

VEER NARMAD SOUTH GUJARAT UNIVERSITY, SURAT.

B. Architectural

Semester - I

COURSE	COURSE NO.	TEACHING SCHEME		Credits
		L Hours	S/P/T/W Hours (TW)	
1	2	3	4	5
Studio – I Basic and Arch. Design	AR - 101	-	8 (5+3)	8
Technical Representation Drawing I (TRD)	AR – 102	-	5	5
Bldg. Materials Construction – I	AR – 103	3	2	5
Structures – I	C – 104	2	3	5
History of Culture – I	AR – 105	3	-	3
Photography & Graphical Representation Skills*	AR – 106	-	4	4
		08	22	30
Total Contact Hours / Week		Total Hours - 30		
Communication Skills				02

* Graphical Skills will include any one skill e.g., Drawing and Painting, Sketching, etc.

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COURSE AR 101

STUDIO I – Basic & Architectural Design

Teaching Scheme (No. of Contact hours)			Examination Scheme				Grand Total	Credits	
Theory	Tutorials	Studio	Theory Exam		Practical		Total		
			Duration - Hours	Marks	End Semester Exam	Continuous Internal Evaluation			
-	-	08	-	-	400	400	800	800	08

Architectural Design SEM I

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 'Design'

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, area 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 exercises 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. Ruskin, Eugene – Architecture: Scale and proportion
9. Gill, Robert – Basic Rendering
10. Ching, Francis D. K. – Graphics in Architecture
11. De Bono, Edward – Lateral thinking

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COURSE AR 102 Technical Representational Drawings I

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

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,
- 3 D representations of solids like isometric and axonometric diagrams

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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COURSE- AR103 Building Material & Construction- I

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

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

Content:

- 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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COURSE C104

Structure-I

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

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.

Projects :

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.

References:

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

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COURSE- AR105 History of Culture I

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

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. Encyclopida of Vernacular Architecture, Vol I

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COURSE AR106

Photography and Graphical Representational Skills

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

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