

VEER NARMAD SOUTH GUJARAT UNIVERSITY, SURAT.

B. Architectural

Semester - II

<i>COURSE</i>	COURSE NO.	TEACHING SCHEME		Credits
		L Hours	S/P/T/W Hours (TW)	
1	2	3	4	5
Studio – II Basic and Arch. Design	AR - 201	-	9 (3+4+2)	9
Technical Representation Drawing II (TRD)	AR – 202	-	5	5
Bldg. Materials & Construction – II	AR – 203	3	2	5
Structures – II	C – 204	2	3	5
History of Culture– II	AR – 205	3	-	3
Environment & Ecology	AR – 206	3	-	3
		11	19	30
Total Contact Hours / Week		Total Hours - 30		
Communication Skills				02

Note: Communication skills is compulsory to pass but will not be added in Calculating the CPI

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COURSE AR 201 STUDIO II – 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		
-	-	9	-	-	400	500	900	900

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

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

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

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, 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

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. Scriver, Peter and Bhatt, Vikram – After the 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 thinking
12. Thames & Houdson- Pen & Ink Rendering

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COURSE AR 202

Technical Representational Drawings II

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 the skills 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

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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COURSE- AR203

Building Material & Construction- II

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: Study of building systems & various building components.

Content:

- 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 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.

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 C204 Structure-II

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: 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 interrelation ship , 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 contra flexure, 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.

References:

1. Junarkar & H,J. Shah- Applied Mechanics
2. Popov P E.. – Mechanics of structures, Vol I & II
3. Bansal.K R - A text book of Strength of material
4. Khurmi R.S. - Strength of Material
5. S. Ramamrutham- Strength of Material

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COURSE- AR205 History of Culture II

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

Content:

A. World history:

- Minoan/ 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

References:

1. Douglas 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

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COURSE AR 206 Environment & Ecology

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: 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 Stearus & Tom Montang- The Urban Ecosystem; A Holistic approach.
3. Kormandy. E.J.- Concept of Ecology
4. World Resources- WHO