Estd. 1962
NAAC 'A' Grade
MHRD-NIRF- 28th Rank

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दुरध्वनी (ईपीएबीएक्स) २६०९००० (अभ्यास मंडळे विभाग– २६०९०९४)
फॅक्स : ००९१-०२३१-२६९१५३३ व २६९२३३३.e-mail:bos@unishivaji.ac.in

SU/BOS/Sci & Tech/7767 **Date: 01/08/2018**

To,

The Principal/ Director,
All affiliated Architecture Colleges,
Shivaji University, Kolhapur..

Subject: Regarding syllabi of Final Year B.Arch. (Sem IX & X) under the Faculty of Science & Technology

Sir/Madam,

With reference to the subject mentioned above, I am directed to inform you that the university authorities have accepted and granted approval to the revised Final Year B.Arch. (Sem IX & X) under syllabi, Nature of question paper and equivalence under the Faculty of Science & Technology.

This syllabus and equivalence shall be implemented from the academic year 2018-2019 (i.e. from June 2018) onwards. A soft copy containing the syllabus is attached herewith and it is also available on university website www.unishivaji.ac.in. (Online Syllabus)

The question papers on the pre-revised syllabi of above mentioned course will be set for the examinations to be held in October /November 2018 & March/April 2019. These chances are available for repeater students, if any.

You are, therefore, requested to bring this to the notice of all students and teachers concerned.

Thanking you,

Yours faithfully,

Dy Registrar

Copy to:

1	The Dean, Faculty of Science & Technology	7	Computer Centre
2	The Chairman, Respective Board of Studies	8	Affiliation Section (T.1)
3	Director, Examination and Evaluation	9	Affiliation Section (T.2)
4	Eligibility Section	10	P.G.Admission Section
5	O.E. – 4	11	P.G Seminar Section
6	Appointment Section	12	Meeting Section

SHIVAJI UNIVERSITY, KOLHAPUR

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Accredided by NAAC 'A' Grade

Syllabus for

Bachelor of Architecture

(Sem IX & X)

(To be implemented from June, 2018 onwards)

SEMISTER IX

Sr. No	Name of the subject	Teaching Scheme			Examination Scheme			Total Marks
		Lectures per week	Studios per week	Duration of Theory papers in hrs	Sessional Work (Internal)	Theory Paper	Oral	
1.	Practical Training And Report	16 weeks (96 working days)		-	100	-	100	200
2.	Arch. Project-II (Data collection, Case studies,Site analysis, Design Programme)	Field Work External Guide allotment		-	100	-	-	100

Syllabus for Subject: PRACTICAL TRAINING AND REPORT.

Lectures- 16 weeks (96 working days)	Theory - .
Studio-	Sessional Work Int. - 100 Marks
No. of Paper –	Ext - 100 Marks
Duration -	**Total - 200 Marks**

• All students who have appeared for Third Year B. Arch Semester VI Exam will proceed for Fourth Year B-Arch Semester Seven - Practical Training and Report.

• The candidate will enroll himself at the college by paying his full fees and obtain permission to join for practical Training.

• The students will have to complete practical training under a registered architect in Private Office/ Corporate office/ Government Organizations etc with the permission and approval of the Principal/ HOD / Director of the college. The period of practical training shall be of two semesters (16 weeks per semester). At least one of the two semesters Training should be done in India

. • At the end of each Semester the candidate will have to submit to the Department, the training report (in stipulated format with drawings) along with the certificate by the employer to the effect that he / she has completed training satisfactorily for the stipulated period.

• The student has to appear for the internal viva examination as per the exam schedule announced by the Institute at the end of the Semester.

• As there is no University Examination for Semester VII there is no need fill University Examination form. The purpose of this study is to expose the students to practical field of design and construction to understand the application of academic knowledge acquired in the college. The purpose of the training is to learn:

• Day-to – day working of an Architect’s Office and Correspondence.

• Presentation techniques.

- Working Drawings and detailed drawings.
- Preparing estimates, checking of contractor’s bills.
- Site Visit for Supervision of the work.
- Item rates, labour rates and cost of standard materials available in the market.

SUBJECT : PROJECT II(Stage-II) – (Data collection, Case studies, Design Programme and Site Analysis)

Lectures- 01 Hour	Theory -
Studio- 08 Studio	Sessional Work Int. - 100 Marks
No. of Paper –	Ext -
Duration -	**Total - 100 Marks**

Submission Schedule: PROJECT II(Stage-II)

1. Data Collection
2. Case Studies
3. Design Program
4. Site Analysis

Students should plan above work in practical training period (16weeks) in following manner,

1. **Data Collection:** Necessary information, interviews, surveys, experimental work, discussion to be done concerned to their thesis topic.
2. **Case Studies:** Two no. Live case studies
   Minimum one no. book case study
   Minimum one no. Net case study
   With comparative analysis and statement
3. **Design Program and Requirements**:
   Students should finalize design program and requirements under the supervision of internal and external guide.
   Students should also take cognizance of different institutional authorities(COA, AICTE, UGC,MHRD,Medical council, Department of Govt. of India, etc.) to finalize their design program.
4. **Site Analysis:** Students should finalize the site and location under the supervision of guide with reference to requirements of above different institutional authorities.

5. **Internal Marking:**
    1. **Data Collection …….. 20 Marks**
    2. **Case Studies…….50 Marks**
    3. **Design Program……..15 Marks**
    4. **Site Analysis……15 Marks**

Total : 100 Marks

Note: If Student fail to submit above work and acquired to get less than 50% marks will not be allowed to appear for stage III of thesis project and Semester-X

FIFTH YEAR B.ARCH.: SEMESTER -X

Sr. No	Name of the subject	Teaching Scheme			Examination Scheme			Total Marks
		Lectures per week	Studios per week	Duration of Theory papers in hrs	Sessional Work (Internal)	Theory Paper	Oral	
1.	Arch. Project-III (Final Design and Presentation drawings /report)	01	08	-	200	-	200	400
2.	Adv. Building Construction & Materials	02	04	03	100	100	100	300
3.	Elective-I	02	02	-	75	-	75	150
	Architectural Conservation							
	Disaster management							
.	Building Economics And Sociology							
	Industrial Architecture							
	Sustainable Architecture							
4.	Elective-II	02	02	-	75	-	75	150
	Digital Architecture							
	Vernacular Architecture							
	Energy conservation and non conventional sources of energy							
	Contemporary Architecture							
	Project Management							

SUBJECT: PROJECT III(Stage-III)

(Final Design & Presentation, Drawings /Report)

Lectures-	01 Hour	Theory -	
Studio-	08 Studio	Sessional Work	Int. - 200 Marks
No. of Paper –			Ext - 200 Marks
Duration -			**Total - 400 Marks**

Submission Schedule:

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 technical 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. (Viva-voce)

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 A4 size (TRIMMED210 x 297) on sunlit 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 provided 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 (Internal and External) 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 BUDLDING CONSTRUCTION TECHNOLOGY AND MATERIALS

Lectures-	02 Hour	Theory	100Marks
Studio-	04Studio	Sessional Work	Int. - 100 Marks
No. of Paper –	one		Ext - 100 Marks
Duration -	3hrs		**Total -300 Marks**

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 of1. 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.

ELECTIVE-I

SUBJECT: ARCHITECTURAL CONSERVATION HOUSING

Lectures-	02 Hour	Theory -	
Studio-	02 Studio	Sessional Work	Int. - 75 Marks
No. of Paper –			Ext -75 Marks
Duration -			**Total -150 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

SUBJECT: DISASTER MANAGEMENT

Lectures-	02 Hour	Theory -	
Studio-	02 Studio	Sessional Work	Int. - 75 Marks
No. of Paper –			Ext -75 Marks
Duration -			**Total -150 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

SUBJECT:BUILDING ECONOMICS & SOCIOLOGY

Lectures-	02 Hour	Theory -	
Studio-	02 Studio	Sessional Work	Int. - 75 Marks
No. of Paper –			Ext -75 Marks
Duration -			**Total -150 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.)

SUBJECT: INDUSTRIAL ARCHITECTURE

Lectures-	02 Hour	Theory -	
Studio-	02 Studio	Sessional Work	Int. - 75 Marks
No. of Paper –			Ext -75 Marks
Duration -			**Total -150 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: SUSTAINABLE ARCHITECTURE

Lectures-	02 Hour	Theory -	
Studio-	02 Studio	Sessional Work	Int. - 75 Marks
No. of Paper –			Ext -75 Marks
Duration -			**Total -150 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 worldwide – LEEDS, BREEAM, ECOTEL, GREEN GLOBE, ENERGY STAR etc.

ELECTIVE-II

SUBJECT: DIGITAL ARCHITECTURE

Lectures-	02 Hour	Theory -	
Studio-	02 Studio	Sessional Work	Int. - 75 Marks
No. of Paper –			Ext -75 Marks
Duration -			**Total -150 Marks**

INTRODUCTION

Other drafting and presentation software's:

- 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.

SUBJECT: VERNACULAR ARCHITECTURE

Lectures-	02 Hour	Theory -	
Studio-	02 Studio	Sessional Work	Int. - 75 Marks
No. of Paper –			Ext -75 Marks
Duration -			**Total -150 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 studies 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

SUBJECT: CONTEMPORARY ARCHITECTURE

Lectures-	02 Hour	Theory -	
Studio-	02 Studio	Sessional Work	Int. - 75 Marks
No. of Paper –			Ext -75 Marks
Duration -			**Total -150 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.

SUBJECT: PROJECT MANAGEMENT

Lectures-	02 Hour	Theory -	
Studio-	02 Studio	Sessional Work	Int. - 75 Marks
No. of Paper –			Ext -75 Marks
Duration -			**Total -150 Marks**

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.