SHIVAJI UNIVERSITY, KOLHAPUR

SYLLABUS STRUCTURE FOR SEM –IX & X FOR B. ARCHITECTURE DEGREE COURSE
FROM ACADEMIC YEAR 2014-15

Code No.	Name of the Subject	Teaching Scheme			Examination Scheme			
		Lecture/ week	Studio/s eek	Duration of theory paper in Hrs.	Sessional Work (Int.)	Theory Paper	Oral (Ext.)	Total
	FINAL YEAR B.ARCH.							
	SEMESTER - IX							
AR09-01	Environmental Design - I	1	4		100			100
AR09-02	Advanced Services	1	3	3	100	100		200
AR09-03*	Advanced Architectural Design	1	8	18	200	200	100	500
AR09-04	Advance Building Systems & Construction Technology	2	4	4	100	100	100	300
AR09-05**	Advance structure-I	4		3	20	80	50	150
AR09-06	Professional Practice, Bldg. By-Laws	2	1	3	50	100		150
AR10-07	Elective - I (One from the group)	2	2		50		50	100
	01-Urban & Rural Planning							
	02- Urban Design							
	03- Disaster Management							
	04- Building Economics & Sociology							
	05- Industrial Architecture							
AR09-08	Project-I : (Synopsis/ Data collection/ Design Programme)	1	2		200			200
	Total	14	24	31	820	580	300	1700
	SEMESTER - X							
AR10-01	Environmental Design - II	1	4		100		100	200
AR10-02	Project -II - (Case Study / Site / Final Design & presentation Drawing /Report)	1	8		100		200	300
AR10-03*	Advance Building Specifications, Valuation & Project Management System	2	4	4	100	100	100	300
AR10-04**	Advance Structure-II	4		3	20	80		100
AR10-08	Elective - II (One from the group)	2	2		50		50	100
	01- Contemporary Architecture							
	02- Architectural Conservation Housing							
	03- Design with Climate							
	04- Sustainable Architecture							
	05- Digital Architecture							
	06- Vernacular Architecture							
	Total	10	18	7	370	180	450	1000
	Library reference, Site Visits for Project work	-	10					

* Means combine passing for external oral & theory paper
* * Means combine passing for internal termwork & theory paper & external oral as applicable
Per Semester Periods per week - 38
Total week - 15 weeks per semester

SHIVAJI UNIVERSITY, KOLHAPUR

SYLLABUS FOR SEM –IX & X FOR B. ARCHITECTURE DEGREE COURSE FROM ACADEMIC YEAR 2014-15

SEMISTER IX

FINAL YEAR ARCHITECTURE
SUBJECT : ENVIRONMENTAL DESIGN I (AR 09- 0l)

Lectures-	1Hr.	Studio -	4 Hr.
No. of Paper –	Nil	Total Marks-	100Marks
Duration -	----	Sessional Work Marks	Int. 100 Marks
			Ext- ------

INTRODUCTION:

This subject is intended to introduce the student the study of built-up spaces and negative spaces, natural environment and built-up environment, aesthetics of spaces in groups of buildings, layout and planning of large areas and campuses. It will cover elements of town planning. Urban design and landscape architecture.

Elements of Town Planning:

i) Planning of Residential areas as social units.
ii) Design of cluster and neighboring layouts.
iii) Layout with topography. climate, orientation.
iv) Different types of roads, housing types.
v) Concepts of densities gross density. net density land use percentages, efficiency in layout.

SUBJECT~ : ADVANCED SERVICES (AR09 -02)

Lectures-	01 Hr	Theory -	100 Marks
Studio-	03 Studio	Int.	100 Marks
Paper	01	Ext.	---
Duration -	03 Hrs	Total	200 Marks

INTRODUCTION -

A. Sewage disposal of large area (introductory only)

1. Sewage disposal system for housing colony. small and medium sized project: for smaller and bigger towns and in rural areas.

2.Sewage treatment plants, different types.

3.Bye products.

4.Gas plant and distribution.

5.Connections of large complexes to Municipal sewers and ventilation of sewers to public sewerage system.

6.Introductory concepts of special types of waste, their treatment and disposal.

7.Drainage systems and problems of multistoried buildings.

8.Basic principles of water purification system (Introductory only) plants, water Treatment, f1lterationswimming pools, water distribution and central stations. Water Supply, distribution for single and multistoried' buildings and industrial projects. water bye principles and implementations. Standard for hard soft: and potable water, standards for different users Sources of water supply.

Design problems based on water supply and drainage for multistoried building and a small colony.

B. Refuse disposal system

1. Refuse disposal system for a small house, colony and town. Refuse types, and disposal problems.
2. Refuse incinerator methods.
3. Methods of Dry disposal, wet refuse treatment.
4. Industrial refuse disposal, problems and systems.
5. Utilisation of farm refuse.
6. Refuse disposal in multistoried buildings.
7.Refuse and environmental pollution problems.

SUBJECT : ADVANCED ARCHITECTURAL DESIGN (AR 09- 03)

Lectures-	01 Hour		Theory - 100 Marks
Studio-	08 Studio	Sessional Work	Int. - 200 Marks
No. of Paper –	one		Ext - 200 Marks
Duration -	18 Hrs		Total - 500 Marks

This study is intended to provide undertaking of co-ordination of all the factors involved in architectural design, including function, construction, material, climate, social, cultural and economical factors, interior and landscape planning, services etc. The student should present and explain the process of his design from data collection analysis to the solution.

- Design of complex buildings and campuses involving analytical study of building spaces with consideration of sociological, economical, cultural and climatic factors.
- Design problems such as housing schemes, industrial estates, educational campuses, Hospitals. urban centre's, multi use buildings, shopping complexes, concert halls, museum and art galleries, transport buildings etc.
- Study of all above types of buildings.
- Emphasis on applications of technology, design of structure involving services and interior and landscape design.
- Minimum two design problems should be done by each student per year. At least one of the problems should contain multifarious activity spaces in one structure.

SUBJECT : ADVANCED BUDLDING SYSTEMS & CONSTRUCTION TECHNOLOGY (AR 09 -04)

Lectures-	02 Hr	Theory	100 Mark
Studio -	04 Studio	Internal	100 Mark
No. of Paper –	one	External	100 Mark
Duration -	04 Hrs	Total	300 Mark

INTRODUCTION

1. PAINTAND VARNISHES: Different types of paints and varnishes, their composition, manufacture, properties, application and uses.

2. FALSE CEILING:

T. W. Aluminum. steel framing materials, covering materials, like asbestos, soft boards, acoustical boards, plaster of paris etc.

3. THERMALAND SOUND INSULATING MATERIALS

Composition, properties and application.

4. MASTIC SEALENTSANDADHESIVES:

Various types, their compositions, properties and application.

5. Epoxy materials and their varied uses in construction.

6. Fire proofing and retarding.

Constructional measures adopted for fire resisting and fire retarding structures.

7. Market survey and study of new products. –

8.FOUNDATION:

Construction aspects and details of raft: foundation, details of hinged joints in footing in R. C. C. and steel. Details of basement construction with waterproofing and details of ventilation in -

(a) Masonry (b) R. C. C.

*Dewatering of basements, sheet piles.

*Equipment and machinery for different types of foundations.

*Methods of water proofing for basements and swimming pools. Tanking.

9. SUPERSTRUCTURE:

10 .BANKVAULTS:

11. DEMOUTION OF STRUCTURES

Timber frame structures, load bearing structures, steel structures. R. C. C. structures.
Addition alterations to old buildings.

1. Strutting
2. Underpinning
3. Thickening of walls.

This subject should be dealt with keeping in mind the fact that construction is a Process and understanding the process should be given importance.

Site visit should be conducted for better understanding of construction process. 1be different situations call for different construction methods, techniques, these methods have certain limitation, and architectural advantages.

12. Earthquake resistant structures.

* Fire escapes, constructional aspects of lifts and escalators.
* Auto sliding doors, fire resistant doors, remote control doors.
* Steel columns for factory buildings.

10.ROOFING:

Constructional aspects of portal frames, in R.C.C .and steel base and apex joints. girders, precast beams, slabs, lifting in position, securing ends, prestressing of beams, geodestic domes, new methods by C. B. R. I. and N.B..O. only Architectural profits and sections without reinforcement details to understand the principles and geometric forms of-

1. Shale Roofs
2. Space structure
3. Pneumatic structures
4. Tensile structures
5. Trussed roof with boas.

Gantry girders, chemical tanks, grain godowns, cold storages, poultry farms, chimney construction, earthquake resistant structures.

SUBJECT: ADVANCED STRUCTURE I (AR 09- 05)

Lectures-	04 Hr	Theory	080 Mark
Studio -	-	Internal	020 Mark
No. of Paper –	one	External	050 Mark
Duration -	03 Hrs	Total	150 Mark

TOPIC	DETAILS
01. FOUNDATION	**A) Shallow Foundation** a) Combined footing - Concept , types & structural behavior reinforcement details b) Raft foundation - Concept , types & structural behavior reinforcement details **B) Deep foundation** a) Pile foundation- Types like friction, end bearing etc. Under reamed piles, group of pile, pile cap
02. SLABS	A) Two way slab- concept, design steps, design problem B) Flat slab- concept , advantages, disadvantages , elements C) Grid/waffle/Coffer Slab - concept , codal provisions D) Hollow block slab- concept and advantages
03.STAIRS	Structural behavior and reinforcement detailing of following types of slab 1) Waist slab 2) Cantilever 3) Folded plate/ slabs 4) Stringer beam type 5) Circular & semicircular 6)Helical 7) Free standing For the above types detailing in steel material also
04. Retaining wall	Elements, structural behavior & reinforcement details of a) Cantilever retaining wall b) Counter fort/ Buttress type retaining wall Advantages and disadvantages

05.Concrete mix design	Parameters for mix design, Water cement ratio, Test for wet & hardened concrete Concept of ready Mix Concrete (RMC) Self Compacting Concrete.(SCC) High strength concrete (HSC)

06.Water tanks	Structural behavior and reinforcement detailing of following types Under ground (UG), resting on ground, elevated service reservoir (ESR) Shape in plan square, rectangular, circular, advantage and disadvantages Aesthetical form of E.S.R.

07. Constructional methodology	1) Precast Concrete elements- advantages & disadvantages 2) Prefabricated steel works- advantages & disadvantages 3) Prestressed concrete structure- Concept, Pre-tensioning & post tensioning, advantages & disadvantages.

SUBJECT: PROFESSIONAL PRACTICE , BUILDING BYE LAWS (AR09 -06)

Lectures-	02 Hr	Theory -	100 Marks
Studio -	01 Studio	Internal -	50 Marks
Paper	01	External-	-
Duration -	03 Hrs	Total -	150 Marks

This subject prepares the student to embark on his professional career in any capacity, to practice his profession efficiently. and to know - bye-law sand regulation of various public authorities.

INTRODUCTION

**. Engagement of an Architect's duties, scope of responsibilities and liabilities in profession, relationship with client and contractor, professional ethics, Architect's Act, 1972 copy right in drawings.

**Normal, additional and partial services, scale of fees and mode of payment, claiming of fees, norms terms of engagement, agreement with client, collaboration with other consultants.

.** Possibilities for an architect in profession, e.g. private, practice partnership, corporate practices, salaried work in private and public offices, set up of these offices and .his role in them, membership of professional organizations, ways of getting commissions.

**.Office administration, filing, recording of letters and drawings, maintenance of accounts, modes of maintenance of accounts, cash book, bank transactions, ledgers, depreciation and profit and loss statements, Modem Office equipments, reproduction, drafting machines, computers, and their uses.

.**Architectural competitions, types of competitions, objectives and conduct, suitability for various projects, norms for scrutiny of entries, award of premium.

**Building bye-laws for different categories of Municipalities national code of practice, factory act, cinema theaters act, rules and regulations of town planning Department for buildings and layouts, explosive act, fire insurance land tenures, urban ceiling act, and highways regarding building set backs, development control rules, Any other acts, rules regulation etc. relevant to building activity.

** An overview of the Town Planning Acts of Urban Development ministry of States & Central Government. The rules and regulations for Development Control and the principles behind the framing of these. Regional Plan, Development Plans, at State, District, Urban agglomeration, Municipal Corporations & Councils, Improvement trusts & Regional Development Authorities, CRZs, etc. Procedures for formulations, Implementation and applying fro Approvals at various levels

**Natural rights, air, light and water, easement, ancient lights, acquisition, interference.

**Methods of execution of works, types of tenders and their suitability for various projects, tender documents, tenders procedure, conditions of contract of ITA and State PWD (introductory), scrutiny of tenders and recommendations.

**Infrastructure for commencement of work. ,

**Work order, bar chart for construction work and office work. introductory concept of CPM and PERT methods, site supervision, site visit reports, interim final bills, duties and completion certificates, Formalities on and after completion of work, arbitration. Sessional work based on above topics like drafting of tender notices, special conditions, bar chart for a typical building, visit report etc.

.

(AR09- 07) ELECTIVE – I (One from the group)

AR09- 07-01 URBAN & RURAL PLANNING

Lectures-	02 Hr	Theory -	-
Studio -	02 Studio	Internal -	50 Marks
Paper	Nil	External -	50 Marks
Duration -	----	Total Marks-	100 Marks

This course in proposed to impart preliminary training for environmental and city planning. The process of town planning factors affecting city planning and procedures involved, to understand bow farsighted city planning will meet present as well as future social, cultural and economical requirements.

A general understanding of Town Planning principles which have evolved through ages.

Evolution of Town Planning thought with special reference to India.

Objects of planning, human settlements, Town Planning as an inter disciplinary process, Contemporary planning concepts, Geddes, Howard, Doxiadis, Perry; Le Corbusier etc.

Regional Plans, Development Plans, Urban and Rural Housing Programmes, Legislative, Administrative and "fiscal measures, Zoning and other regulations.

Land-use maps, topography, influences of climate on town planning.

Infrastructure in city planning, traffic census, classification of roads, road layouts, widths, junctions, flyover bridges, and various road patterns for vehicles and pedestrian traffic.

Introduction of M. R. T.P. Act, 1966 and Town Planning Act, 1954.

Planning for villages and Rural areas.

AR09- 07-02 URBAN DESIGN

Lectures-	02 Hr	Theory -	-
Studio -	02 Studio	Internal -	50 Marks
Paper	Nil	External -	50 Marks
Duration -	----	Total Marks-	100 Marks

INTRODUCTION-

Theory --Definitions of urban planning, urban design and architecture.

Urban morphology, public realm, urban pattern, grain, texture,

Land use, scale of urban design, heritage of urban design,

Elements of urban design – Image of the city

Principles of urban design.

Building bye-laws and zoning regulations

Analytical study covers the following points-----

Heritage of urban design, urban pattern, grain, texture, land use study, housing in urban design, formal and natural urban spaces in urban design, urban renewal/ rejuvenation of urban form, streetscape in urban design, role of landscaping in urban design, effect of social, cultural, religious, aspects on town and residential living, skyline, views, vistas. Contemporary urban form. Building bye-laws and zoning regulations and their influence on urban design of existing areas and emerging areas of development.

Emerging concepts in urban design, salient examples. Case study / appraisal of an Urban center / central business district /Town center in view of the above issues related to Urban Design

AR09- 07-03 DISASTER MANAGEMENT

Lectures-	02 Hr	Theory -	-
Studio -	02 Studio	Internal -	50 Marks
Paper	Nil	External -	50 Marks
Duration -	----	Total Marks-	100 Marks

INTRODUCTION.

Definition - Disaster, Mitigation, Management, Preparedness, Vulnerability, Rehabilitation

Types of Natural and man-made hazards

Environmental Planning & Disaster Management:

Study of history, physical, geological and hydro-geological characteristics, vegetation, demography & built structures; carrying capacity, ecological footprint & parasitism.

Some important past disasters

Authorities, NGO's in mitigation and management

I.S.codes, local bye-laws and national Building code.

Site planning, building forms and Architectural Design

Structural detailing

Disaster management cycle

Studio Work

Case study and report writing

Site visit to any disaster

Disaster mitigation layout for public building/institutional buildings/national important structures

AR09- 07-04 BUILDING ECONOMICS & SOCIOLOGY

Lectures-	02 Hr	Theory -	-
Studio -	02 Studio	Internal -	50 Marks
Paper	Nil	External -	50 Marks
Duration -	----	Total Marks-	100 Marks

Building Economics:

Elements of economics, production of goods, Distribution of wealth, Un-employment Labour and its efficiency, Labour Laws, Economics of buildings contracting. Capital and return from projects like Residential properties, offices, cinemas, hotels, etc. Relation between initial and recurring expenditure in building costs. Low cost housing, Examples illustrating the economics of building projects undertaken by private and Semipublic . organisations.

Different forms of business Organisation:

1. Single entrepreneur system,
2. Partnership,
3. Joint Stock Company,
4. Co-Operative Concerns.
5. Nationalization.

Horizontal and Vertical combinations, Their merits and demerits with reference to building industry.

Banking: Process of Banking, Functions of Central Bank and Commercial Banks.

Sociology: Definition and scope, Relevance to students of Architecture, Social and Religious Structure in India .Joint Family systems, property inheritance, Rural and Urban societies and their characteristics, Occupational and social security in India. Welfare organisations in India, Public and private organisations for social work. The modern welfare state. Influence of these on Architecture, co-operative housing their set up and working, building activity by promoters and builders for different purposes, Role of Central and State Government Institution floated by them to promote their activities resulting in effect on building activity (like HUDCO, MSFC etc.)

AR09- 07-05 INDUSTRIAL ARCHITECTURE

Lectures-	02 Hr	Theory -	-
Studio -	02 Studio	Internal -	50 Marks
Paper	Nil	External -	50 Marks
Duration -	----	Total Marks-	100 Marks

Site survey and selection for single and group of Industries.

Layouts of Industrial complexes, Industrial Estates, etc. Developing master plans for these. Transport and infrastructure facilities.

Classification of Industries, Engineering and Processing Industries, Major, allied and small scale industries.

Air pollution and environmental control.

Services in industries ─Water supply and sanitation. Effluent disposal, Electricity and Industrial Lighting Communication, material and product handling cranes and equipments.

Fire protection systems and fire insurance of buildings.

Layout of factory and detailed working drawings of a typical factory building with machinery layout.

Bye-laws and development control rules of state Industrial Estates, and Co-operative estates.

Control of Inspector of factories pertaining to factory buildings, factory Act and Rules, Common amenities and facilities to be provided to the workers under factory Act.

Building materials for factory buildings, fabrication, modem construction techniques, expansion, Industrial colonies, social and recreational facilities.

SUBJECT: PROJECT I (Synopsis /Data collection/Design Programme) (AR09 -08)

Lectures-	01 Hr	Theory -	-
Studio -	02 Studio	Internal -	200 Marks
Paper	Nil	External -	-
Duration -	----	Total Marks-	200 Marks

Preamble:

No solution to any architectural problem can be considered as ideal due to ever changing human needs and behavior, brought about by socio-economic factors and advances in science and technology.

Technology has advanced so rapidly over the last decade, (and will continue to do so at even a faster rate). that human living patterns, their needs and behavior are changing likewise posing even greater planning problems for the architect. It is in this context that an architectural design dissertation is an exercise in analyzing a problem (whether it be an urban renewal scheme, a housing project. an educational or medical institution, or any other such problems of the candidate's own choice) by making a thorough study of the particular problem, to establish its development over the years and evaluate its shortcomings in terms of present day and future human needs and finally offer a probable design solution which takes all these factors into account.

Each candidate wishing to undertake such a problem is required to give a synopsis, which should outline the following - .

1. The problem itself with appropriate title.
2. Reasons for selecting that particular problem.
3. How the candidate intends to tackle the problem and present it in the form of a dissertation, including the design presentation of the scheme.

The work should include intensive investigation and research on social and economic aspects project needs, climatology, Design project may be based on development schemes, or redevelopment schemes of complexes in town centers, Education, Industrial, Recreation, Commercial or residential use involving problems in traffic movement of vehicles and People, giving layouts. landscaping, model and concise written report clearly outlining the concept and evolution of design. The final solution will be a complete design drafted on cartridge of tracing paper .model, perspective etc. as much as to explain the scheme in its totality.

Submission Schedule:

PROJECT I (Synopsis /Data collection/Design Programme)

1. Registration of title and acceptance letter from guide
2. Synopsis submission
3. Data collection
4. Submission of data /Report
5. Finalising tentative Design Programme

Note: Marks for stages 1 to 5 shall be allotted by the respective guides as per the marking scheme decided .

Unless a student passes in the internal assessment, he will not be allowed to appear for the external assessment.

Guides and Approval of Dissertation Topic:

1. All teachers with a teaching experience of ten years are eligible, irrespective of the posts /

department responsibility they hold, to guide students.

2. The choice of guide is made by the student and their choice made known to the coordinators.
3. Each approved guide can guide minimum 4 number of students as per the total number of students in the class and the total number of teachers available. willing teachers are given opportunity to guide.
4. For certain topics there may be more than one guide. The second guide may be from within the institute or from practice.
5. The exact title of the topic shall be finalized immediately after the evaluation of the synopsis.And ones the Title is finalized ,it should be reported to University within one month after starting the term. And not allow to change..

Submit your application of dissertation topic on the proforma given below.

Date:

To:
The Principal,

Respected Sir,

I am preparing my dissertation on the topic entitled as follows:

Title of the dissertation:

I have requested Shri/Prof ---------- to guide me in this work and he has agreed to do so. So allow me to do the work under his guidance.

Thanking you

I hereby accept to guide this project.

Yours Truly.

(Signature & Name of the Guide.) (Sign. & Name of the Student)

SEMISTER X

FINAL YEAR ARCHITECTURE
SUBJECT : ENVIRONMENTAL DESIGN II (AR 10- 0l)

Lectures-	01 Hr	Theory -	-
Studio -	02 Studio	Internal -	100 Marks
Paper	Nil	External -	100 Marks
Duration -	----	Total Marks-	200 Marks

INTRODUCTION

Elements of Urban Design :

i) Correlations of F.S. I. Ground coverage, floor heights.
ii) Co-relation of positive and negative spaces, aesthetics of spaces in groups of buildings, Block model making. .
iii) Delineation of Architectural character.
iv) Urban Renewal, conservation, design in relationship with historic buildings.

Elements of Landscape Architecture:

i) Materials-hard and soft, textures, shapes-uses.
ii) Types of trees and other landscape elements, their uses in landscape arch.
iii) Relationship between built up and natural environment.
iv) Integration of buildings and landscape, design of open spaces inside and outside buildings.
v) Design of street furniture and signage.

SUBJECT : PROJECT II – (Case study/Site analysis/Final Design & Presentation,Drawings /Report) (AR 10- 02)

Lectures-	01 Hr	Theory -	-
Studio -	08Studio	Internal -	100 Marks
Paper	Nil	External -	200 Marks
Duration -	----	Total Marks-	300 Marks

Submission Schedule:

PROJECT II (Case study/Site analysis/Final Design & Presentation, Drawings /Report)

1. Analysis & Conclusion
2. Decision of approach to Final Design –concept & zoning etc.
3. Draft Design submission –Includes single line conceptual plans,
4. Final submission with Detailed layout plan showing building footprints,roadways,parking,service line,ETP/STP,Landscaping etc,. All techniques drawings including plans,elevations,Sections, interior & Exterior Views, model, construction techniques applied,security systems etc.with typewritten bound report and drawing
5. External viva- voce

Note: Assessment and marking for stage 1 to 5 shall be done by an internal panel of three members appointed by the institute. As far as possible practicing architects should be involved by the institute in this panel. If a student deviates from the above schedule his internal marking will be affected.

.

Unless a student passes in the internal assessment, he will not be allowed to appear for the external assessment.

The typewritten dissertation must be presented in neatly bound 3 copies two copies of which will be retained by the college and one returned to the candidate. The size of the dissertation volume must be A size (TRIMMED210 x 297) on sunlity bound or equivalent paper with standard binding in black or brown cloth and embossed title on top and preferably on the spine.. The printed blank page of the certificate which will be supplied by the college will be bound along with other typewritten pages in the beginning of the dissertation. This will be certified and signed by the college authorities as authentication of the work and by the . guide who has guided the work.

The index page must contain the following sequence and paging the volume must follow this sequence. Attach either reduced size xerox or photocopies of drawing (if legible) or prints neatly folded to suit the size of the volume.

1. Introduction (the why and what of the project)
2. Planning proposals (what do you wish to do).

3. Case studies (actual similar examples studied or visited).

4. Location (where is it proposed, brief environmental Characteristics).

5. Physical programme (details of requirements).

6. Design determinants (concepts that guided you to arrive at the decisions or solutions).

7. Architectural proposals (Actual copies of drawings and/or reduced xerox copies or photo copies).

8. Bibliography (reference books, papers, etc. from where the information is gathered).

It is recommended that the appraisal of criticisms of building projects which appear in the magazines on Architecture be read so as to acquaint you of the technical language in explaining year case studies.

SUBJECT: ADVANCED BUILDING SPECIFICATIONS,VALUATION & PROJECT MAMAGEMENT SYSTEM (AR 10-3)

Lectures-	02 Hr	Theory -	100 Marks
Studio -	04 Studio	Internal -	100 Marks
Paper	01	External -	100 Marks
Duration -	04 Hr	Total Marks-	300 Marks

SPECIFICATIONS

Importance of specification in building construction, Method of writing in correct order & sequence , use of Indian Standard & " RED BOOK" in drafting specification.
Specification for basic materials like Brick Sand , Cement, Coarse Aggregate, stone, water etc. , fixtures and fastening
Specification for construction items like excavation, PCC, RCC works, Brick & stone masonry, Plastering and finishing, Doors And Windows, Rolling shutter, roofing materials ,

VALUATION

Definitions of value, cost, price, Importance of valuation, Different types of values,
Factors affecting value , Different purposes of valuation,
Gross income, outgoings and Net Income, different outgoings
Different methods of valuation for land and building
Application of valuation tables
Valuation Questionnaire
valuation of Commercial Buildings like hostels, Lodges, theaters etc.
valuation report for two simple cases

PROJECT MANAGEMENT SYSTEM

Introduction & necessity of Project management, Purpose , goal & objectives of project management
Fundamentals of project management , Planning, (Programming),
Scheduling(Work break down & time Schedule), Controlling and reviewing.
Traditional management , Bar/ Gnatt's Chart, Load chart
Merits and demerits of Gnatt Chart
Introduction to modern management system concept, Introduction to Critical path method
Network, Concept of event, activity, time estimates, float and slack
Introduction to Programme Evaluation Review technique, Various time estimates,
Difference between CPM & PERT technique,
Site Layout for construction Works, Site office & management
Application of Computers In Project management for calculation of material requirement and labour requirement Using Abstract Sheet of typical project.

SUBJECT: ADVANCED STRUCTURE II (AR 10- 04)

Lectures-	04 Hr	Theory -	80 Marks
Studio -	-	Internal -	20 Marks
Paper	01	External -	-
Duration -	03 Hr	Total Marks-	100 Marks

TOPIC	DETAILS
01.INDUSTRIAL BUILDING	**Concept & structural behavior of Industrial Building** Planning and designing, bays, ht. of column etc. Different types of trusses for large span > 15 m Pre Engineered Building (PEB) Concept of truss less roofing **Gantry Girder- span, crane girder, cab, various forces acting on G.G.,** different cross section of G.G. Concept of plate girder Different elements and their functions, Curtailment of flange plate Concept of Virendell girder Concept of castellated girder
02 Earthquake resistant Structure	Precautions in planning, different shapes in plan Aspect ratio, Separation Joint Behavior of Building for EQ forces Detailing of load bearing structure Detailing of framed structure (Ductile detaining)
03 Application Of Computers in structure	Introduction to analysis of building, introduction of different software's used in analysis of structure
04 Portal frames	Rigid and hinged portal frames in RCC & steel structure
05 Composite structure	Concept & detailing Multistoried load bearing non load bearing structure
06 . Shells	Introduction of folded plate, geodesic dome, hyperbolids, parabolids

	Concept of space frames
TOPIC	**DETAILS**
01.INDUSTRIAL BUILDING	**Concept & structural behavior of Industrial Building** Planning and designing, bays, ht. of column etc. Different types of trusses for large span > 15 m Pre Engineered Building (PEB) Concept of truss less roofing **Gantry Girder- span, crane girder, cab, various forces acting on G.G.,** different cross section of G.G. Concept of plate girder Different elements and their functions, Curtailment of flange plate Concept of Virendell girder Concept of castellated girder
02 Earthquake resistant Structure	Precautions in planning, different shapes in plan Aspect ratio, Separation Joint Behavior of Building for EQ forces Detailing of load bearing structure Detailing of framed structure (Ductile detaining)
03 Application Of Computers in structure	Introduction to analysis of building, introduction of different software's used in analysis of structure
04 Portal frames	Rigid and hinged portal frames in RCC & steel structure
05 Composite structure	Concept & detailing Multistoried load bearing non load bearing structure
06 . Shells	Introduction of folded plate, geodesic dome, hyperbolids, parabolids Concept of space frames

AR10- 05 - ELECTIVE – II (One from the group)

AR10- 05-01 CONTEMPORARY ARCHITECTURE

Lectures-	02 Hr	Theory -	-
Studio -	02 Studio	Internal -	50 Marks
Paper	-	External -	50 Marks
Duration -	-	Total Marks-	100 Marks

Background electric factors -based on Greek, Roman, Gothic models, ornamentation and their adoption in modern architecture validity of such ornamentation.

Industrial Revolution, New materials steel concrete, revolution in their techniques and adoption in building technology, new socio-economic views, speed, standardization Large scales, etc.

Study of various art movements in various fields (Painting, sculpture, theatre, architecture) their interrelationships and Impact on each other, study of Art, Noveaul, its rise and fall.

Some of the first break-through: Crystal places by Joseph paxton, Eiffel Tower by Gustaff Eiffel, Marshell Field Stire by Richardson, Turbine Factory by Peter Behirens, Art School ,Wiehar by Henry Vande Velde.

Their significance and impact on the three modern masters -Frank Liyod Wright, Le Corbusier and Mies Vander, Rohe, Their values and concepts, the new generation of Architectural projects.

Neo Classicism : Early projects of adopt Loos, Richardson, Sohinkel, Constructivism: Naum Gabo,Cor Ven Eastener, Malevich.

The Chicago School: Richerdson, Sullivan, Adler.

Expressionism: Behrens, Van Der Rohe, Corbusier ,Antonio Gaudi Futurism: Sand Elia, Marianetti, Mainly with urban form.

Functionalism: Brue and others.

Fundamentalism Objective architecture, Less is More -Mies Van Der Rohe - God is in detail.

Bahaus : The industrial athic ─Technique & Ligic, Later, the Harvard School of Thought, Paul Klede, Harbet Bayer

Organic Architecture: F. L .Wright, Van Der Velde,

Brutalism : Peter &Alison Smithson, Paul Rudolph.

Purism: Corbusier, Ozenfant,

Metabolism in. Architecture : The highly adaptive, Manipulative, Changing high Tech. Style-kurokawa, Thnge.

The plug in, bio-morphic,incremental architecture: ArchigramGroup,YonaFriendman &others.

The cybernatic, automated, semi logical school of thought, The unself conscious, vernacular, & holistic school of thought.

Structuralism: Nervi, Candela, Buckminster Fuller.

Post Modern classicism : Revival of old classical values of Greeco Roman Architecture. .

Architecture &philosophical studies of louis Kahn, Buckminister Fuller, paul Rudolph, Ero & Eliel Saarinen, Philip Johnson, I. M. Pie, James Sterling, Charles Moore, Charles Correa, A P. Kanvinde, B. V.Doshi & others.

AR10- 05-02 ARCHITECTURAL CONSERVATION HOUSING

Lectures-	02 Hr	Theory -	-
Studio -	02 Studio	Internal -	50 Marks
Paper	-	External -	50 Marks
Duration -	-	Total Marks-	100 Marks

Introduction

Introduction to architectural conservation of Housing includes

- definition, nature, purpose and scope.

Issues regarding values in conservation;

Ethics of conservation building

legislation regarding Conservation .

Preparatory procedure for conservation

Inventories, inspection, documentation; degree of intervention for prevention of deterioration, prevention of existing state, consolidation of the fabric, restoration, rehabilitation, reproduction, reconstruction etc.

Structural aspects of building

To study structural elements such as beams, arches and domes; thumbs and walls, piers and columns, foundation of the building etc.

Causes of decay in buildings by natural and human factors, Disasters, Botanical, Biological and Microbiological causes.

Conservation procedure - the work of conservation Architect and his team of coworkers: inspection documentation and reports, Research, analysis, Preventive maintenance, fire and security, cost control, special skills in arts and crafts

Case study / appraisal of Conservation project of a medium size in view of the above issues

AR10- 05-03 DESIGN WITH CLIMATE

Lectures-	02 Hr	Theory -	-
Studio -	02 Studio	Internal -	50 Marks
Paper	-	External -	50 Marks
Duration -	-	Total Marks-	100 Marks

Elements of climate: Sun and earth, Global climatic factors, Elements of climate, Quantification of solar radiation on building surfaces, Sol-air-Temperature.

Analysis of climatic Data: Analysis of climatic Data and its implications, Bio-climatic chart, psychometric chart.

Climate zones and Criteria of building design: Climate zones, macroclimate, microclimate factors, Orientation of buildings for sun and wind. Criteria of building design. Building farms

Thermal comfort : Work comfort thermal environment. Metabolism. Heat Exchange phenomena of human body with environment. Assessment of heat losses. Factors affecting thermal comfort. Thermal comfort Indices. Effective temp. Equivalent temp. Heat stress Index. Physiological responses, Heat regulating mechanism.

Heat Transfer and Thermal Insulation: Process of Heat Transfer through opaque and non-opaque elements of buildings. Steady state heat Transfer, periodic state Heat Transfer Factors. Calculations of hart – gain to buildings. Thermal Insulation, Materials of insulation

Thermal control: Solar chart, Shading devices shade factors. Design of shading device.

Thermal control through natural ventilation. Mechanism of ventilation factors wind pressure temperature differentials. Wind flow in and around buildings. Landscape elements. Application of water and landscape in building design and forms of buildings.

AR10- 05-04 SUSTAINABLE ARCHITECTURE

Lectures-	02 Hr	Theory -	-
Studio -	02 Studio	Internal -	50 Marks
Paper	-	External -	50 Marks
Duration -	-	Total Marks-	100 Marks

Introduction to sustainable architecture: Definition of sustainable architecture,Need,scope &study of , Natural resources & their interrelationship

Historical Perspective: Natural & Physiological factors influencing human civilizations & Settlements

Challenge of Sustainable Development: Introduction to sustainability, its historical precedence global & local relevance - its correlation to population growth & consumption patterns

Human Impact on Earth sustainability: Impact of human civilization on the earth's major ecosystem forests, oceans, & atmosphere;

Strategies for Sustainability: Principles of conservation & efficiency as applied to space, energy and material resources; Global treaties & action plans; sustainable role models such as eco-villages; environmental education

sustainability applications to Architecture and Planning: Sustainable Architecture and Planning. Preserving and improving the human settlement in harmony with nature. Conservation of natural resource for improving the quality of life on earth and attempting to ensure its continuity for the future of humanity. Eco cities, eco-communities and eco buildings: Archeology. Designing settlements and other man-made eco-systems. Ecological and environmental cities for sustainable future

Use of sustainable materials in interiors, Green materials and construction technology: Insulation, paint, wiring; Smart building systems

Technical Standards & Certifications systems: Types of certification systems world wide – LEEDS, BREEAM, ECOTEL, GREEN GLOBE, ENERGY STAR etc.

AR10- 05-05 DIGITAL ARCHITECTURE

Lectures-	02 Hr	Theory -	-
Studio -	02 Studio	Internal -	50 Marks
Paper	-	External -	50 Marks
Duration -	-	Total Marks-	100 Marks

INTRODUCTION

Other drafting and presentation softwares :

- Auto Architect or Equivalent Software
- Setup, Creating drawing / project
- Editing a drawing,
- Modification and Data Extraction
- Outputs

3D Studio

- Creating objects- 2 D lofter and 3d Sheper
- Modification of objects *I* material
- Surfaces and material Application
- Cameras and lights - create and modify
- Rendering
- animation - key framer
- Coral draw:
- DTP Function -Presentation, rendering
- Introduction to Fox pro.
- Application to data extraction.
- Sessional work based on above topics.-

AR10- 05-06 VERNACULAR ARCHITECTURE

Lectures-	02 Hr	Theory -	-
Studio -	02 Studio	Internal -	50 Marks
Paper	-	External -	50 Marks
Duration -	-	Total Marks-	100 Marks

Introduction to Vernacular architecture in history of world architecture (outside Indian subcontinent)

Introduction to Vernacular architecture it's nature, purpose and scope. Analytical review classification, salient features and important contributions in evolving workable solutions. Study of examples of Vernacular architecture in history of world architecture (outside Indian subcontinent) to understand evolution of building forms based on functions, building materials and construction techniques, art & crafts, the local conditions, traditions, climate &geography, religion & culture in the period when they were built

Case study/ies of works of architects in contemporary world architecture (outside Indian subcontinent)

Introduction to Vernacular in history of architecture in Indian subcontinent

Introduction to Vernacular architecture it's nature, purpose and scope. Analytical review classification, salient features and important contributions in evolving workable solutions. Study of examples of Vernacular architecture in history of architecture in Indian subcontinent; to understand evolution of building forms based on functions, building materials and construction techniques, art & crafts, the local conditions, traditions, climate &geography, religion & culture in the period when they were built

SHIVAJI UNIVERSITY, KOLHAPUR

EQUIVALENCE FOR THE SUBJECTS OF OLD YEARLY PATTERN SYLLABUS AND NEW SEMISTER WISE SYLLABUS STRUCTURE FOR SEM –IX & X FOR B. ARCHITECTURE DEGREE COURSE FROM ACADEMIC YEAR 2014-15

Old Subject Code	Old Name of the Subject	New Subject Code	New Name of the Subject
AR 4-01	Environment Design	AR09-01	Environment Design-I
		AR10-01	Environment Design-II
AR 4-02	Advance Architectural Design – IV	AR09-03	Advance Architectural Design
AR 4-03	Advanced Building Technology – (Materials)	AR09-04	Advanced Building Systems & Construction Technology
AR 4-04	Advanced Building Technology – (Materials)		
AR 4-05	Advanced Structure	AR09-05	Advanced Structure -I
		AR 10-04	Advanced Structure -II
AR 4-06	Urban & Rural Planning	-----	------
AR 4-07	Environment Services	AR09-02	Advanced Services
AR 4-08	Advanced Estimating Specifications & Costing	AR10-03	Advanced Building Specifications , Valuation & Project Management System
AR 4-09	Professional Practice &Building Regulations	AR09-06	Professional Practice Building Byelaws
AR 4-10	Advance Working Drawing	-----	---------
AR 4-11	Project	AR 09-08	Project - I (Synopsis/ data collection/ Design Programme)
		AR 10-02	Project –II (Case study/ Site Analysis/ Final Design & Presentation & Drawing Report)
AR 5-01	Seminar	----------	----------
AR 5-02	Elective -I (Any Two) 1) Project Management 2) Urban Planning & Design 3) Building Economics & Sociology 4) Valuation of Immovable Properties 5) Industrial Architectural 6) Contemporary Architecture 7) Landscape Architecture 8) Computer Technology in Architecture	AR 10-07	Elective –I (One From the Group) 1) Urban & Rural Planning 2) Urban Design 3) Disaster Management 4) Building Economics & Sociology 5) Industrial Architecture
		AR 10-06	Elective –I (One From the Group) 1) Contemporary Architecture 2) Architectural Conservation Housing 3) Design with Climate 4) Sustainable Architecture 5) Digital Architecture 6) Vernacular Architecture

Ar.Vijay B.Sambrekar
Chairman
Advoc-BOS in Architecture
ABCA,Sangli,Mobile-9823040506