ANNA UNIVERSITY TIRUCHIRAPPALLLI
Tiruchirappalli – 620 024

Regulations 2007

Curriculum

B.ARCH

SEMESTER III

S.No.	Subject Code	Subject	L	T	P	Max. Marks
Theory						
1		Mechanics of Structures II	3	-	-	100
2		Theory of Architecture II	2	-	-	100
3		History of Architecture III	2	-	-	100
4		Climatology	2	-	-	100
5		Environmental Sciences and Engineering	3	-	-	100
Theory Cum Studio						
6		Materials and Construction III	2	-	3	100
Studio						
7		Architectural Design III	-	-	14	300

SEMESTER IV

S.No.	Subject Code	Subject	L	T	P	Max. Marks
Theory						
1		Design of Structures I	3	-	-	100
2		Site Planning	2	-	-	100
3		History of Architecture IV	2	-	-	100
4		Building Services I	3	-	-	100
5		Elective I	2	-	-	100
Theory Cum Studio						
6		Materials and Construction IV	2	-	3	100
Studio						
7		Architectural Design IV	-	-	14	300

SEMESTER V

S.No.	Subject Code	Subject	L	T	P	Max. Marks
Theory						
1		Design of Structures II	3	-	-	100
2		Architectural Acoustics	2	-	-	100
3		History of Architecture V	2	-	-	100
4		Building Services II	3	-	-	100
5		Elective II	2	-	-	100
Theory Cum Studio						
6		Materials and Construction V	2	-	3	100
Studio						
7		Architectural Design V	-	-	14	300

SEMESTER VI

S.No.	Subject Code	Subject	L	T	P	Max. Marks
Theory						
1		Design of Structures III	3	-	-	100
2		Interior Design Principles	2	-	-	100
3		History of Architecture VI	2	-	-	100
4		Building Services III	3	-	-	100
5		Elective III	2	-	-	100
Theory Cum Studio						
6		Materials and Construction VI	2	-	3	100
Studio						
7		Architectural Design VI	-	-	14	300

SEMESTER VII

S.No.	Subject Code	Subject	L	T	P	Max. Marks
Theory						
1		Design of Structures IV	2	-	-	100
2		Professional Ethics & Practice I	2	-	-	100
3		Human Settlement Planning	3	-	-	100
4		Specification and Estimation	2	-	-	100
5		Elective IV	3	-	-	100
6		Elective V	3	-	-	100
Studio						
7		Architectural Design VII	-	-	16	300

SEMESTER VIII

S.No.	Subject Code	Subject	L	T	P	Max. Marks
Theory						
1		Practical Training	-	-	-	500

SEMESTER IX

S.No.	Subject Code	Subject	L	T	P	Max. Marks
Theory						
1		Landscape and Ecology	3	-	-	100
2		Professional Ethics & Practice II	2	-	-	100
3		Urban Economics & Sociology	2	-	-	100
4		Elective VI	3	-	-	100
5		Elective VII	3	-	-	100
Studio						
7		Architectural Design VIII	-	-	16	300

SEMESTER X

S.No.	Subject Code	Subject	L	T	P	Max. Marks
Theory						
1		Elective VIII	3	-	-	100
2		Elective IX	3	-	-	100
Studio						
7		Thesis	-	-	15	500

LIST OF ELECTIVES

S.No.	Subject Code	Subject	L	T	P	Max. Marks
ELECTIVE I (Fourth semester)						
1		Vernacular Architecture	2	0	0	100
2		Industrial Building System	2	0	0	100
3		Indian Constitution and Society	3	0	0	100
ELECTIVE II (Fifth semester)						
1		Energy Efficient Architecture	2	0	0	100
2		Traditional Indian Architecture I	2	0	0	100
3		Intellectual Property Rights	3	0	0	100
ELECTIVE III (Sixth semester)						
1		Theory of Design	2	0	0	100
2		Waste Management and Recycling	2	0	0	100
3		Multimedia Design tools	0	0	4	100
ELECTIVE IV (Seventh semester)						
1		Urban Housing	2	2	0	100
2		Traditional Indian Architecture II	3	0	0	100
ELECTIVE V (Seventh Semester)						
1		Urban Environment and Perception	3	0	0	100
2		Construction Technology	3	0	0	100
ELECTIVE VI (Ninth semester)						
1		Urban Design & Renewal	3	0	0	100
2		Project Management	3	0	0	100
ELECTIVE VII (Ninth semester)						
1		Architectural Conservation	3	0	0	100
2		Advanced Structures	3	0	0	100
ELECTIVE VIII (Tenth semester)						
1		Interior Design & practices	3	0	0	100
2		Building Management System	2	2	0	100
ELECTIVE IX (Tenth semester)						
1		Environmental Design	3	0	0	100
2		Industrial Architecture	3	0	0	100
3		Sustainable Planning and Architecture	3	0	0	100

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MECHANICS OF STRUCTURES II

L	T	P	M
3	0	0	100

UNIT I **SHEAR FORCE AND BENDING MOMENT** **10**

Concept of shearing forces and Bending Moments - shear force and bending Moment diagrams for cantilever and simply supported beams subjected to point load, uniformly distiuted loads and their combinations

UNIT II **STRESSES IN BEAMS** **10**

Theory of simple bending -bending stresses in beams, shear stresses in beams - examples on simple sections. Stress distribution diagrams.

UNIT III **DEFLECTION OF BEAMS** **10**

Slope and deflection at a section - Double Integration and Macaulay's method for simply supported and cantilever beams for concentrated loads and uniformly distributed loads.

UNIT IV **THEORY OF COLUMNS** **10**

Short and long columns - Euler's method and its limitations - Derivations of Euler's formula (for different end conditions) – Rankine's formula for columns (No derivations) – Application to simple problems.

UNIT V **INTRODUCTION TO INDETERMINATE STRUCTURES** **5**

Concept in Analysis of continuous beams, fixed beams, and partial frames (No analysis problems).

Total: 45

TEXT BOOKS

1. M.M.Ratwani & V.N.Vazirani, Analysis of Structure, Vol.1, Khanna Publishers – Delhi, 1987
2. A.R.Jain and B.K.Jain, Theory and analysis of Structures, Vol. 1, Nemchand and Bros, Roorkee, 1987.

REFERENCES

1. Dr.V.S.Prasad, Basic Structural Mechanics, Galgotia Publications.
2. Timoshenko, S.P., and D.H. Young, Elements of Strength of Materials, Fifth edition, East West Press, 1993
3. B.C.Punmia, "Strength of Materials and Theory of Structures", Vol. 1, Laxmi publications, New Delhi 1994
4. R.K. Rajput "Strength of Materials", S.Chand & Company Ltd., New Delhi 1996

THEORY OF ARCHITECTURE II

L	T	P	M
2	0	0	100

UNIT I ORGANISATION OF FORMS AND SPACES 5

a) Spatial Relationships: i) Space within space, ii) Interlocking spaces, iii) Adjacent spaces, iv) Space linked by a common space b) Spatial Organization: influencing factors and their types i) Centralized, ii) Linear, iii) Radial, iv) Clustered, v) Grid c) Articulation of forms and spaces types: i) Edges and corners, ii) Surface

UNIT II CHARACTER AND STYLE IN BUILDINGS 9

Factors influencing the character and style of buildings. Study of examples from Buddhist, Hindu and Islamic Architecture in India - Greek, Roman, Gothic Renaissance, Modern and Post Modern Movement.

UNIT III PRINCIPLES OF COMPOSITION 3

Unity, harmony and specific qualities of design to include dominance, punctuating effect, dramatic effect, fluidity, climax, accentuation and contrast with building examples.

UNIT IV CIRCULATION 4

Function of building circulation components of building circulation - The building approach, The building entrance, configuration of the path, path space relationship, form of circulation space with examples. Simple circulation diagram for buildings.

UNIT V WORKS OF CONTEMPORARY ARCHITECTS 9

Works of following modern and post modern architects and their ideologies and philosophies in brief - Louis Sullivan, F.L.Wright, Louis Khan, Le Corbusier, Philip Johnson, Charles Correa, and Michael Graves.

Total: 30

TEXT BOOKS

1. Paul Alan Johnson - The Theory of Architecture - Concepts and Themes - Van Vostrand Reinhold Co - 1994
2. Francis D.K.Ching, Architecture - Form, Space and Order, Van Nostrand Publications, New York, 1979.
3. V.S. Pramar, Design Fundamental in Architecture - Somaiya Publications Pvt. Ltd. New Delhi, 1973

REFERENCES

1. Ernest Burden - Elements of Architectural Design - A visual resource, Van Nostrand Reinhold, 1994
2. Sir Bannister Fletcher - A History of Architecture, Butterworths, London, 1987.

HISTORY OF ARCHITECTURE – III

L	T	P	M
2	0	0	100

UNIT I ROMANESQUE 6

The medieval ages - learning in the monasteries, evolution of the guilds - Factors influencing architecture - outline of architectural character if Italy, France and England - Examples: Pisa group, Italy Abbay aux Hommes, Caen, Tower of London.

UNIT II FRENCH GOTHIC 4

Religious and social influences - evolution of vaulting and development of structural systems - outline of Architectural character - Examples: Notre Dame, Paris.

UNIT III ENGLISH AND ITALIAN GOTHIC 4

Development of English gothic vaulting - outline of Architectural character in England and Italy - Examples: Westminster Abbey, Hampton Court Palace, London, Doges Palace, Venice, Milan Cathedral.

UNIT IV ITALIAN RENAISSANCE 8

The idea of rebirth and revival of art - sociological influences in art and architecture - Development of thought, emergence of merchant communities and their patronage. Outline of the Architecture during the early Renaissance, High Renaissance and Baroque Periods - Features of a typical Renaissance palace, eg. Palazzo Ricardi, Study of life history philosophy, contribution of the following architects; Brunelleschi, Mischaelangelo, Andrea Palladio.

UNIT V FRENCH & ENGLISH RENAISSANCE 8

Outline of the architectural character of French and English Renaissance - Domestic Architecture in England - Study of the life, philosophy and works of the following architects: Sir Christopher Wren, Inigo Jones.

Total: 30

TEXT BOOKS

1. Sir Bannister Fletcher, A History of Architecture, University of London, The Antholone Press, 1986.

REFERENCES

1. Skpiro Kostof, A History of Architecture - Settings and Rituals, Oxford University Press, London, 1985
2. S.Lloyd/H.W.Muller, History of World Architecture - Series, Faber Ltd., London, 1986.
3. Pier Luigi Nervi, History of World Architecture Series. Harry N.Abrame Inc. Publication, New York, 1972

WEBSITES

http://www.clr.tornoto.edu - virtual lib.
http://www.lib.virginia.edu/- Renaissance and baroque
http://UNIT IIsiis.umich.edu/ - Image browser

CLIMATOLOGY

L	T	P	M
2	0	0	100

UNIT I CLIMATE AND THERMAL SENSATION **6**

Factors that determine climate - Components of climate - Characteristics of climate types - Body heat balance - Effective temperature - Comfort zone.

UNIT IISOLAR CONTROL **6**

Solar geometry - solar chart - Sun angles and shadow angles - Design of solar shading devices.

UNIT III HEAT FLOW THROUGH MATERIALS **4**

Basic principles of Heat Transfer - Performance of different materials 'U' value - Time lag and decrement of building elements.

UNIT IV AIR MOVEMENT **6**

Wind rose - Wind shadows - Air movement around and through buildings - Stack effect - Thermally induced Air currents.

UNIT V SHELTER DESIGN IN TROPICS **8**

Design considerations for warm humid, hot dry, composite and upland climates - Heavy rainfall regions - Landscape and climatic design.

Total: 30

TEXT BOOKS

1. Donald Watson and Kenneth Labs., Climatic Design – McGraw-Hill Book Company - New York - 1983
2. Joseph de chiarra and Le Copplemann - Planning and Design Corieteria – McGraw-Hill, New York 1983

REFERENCES

1. O.H.Koenigsberger and others, Manual of Tropical Housing and Building - Part I - Climatic Design, Longmans, London, 1980.
2. M.Evans - Housing, Climate and Comfort - Architectural Press, London, 1980.
3. B.Givoni, Man, Climate and Architecture, Applied Science, Banking, Essex, 1982

WEBSITES

http://www.envinst.conu.edu/~envinst/research/built.html
www.terin.org/
http://www.pge.com/pec/archives/w98 passi.html
http://solstice.crest.org/efficiency/index.shtml

ENVIRONMENTAL SCIENCES AND ENGINEERING

L	T	P	M
3	0	0	100

UNIT I THE MULTIDISCIPLINARY NATURE OF ENVIRONMENTAL STUDIES 2

Definition, Scope and importance
Need for public awareness.

UNIT II RENEWABLE AND NON-RENWABLE RESOURCES 8

Natural resources and associated problems

Forest resources: Use and over-exploitation, deforestation, case studies. Timber extraction, mining, dams and their effects on forests and tribal peoples.
Water resources: Use and over-utilization of surface and ground water, dams-benefits and problems.
Mineral resources: Use and exploitation, environmental effects of extracting and using mineral resources, case studies.
Food resources: World food problems, changes caused by agriculture and overgrazing, effects of modern agriculture, fertilizer-pesticide problems, water logging, salinity, case studies.
Energy resources: Growing energy needs, renewable and non-renewable energy sources, use of alternate energy sources, case studies.
Land resources: Land as a resource, land degradation, man included landslides, soil erosion and desertification.
Role of an individual in conservation of natural resources.
Equitable use of resources for sustainable lifestyles.

UNIT III ECOSYSTEMS 6

Concept of ecosystem.
Structure and function of an ecosystem.
Procedures, consumers and decomposers.
Energy flow in the ecosystem.
Ecological succession.
Food chains, food webs and ecological pyramids.
Introduction, types, characteristic features, structure and function of the following ecosystem:
Forest ecosystem
Grassland ecosystem
Desert ecosystem
Aquatic ecosystems (ponds, streams, lakes, rivers, oceans, estuaries)

UNIT IV BIODIVERSITY AND ITS CONSERVATION 8

Introduction - Definition: Genetic, species and ecosystem diversity.
Biogeographical classification of India.
Value of biodiversity: Consumptive use, productive use, social, ethical, and aesthetic and option values.
Biodiversity at global, National and local levels.
India as a mega-diversity nation.
Hot spots of biodiversity.
Threats to biodiversity: Habitat loss, poaching of wildlife, man-wildlife conflicts.
Endangered and endemic species of India.
Conservation of biodiversity: In-situ and Ex-situ conservation of biodiversity.

UNIT V ENVIRONMENTAL POLLUTION 8

Definition
Causes, effects and control measures of:
- Air pollution
- Water pollution
- Soil pollution
- Marine pollution
- Noise pollution
- Thermal pollution
- Nuclear pollution

Soil waste Management: Causes, effects and control measures of urban and industrial wastes.
Role of an individual in prevention of pollution.
Pollution case studies.
Diaster management: Floods, earthquake, cyclone and landslides.

UNIT VI SOCIAL ISSUES AND THE ENVIRONMENT 7

From unsustainable to sustainable development.
Urban problems related to energy.
Water conservation, rain water harvesting, watershed management.
Resettlement and re habitation of people; its problem and concerns. Case studies.
Environmental ethics: Issues and possible solutions.
Climate changes, global warming, acid rain, ozone layer depletion, nuclear accidents and holocaust. Case studies.
Wasteland reclamation.
Consumerism and waste products.
Environmental protection Act.
Air (prevention and control of Pollution) Act.
Water (prevention and control of Pollution) Act.
Wildlife protection Act.
Forest conservation Act.
Issues involved in enforcement of environmental legislation.
Public awareness.

UNIT VII HUMAN POPULATION AND THE ENVIRONMENT 6

Population growth, variation among nations.
Population explosion - Family Welfare Programme.
Environment and human health.
Human rights.
Value education.
HIV/AIDS
Women and Child Welfare.
Role of information Technology in Environment and human health.
Case studies.

UNIT VIII FIELD WORK

Visit to a local area to document environmental asserts-river/ forest/ grassland/ hill/ mountain.
Visit to a local polluted site - Urban/ Rural/ Industrial/ Agricultural.
Study of common plants, insects, birds.
Study of simple ecosystem-pond, river, hill slopes, etc. (Field work Equal to 5 lecture hours).

Total: 45

TEXT BOOKS

1. Miller T.G. Jr., Environmental Sciences, Wadsworth Publishing Co. (TB)
2. Cunningham, W.P. Cooper, T.H. Gorhani, E & Hepworth, M.T. 2001, Environmental Encyclopedia, Jaico Publ. House, Mumbai, 1196p.

REFERENCES

1. Hawkins.R.E, Encyclopedia of Indian Natural History, Bombay Natural History Society, Bombay (R).
2. Heywood, V.H & Watson, R.T. 199UNIT V Global Biodiversity Assesment. Cambridge Univ. Press 1140p.
3. McKinney, M.L & Schoch, R.M. 1996. Environmental Science System & Solutions, Web enhanced edition. 639p.
4. Trivedi R.K., Handbook of Environmental Laws, Rules, Guidelines, Compliances and Standards, Vol. I and II, Enviro Media (R).

MATERIALS AND CONSTRUCTION III

L	T	P	M
2	0	3	100

UNIT I CEMENT **6**

Verities of cement, composition, properties and uses - tests for cement - mortar for various works.

UNIT II CONCRETE, IT'S INGREDIENTS AND PROPERTIES **16**

Ingredients - suitability requirements for aggregates, grading of aggregates – water mix in concrete - reinforcement - admixtures - properties of concrete.

Concreting process its properties - mix proportioning - batching, mixing, transporting, placing, compaction, curing, formwork - quality control - tests for concrete - joints in concrete - concrete finishes.

UNIT III CONCRETE CONSTRUCTION **27**

Introduction to framed structures.
Concrete in foundations - types of footings - isolated, combined, continuous, strap.
Concrete floors (PCC), walls and partitions. Concrete lintels, sunshades. Concrete beams and columns and slabs – one-way and two-way slabs.

UNIT IV CONCRETE STAIRCASES

Factors involving staircase design - types of staircases like straight flight, doglegged, quarterturn, bifurcated, spiral helical, etc. - different support conditions like inclined slab, cranked slab, continuous, cantilever - foundations finishes for staircases - detailing out of handrails and balusters. Designing and detailing for physically handicapped.

UNIT V GLASS **8**

Composition of glass - brief study on manufacture, treatment properties and uses of glass - special types of glass, sheet glass, plate glass, safety glass, tinted and coated glass - glass blocks - properties and applications in the building industry - current developments. Detailing for physically handicapped.

Total : 75

TEXT BOOKS

1. Dr.B.C.Punmia, Building Construction, Laxmi Publications Pvt. Ltd., New Delhi, 1993
2. Francis D.K.Ching, Building Construction Illustrated VNR, 1985

REFERENCES

1. S.C.Rangwala, Engineering Materials, Charotar Publishing House, India, 1997.
2. Alan Banc, Stairs, Steps and Ramps, Butter worth Heinemann Ltd., 1996
3. M.S.Shetty, Concrete Technology, S.Chand & Co. Ltd., New Delhi, 1986.
4. W.B.Mckay Building Construction, Longmans, UK, 1981

WEBSITES

http://dir.yahoo.com/Business-and-Economy/companies/construction/concrete/materials
http://www.easyads.co.2a/yellow/india/construct
http://www.concrete.t.v-tokyo.ac.ip
www.larsentoubro.com
www.dalmiacement.com/index.html

ARCHITECTURAL DESIGN – III

L	T	P	M
0	0	14	300

UNIT I DESIGN STUDIO 100

Single level planning in small scale, small span, horizontal movement and simple vertical movement, data collection, case studies, analysis and presentation of studies – Data collection with respect to design and detailing for physically handicapped persons - Concepts and presentation of design with scaled models

Examples: Residential buildings, Institutional buildings: banks, nursery or primary schools, primary health center, school for children with learning disabilities, neighborhood market, etc.

UNIT II COMPUTER LAB STUDIO 80

Introduction to computer aided drafting system, concepts of real dimensions, colours, symbols, repeatability modification, layers. Exercises related to design projects above.

Total: 180

TEXT BOOKS

1. Ed.by. Quentin Pickard RIBA - The Architects' Hand Book - Blackwell Science Ltd. - 2002
2. De Chiara and Callender, Time Saver Standards Building Types, McGraw-Hill Co., 2nd Edition, 1980.

REFERENCES

1. Edward D.Mills, Planning - The Architects Handbook - 10th Edition, British Library C Taloguing in Publication Data, 1985
2. P&D Act 1995
3. Wakita\Linde, The Professional practice of Architectural working, drawing John Wiley & Sons, 1984
4. Andrew Alpern, Handbook of Speciality Elements in Architecture, McGraw Hill Book Co., 1982
5. Julius Panero & Martin Zelnik, Human Dimension and Interior Space, Whitney Library of Design Publication, 1979.
6. Neufet Architect's Data, Rudoll Herg, Crosby Lockwood and Sons Ltd., 1970.

WEBSITES

http://www.hamptons.com/freshair
http://www.columbiamedical.com/
http://www.mgarchitects.com/

DESIGN OF STRUCTURES – I

L	T	P	M
3	0	0	100

UNIT I TIMBER **5**

Design requirements from National Building Code, Design of timber joists.

UNIT II STEEL SECTIONS AND RIVETED JOINTS **10**

Properties of rolled steel sections, riveted joints, Analysis and Design of riveted joints (Excluding eccentric connections)

UNIT III WELDED JOINTS **10**

Types of welding, permissible stresses, Design of fillet welds (excluding eccentric connections)

UNIT IV STEEL BEAMS **10**

Allowable stresses, General specifications, Design of laterally supported beams.

UNIT V STEEL COLUMNS **10**

Allowable stresses, various shapes, built-up sections, Design of columns (excluding built – up columns lacing, battening and other connections).

Total: 45

TEXT BOOKS

1. Ramachandra S., Design of Steel Structures, Standard Book House, Delhi, 1984
2. A.S.Arya, Structural Design in Steel, Masonry and Timber, Nemchand and Bros, Roorkee, 1971

REFERENCES

1. National Building Code of India, 1983, Part VI, Structural Design.
2. Gurucharan Singh, Design of Steel Structures, Standard Publishers, New Delhi, 1982
3. Negi “Design of steel Structures”, Tata McGraw-Hill Book Company, New Delhi 1997.

SITE PLANNING

L	T	P	M
2	0	0	100

UNIT I INTRODUCTION 6

Definition of plot, site, land and region, units of measurements, reconnaissance, and need for surveying - chain survey and campus survey - Plane Table and Theologize surveys - various equipments used - simple field surveys.

UNIT II SITE ANALYSIS 8

Important of site analysis - factors - involved - accessibility and size and stage conforming and non-conforming uses, climate and topography, infrastructures available, sources of water supply and means of disposal system, architectural and visual aspects.

UNIT III CHARACTERISTIC FEATURES 4

Lie of the land, contours, water shed, surface drainage, ayacuts and irrigation lands.

UNIT IV DETAILED ANALYSIS AND TECHNIQUES 8

Water, vegetation, soils, climate, landforms, or categories, sewage disposal, irrigation system and ecology - organization of parking lots - preparation of site analysis diagram.

UNIT V ENVIRONMENTAL FACTORS 4

Man-made structures, sensuous qualities, cultural data, images and data correlation - vegetation - plant associations, types and distribution - preparation of ecological profile for an area.

Total: 30

TEXT BOOKS

1. W.M. Marsh - Landscape Planning, John Wilay & Sons, USA 1983
2. B.C.Punmia - Surveying Vol.I - Standard Book House, New Delhi - 1983

REFERENCES

1. Kevin Lyunch - Site planning - MIT Press, Cambridge, MA - 1967.
2. P.B.Shahani - Text of surveying Vol. I, Oxford and IBH Publishing Co - 1980
3. Joseph De.Chiarra and Lee Coppleman - Planning Design Criteria - Van Nostrand Reinhold Co., New York - 1968.
4. Beer R, Environmental Planning for Site development, Turner, Landscape Planning and environmental impact design.

HISTORY OF ARCHITECTURE IV

L	T	P	M
2	0	0	100

UNIT I INTRODUCTION TO ISLAMIC ARCHITECTURE 6

Brief History of Islam in terms of birth, spread across countries and principles - Influences on Islamic Architecture - Evolution of building types in terms of forms and functions - the mosque, the tomb, and minaret, the madarasa, the palace, the caravanserai, vernacular architecture, the market - important principles, elements and character of Islamic architecture in terms of structure materials and methods of construction, elements of decoration, color, geometry, light - important examples to illustrate development of Islamic architecture.

UNIT II ISLAMIC ARCHITECTURE IN INDIA 2

Advent of Islam into the Indian subcontinent and its impact - sources of Islamic Architecture in India and influences on them - Brief history of development and classification under different styles and regions.

UNIT III DELHI OR IMPERIAL STYLE 5

Development of architectural style during the rule of the slave, Khalji, Tuqlaq, Sayyid and Lodhi Dynasties - important examples for each period.

UNIT IV PROVINCIAL STYLE 9

Development of the provincial styles in different regions - Punjab, Jaunpur, Bengal, Gujarat, Malwa, the Deccan (Bijapur, Golconda, Bidar and Gulbarga) - important examples for each style.

UNIT V CONTRIBUTION OF RULERS OF ISLAMIC INDIA 8

Development of the Mughal style under the different rulers - Babur, Shershah, Humayun, Akbar, Jahangir, Shahjahan, Aurangazeb - important examples - development of the Mughal garden - important examples.

Total: 30

TEXT BOOKS

1. Brown Percy, Indian Architecture (Islamic Period) Taraporevala and Sons, Bombay, 1983
2. Christopher Tadgell - The History of Architecture in India - Penguin Books (India) Ltd., New Delhi 1990.

REFERENCES

1. Architecture of the Islamic World - George Michel - its history and social meaning, Thames and Hudson, London, 1978.
2. Islamic Architecture, Form, Function and Meaning, Robert Hillenbrand, Edinburgh University Press, 1994
3. Satish Grover, The Architecture of India (Islamic) Vikas Publishing House Pvt. Ltd., New Delhi, 1981
4. R.Nath - History of Mughal Architecture - Abhinav Publications - New Delhi, 1985

WEBSITES

http://www.islamicart.com/pages/archcrea/index.htm
http://libraries.mit.edu/rvc/aka/agakhan/index.html
http://www.greatbuildings.com//types/styles/islamic.html
http://www.ets.uidaho.edu/arch499/nonwest/IslamUNIT Ihtml
http://indiagateway.com/culture/architecture.html

BUILDING SERVICES – I

L	T	P	M
3	0	0	100

UNIT I WATER QUALITIES, PURIFICATION, TREATMENT AND DISTRIBUTION 12

Surface and ground water sources - quality/quantity - nature of impurities - treatments - water supply systems - treatment systems - centralized treatment - user and treatment - Desalination - ozonisation - reverse osmosis etc. - Distribution system in small towns - Types of pipes used - Laying, Jointing, testing internal water supply in buildings - Municipal byelaws, regulations, standards.

UNIT II RAIN WATER MANAGEMENT AND CONVERSATION OF RAW AND WASTE WATER 6

Water conservation, rainwater collection - methods of harvesting - storm water drains in layouts, towns and cities - Waste water recycling.

UNIT III FUNDAMENTALS, SEWAGE TREATMENT AND SEWERAGE SYSTEMS 12

a) Environmental sanitation - Sanitation in buildings. Primary and secondary treatment Activated sludge - Intermittent and trickling sand filters - Arrangement of sewerage systems in Housing, large factories, shopping centers - sewage pumping station, sewage disposal, construction details of sewers and connections.

UNIT IV CITY LEVEL SERVICES AND DISPOSAL 6

Collection, conveyance, recycling and disposal of town refuse system - sanitation in unsewered areas of cities - alignment of storm water drains in residential areas and cities.

UNIT V PUMPS AND MOTORS, SANITARY FIXTURES AND FITTING - PRODUCT RANGE 9

Pumps including reciprocating, centrifugal, deep well, submersible, sewage pumps their selection and choice installation and Maintenance

Total: 45

TEXT BOOK

1. S.C.Rangwala, Water Supply and Sanitary Engineering, Charotar Publishing House, Anand 388 601, 1989.

REFERENCES

1. G.M.Fair, J.C.Geyer and D.Okun, Water and Waste Water Engineering, Vol. II, John Wiley & Sons, Inc., New York, 1968.
2. Manual of Water supply and Treatment, Second Edition, CPHEEO, Ministry of Works and Housing, New Delhi, 1977.
3. Manual on Sewerage and Sewage Treatment, CPHEEO, Ministry of Works and Housing, New Delhi, 1980.

MATERIALS AND CONSTRUCTION IV

L	T	P	M
2	0	3	100

UNIT I FERROUS METALS 10

Brief study on manufacture, properties and uses of cast iron, wrought iron, pigiron and steel - anticorrosive measures for steel - mechanical and heat treatment of steel - market forms of steel - structural steel, stainless steel, steel alloys - properties and uses - current developments.

UNIT II STEEL CONSTRUCTION 32

Structural steel sections - types of connections in steel - steel in foundations, columns and beams - different types of steel roof trusses including northlight truss - space frames - materials for roof covering.
Steel staircases and handrails, balusters - Doors and windows - openable, sliding - collapsible gates - rolling shutters.
Steel in furniture and other interior uses. Detailing and specification for physically handicapped

UNIT III NON FERROUS METALS 8

Aluminum and Aluminum Alloys - brief study on properties and uses - Aluminum products - extrusions, foils, castings, sheets, etc. - brief study of other non-ferrous metals like copper, bronze brass, tin and lead, properties and uses - current developments.

UNIT IV CONSTRUCTION USING NON-FERROUS METALS 25

Aluminum doors - openable, sliding, pivoted.
Aluminum windows - openable, sliding, fixed, pivoted.
Aluminum ventilators - top hung, bottom hung, pivoted, louvred, and fixed.
Aluminum partitions, false ceiling, shop front handrails, curtain walling.
Aluminum roofing - northlight glazing bar, aluminum roofing sheets.

Use of other nonferrous metals like copper, bronze, brass, etc. in architectural construction. Detailing and specification for physically handicapped.

Total: 75

TEXT BOOKS

1. S.C.Rangwala, Engineering Materials, Charotar Publishing House, India, 1997.
2. W.B.Mckay Building Construction, Longmans, U.K. 1981

REFERENCES

1. B.C.Punmia, Building Construction, Laxmi Publications Pvt. Ltd., New Delhi, 1993
2. Arthur Lyons - Materials for Architects and Builders - An Introduction - Arnold, London, 1997.
3. Harold B.Olin, Construction Principles Materials and Methods, The Institute of Financial Education, Chicago, 1980.
4. Time Saver Standards for Architectural Design Data, Calendar JH, McGraw-Hill, 1974
5. Don A. Watson, Construction Materials and processes, McGraw Hill Co., 1972

WEBSITES

http://www.britmetfed.org.uk/frmedu.html
http://www.indiabussinessonline.com
http://www.nrwas.com
http://www.arcadiaproducts.com
http://www.sail.com.in

ARCHITECTURAL DESIGN IV

L	T	P	M
0	0	14	300

UNIT I DESIGN STUDIO 60

Problem related to multi room, single use, small span - multiple story, Horizontal and vertical movement, Active cum passive energy, conventional and frame type buildings.
Examples: Department store, Library, higher secondary school, campus students center, etc. The projects will consciously provide for movement and use by the physically handicapped and elderly.

UNIT II DESIGN STUDIO - RURAL PROJECT 90

Problems related to Rural Housing - Visits to selected village - surveys on socio-economic, physical, housing and surveys, etc. to study existing conditions - analysis of survey data - preparation of report and presentation in a seminar - preparation of design brief solutions for housing and community facilities.

UNIT III COMPUTER LAB. STUDIO 30

Documentation of rural project using computer for housing typology - Introduction to 3 D modelling and rendering 3 D images.

Total: 180

TEXT BOOK

1. Ed.By.Quentin Pickard RIBA - The Architects' Hand Book - Bladewell Science Ltd. - 2002

REFERENCES

1. De Chiara and Callender, Time Saver Standard for Building Types, McGraw-Hill Co., 2nd Edition, 1980.
2. P&D Act 1995
3. Edward D.Mills, Planning - The Architects Handbook - 10th Edition, British Library Cataloguing in Publication Data, 1985
4. Andrew Alpern, Handbook of Speciality Elements in Architecture, McGraw-Hill Book Co., 1982
5. Neufert Architect's Data, Rudolf Herg, Crosby Lockwood and Sons Ltd., 1970.

WEBSITES

http://www.focusnet.co.uk/cib/library/physdishous9UNIT IVhtm
http://www.ourvirtualmall.com/cloth.htm
http://www.ddimagazine.com/
http://www.atlasmagazine.com/photo/lande6/

DESIGN OF STRUCTURES – II

L	T	P	M
3	0	0	100

UNIT I PROPERTIES OF STEEL AND CONCRETE 5

Structural properties of concrete - Grades and Strength of Concrete - durability - code provisions and design requirements of steel and concrete.

UNIT II WORKING STRESS DESIGN METHOD 8

Introduction to Elastic Theory - basic concepts - stress-strain relationships, design of singly reinforced beams - merits and demerits of the method - code requirements.

UNIT III LIMIT STATE DESIGN - INTRODUCTION 10

Various limit stages - characteristic load and characteristic strength of materials - partial safety factor - stress-strain relationship of steel and concrete - safety and serviceability requirements.

UNIT IV LIMIT STATE DESIGN OF BEAMS 10

Analysis and Design of rectangular sections for bending - singly reinforced, doubly reinforced and flanged sections.

UNIT V LIMIT STATE DESIGN OF SLABS 12

Design of one-way and two-way slabs using IS Code co-efficients for various edge conditions.

Total: 45

NOTE: Reference to IS codes and tables be permitted in the examination.

TEXT BOOKS

1. P.Dayaratnam, Design of Reinforced Concrete Structures, Oxford and IBH Publishing Co., 1983
2. N.C.Sinha and S.K.Roy, Fundamentals of Reinforced Concrete, S.Chand & Co., New Delhi, 1983

REFERENCES

1. S.N. Sinha, Reinforced Concrete Design Tata McGraw-Hill, New Delhi 1998.
2. Dr.B.C.Punmiya, Reinforced Concrete Structures, Standard Laxmi publication, Delhi, 1994
3. P.C.Varghese, Limit state Design of Reinforced Concrete, Prcufice Hall of India - 1999

ARCHITECTURAL ACOUSTICS

L	T	P	M
2	0	0	100

UNIT I FUNDAMENTALS 4

Sound waves, frequency, intensity, wave length, measure of sound, decibel scale, speech and music frequencies, human ear characteristics - Tone structure.

UNIT II SOUND TRANSMISSION AND ABSORPTION 6

Outdoor noise levels, acceptable indoor noise levels, sonometer, determinate of density of a given building material, absorption co-efficient and measurements, choice of absorption material, resonance, reverberation, echo, exercises involving reverberation time and absorption co-efficient.

UNIT III NOISE CONTROL AND SOUND ABSORPTION 4

Types of noises, transmission of noise, transmission loss, noise control and sound insulation, remedial measures and legislation.

UNIT IV CONSTRUCTIONAL MEASURES 6

Walls/partitions, floors/ceilingts, widow/doors, insulating fittings and gadjets, machine mounting and insulation of machinery.

UNIT V ACOUSTICS AND BUILDING DESIGN 10

Site selection, shape, volume, treatment for interior surfaces, basic principles in designing open air theatres, cinemas, broadcasting studios, concert halls, class rooms, lecture halls and theatres.

Total : 30

TEXT BOOK

1. Thomas D.Northwood - Architectural Acoustics - Dowden, Hutchinson and Ross Inc. - 1977.

REFERENCES:

1. Dr.V.Narasimhan - An Introduction to Building Physics - Kabeer Printing Works, Chennai-5 - 1974
2. D.J.Groomet - Noise, Building and People - Pergumon Press - 1977.
3. B.J.Smith, R.J.Peters, Stephanie Owen - Acoustics and Noise Control - Longman Group Ltd., - New York, USA - 1982

WEBSITES

http://www.soundesigns.net
http://www.acs-psu.edu

HISTORY OF ARCHITECTURE V

L	T	P	M
2	0	0	100

UNIT I LEADING TO A NEW ARCHITECTURE 4

Historical overview - Origins of Neo-Classicsm - Enlightenment Architects: Boulle and Ledoux.

UNIT II BEGINING OF A NEW ERA 6

Industrial Revolution and its impact - Materials and Technologies: History of Steel, Concrete, Glass - Architecture and Industrial Exhibitions.

UNIT III REVIEWING INDUSTRIALIZATION 6

Arts and Crafts Movement in Europe and America - Art Nouveau and the works of Gaudi, Horta, Macintosh - Early works of F.L.Wright.

UNIT IV ISSUES OF ORNAMENTATION AND AESTHETICS 8

Adolf loos and the Arguments on Ornamentation - Futurists Movement Manifestos and the works of Sant'Elia - Expressionim and the works of Mendelsohn, Taut, Polzeig - Cubilism and Constructivism and its influence on Architecture - Destijl: Ideas and works.

UNIT V INSTITUTIONS 6

Werkbund and Bahaus/Works of Behrens and Gropius - Cannonising Modernism - International Style - CIAM Congresses and Declarations.

Works and Ideas - LeCorbusier - Mies - Later Works of Wright - Alvar Alto

Total : 30

TEXT BOOKS

1. Bill Risebero, Modern Architecture and Design.
2. Kenneth Frampton, Modern Architecture: A Critical History, Tahmes and Hudson, London, 1994

REFERENCES

1. Thomas Metcalf, An Imperial Vision, Faber and Faber, London, 1989.
2. Manfredo Taferi/Franceso dal co., Modern Architecture, Faber and Faber/Electa, 1980.
3. Sigfried Giedion, Space Time and Architecture: The Growth of a New Tradition, Havard University Press, 1978.

BUILDING SERVICES II

L	T	P	M
3	0	0	100

UNIT I MACHINERY AND EQUIPMENT 6

Mechanized transportation in buildings: Lifts, escalators, Conveyors, Traveletors.
Hot water boilers, diesel generators
Essential services in Hospital, Hotels, Labs - Gas, water, air and electricity.

UNIT II ELECTRICAL SYSTEMS AND INSTALLATIONS 16

Basics of electricity - Single/Three phase supply - Protective devices in electrical installations - Earthing for safety - Types of earthing - ISI specifications. Types of wires, wiring systems and their choice - Planning electrical wiring for building - Main and distribution boards - transformers and switch gears - Layout of substations.

UNIT III INTRODUCTION TO BUILDING AUTOMATION SYSTEMS 4

Telecom systems.
Computer systems and networking.
Security and surveillance system.
Cable management.

UNIT IV PRINCIPLES OF ILLUMINATION 10

Visual tasks - factors affecting visual taska - Modern theory of light and colour - synthesis of light - Additive and subtractive synthesis of colour - Utilization factor - depreciation factor - MSCP - MHCP - Lans of illumination.

UNIT V LIGHTING DESIGN 9

Classification of lighting - Artificial light sources - spectral energy distribution - luminous efficiency - colour temperature - colour rendering.

Design of modern lighting - Lighting for stores, offices, schools, hospitals and house lighting. Elementary idea of special features required and minimum level of illumination required for physically handicapped and elderly in building types.

Total : 45

TEXT BOOKS

1. E.R.Ambrose, Heat Pumps and electric heating, John and Wiley and Sons, Inc., New York, 1968.
2. R.G.Hopkinson and J.D.Kay, The Lighting of buildings, Faber and Faber, London, 1969.

REFERENCES

1. Handbook for Building Engineers in Metric systems, NBC, New Delhi, 1968.
2. Philips Lighting in Architectural Design, McGraw-Hill, New York, 1964

MATERIALS AND CONSTRUCTION – V

L	T	P	M
2	0	3	100

UNIT I DAMP AND WATER PROOFING 20

Damp proofing - hot applied and cold applied - Emulsified asphalt, Bentonite clays, butyl rubber, silicons, vinyl's, Epoxy resins and metallic water proofing materials - properties, uses. (Water proofing membranes such as rag, asbestos, glass, felt - plastic and synthetic rubber - vinyls, butyl rubber, neoprene polyvinyl chloride (PVC) - prefabricated membranes - sheet lead, asphalt - properties and uses. Application of the above under various situations - basement floors, swimming pool, terraces, etc

UNIT II THERMAL INSULATION 15

Heat transfer and heat gain by materials - vapor barriers and rigid insulation. Blanket, poured and reflective insulation - properties and uses of spun glass, foamed glass, cork, vegetable fibers, mineral fibers, foamed plastics, and vermiculite and glass fibers. Gypsum - manufacture, properties and uses, plaster of paris and hydride gypsum. Construction details of the material application of flood, walls and roofs. Detailing for physically handicapped.

UNIT III ACOUSTIC INSULATION 15

Porous, Baffle and perforated materials such as acoustic plastic, acoustic files, wood, partial board, fiber board, cook, quilts and mats - Brief study on properties and uses of the above - current developments

UNIT IV FLOOR AND WALL COVERINGS 10

Floor coverings - flooring - softwood, hardwood - Resilient flooring - Linolium, Asphalt tile, vinyl, rubber, cork files - terrazzo - properties, uses and laying. Wall coverings - Porcelain, enameled metal, wood veneer, Vinyl, plastic surfaced paneling - properties, uses and lying. Wall and floor tiles - Ceramic glazed, mosaic, quarry and cement files - properties, uses and lying. Detailing for physically handicapped.

UNIT V PROTECTIVE AND DECORATIVE COATINGS 15

Paints - Enamels, distempers, plastic emulsions, cement based paints - properties, uses and applications - Painting on different surfaces - defects in painting.

Clear coatings and strains - Varnishes, Lacquer, Shellac, Wax Polish and Strains - Properties, uses and applications.

Special purpose paints - Bitumenious, Luminous; fire retardant and resisting paints - properties, uses and applications.

Total : 75

TEXT BOOKS

1. S.C.Rangwala, Building Construction (Sixteenth Edition) Charotar Publishing House, Anand, India, 1997.
2. Francis. D. K. Ching – A Visual Dictionary of Architecture – Van Nostrand Reinhold – 1997.

REFERENCES

1. Jack M.Launders, Construction Materials, Methods, careers pub, J.Holland, Illinois Wileox Co., Inc. 1983
2. Arthur R.Llons, Materials for architects and builders - An introduction, Holder Headline group, Great Britain, 1997.
3. Don.A.Watson, Construction Materials and Processes, McGraw-Hill Book Co., 1972
4. W.B. McKay, Building construction, Longman, U.K.

WEBSITES

http://www.zircan.com
http://www.bwpda.co.uk
http://www.sonix.com
http://www.inplasin.org
http://bussiness.vsnl.com/Piolam
http://www.paintland.com
http://www.formica.com
http://www.jensonnicholson.com
http://www.eurocontiles.com
http://www.spectrumpaints.com
http://www.soundesigns.net
http://www.bmtpc.com

ARCHITECTURAL DESIGN V

L	T	P	M
0	0	14	300

UNIT I DESIGN STUDIO 180

Small complexes - concept of multi planning and circulation analysis - massing problems involving building technology, - Design and detailing for movement of physically handicapped and elderly persons within and around buildings.

Examples: Shopping centers (Commercial) Home for aged, apartments (residential) Health centers, Nursing homes (institutional) Etc.

Introduction to three-dimensional modeling of spaces using Computer. Construction and manipulation of three-dimensional building databases, Rendering 3 D images and Presentation techniques.

Total : 180

TEXT BOOKS

1. Ed.By.Quentin Pickard RIBA - The Architects' Hand Book - Bladewell Science Ltd. - 2002
2. De Chiara Callender, Time Saver Standard for Building Types, McGraw-Hills Co., 1973

REFERENCES

1. Edward D.Mills, Planning, 4 volumes, Newnes, Butterworths, London, 1976.
2. P&D Act 1995
3. E and O.E. Planning. Lliffee Books Ltd., London, 1973
4. National Building Code and Bureau of Indian standard publications.

WEBSITES

http://wwwtest.library.ucla.edu/libraries/arts/websites/www.des.htm
http://www.clr.toronto.edu/VIRTUALLIB/ARCH/proj.html
http://www.thehub.net.au/%7Emorrisqc/architext
http://www.archinet.co.uk/
http://archinform.de/start.en.htm
http://www.plannet.com/

DESIGN OF STRUCTURES III

L	T	P	M
3	0	0	100

UNIT I LIMIT STATE DESIGN OF RCC COLUMNS 10

Code provisions - Design of axially loaded short and long columns of rectangular and circular sections - ties and spiral reinforcements

UNIT II LIMIT STATE DESIGN OF BEAMS AND SLABS 6

Limit State Design of continuous beams and slabs using code coefficients.

UNIT III LIMIT STATE DESIGN OF STAIRCASE 4

Types of staircases - Design of doglegged staircase.

UNIT IV WORKING STRESS DESIGN OF FOUNDATION 15

Types of foundations - Isolated pad footings - combined footings for simple design problems.

UNIT V DESIGN OF FOUNDATION 10

Design principals for raft and pile foundation (No. Design calculations)

Total : 45

TEXT BOOKS

1. P.Dayaratnam, Design of Reinforced Concrete Structures, Oxford and IBH Publishing Co., 1983
2. N.C.Sinha and S.K.Roy, Fundamentals of Reinforced Concrete, S.Chand and Co., New Delhi, 1983

REFERENCES

1. Vazirani and Ratwani, Concrete Structures, Khanna Publishers, New Delhi, 1969.
2. S.N. Sinha, Reinforced Concrete Design, Tata McGraw-Hill, New Delhi 1998.
3. Ashok K. Jain, Reinforced Concrete Limit State Design, New Chand Bros. – Roorkee – 1983

INTERIOR DESIGN PRINCIPLES

L	T	P	M
2	0	0	100

UNIT I INTRODUCTION TO INTERIOR DESIGN 6

Definition of interior design - interior design process - vocabulatory of design in terms of principles and elements - Introduction to the design of interior spaces as related to typologies and functions, themes and concepts - study and design.

UNIT II HISTORY OF INTERIOR DESIGN 6

Brief study of the history of interior design through the ages relating to historical context, design movements and ideas etc. - Brief study of folk arts and crafts, vernacular design in India with reference to interior design and decoration.

UNIT III ELEMENTS OF INTERIOR DESIGN - ENCLOSING ELEMENTS 6

Introduction to various elements in interiors like floors, ceilings, walls, staircases, openings, interior service elements, incidental elements etc. and various methods of their treatment involving use of materials and methods of construction in order to obtain certain specific functional, aesthetic and psychological effects - design projects.

UNIT IV ELEMENTS OF INTERIOR DESIGN - LIGHTING, ACCESSORIES, INTERIOR LANDSCAPING 4

Study of interior lighting - different types of lighting, their effects, types of lighting fixtures.
Other elements of interiors like accessories used for enhancement of interiors - paintings, objects de art, etc. Interior landscaping - elements like rocks, plants, water, flowers, fountains, paving, artifacts, etc. their physical properties, effects on spaces and design values.

UNIT V ELEMENTS OF INTERIOR DESIGN - FURNITURE DESIGN 8

Study of relationship of furniture to spaces and human movements furniture design as related to human comfort, function, materials and methods of construction, changing trends and lifestyles, innovations and design ideas - study on furniture for specific types of interiors like office furniture, children's furniture, residential furniture's, display systems, etc. - projects on furniture design.

Total : 30

TEXT BOOKS

1. Francis D.K.Ching, Interior Design Illustrated, V.N.R. Pub. NY 1987.
2. Steport - De - Van Kness, Logan and Szebely, Introduction to Interior Design Macmillan Publishing Co., NY 1980.

REFERENCES

1. Syanne Slesin and Stafford Ceiff - Indian Style, Clarkson N.Potter, New York, 1990.
2. Kathryn B.Hiesinger and George H.Marcus, Landmarks of twentieth Century Design; Abbey Ville Press, 1993
3. Inca/Interior Design Register, Inca Publications, Chennai 1989.
4. The Impulse to adorn - Studies in traditional Indian Architecture - Editor Dr.Saranya Doshi, Marg Publications, 1982
5. Julius Penero and Martin Zelnik, Human Dimensions and Interior space Whitney Library of Design, NY 1979.

WEBSITES

http://iiid.org/
http://www.arch.ufl.edu/interior/indwebsts.htm
http://www.interiormall.com
http://www.scandinaviandesign.com/
http://www.tifaq.com/furniture.html
http://www.fxdesign.co.UK/

HISTORY OF ARCHITECTURE – VI

L	T	P	M
2	0	0	100

UNIT I CRITIQUING MODERNISM 6

Challenging CIAM declarations: Team X and Brutalism - Writings of Venturi - Jane Jacobs - Aldo Rossi - Christopher Alexander.

UNIT II AFTER MODERNISM 8

Conditions of Post-Modernity - Tools of New Architecture: Collage, Technology and New Science - Canonization of Post-Modernist Architecture - Historic Revivalism - Pop Architecture - Critical Regionalism - Deconstructive Theory and Practice - their limitations.

UNIT III ALTERNATIVE PRACTICE 4

Ideas and selected Works of - Fathy - Baker - Ando - Soleri - Bawa.

UNIT IV ARCHITECTURE IN COLONIAL INDIA 6

Colonialism and its impact - Early British Neo-classical Architecture - Indo-Sarcenic Architecture and the works of Chisholm - P.W.D. and the Institutionalization of Architecture - Building New Delhi.

UNIT V POST-INDEPENDENT ARCHITECTURE IN INDIA 6

Chandigarh and Bhuvaneshwar experiments - Influence of Corbusier, Louis Khan Koeinsberger - The formation of Institutions - Debates on Tradition as a source and burdern - works and ideas: Nari Gandhi - Doshi - Kanvinde - Correa - A. Raje - U.C.Jain - Stein Housing and the issues of Appropriate Technology-Architecture in the Horizon.

Total : 30

TEXT BOOKS

1. Miki Desai et.al, Architecture and Independence, Oxford University Press, New Delhi, 1998.
2. Kenneth Frampton, Modern Architecture: A Critical History, Thames and Hudson, London, 1994

REFERENCES

1. Aldo Rossi, The Architecture of the City, MIT Press, Massachusetts, 1982
2. Charles Jencks, The Language of Post-Modern Architecture, 1984
3. Christopher Alexander, Pattern Language, Oxford University Press, Oxford.
4. D.Ghirardo, Architecture After Modernism, Thames and Hudson, London, 1990.
5 Robert Venturi, Complexity and Contradiction in Architecture, The Architectural Press, London, 1977.

BUILDING SERVICES III

L	T	P	M
3	0	0	100

UNIT I BASIC REFRIGERATION PRINCIPLES 9

Thermodynamics - Heat - Temperature, measurement transfer - Change of state - Sensible heat - Latent heat of fusion, evaporation, sublimation - Saturation temperature - Super heated vapor - sub cooled liquid - pressure temperature relationship for liquids - Refrigerants.

UNIT II REFRIGERATION CYCLE AND SYSTEMS COMPONENTS 6

Vapor compression cycle - compressors - evaporators' - Refrigerant control devices - electric motors - Starters - Air handling units - Cooling towers.

UNIT III AIR-CONDITIONING SYSTEM AND APPLICATIONS 12

Centralized systems - Types - Packed air conditioning - Window air conditioning - Air conditioning systems for various types of buildings.

UNIT IV FIRE SAFETY - GENERAL PROVISIONS 9

Causes of fire in buildings Fire protection, standards - safety regulations - NBC - Planning considerations in buildings like Non-combustible materials, construction, staircases and lift lobbies, fire escapes and A.C. systems. Special features required for physically handicapped and elderly in building types.

UNIT V FIRE DETECTION AND FIGHTING INSTALLATIONS 9

Detectors - Types of detectors and usage
Heat detectors, smoke detectors, photoelectric detectors etc.,
Alarm Systems
Fire fighting: Pumps, Fire tank (static capacity) Dry and wet risers, Automatic sprinklers/ fire drill, refuge areas.

Total: 45

TEXT BOOK

1. William H.Severns and Julian R.Fellows, Air-conditioning and Refrigeration, John Wiley and Sons, London, 1988.

REFERENCES

1. A.F.C. Sherratt, Airconditioning and Energy Conservation, The Architectural Press, London, 1980.
2. National Building Code.

MATERIALS AND CONTRUCTION VI

L	T	P	M
2	0	3	100

UNIT I CONSTRUCTION SYSTEMS DEVELOPED BY RESEARCH ORGANISATION **20**

Study of construction system innovated through research organizations like CBRI, NBO, SERC, etc. Floor, wall and roofing systems.
Ferrocement its properties, uses and application in building construction including the techniques of preparation, casting, curing, etc.

UNIT II FOUNDATIONS **15**

Pile foundation, different types of piles, precast and cast insitu with reinforcement details for different types of grids, details of pile capping, jointing of precast piles and columns.

UNIT III VERTICAL MOVEMENT EQUIPMENTS IN BUILDINGS **15**

Elevators - Historical development of elevators or lifts. Elevators - size, capacity, speed, mechanical safety method, poritioning of cote under planning grid. Types of elevators - Electric, hydraulic - passenger, hospital, capsule, freight, etc. Dumb waiters, details of lift shaft and other mechanism. Detailing and fitting for physically handicapped.

UNIT IV ESCALATORS AND CONVEYORS **10**

Parallel and criss cross escalators, horizontal belt conveyors, horizontal moving walkways - concern for physically handicapped mechanical safety systems and automatic control

UNIT V MISCELLANEOUS STRUCTURES **15**

Shell structures, domes, space frame, shell barred vault, folded plate structures, tensile structures, pneumatic structures, and etc

Total : 75

TEXT BOOKS

1. J.H.Callender, Time Saver Standard for Architectural Design Data, McGraw-Hill, 1994
2. James Ambrose, Building Construction, Service Systems, Van No strand Reinhold, New York, 1992

REFERENCES

1. H.A Thiruvananthapuram – Hand Book on Elevators – Printing and Publishing co – 1997.
2. United Technologies – OTIS – Tell me About Escalators – Printed in USA – 1990.
3. Pamphets supplied and other literatures from N.B.O., SERC, CBRI, 1970 onwards.
4. R.Chudley, Construction Technology, Richard Clay (Chaucer Press) Ltd., Suffolk, 1978.

WEBSITES

http://www.nas.otis.com
http://www.hugo.lib.ryerson.ca/marion
http://www.ibex.intl.com
http://www.tridelta.com
http://www.pilebrick.com

ARCHITECTURAL DESIGN VI

L	T	P	M
0	0	14	300

UNIT I DESIGN STUDIO 180

Design of large structures - Multiuse, multispan, multilevel (six to eight floors) - building types involving technology and services – Design and detailing for movement and use by physically handicapped people within and around building.

Examples: College office buildings (Institutional) Large Commercial Complex (Commercial) Resorts (Recreational) - Mixed Residential Developments (Residential) etc.

Working drawings for any one design Using Computer for presentation Skills.

Total: 180

TEXT BOOKS

1. Ed.By.Quentin Pickard RIBA - The Architects' Hand Book - Bladewell Science Ltd. - 2002
2. De Chiara Callender, Time Saver Standard for Building Types, McGraw-Hills Co., 1973

REFERENCES

1. Edward D.Mills, Planning, 4 volumes, Newnes, Butterworths, London, 1976.
2. P&D Act 1995
3. E and O.E. Planning. Lliffee Books Ltd., London, 1973
4. National Building Code and Bureau of Indian standard publications.

WEBSITES

http://wwwtest.library.ucla.edu/libraries/arts/websites/wwwdes.htm
http://www.clr.toronto.edu/VIRTUALLIB/ARCH/proj.html
http://www.thehub.net.au/%7Emorrisqc/architext
http://www.archinet.co.uk/
http://archinform.de/start.en.htm
http://www.plannet.com/

DESING OF STRUCTURES IV

L	T	P	M
2	0	0	100

UNIT I MASONRY **6**

Analysis and Design of brick masonry, load bearing walls - codal requirements

UNIT II CIRCULAR SLABS **10**

Design of RCC Circular slabs - simply supported and fixedslabs with uniformly distributed loads

UNIT III FLAT SLABS **5**

Design principles of flat slabs - code provisions – Simple design problems.

UNIT IV PRESTRESSED CONCRETE **5**

Principle of prestressing, methods of prestressing, advantages and disadvantages

UNIT V SHEELS AND FOLDED PLATES **4**

Introduction to shells and folded plates, structural action, classification of shells

Total: 30

TEXT BOOKS

1. P. Dayarathnam, “Design of Reinforced Concrete Structures” second edition, Oxford and IBH publishing Co., New Delhi 1984
2. Ashok K. Jain, Reinforced Concrete Limit State Design Nemchand and Bros., Roorkee, 1983

REFERENCES

1. N.L. Shinha and S.K. Roy, Fundamental of Reinforced Confrete, S.Chand and Company, New Delhi, 1983
2. G.S.Ramaswamy, Concrete shell roofs – CBS Publishers and Distributors 1986
3. N.Krishnaraju, Prestressed Concrete – Tata McGraw-Hill Publishing Co. 1998.

PROFESSIONAL ETHICS & PRACTICE I

L	T	P	M
2	0	0	100

UNIT I ARCHITECT AND PROFESSION

Role of architect in society - relationship with client and contractor - code of conduct – management of an architect's office - elementary accountancy.

UNIT II ARCHITECT'S SERVICES AND SCALE OF FEES 7

Conditions of engagement of an architect - normal additional, special and partial services – scale of fees for various services - claiming of fees

UNIT III ARCHITECTURAL COMPETITIONS 4

Open and closed competitions - appointment of assessors - duties of assessors - instructions to participants - rejection of entries - award of premium - guidelines prescribed by COA & IIA for promotion and conduct of competitions

UNIT IV LEGISLATION 8

Salient features of various Acts such as Architects' Act 1972
Chennai Corporation Building Rules 1972
The Panchayat Building Rules 1942
The Tamil Nadu Factory Rules 1950
Development control Rules for Chennai Metropolitan Area 1990

UNIT V EMERGING AREAS OF IMPORTANCE 4

Role of urban Arts Commissions - need for special rules on architectural control and development.

Total: 30

TEXT BOOKS

1. Derek Sharp, The Business of Architectural Practice William Collins Sons & Co. Ltd, 8 Erafton St., London W1 1986
2. Publications of COA IIA Hand book on Professional Practice, The Architects publishing Corporation of India, and Bombay 1987

REFERENCES

1. D.C. Rules for Chennai Metropolitan Area 1990
2. J.J. Scott, Architect's Practice, Butterworth, London 1985
3. T.N.D.M. Building Rules, 1972
4. Chennai City Corporation Building Rules 1972
5. T.N.P. Building Rules 1942
6. Roshan Namavathi, Professional Practice, Lakhsmi Book Depot, Mumbai 1984
7. Architects' Act 1972
8. Architects Professional Regulation 1989.

HUMAN SETTLEMENTS PLANNING

L	T	P	M
3	0	0	100

UNIT I CONCEPTS OF HUMAN SETTLEMENTS 12

Elements of human settlements context and contain: Meaning and Examples

Nature, Man, Society, shells and Network: Their sub elements, characteristics, functionaries / potentials, major aspects in spatial planning.

Classification of human settlements:

Classification based on population, functions, locations, Municipal status.

Growth and decay of human settlements:

Factors influencing the growth and decay, growth pattern of urban settlements during the last one-century in our country.

Structure and Form of Human settlements:

Different physical forms, examples and their functional characteristics.

UNIT II PLANNING CONCEPTS 10

Contribution to planning thought - Patric Geddes, Ebener Howard - CA Perry - Lr Corbusior - Doxiadis - Principles and concepts - Relevance to Indian Planning.

UNIT III URBAN AND REGIONAL PLANNING 10

Aim, objective, scope and content of Regional plan, Master plan, zonal plan and urban renewal plan.

UNIT IV PLANNING ACTIVITIES 6

Urban and Rural Housing:

Assessment of housing need and demand, Meaning of housing units - built units and plots - approved, unapproved - developed, undeveloped and serviced.

Roads:

Classification, cross section elements - their geometry and functions, Intersection - conflicting points and channelisers.

UNIT V LOCAL GOVERNANCE 7

Objectives, Functions, Responsibilities and Organizational structure of: (i) Village Panchayats (ii) Municipalities (iii) Corporations and (iv) Urban Development Authorities.

Total: 45

TEXT BOOKS

1. Gallion Arthur B & Eisna Simon, The Urban Pattern: City Planning and Housing.
2. L.R. Kadiyali, Traffic Engineering and Transport Planning.
3. John Ratchiffe, An Introduction to Town and Country Planning.

REFERENCES

1. C.L.Doxiadis, Ekistics, “An Introduction to the Science of Human Settlements”, Hutchinson, London, 1968.
2. Government of India, “Report of the National Commission on Urbanisation”, 1988.
3. Andro D.Thomas, “'Housing and Urban Renewal”, George Allen and Unwin, Sydney, 1986.
4. Rodwin, Lloyd, ed., 1987. Shelter, Settlements and Development (Hemel Hempstead, United Kingdom, Unwin Hyman Ltd.)

WEB SITES

http://www.jadavpur.edu/academics/centers_human.htm
http://www.virtualref.com/uncrd/558.htm
http://www.unescap.org/huset/m_land/index.htm
http://www.esa.un.org/subindex/prviewsites.asp?termcode=GH.05

SPECIFICATION AND ESTIMATION

L	T	P	M
2	0	0	100

UNIT I INTRODUCTION TO ESTIMATION 10

Types and purpose, approximate estimate, detail estimate of building, Bill of quantity format.
Quantity survey - Principle of measurement and billing, elementary billing and measurement of basic materials like brick wood, concrete, etc. Advance billing and measurement of structural and service item of work.

UNIT II COST ESTIMATING 10

Function of cost planner, liasons with consultant construction planning technique for efficient cost control or cost budgeting of a project.
Exercise in variation, cost adjustment and cost analysis norms and standard for building project. Relationship between specifications with B.O.Q. on grounds of cost economics.

UNIT III COST BUDGETTING 10

The business environment, and its structure in practice details and information on taxation, depreciation, operation cost, economics of building plant and material handling.

UNIT IV FINANCE AND BUDGETTING 9

Financial control and management for building construction and maintenance investment - role of various financial agencies for building and land development.

UNIT V PROJECT EVALUATION 6

Financing of projects, economic feasibility report, valuation depreciation and its implication, and assessment of completed project.

Total: 45

TEXT BOOKS

1. S.C.Rangwala, Elements of Estimating and Costing, Charoter Publishing House, India.

REFERENCES

1. Dutta, Estimating and Costing, S.Dutta and Co., Lucknow
2. W.H.King and D.M.R.Esson, Specification and Quantities for Civil Engineers, The English University Press Ltd.
3. T.N.Building Practice, Vol.1, Civil, Govt. Publication.
4. P.W.D. Standard specifications, Govt. Publication.

WEBSITES

http://www.archindia-com
http://www.abuildnet.com
http://www.buildernews.com/
http://www.builderdata.com/
http://www.building.ca/

ARCHITECTURAL DESIGN VII

L	T	P	M
0	0	16	300

DESIGN STUDIO **180**

Design of advanced and complex problems - comprising of group and multi storied structures and infrastructure - with regard to climatic conditions, orientation, services, circulation problems relating to large developments Design and detailing for movement and use by handicapped persons within and around building.

Examples: Multi storied Residential flats, campus design, urban centers, Housing Senior citizens' neighborhood, Transport terminals etc, and Time problem using computer-aided design shall be introduced.

Total: 180

TEXT BOOKS

1. Ed.By.Quentin Pickard RIBA - The Architects' Hand Book - Bladewell Science Ltd. - 2002
2. De Chiara Callender, Time Saver Standard for Building Types, McGraw-Hills Co., 1973

REFERENCES

1. Edward D Mills, planning, 4 volumes, newness Butterworths, London 1976
2. P&D Act 199UNIT V
3. E and OE -Planning -London Lliffee Books Ltd 1973
4. National Building Code and Bureau of Indian standard publications.
5. Kulbhushan Jain and Meenakshi Jain - Mud Architecture of Indian Desert - Aadi Center Ahmedabad - 1992

PRACTICAL TRAINING

L	T	P	M
0	0	0	500

The choice of the place of training shall be Architectural Firms, Organizations, Development Authorities, etc. which are headed by architects. The choice of the office shall be approved by the HOD, Faculty of Architecture and Planning.

The final evaluation of the practical training will be based on the following features.

i. Architectural office training
ii. Site supervision and training
iii. Critical study of project built

Field Documentation of Architectural details and working drawings.

15 WEEKS

LANDSCAPE AND ECOLOGY

L	T	P	M
3	0	0	100

UNIT I INTRODUCTION 6

Introduction to ecology, landscape conservation, reclamation and landscaping of derelict areas.

UNIT II PLANT MATERIALS 6

Notes on basic plant data for plant selection and planting design, in the Indian context.

UNIT III GARDEN DESIGN 8

A brief description of Moghul gardens of India, Japanese gardens and Italian gardens. Basic principles of landscape design and the visual aspects of plant forms.

UNIT IV SITE PLANNING 10

Site investigation appraisal and site planning neighborhood parts, Children's parks toilets and sports area.

UNIT V LANDSCAPING OF FUNCTIONAL AREAS 15

Landscaping for various types of housing areas. Landscape design for waterfront areas and functional areas in urban centers. Principles of urban landscape, urban design and architectural control.

Total: 45

TEXT BOOKS

1. Harvey M.Rubenstain, A guide to Site and Environmental Planning 3rd Volume John Wiley and Sons, New York, 1987.
2. Sylvia Crowe Sheila Haywood, The Gardens of Mughal India, Vikas Publishing House, Pvt. Ltd., India, Delhi, India, 1973

REFERENCES

1. Garrett Eckbo, The Art the Home landscaping, McGraw-Hill Book Co., London, 1956.
2. Testsuro Yoshida, Gardens of Japan, Jr.Marcus G.Sims, 1963
3. Clift Tandy Hand Book of Urban Landscape, The Architectural Press, London, 1971
4. John O.Sinurds - Earthscape, McGraw-Hill Book Co., New York, 1878.

PROFESSIONAL ETHICS & PRACTICE II

L	T	P	M
2	0	0	100

UNIT I EASEMENTS 2

Definition - types of easement – acquisition extinction and protection of easements

UNIT II TENDER 8

Calling for tenders - tender documents - open and closed tenders - item rate, lumpsum, labour and demolition tender - conditions of tender - submission of tender - scrutiny and recommendations

UNIT III CONTRACT 10

Conditions of contract - Form of contract articles of agreement - Contractor's bill certification

UNIT IV ARBITRATION 4

Arbitration in disputes - arbitration agreement - sole arbitration - umpire - excepted matters and - award

UNIT V LEGISLATION 6

Environmental Acts and Laws - Special Rules governing Hill Area Development - coastal area development and management - Heritage Act of India - Consumer protection act and their relevant provisions.

Total: 30

TEXT BOOKS

1. Publications of COA IIA Hand book on Professional Practice, The Architects publishing Corporation of India, and Bombay 1987
2. Roshan Namavathi, Professional Practice, Lakhsmi Book Depot, Mumbai 1984

REFERENCES

1. J.J. Scott, Architect's Practice, Butterworth, London 1985
2 D.C. Rules for Chennai Metropolitan Area 1990
3. T.N.D.M. Building Rules, 1972
4. T.N.P. Building Rules 1942
5. Chennai City Corporation Building Rules 1972
6. Derek Sharp, The Business of Architectural Practice William Collins Sons & Co. Ltd., 8 Erafton St., London W1 1986
7. The Tamil Nadu Hill Areas Special Building Rules - 1981
8. Environmental Laws of India - by Kishore Vanguri, C.P.R. Environmental Education Centre, Chennai

URBAN ECONOMICS AND SOCIOLOGY

L	T	P	M
2	0	0	100

UNIT I ROLE OF URBAN ECONOMICS & SOCIOLOGY 4

Subject matter of Economics and Sociology as related to built environment.

UNIT II URBAN ECONOMICS 8

Principles of consumption, production and distribution and their relevance's; market demand and supply and price changes, laws of returns and urban land values, built environment and municipal taxes.

UNIT III BUILDING ECONOMICS, URBAN RENEWAL AND URBANIZATION 5

Construction labour market, economic evaluation of urban renewal, building and housing, urbanization and urban problems.

UNIT IV SOCIOLOGICAL CONCEPTS AND SOCIAL CHANGES 8

Concepts of Society, community, group, culture, Institutions, role of status, social norms, social structure and charges.

UNIT V ECOLOGICAL PROCESSES AND DEVELOPMENT IMPACTS 5

Ecological processes and land use structures of cities, impact or urbanization and developmental programmes on social development

Total: 30

TEXT BOOKS

1. Hirsch W.Z., Urban Economics, Macmillan, New York, 1984
2. Gopal Bhargava (ed) Urban Problems and policy perspectives, Abhinav Publications, New Delhi, 1981

REFERENCES

1. Desai A.R., Rural Sociology, Popular Prakasham, Bombay, 1984
2. Muttalib, A.A., Public Housing, Sterling Publishers, New Delhi, 1986.
3. Rao, ULSP, Urbanisations in India, Concept Publishing Co., New Delhi
4. Subramanian, K.K. et.al. Construction Labour Market: A study in Ahmedabad, Concept Publishing Co., New Delhi, 1982

WEBSITES

www.nwmisseuri.Edn/nwcourses/martin/urban
www.solent.ac.uk/socscilmf/urban UNIT Ihtml
http://directorysearch.mozilla.org/science/social-sciences/Economics/urban-Economics
http://11cs.uop.edu/cop/economics/econ15/.html

ARCHITECTURAL DESIGN VIII

L	T	P	M
0	0	16	300

DESIGN STUDIO

Design projects pertaining to Urban Design problems including Urban Renewal and Redevelopment - Involving intensive study of visual and other sensory relationship between people and their environment, problems concerning both preservation and development based on correlation of socio-economic and physical state and problems pertaining to traffic – Design and detailing for physically handicapped at the city/street/building scale.

Examples: Hill Architecture, High Tech Buildings, Green buildings, urban nodes/streets/district Large Transportation terminals, Conservation and Re-development, revitalization of historic core, etc.

Total: 180

TEXT BOOKS

1. D. Gosling and Maitland - Urban Design - St. Martins Press 1984
2. Ian Bentley - Responsive Environment - A manual for Designer - Architecture Press, London - 1985

REFERENCES

1. E and OE planning 11iffe Books Ltd, London 1973
2. P&D Act 1995
3. Edward D Mills planning 4 volumes Newnes - Butterworths, London 1976.
4. Gordon Cullen - the concise Townscape - The Architectural press - 1978
5. Quentin Pickard - RIBA - The Architects' Hand Book - Blackwell Science Ltd. - 2002

THESIS

L	T	P	M
0	0	15	500

450

TOPICS OF STUDY

The main areas of study and research shall be Architecture, Urban design, Urban renewal, urban and rural Housing and settlements, Environmental Design, Conservation, Landscape Design, etc. However, the specific thrust shall be on architectural design and environment context with full understanding.

PRESENTATION REQUIREMENTS

The Thesis Project shall be submitted in the form of drawings, project report, models, Slides, C.D's and reports, as required for the project.

Total: 450

TEXT BOOK & REFERENCE

As per requirement of Topic and as suggested by the supervisor of Thesis.

VERNACULAR ARCHITECTURE

L	T	P	M
2	0	0	100

UNIT I INTRODUCTION 4

Approaches and concepts to the study of Vernacular Architecture - Aesthetic - Anthropological - Architectural - Developmental - Geographical - Historical - Spatial - Folkloristic.

UNIT II RADITIONAL PRINCIPLES OF PLANNING IN WESTERN & NORTHERN INDIA 8

Primitive forms, symbolism, colour, Folk Art, etc. in the Architecture of the Deserts of Kutch and Gujarat State - Subterranean Architecture - Wooden Houses & Mansions (Havelis) Gujarat & Rajasthan - Housekboats (Dhungas), Kashmir - Matedials of Construction & Construction detail.

UNIT III VERNACULAR ARCHITECTURE OF SOUTH INDIA 6

Wooden Houses, palaces & Theatres in Kerala, Chettinad houses and palaces in Tamil Nadu - Principles of Planning, proportion & religious practices & beliefs & culture, materials of construction & construction detail & settlement planning.

UNIT IV WESTERN INFLUENCES ON VERNACULAR ARCHITECTURE 6

Colonial influences on the Traditional House, Goa, and change - Bangla & Bungalow, Bengal and Victorian Villas - Planning Principles, materials & methods of construction - House Typologies, settlement Planning, Pondicherry & Cochin.

UNIT V SECULAR ARCHITECTURE 6

Medieval period - Citadels, palaces, towers, gateways, public buildings, etc. in the medieval towns of Jodhpur, Jaipur, Jaisalmer, Gwalior, etc.

Total: 30

TEXT BOOKS

1. Paul Oliver, Encyclopedia of Vernacular Architecture of the World, Cambridge University Press, 1997.
2. G.H.R. Tillotsum - The tradition of Indian Architecture Continuity, Controversy - Change since 1850, Oxford University Press, Delhi, 1989.

REFERENCES

1. V.S.Praman, Havali - Wooden Houses & Mansions of Gujarat, Mapin Publishing Pvt. Ltd., Ahmedabad, 1989.
2. Kullrishan Jain & Minakshi Jain - Mud Architecture of the Indian Desert, Aadi Centre, Ahmedabad, 1992
3. Carmen Kagal, VISTARA - The Architecture of India, Pub: The Festival of India, 1986.
4. Amos Rappoport, House, Form & Culture, Prentice Hall Inc. 1969.

INDUSTRIAL BUILDING SYSTEM

L	T	P	M
2	0	0	100

UNIT I INTRODUCTION 4

Five year plans and thrust in housing – Issues in Urban Housing – use of modern building materials – application of modern technology – meaning of industrial building system.

UNIT II APPLICATION OF INDUSTRIAL BUILDING SYSTEM 8

Feasibility of using industrial building system in Residential and Non-Residential buildings – manufacturing of building components – Technology requirements for industrial building system – use of Industrial building system as an option for disaster mitigation.

UNIT III MODULAR CO-ORDINATION AND INDUSTRIALISED SYSYEM 6

Concept and definition of Modular dimensional discipline – Advantages and Limitations of modular principle – Components of residential buildings – precast elements.

UNIT IV PRE-FABRICATION SYSTEM 6

Objective and necessity – Off site on site prefabrication elements and construction joints – architectural and technical limitations.

UNIT V PROCEDURES AND ORGANISATION 6

Equipments used – manufacturing processes – transportation of components – assembly and finishing – Structural, social and economic issues related to industrial building system.

. **Total: 30**

REFERENCES:

Industrial Building and Modular Design Henrik Missen – C & CK, UK 1972

Albert G.H.Dietz, Laurence Secotter – "Industrialized Building Systems for Housing" – MIT, special summer session, 1970 USA.

"Industrialized Building Construction" – Proceedings of National Seminar, Nov-17-18, 2000, Indian Concrete Institute, Mumbai.

"Innovative Construction Materials" – Proceedings of Seminar, Jan 20-21,2001, Veermata Jeejabai Technical Institute, Mumbai.

ENERGY EFFICIENT ARCHITECTURE

L	T	P	M
2	0	0	100

UNIT I CLIMATE AND SHELTER **6**

Historic buildings - pre-industrial, post-industrial and modern architecture - examples from different climatic zones.

UNIT II SOLAR ENERGY AND BUILDINGS **6**

Solar geometry and shading - Thermal comfort - Heat Transfer - Heating and cooling loads - Energy estimates - Conservation - Day lighting - Water Heating and Photo voltaic system.

UNIT III PASSIVE SOLAR HEATING **6**

General principles - Direct gain - Thermal storage wall - sunspace - convective air loop - examples

UNIT IV PASSIVE COOLING **6**

General principles - Ventilation - Radiation - Evaporation and Dehumidification - Mass effect - examples.

UNIT V SITE PLANNING AND DEVELOPMENT **6**

Landform - vegetation type and pattern - water bodies open spaces and built spaces - urbans cape - design strategies.

Total: 30

TEXT BOOKS

1. PLEA SPA - Climatically Responsive Energy Efficient Architecture - New Delhi - 1995
2. A.Konya, Design Primer for Hot Climates, Architectural Press, London, 1980.

REFERENCES

1. Fuller Moore, Environmental Control Systems, McGraw-Hill, Inc., New Delhi, 1993
2. Climatically Responsive Energy Efficient Architecture, PLEA/SPA, New Delhi - 1995
3. Ms.Sudha, N.K.Bansal and M.A.S.Malik - Solar Passive Building - Pergamon Press.
4. V.Gupta - Energy and Habitat - Wiley Eastern Limited, New Delhi.
5. Donald Watson, Climatic Building Design.

WEBSITES

www.terin.org/
http://solstice.crest.org/efficiency/index.shtml
http://www.envinst.conu.edu/~envinst/research/built.html

TRADITIONAL INDIAN ARCHITECTURE I

L	T	P	M
2	0	0	100

UNIT I INTRODUCTION 4

Traditional definition - achievements in India - Meaning of Vastu and Vaastu - its classification - Relationship to earth.

UNIT II SPACE THEORY 6

Features of good building site - good building shapes - macro, micro, enclosed and material spaces - relationship between built space, living organism and universe - impact of built space on human psyche.

UNIT III MEASUREMENT AND BUILT SPACE 6

Units of measurement - Tala system and Hasta system of measures - Musical measurements compared to space measurements - resultant ambience in built space.

UNIT IV VIBRATION, TIME, RHYTHM INTERFACE 6

Theory of vibration - vibration as time, equation of time and space - Time space relationship and measurement of the same.

UNIT V SITE PLANNING AND COSMOGRAM 8

Orientation of building, site, layout and settlement - positive and negative energies - importance of cardinal and ordinal directions - The celestial grid or mandala and its types.

Total: 30

TEXT BOOK

1. Dr. V. Ganapathi Sthapathi - Sthapathy Veda - Dakshina Publishing House - Chennai - 200UNIT I

REFERENCES

1. Dr.Prasanna Kumar Acharya - Manasara - Oxford University Press - 1927 (English version)
2. K.S.Subramanya Sastri - Maya Matam - Thanjavur Maharaja Sarjoji saraswathi Mahal Library - Thanjavur - 1966.
3. Stella Kramresh - The Hindu Temple Vol. I & II Motital Banarsidass Publishers Pvt. Ltd., Delhi - 1994
4. Bruno Dagens - Mayamatam, Vol.I & II IGNCA and Motilal Bamarsidars Publishers Pvt. Ltd., Delhi

THEORY OF DESIGN

L	T	P	M
2	0	0	100

UNIT I DESIGN 6

Definition of design, understanding of design, purpose of design, nature of good design and evaluation of design, types of design classifications, role of designer, design in history.

UNIT II DESIGN PROCESS 6

Context for architectural design problems, design process, stages in the design process from different considerations, different ideas of design methodology.

UNIT III DESIGN PROBLEMS AND SOLUTIONS 6

Different approaches to design, problem solving or intuitive, formulation of problems, nature of creative design problems, goals in design.

UNIT IV DESIGN THINKING 6

Understanding the terms creativity, imagination, etc. Theories on thinking, convergent and divergent thinking, lateral and vertical thinking, creative techniques like checklists, brainstorming, syntactic, etc. design puzzles and traps, blocks in creative thinking.

UNIT V DESIGN CONCEPTS, PHILOSOPHIES AND STRATEGIES 6

Various approaches to generate ideas for architectural design - types of concepts, personal philosophies and strategies of individual designers, channels to creativity in architecture.

Total: 30

TEXT BOOKS

1. Geoffrey Broadbent - Design in Architecture - Architecture and the human sciences - John Wiley & Sons, New York, 1981
2. Nigel Cross - Developments in Design Methodology, John Wiley & Sons, 1984

REFERENCES

1. Bryan Lauson - How Designers Think, Architectural Press Ltd., London, 1980.
2. Tom Heath - Method in Architecture, John Wiley & Sons, New York, 1984
3. James C.Snyder, Anthony J.Catarex - Introduction to Architecture, McGraw-Hill Inc., 1979.
4. Allen Mave Evans & Caula David Dumes Nil, An Invitation to Design, Macmillan Publishing Co., New York, 1982
5. Edward De Bone, Lateral Thinking
6. Christopher Alexander, Pattern Language, Oxford University Press.

WASTE MANAGEMENT AND RECYCLING

L	T	P	M
2	0	0	100

UNIT I INTRODUCTION 4

Waste in built environment – Traditional practices of waste Management Current Scenario in India – Categorisation to solid, liquid and gaseous wastes – sectors responsible for waste generation.

UNIT II WASTE AND BUILT ENVIRONMENTAL 8

Solid and Liquid waste from residential and commercial buildings – Environmental significance – segregation and treatment of wastes – Industrial case studies – Experiments in construction industry – demolition – Role of NGOS in waste management.

UNIT III ALTERNATIVE BUILDING MATERIALS 6

Need for recycling industrial – byproducts as alternative building materials – use of fly ash, Furnace slag, Quarry dust, silica fume, waste lime and gypsum – Technology required for manufacturing – specification and application in construction industry.

UNIT IV RECYCING OF WASTES 8

Meaning of sustainable approach – Identification and workability of waste - Concept of recycling Solid and Liquid wastes in building industry – Solid waste recycling, Vermi Composting, Biogas production – Liquid waste recycling methods and practices.

UNIT V ENVIRONMENTAL MANAGEMENT AND ENERGY OPTIONS 4

Degradation of environment due to waste – Salient features of environmental laws – Rain water Harvesting techniques - Biological and Thermal energy options – Refuse derived fuel and other options.

Total: 30

REFERENCES:

Ravindrarajah, R.S, Tam. T.C. Properties of concrete made with crushed concrete a coarse aggregate, - Magazine of concrete Research, Vol-37, March 1985

Arceivala. S.J., “Wastewater Treatment for pollution Control”- Tata-McGraw Hill, New Delhi, 1986.

ERM.UK Municipal Solid waste Management, Study for the MMA-Vol-1 Interim Report, August-1995

R.Ambalavanan and A.Roja “Feasibility Studies on Utilisation of Wastelime, Gypsum with Fly Ash - The Indian concrete Journal – Vol. – 70 Nov-1996.

MULTIMEDIA DESIGN TOOLS

L	T	P	M
3	0	0	100

UNIT I INTRODUCTION 5

Past trends and theories of digital media – the influence of digital media on the perception of space and architecture, Virtual Spaces.

UNIT II VISUALIZATION STUDIO 8

Role of visualization as a tool in the interpretation of design – development of conceptual models – design – wall, windows, openings, roofs, staircase, design library, generate – elevations, sections, perspective views – schedule tables – layer management – exercises involving the same.

UNIT III ADVANCED 3D MODELLING 12

Enhancing the virtual model with the application of light, color, material, texture – introducing cameras.

UNIT IV ANIMATION AND PRESENTATION 10

Working with key frames, time configurations, converting as avi.files – high – resolution photo rendering and photo realistic images - exercises involving the same.

UNIT V CONTEMPORARY DESIGN PROCESS 10

Formal and functional abstraction – Development of conceptual design models – design development – documentation and presentation.

Total: 45

TEXT BOOKS

1. A. Watt, Fundamentals of Three Dimensional Computer Graphics, Addison – Wesley, Massachusetts, 1989.
2. Sham TIkoo, Autocad 2000, A Problem solving approach, Leaming 1999.

REFERENCE:

1. L. Conway et.al. Virtual Architecture, Batsford, 1985
2. John Beckman, The Virtual Dimension, Architecture, Representations and crash culture, Princeton Architecture Press, 1998.
3. User Guide, Architectural Desktop 2004
4. User Guide, 3D studio max.

URBAN HOUSING

L	T	P	M
3	0	0	100

UNIT I HOUSING ISSUES - INDIAN CONTEXT 6

Need and Demand - National Housing Policy - Housing Agencies and their role in housing development - Impact of traditional life style.

UNIT II SOCIO-ECONOMIC ASPECTS 9

Social factors influencing Housing Design, affordability, economic factors and Housing concepts - Slum Up gradation and Sites and Services.

UNIT III HOUSING STANDARDS 6

Standards and Regulations - DCR relevant to housing - Methodology of formulating standards - Performance standards.

UNIT IV HOUSING DESIGN 15

Traditional patterns - Row Housing and Cluster Housing - Layout concepts - Use of open spaces - Utilities and common facilities - Case studies - High Rise Housing.

UNIT V HOUSING PROCESS 9

Various stages and tasks in Project Development - Housing Management - Community participation - Environmental aspects - Technology

Total: 45

TEXT BOOKS

1. Joseph de chiara & others - Time Saver Standards for Housing and Residential development, McGraw-Hill Co., New York, 1995
2. Karnataka state Housing Board - MANE - Publication - 1980.

REFERENCES

1. Richard Untermanu & Robert Small, Site Planning for Cluster Housing, Van Nostrand Reinhold Company, London/New York, 1977.
2. Forbes Davidson and Geoff Payne, Urban Projects Manual, Liverpool University Press, Liverpool, 1983
3. Christopher Alexander, A Pattern Language, Oxford University Press, New York - 1977.
4. HUDCO Publications - Housing for the Low income, Sector Model.

WEBSITES

www.hudcoindia.com/
www.indiabuildnet.com/arch/sangath-8.htm

URBAN ENVIRONMENT AND PERCEPTION

L	T	P	M
3	0	0	100

UNIT I CONCEPTS AND CONCERNS OF PERCEPTION 7

Visual perception - perceptual constancy, objective and spatial vision, attention and awareness, methods of vision perception and science.

UNIT II DEVELOPING SENSIVITY TO THE NEEDS OF USERS AND CLIENTS 9

Architectural assumptions and Environmental Designs, Designs and social practices, involvement of clients and user in Designs and built environment, realities of clients and public their impact projects and designs.

UNIT III DESIGNING AND PLANNING FOR URBAN QUALITY 9

Quality of urban environment and living - past, present and futuretrends, role of urban design in urban environment, planning for quality living in urban areas,

UNIT IV MICRO AND MACRO BUILT ENVIRONMENT AND BEHAVIORAL ASPECTS 10

Relationship of built environment to society, spatial relationship within built - environment, influence of physical environment on human behavior, influences of built environment on human behaviour.

UNIT V BUILT - ENVIRONMENT AND PERCEPTION 10

Case studies of tall buildings, low raise neighborhoods, interior and exterior elegance of built environment, local and regional level landscape.

Total: 45

TEXT BOOKS

1. Parfeet M and Power G, Planning for urban quality, Rent ledge, London 1977.
2. Johathan Batnett - Urban Design as public polody - Haxper and row Publications New York, 1983

REFERENCES

1. Yantis .S (2001), Visual perception, Psychology Press, Philadelphia.
2. Nicol D and Pilling S (2000), changing Architectural education - Towards new propersimalism, Spon Press, London.
3. Frey H, (1999), Eand FN Spon, London.
4. Dovey K, (1999) Framing Places, meditiating power in built form, Rent ledge, London.

CONSTRUCTION TECHNOLOGY

L	T	P	M
3	0	0	100

UNIT I GENERAL BUILDING REQUIREMENTS 4

Classification of buildings - Sites and Services - Requirements of parts of buildings.

UNIT II MODERN MATERIALS OF CONSTRUCTION 13

Fibber reinforced polymer and lightweight concrete Ferrocement - High strength steel - Prestressing tendons - Light gauge sectional - plastics - fibber glasses - Materials storage practices.

UNIT III CONSTRUCTION SYSTEMS 8

Planning - Cast in situ construction (ready mixed pumped etc. Reinforced concrete and prestressed concrete constructions precast concrete and pre- fabrication system - Modular coordination – Structural schemes.

UNIT IV CONSTRUCTION PRACTICE 10

Manufacture, storage, transportation and erection of precast component forms, moulds and scaffoldings in construction - safety in erection and dismantling of constructions.

UNIT V CONSTRUCTION EQUIPMENT 10

Uses of the following: Tractors, bulldozers, shovels draglings, cableways and belt conveyors, batching plants - Transit mixers and agitator trucks used for ready mix concrete pumps Guniting equipments - Air compressors - welding equipment - cranes and other lifting devices Choice of construction equipment for different types of works.

Total: 45

TEXT BOOK

1. R. Chudley, Construction Technology, Longman Group Limited, England, 1985

REFERENCES

1. National Building Code of India, 1983
2. Frank R. Dagostino, Materials of Construction – Details given Reston Publishing Company, nc.Virginia, 1976.
3. R. Barry, The Construction of Buildings, The English Language Book Society and Crosby Lockwood, Staples, London, 1976.
4. M. Mohsin, Project Planning and Control, Vikas Publishers, New Delhi, 1983

WEBSITES

http://www.asbi-assoc.org/
http://www.cerf.org/
http://www.members.aol.com/ndtmans/index.html

URBAN DESIGN AND RENEWAL

L	T	P	M
3	0	0	100

UNIT I INTRODUCTION 8

Relationship between Architecture, Urban Design and Town Planning - Perception of city form and pattern – Townscape elements

UNIT II ROLE OF SPACE IN HISTORICAL TOWNS 10

Comparative analysis of public spaces, their organization and articulation in pre-history, early, mediaeval and renaissance periods in western civilization and eastern civilization.

UNIT III ORGANISATION OF SPACE 10

Understanding, organizing and articulation of spaces for residential, commercial, industrial and recreational areas.

UNIT IV RENEWAL AND RE-DEVELOPMENT 10

Objectives, surveys programmers of urban renewal and public involvement and participation.

UNIT V CONTEMPORATY PRACTICE 7

Townscape policies, need for new bye-laws, regulations and emerging areas of development

Total: 45

TEXT BOOK

1. Gosling and Maitland - URBAN DESIGN - St.Martin's Press, 1984

REFERENCES

1. Gordon Cullen - The concise TOWNSCAPE - The Architectural Press - 1978
2. Lawrence Halprin - CITIES - Reinhold Publishing Corporation N.Y. 1964
3. Jonathan Barnett - An Introduction to Urban Design - Harper & Row, Publishers, N.Y., 1982
4. Paul. D. Speriregen - Urban Design - The Architecture of Towns and Cities – McGraw-Hill, 1980.

WEBSITES

www.Tribnet.com/News/projects/Rudat
www.Megranahan.com/Rudat98/Report/Report.html.
www.Dom.Gov.an/climate/environ/design/design-d/shtml.
http://:iesd-dmu.oc.uk/ecadap/projects.htm

PROJECT MANAGEMENT

L	T	P	M
3	0	0	100

UNIT I INTRODUCTION TO PROJECT MANAGEMENT 6

Introduction to project Management concepts - background of management, purpose, goal and objectives, characteristics of projects and different aspects of management. Traditional management system, Gantt's approaches load chart, progress-chart, bar-chart merits and limitation. Schedule, time estimates units

UNIT II PROJECT PROGRAMMING 6

Project programming, resources balancing, phasing of activities, programmes, scheduling, project control, reviewing, updating and monitoring.
Introduction to modern management, concepts, unidimensional management techniques - Introduction to PERT and CPM introduction to network concepts, network eolements and inter-relationships.

UNIT III NETWORK TECHNIQUES 12

Network techniques, network logic - interrelationships, activity information, data sheets, and development of network.
CPM for management, CPM network analysis, identification of critical path floats computation result sheets.

UNIT IV PERT NETWORK 6

PERT Network, introduction to the theory of probability and statistics, probabilistic time estimation for the activities of PERT network

UNIT V PROJECT COST 15

Introduction to two dimensional network analyses, activity cost information. Cost time relationship, crashed estimates for the activities, compression potential, cost slope, utility, data sheet, project direct cost and indirect cost.
Crashed programmes, network compression least cost solution least time solution, optimum time solution.
Network techniques, PERT/CPM, generating alternative strategies using computers

Total : 45

TEXT BOOKS

1. Dr. B.C. Punmiya and K.K. Khandelwal - Project Planning and Control with PERT\CPM Laxmi Publications, New Delhi, 1987.
2. S.P. Mukhopadyay, Project Management for Architects and Civil Engineers, IIT, Kharagpur, 1974

REFERENCES

1. Jerome D. Wiest and Ferdinand K. Levy, A Management Guide to PERT/CPM, Prentice Hall of Indian Pub. Ltd. New Delhi, 1982
2. SR.A. Burgess and G. White, Building production and Project Management, The Construction Press, London 1979.

ARCHITECTURAL CONSERVATION

L	T	P	M
3	0	0	100

UNIT I INTRODUCTION 6

Definitions of Conservation, preservation, urban design and Renewal - Need for them - Indian Context - Role of architect in such programmes.

UNIT II EVOLUTION AND METHODOLOGY 10

Origin and evolution in history - architectural heritage - required - Methodology - Stages of development - Implementation tools and technologies.

UNIT III SOCIO - CULTURAL DIMENSION 10

Social, Cultural, economical, and historical values of Conservation programme – Invovlvement of Community- Social Organisations – public participation – Conflict and compatibility between Conservation and development.

UNIT IV CASE – STUDIES 10

International Case Studies (atleast four) – Success and failure – reasons for it – Role of UNDP, UNESCO and other funding agencies – their involvement.

UNIT V LEGISLATION 9

Special legislation – relevance to T & CP Act 1971 – The T.N. Heritage Bill – Constitution of authorities – administrative aspects – New Concepts and emerging trends in Conservation.

Total: 45

REFERENCES

Conservation and Development in Historic Towns and Cities. - Pamela Ward - Orid Press. Ltd.
Planning for Conservation - Kain Roger, - St.Martin N-Y 1981
Recycling Cities – Cutler and Cutter – Canni, Massachussets, 1976
Character of Towns an Approach to Conservation - Worskett Roy, Architectural Press – London.

ADVANCED STRUCTURES

L	T	P	M
3	0	0	100

UNIT I PRESTRESSED CONCRETE **10**

Analysis and approximate design of determinate beams losses of prestressing

UNIT II MULTI-STOREYED BUILDINGS **10**

Introduction - Load action on High-rise buildings - various structural systems - approximate structural analysis and design (No problem)

UNIT III PNEUMATIC STRUCTURES **10**

Concept - development - laws of formation - merits and demerits

UNIT IV CABLE STRUCTURES **10**

Basic principles - various forms - merits and demerits

UNIT V SPECIAL STRUCTURES **5**

Grids - Domes, Shells and various forms - Geodesic domes

Total: 45

TEXT BOOKS

1. P. Dayarathnam, Prestressed Concrete Structures, Oxford and IBM Publishing Co., New Delhi, 1982
2. Wolfgang Schueller - High Rise Building Structures, John Wiley & Sons, New York, 1976.

REFERENCES

1. Frd Otto - Editor - Tensile Structures VolI Pneumatic Structures, Vol2 Cable Structures. The MIT Press, London
2. N. Subramaniam, Principles of Space Structures, Wheeler & Co., Allahabad 1983
3. N.Krishnaraju, Prestressed Concrete, Tata McGraw-Hill Publishing Co. 1998.

WEBSITES

http://www.wkwebUNIT Vcableinet.co.uk
http://www.struct.kth.se/people/raid/cable.htm
http://www.high-rises.co.uk/
http://www.dallassky.com/
http://www.jcbus.co.ip/kameda/longest.htm

CD-ROM-"***A century of Takenaka Building works***"-Takenaka Corporation, Osaka, Japan-Aug.1999

INTERIOR DESIGN AND PRACTICES

L	T	P	M
2	2	0	100

UNIT I INTRODUCTION TO INTERIOR DESIGN PRACTICE 4

Distinction between Interior Design and Decoration – process of interior design – as an integral part of building – typologies, importance in the context of Globalization and GATS.

UNIT II PROFESSIONAL PRACTICE FOR INTERIOR DESIGNERS 6

Role of National Institute of interior designers – scale of fees – tender – contract – professional interior design societies – licensing and registration procedures.

UNIT III COST ESTIMATION 8

Types, purpose, approximate estimate, detail estimate, bill of quantity format, elementary billing and measurement of basic interior design materials.

UNIT IV OFFICE MANAGEMENT 7

Office procedures and manuals – Record keeping – Dealing with the trade – Use of trade showrooms – Working with other professionals – how to build up a library – Filing, client diary and action record – Selling techniques, presentation and professionalism.

DESIGN PROJECTS

1. A furniture design with material specification and detailing. **15**

2. Design small interior space – residential or commercial. **20**

Total: 60

TEXT BOOKS

1. Professional practices for interior designers by Christine M. Piotrowski.
2. Professional practice of interior design by Ronald Veitch, Dianne Jackman.

REFERENCES

1. Time savers standards for interior design.
2. A guide to business principles and practices for interior designers by Harry Siegel, et al.
3. Interior design law and business practices by C. Jaye Berger.
4. Interior design management : A handbook for owners and managers by Christine M. Piotrowski.
5. NIID – Communications and Brochures.

BUILDING MANAGEMENT SYSTEM

L	T	P	M
3	0	0	100

UNIT I INTRODUCTION 6

Introduction to Construction management - Project Management – Role of a Manager - Responsibility and Authority - Functions in the Management process.

UNIT II OTHER MANAGEMENTS 10

Materials Management – importance – materials of Construction – Classification – ABC analysis – Estimation of materials requirement - procurement purchase and transportation. Maintenance Management – Repairs, Spare parts inventory.

UNIT III SAFETY IN CONSTRUCTION 10

Safety in Construction practice – general causes of accidents and prevention – Safety legislation – Standards – Health and welfare in Construction – statutory provisions regarding health and welfare at sites.

UNIT IV BUILDING COSTS AND FINANACIAL MANAGEMENT 10

Costs analysis for Control, CVF analysis for planning and control – Contribution approach – relevant and irrelevant costs – Meaning and Scope of financial mamagement – Statement analysis – ratio analysis – funds flow analysis.

UNIT V LEGISLATION 9

Labour legislation – Salient features of – Contract Labour Act 1970 – Inter State Migration Act – 1979, - Factories Act – 1948 – Indian Contract Act – Arbitration Act

Total: 45

REFERENCES

R.A.Burgess and G.White “Building Production and Project Management” -The Construction Press, London – 1979.
Ulimen John “ Handbook of Engineering Management -Wiley, New York, 1996.
Harris F.C and Mccaffer.R “Modern Construction Management” - Croshy Lockwood Staples. 1997.

ENVIRONMENTAL DESIGN

L	T	P	M
3	0	0	100

UNIT I BASICS OF ENVIRONMENTAL DESIGN 5

Definition - Biotic systems - symbiosis - Feed back cycles - relationship to buildings.

UNIT II NATURAL SYSTEMS AND ADOPTIONS 8

Relevance of natural systems - analysis and integration at building and settlement level - case studies.

UNIT III ENVIRONMENTAL IMPACT 10

Environmental impact on buildings and settlements - concepts and definition of environmental impact assessment and programmes at city level.

UNIT IV ENERGY MANAGEMENT AND DESIGN 12

Energy management in buildings, waste recycling and concepts of renewable and non-renewable energy systems - technologies involved - understanding of the same through documented case studies.

UNIT V NON-CONVENTIONAL ENERGY OPTIONS 10

Definitions - environmental impacts on non-conventional energy systems - solar energy

Total: 45

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1. Gosling and Maitland - URBAN DESIGN - St.Martin's Press, 1984

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www.Dom.Gov.an/climate/environ/design/design-d/shtml.
http://:iesd-dmu.oc.uk/ecadap/projects.htm

INDUSTRIAL ARCHITECTURE

L	T	P	M
3	0	0	100

UNIT I DEFINITION AND HISTORIC CONTEXT 8

Meaning of industrial architecture, scope, context and distinction between it and industrialized buildings – impact of industrial revolution – origin in the context of Britain and the United states – Impact of materials and technology in 1900's and emergence of new aesthetics in architecture.

UNIT II EVOLUTION AND PROCESS 5

Automation techniques and impact on process circulation and area requirements – influence on design – internal and external environment control – Precautions at site.

UNIT III PIONEERS AND ARCHITECT'S ROLE 12

Study of examples of pioneer to include Peter Behrens, Max Berg, Hans Poelzig's and P.L.Nervi – impact of expressionism and international style – Responsibility of architects in – innovative corporate image, understanding building engineering and understanding industrial environments through Indian case – studies.

UNIT IV DESIGN PRINCIPLES AND PROGRAMMING 12

Zoning principles, factories Act and Rules (1948) – in India – Role of pollution control boards, organizing principles – Programming aspects to include need, spatial relationships, Access, Layout and user facilities – Automation and its impact on space and performance – Environmental control to include working conditions, atmospheric control, visual factors and waste management.

UNIT V CONTEMPORARY TRENDS AND FUTURE 8

Analytical approach involving – technical, social, geographical aspects, corporate philosophy, worker management relations, and manufacturing equipments, critical issues involving master plan, Material handling, Functional process, Time and cost and structural resolutions – Flexibility in planning, design and technology.

Total : 45

TEXT BOOKS

1. Kenneth Reid – Industrial Buildings – F.W. Dodge Corporation, New York – 1961
2. Friedmank Wild – Design and Planning Factories – Van Nostrand Reinhold / New York – 1982

REFERENCES

1. James F. Munce – Industrial Architecture – F. W. Dodge Corporation – New York - 1980
2. Grant Hildebrand – Designing for Industry – The M.I.T. Press, Cambridge, New York – 1984
3. United nation Volume – Trends in Industrialization of Buildings – New York – 1970.

SUSTAINABLE PLANNING AND ARCHITECTURE

L	T	P	M
3	0	0	100

UNIT I INTRODUCTION 5

Planning Concept – Environment Impact Analysis – Ecological Footprints – Essential ingredients of Sustainable Development apart from Social and Economical – Environment, Stakeholders Participation, Institutional Mechanism.

UNIT II DEVELOPMENT IN HISTORICAL CONTEXT 8

Early settlement pattern – Climate Responsive Planned Layouts – orientation of Streets and Buildings, Creation of Habitable Environment, Early Planning Methods – Land Generation, Soil and Water Conservation, Bioregional Approach.

UNIT III RESOURCE EFFICIENCY 10

Land, Water, Energy, Human Resource, Biodiversity – Suitable practices at settlement, Campus and Building Level

UNIT IV SUSTAINABLE ARCHITECTURE 12

Appropriate materials and construction – review of their properties workability, Eco Friendly construction practices – Need for Legislation – sustainable campuses, neighborhoods, programmesw and case studies.

UNIT V SUSTAINABLE PLANNING AND POLICIES 10

Awareness programme at National, International levels Rio de Jenero agenda – Earth summits – agenda involved – their realization.

Total: 45

TEXT BOOKS

1. Manik & Girish Komisva, IIPA, keeping Cities Clean and Green, Uppal Publishing House, 1997.
2. Beer, Environment Planning for Site Development.

REFERENCES

1. Bioclimatic Architecture – ENEA and IN/ARCH Publication Edition – 1989.
2. Brotoc, Sustainable architecture high-tech housing.
3. Roafs, Eco-house a design guide.

WEBSITES

1. www.enviroarchitecture.com
2. www.greenconcepts.com
3. www.greenhomebuilding.com
4. www.hoksustainbledesign.com
5. www.sustainablesettlement.com
6. www.buildnaturally.com