Shear force & Bending moment diagram for Determinate Beams & Indeterminate plane frames & arches:

Calculation of Shear force & bending moment for statically determinate & indeterminate plane frames subjected to gravity & lateral load.

6. Torsion:

Introduction to torsion, basic behavior

Projects:

1. Tutorial based on course contents.
2. Practical in lab based on -Testing of materials under various action like compression, tension etc.

3. Junarkar & HJ. Shah- Applied Mechanics
4. Popov P E.. - Mechanics of structures, Vol I & II
5. Bansal K R - A text book of Strength of material
6. Khurmi R.S. - Strength of Material
7. S .Ramamrutham-Strength of Material

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BARCH -I SEM-II
COURSE- AR205
History of Culture II

Teaching Scheme (No. of Contact hours)			Examination Scheme				Credits	Total	Grand Total
Theory	Tutorials	Studio	Theory Exam		Practical				
			Duration - Hours	Marks	End Semester Exam	Continuous Internal Evaluation			
2	-	-	2	100	-	1	2	-	100

Emphasis: Study of society; its historical, socio-institutional developments; settlements, public & private spaces; symbols & meaning in built, form & spatial structures.

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Content:

A. World history.

- Minonian/ Mycenaean civilizations
- Rise & decline of Greek city
- Early Rome -Roman Empire & its decline
- Chinese Civilization
- Civilizations of South America

B. Indian History

- Vedic period / Aryanization in India
- Mauryan Period

C. Religion & its articulation in architecture & sacred built forms with special emphasis on Bhagvatism /Shaivism & Hindu Cosmogony

Refernces:

1. Doughlas Goodwine -A brief history of Ancient World
2. Ancient Egypt; Time- Life books Series
3. Romilla thapar, Percival Spear-A History of India; Vol-1&2
4. Cambridge History & Culture of the Indian People; Vol-1&2
5. R.C. Mujumdar- Ancient India

15

B. Arch I SEMII
COURSE AR206s
Environment & Ecology

Teaching Scheme (No. of Contact hours)			Examination Scheme				Credits	Total	Grand Total
Theory	Tutorials	Studio	Theory Exam		Practical				
			Duration - Hours	Marks	End Semester	Continuous Internal Evaluation			
3	-	-	3	100	-	-	3	-	100

Understanding of ecology & the relationship of built & natural environment

Contents:

- Concept of ecology & ecosystem.
- Study of biological cycles.
- Resources & its conservation.
- Study of various climatic zones & issues of ecological balance.
- Study of various climatic forces.
- Urbanization & its impact on natural environment such as* forestry, agriculture, water bodies, landforms etc.
- Pollution & its types.
- Introduction to the concept of sustainable habitats.

References:

1. Donum E.P. -Fundamental of Ecology
2. Forest Steams & Tom Montang- The Urban Ecosystem; A Holistic approach.
3. Kormandy. E.J.- Concept of Ecology
- *4 World Resources-WHO