B.ARCH. III SEM V
COURSE AR-501
Architectural Design Studio V
(Effective From 2008)

					EXAMINATION SCHEME						GRAND TOTAL
COURSE	COURSE NO.	TEACHING SCHEME			THEORY EXAMS		PRACTICAL EXAM				
		L Hours	S/P/W Hours (TW)	Credits	Duration Hours	Marks	Tutorial Marks	End Sem Marks	Conti. Eval Marks	Total (8+9+10)	Marks (7+11)
1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**
Architectural Design Studio - V	AR – 501	-	11	11	-	-	-	200/80	200	400/192	400

Emphasis: Determinants of space making on housing or house forms in rural and urban context and their relevance

Contents: Identification of the cultural factors of space making such as notion of privacy and territoriality, family structure and hierarchy, gender roles, occupational associations, traditional values and their continuity etc., interpretations of socio-cultural factors in the built form in terms of spatial organization, orientation, open, semi open and closed spaces correlation, scales and proportions etc., climate and topography, local construction system and use of materials, bye laws

Projects: Design of various typologies such as dwelling-cluster and neighbourhood in a specific community and context, relevant case studies and their analysis, literature review, exercises related to relevant or appropriate construction systems and materials

References:

1. Rapoport, Amos: House Form and Culture
2. Rudofsky, Bernard: Architecture without Architects
3. Oliver, Paul: EVAW
4. Joglekar, M. N.: Contemporary Architecture in India
5. Mc Camant & Durrett: Co-housing
6. Bhatia, Gautam: Life, works and writings of Laurie Baker

B.ARCH. III SEM V
COURSE AR-502
History of Architecture III

					EXAMINATION SCHEME						GRAND TOTAL
COURSE	COURSE NO.	TEACHING SCHEME			THEORY EXAMS		PRACTICAL EXAM				
		L Hours	S/P/W Hours (TW)	Credits	Duration Hours	Marks	Tutorial Marks	End Sem Marks	Conti. Eval Marks	Total (8+9+10)	Marks (7+11)
1	2	3	4	5	6	7	8	9	10	11	12
History of Architecture III	AR – 502	3	-	3	2	50/18	-	30/12	20	50/24	100

Emphasis: Evolution of the built environment or human habitat as a complex and multilayered synthesis of 'culture, climate and construction'

Contents: Study of spatial order, structure and materials, articulations, symbols and meanings in the built forms at various scales of settlements, institutions and dwellings in the following time period:

13th – 18th Century AD

India

- Middle East & Influences in India: Religious Philosophy, Islamic building types, Sense of Unity – Order and Geometry
- Islamic Architecture : Evolution in North India (Delhi Regimes)
- Deccan and Central India – Mandu, Bidar, Bijapur
- Sultanate architecture – Gujarat
- Evolution of Dwelling types in India
- Other than Islamic architecture in India

West

- Renaissance
- Mannerist
- Baroque
- Neo Classical

Developments in Japan, Middle East and Others

Projects: Model making, Literature reviews, Assignments, Debates

References:

- Meaning in Western Architecture – Christian Norberg-Schulz
- Space, Time and Architecture – Sigfried Gideon
- Bernini – Franco Borsi
- The Architecture of Michaelangelo – James S. Ackerman
- Baroque and Rococo – Sachervevell Sitwell
- The Four Books of Architecture – Andrea Palladio
- Architecture : From Prehistory to Post-Modernity – Trachtenberg and Hyman
- The History of Architecture in India - Christopher Tadgell
- Indian Architecture (Islamic Period) - Percy Brown.
- Living Architecture Series – Architecture of the World: Islamic India, Renaissance, Baroque

B.ARCH. III SEM V
COURSE AR-503
Building Material & Construction- V

					EXAMINATION SCHEME						GRAND TOTAL
COURSE	COURSE NO.	TEACHING SCHEME			THEORY EXAMS		PRACTICAL EXAM				
		L Hours	S/P/W Hours (TW)	Credits	Duration Hours	Marks	Tutorial Marks	End Sem Marks	Conti. Eval Marks	Total (8+9+10)	Marks (7+11)
1	2	3	4	5	6	7	8	9	10	11	12
Building Materials & Construction – V	AR – 503	2	2	4	3	100/36	-	60/24	40	100/48	200

Emphasis: Understanding of specialized construction system

Content:

- Understanding of Precast and Prestressed concrete components and their applications in building /construction industry.
- **Materials and Construction Technology for large span structures(Temporary/Permanent):**

- Modular unit system
- Tensile/Compressive structures
- Space frame system
- Shell structures
- High rise structures.

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

Reference:

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

B.ARCH. III SEM V
COURSE AR-504
Structure- V

					EXAMINATION SCHEME						GRAND TOTAL
COURSE	COURSE NO.	TEACHING SCHEME			THEORY EXAMS		PRACTICAL EXAM				
		L Hours	S/P/W Hours (TW)	Credits	Duration Hours	Marks	Tutorial Marks	End Sem Marks	Conti. Eval Marks	Total (8+9+10)	Marks (7+11)
1	2	3	4	5	6	7	8	9	10	11	12
Structure - V	AR – 504	2	2	4	3	100/36	-	60/24	40	100/48	200

Emphasis : **Design & detailing of Steel structure**.

Contents :

1. Rolled Steel sections :
Study of IS Rolled steel sections & steel table.

2. Design of a Tension member :
Design of a Tension member for a single & built up section.

3. Design of a Compression member :
Design of a Compression member - single & built up sections.

4. Design of a simple roof truss :
Calculation of wind load, Design of a simple roof truss.

5. Design of beams :
Design of beams - single & built up sections.

6. Design of Footing :
Design & detailing of slab based & Gusseted based footings.

7. Connections in steel structure:
Types of connections, Riveted, Welded & bolted connections. Design of riveted & welded connection for an axial members i.e. members of a truss, Connection for beam & column, Framed connection, Seated connection, Design of Compression member

Project :

1. Analysis & design of simple elements with detailing based on course content.
2. Site visits & case studies of steel structure.
3. Making study models for various types of connections

Reference :

1. L.S.Negi, " Design of steel structure."
2. A.S. Arya & J.L. Ajamani, "Design of steel structure."
3. Kazmi & Jindal, "Design of steel structure."
4. INSDAG publication, " Teaching resources for steel design."
5. IS 800, " Design of steel structure."
6. IS 875 –1987, Part I to V.

B. ARCH – III SEMESTER – V
COURSE AR- 505
Specifications

					EXAMINATION SCHEME						GRAND TOTAL
COURSE	**COURSE NO.**	**TEACHING SCHEME**			**THEORY EXAMS**		**PRACTICAL EXAM**				
		L Hours	S/P/W Hours (TW)	Credits	Duration Hours	Marks	Tutorial Marks	End Sem Marks	Conti. Eval Marks	Total (8+9+10)	Marks (7+11)
1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**
Specifications	AR – 505	2	-	2	2	50/18	-	30/12	20	50/24	100

Emphasis:
Specifications and its relevance to architectural practice.

Contents:

1. Types of Specifications:
2. Process oriented and performance specifications. Constituents of specifications. Materials qualities and proportions, labour quality of measurements, methods of structuring and writing specifications in a total set of contract and quality implications of specifications. Trade off ideal and realistic specifications.

Reference:

1. Estimating and Costing, S. C. Rangwala.
2. Estimating and Costing, B. N. Dutta.
3. Engineering Contract and Specifications, Abbet Robert W.

B-Arch-III Semester-V
Course AR -506
Building Services-II

					EXAMINATION SCHEME						GRAND TOTAL
COURSE	COURSE NO.	TEACHING SCHEME			THEORY EXAMS		PRACTICAL EXAM				
		L Hours	S/P/W Hours (TW)	Credits	Duration Hours	Marks	Tutorial Marks	End Sem Marks	Conti. Eval Marks	Total (8+9+10)	Marks (7+11)
1	2	3	4	5	6	7	8	9	10	11	12
Building Services – II	AR – 506	2	2	4	3	100/36	-	60/24	40	100/48	200

Emphasis:

- Introduction to mechanized building services: its use, application and installation. (Lifts and Air conditioners)
- Understanding of acoustics as a part of building design and its applications.

Content:

1. Lifts

- Lifts, grouping of lifts, return-travel time, design of lift well, carrying capacity, installation requirements.
- Design of specialized lifts for heavy loads

2. Air conditioning

- Different systems in current use from chilled water cooling systems to air handling package unit etc; their installations requirements and demand in building layouts.
- Supply air, return air ducting systems, their layouts and requirements along with building systems.

3. Acoustics

- Properties of sound, process of hearing, behavior of sound, acoustics for various spaces/ functional areas, noise control, outdoor and indoor sound input/output systems, noise control of building materials, prediction methods and calculations, noise reduction, properties of materials for sound insulation, testing, room acoustics, reverberation time in functional areas.

Project: The project work / studio work focuses on energy efficient, energy saving and environment friendly techniques/ materials/ systems used.

1. Study of cinema halls, auditoriums, recording studios, lecture halls.
2. Market survey of light fixtures, acoustical building materials, finishes.
3. Case study and literature study of different buildings with reference to lifts and air-conditioning systems.
4. Comparative analytical study of complexities arising due to lifts, air conditioning and acoustics provided as a “set of systems/services” as architectural expressions and functionality in a planned area.
5. Exploration of building services (lifts/air-conditioning/acoustics) **as mechanized systems based on passive energy mechanisms / systems** (based on natural flow of air/ pressurized air / water recycling plants/ steam based cycles/ gravity based systems etc.

References:

1. Master handbook of acoustics by Alton Everest
2. Time saver standards for architectural design data by Calendar
3. Mechanical and electrical equipments for buildings: Stein/Reynolds/Mc Guiness

B.ARCH –III SEM-V
COURSE- AR-507
Electives - II

					EXAMINATION SCHEME						GRAND TOTAL
COURSE	COURSE NO.	TEACHING SCHEME			THEORY EXAMS		PRACTICAL EXAM				
		L Hours	S/P/W Hours (TW)	Credits	Duration Hours	Marks	Tutorial Marks	End Sem Marks	Conti. Eval Marks	Total (8+9+10)	Marks (7+11)
1	2	3	4	5	6	7	8	9	10	11	12
Elective II	AR – 507	2	-	2	2	50/18	-	30/12	20	50/24	100

AR-507 A
Elective: Traditional Architecture

Emphasis: **S**tudy & overview the influence of cultural system & ethos in the evolution & development of traditional architecture of a place & region

Content:

Introduction to vernacular & traditional architecture. To understand & identify the constants of a traditional building environment in today's multi cultural society. Study of cultural connotation & other determinants of traditional built form as, climate, site, building material & technology along with behavioral studies. Understanding the domestic architecture of a place & various typology of built form in a traditional settlement

Reference:

i. Oliver Paul: Encyclopedia of vernacular architecture , Vol I,II,III
ii. Rapoport Amos: House form & culture
iii. Criticism in Architrcture
iv. Jain Kulbhushan: Thematic Spaces
v. Jain Kulbhushan & Jain Minakshi: Mud Architecture of Indian Desert,
vi. Jain Kulbhushan & Jain Minakshi: Indian City in the Arid West
vii. Rudofsky Bernard: Architecture without Architects.

AR-507 B
Elective: Art Appreciation

Emphasis: To Understand and refine the visual perception in the field of art & architecture

Content:

Developing the criteria for making visual aesthetic decision & value judgment in the works of art and to be aware of many images & forms of art & design. Establish appropriate standards of composition, context & craftsmanship. Developing innate understanding of art form.

Reference:

i. Goldstein Harriet & Goldstein Vetta: Art in Everyday life.
ii. L. Moholy Nagy : Vision in motion
iii. Gyorgy Kepes: Education in Vision

AR-507 C
Elective: Research Paper Writing

Emphasis: Developing skills for paper writing on a particular topic with identifying a current issue of interest to the profession and seek to clarify the question or answer some part of it based on an investigation of past events.

Content:

- Identifying and issue based on interest and concerns
- How to pick a topic?
- Researching on the topic
- Analysis
- Visual Analysis
- Textual Analysis
- Historical Analysis
- Developing a topic
- Writing the research Paper