

**Dr. Babasaheb Ambedkar Technological University, Lonere,
Raigad**

Proposed Syllabus for Masters in Architecture (General)

Date: 26th March 2018

PREAMBLE

The Academic Council of Dr. Babasaheb Ambedkar Technological University aims at bridging the gap between the Industry and the Institute by framing a syllabus on the Guidelines of Council of Architecture, India and fine tuning the same with respect to the requirements of the building industry at the international and national level.

The students have been made sound enough through the Graduation Program, to proceed to Masters in any part of the World and be suitable enough to support any good Architectural office across the globe or raise his / her professional practice.

The Education at Masters Level is oriented to develop students with modern Skills and Techniques, in specialist field of Architecture i.e. Construction Management, Environmental Architecture and General (aspects in Architecture).

The Education is desired to orient and to equip students with modern skills and techniques of designing structures and detail them further with precise constructional details, use of most suitable materials, examine the sustainability attributes and further specify the process of implementation with the value addition of conservation of energy flavoured with modern architectural concepts giving justice to the various spaces in their chosen field of specialisation (within and around the built form), they are meant to perform.

The architectural institutes shall also educate the students on their responsibility as a professional, to create designs that shall adhere to all the local regulations and laws of the land and should provide updated knowledge of procedures to be followed from work commencement to completion.

The graduate course (B.Arch) shall be of Ten semesters (stage I & stage II) and the detailed subject wise pattern shall be strictly adhered to.

The Masters Course (M. Arch) shall be of 4 semesters and detailed subject wise pattern enclosed along with this preamble shall be strictly adhered. The Universities stipulates that maximum students in each class be 20 only and sections may be added for additional intakes

M. Arch (General):

The Masters course of M. Arch (General) shall envelope advanced knowledge and techniques of various disciplines of Architecture with a focus on Architectural designs of Complex buildings, Groups of Buildings and Buildings of special purpose such as Public and Government Buildings, Town Squares etc. The Course should also enveloped current approach towards sustainable Architecture and Hi – Tech detailing for better and greater performance.

The libraries shall be equipped with internet facility with a computer lab to provide students networking opportunities with other Institutes/Universities across the world. Facebook /Twitter/Blogs/any othersocial media tool shall be used to create data that may be required time and again as student/faculty flow year on year.

The Institution shall encourage exchange programs of faculty and students with other Universities in India and abroad to help develop them.

Emphasis shall be given to live site visits, interactions with the client's promoters, contractors and also approving authorities and project managers to get feedback on drawings, details, specifications, selection of materials, techniques of constructions.

The institutes are expected to conduct seminars on newer technologies and materials by inviting players from the market/industry and faculty and the students should take it further through interactive workshops. The institutes shall also encourage students to attend conference and conventions of architectural organizations within India and Abroad.

The Institute shall guide students to leading architectural offices within and outside the Country for the internship course and shall conduct interactive feedback workshops for exchange of ideas and experience of the building industry and professional office working. The subject of Professional training shall be constantly updated based on changing trends and their expectation from professional architect's. Inviting leading architects to share on the above subject within the institute may help in building confidence within out-going graduates.

The BATU syllabus is composed by team of experts after thorough examination and comparative analysis of syllabi of colleges of architecture in India and intends to further modify or amend that maybe required by the foreign universities offering BATU their accreditation in order to respond to rapidly changing industry, society and environment, national and international economic dimensions.

The Above architectural technology benchmark statement shall/may reflect these changes in the context of the building Industry, including the need to produce graduates that are employable yet adaptable, agile and flexible to respond to future challenges and changes.

List of Abbreviations

| Sr.No. | Acronym | Full form |
|--------|---------|--------------------------------|
| 1 | TH | Theory |
| 2 | SWT | Sessional Work with Assessment |
| 3 | SV | Sessional Work with Viva |
| 4 | L | Theory Lecture |
| 5 | S | Studio |
| 6 | IA | Internal Assessment |
| 7 | MSE | Mid Semester Exam |
| 8 | ESE | End Semester Exam |

Teaching Scheme:

Each Lecture to be conducted should be of 60 min duration.

Each Studio to be conducted should be of 60 min duration.

1 Credit Point = 1 Hour Lecture (For Theory subject)

1 Credit Point = 2 Hour Studio

Mandatory Passing Criteria:

All the rules and regulations for Allowed To Keep Terms (ATKT) from Dr.BabashaebAmbedkar Technological University (DBATU) should apply.

Each student should publish a Research Paper in recognised National / International Journal during the Second Year of Masters. The research paper should be related to the Dissertation topic selected for Semester 4 of the Second year.

The impact factor of the journal should be 1 and above.

Final Degree Class / Division and Marks / Percentage / Credits / Grade needs to be given as average score of all 4 Semesters, with Absolute Grading.

Reporting of Submissions by the students and Institutes:

All students should mandatorily submit the course work to the college, completed in the class at the end of the day through the servers to the college / university.

The evaluation of the work done in the class by the student should be done by the teacher on the same day and data to be maintained on the server.

Use of Computers:

The institutes can allow the use of computers as found suitable.

Study Tours:



Study tours can be organised by the institutes to make the student aware of the various aspects of architecture. At least 1 study tour per year should be organised.

Teaching and learning Process Matrix:

This matrix is to be used by the teachers and students to understand subject in detail. It will unfold the desired skill sets required along with identification of teaching and learning process approach indicators.

It will also help teachers and students to evolve concepts and module development.

This is a tool recommended to be followed by subject teachers. It will create learning and understanding process of the subject.

| Sr. No. | Subject Heads  | Subject -1 | Subject -2 | Subject-3 | Subject -4 |
|---------|--|------------|------------|-----------|------------|
| | Definitive questions for learning subjects  | | | | |
| 1 | How does learning occur? | | | | |
| 2 | What factors influence learning? | | | | |
| 3 | What is role of learning? | | | | |
| 4 | How does transfer occur? | | | | |
| 5 | What type of learning are best explained by theory / drawing? | | | | |
| 6 | How is technology used for learning in Architecture? | | | | |

Dr.BabasahebAmbedkar Technological University

First Year

Masters in Architecture - General

Semester -1

26-03-2018

| Subject Code | Subject | Teaching Scheme | | Evaluation Scheme | | | | | | Credits |
|--------------|---|-----------------|-----------|-------------------|------------|------------|-----------|------------|-------------|-----------|
| | | L | S | CA1 | CA2 | MSE | ESE-Paper | ESE-SV/STW | Total | |
| MAR10100001 | Architectural Design Studio | 2 | 6 | 50 | 50 | 0 | 0 | 150 | 250 | 5 |
| MAR10100002 | Contemporary Architecture : Theories & Trends | 2 | 4 | 20 | 20 | 40 | 60 | 60 | 200 | 4 |
| MAR10100003 | Urban Design | 2 | 4 | 20 | 20 | 40 | 60 | 60 | 200 | 4 |
| MAR10100004 | Computer Aided Design & Planning | 0 | 4 | 20 | 20 | 0 | 0 | 60 | 100 | 2 |
| MAR10100005 | Elective - 1 | 2 | 0 | 20 | 20 | 0 | 0 | 60 | 100 | 2 |
| | Tall Buildings | | | | | | | | 0 | |
| | Pre Engineered Structures | | | | | | | | 0 | |
| | Product Design | | | | | | | | 0 | |
| MAR10100006 | Advanced Studies & Research Methodologies | 2 | 2 | 10 | 10 | 40 | 60 | 30 | 150 | 3 |
| | Total | 10 | 20 | 140 | 140 | 120 | 30 | 420 | 1000 | 20 |

Dr.BabasahebAmbedkar Technological University

First Year

Masters in Architecture - General

Semester -2

| Subject Code | Subject | Teaching Scheme | | Evaluation Scheme | | | | | | Credits |
|--------------|--|-----------------|-----------|-------------------|------------|------------|------------|------------|-------------|-----------|
| | | L | S | CA1 | CA2 | MSE | ESE-Paper | ESE-SV/STW | Total | |
| MAR10200001 | Applied Design Studio | 2 | 6 | 50 | 50 | 0 | 0 | 150 | 250 | 5 |
| MAR10200002 | Resource Conserving Architecture | 0 | 4 | 20 | 20 | 0 | 0 | 60 | 100 | 2 |
| MAR10200003 | Low Cost Building Materials & Construction | 2 | 4 | 20 | 20 | 40 | 60 | 60 | 200 | 4 |
| MAR10200004 | Sustainable Architecture & Design | 2 | 4 | 20 | 20 | 40 | 60 | 60 | 200 | 4 |
| MAR10200005 | Elective - II | 2 | 0 | 20 | 20 | 0 | 0 | 60 | 100 | 2 |
| | Re Architecture | | | | | | | | | |
| | Architectural Criticism | | | | | | | | | |
| | Land Economics | | | | | | | | | |
| MAR10200006 | Building Byelaws, Codes & Legislation | 2 | 2 | 10 | 10 | 40 | 60 | 30 | 150 | 3 |
| | Total | 10 | 20 | 140 | 140 | 120 | 180 | 420 | 1000 | 20 |

Dr.BabasahebAmbedkar Technological University**Second Year****Masters in Architecture - General****Semester -3**

| Subject Code | Subject | Teaching Scheme | | Evaluation Scheme | | | | | | Credits |
|--------------|---------------------------------------|-----------------|-----------|-------------------|------------|-----------|------------|------------|-------------|-----------|
| | | L | S | CA1 | CA2 | MSE | ESE-Paper | ESE-SV/STW | Total | |
| MAR20300001 | Integrated Design Studio | 2 | 6 | 50 | 50 | 0 | 0 | 150 | 250 | 5 |
| MAR20300002 | Futuristic Architecture | 2 | 0 | 20 | 20 | 0 | 0 | 60 | 100 | 2 |
| MAR20300003 | Advanced Landscape Design & Materials | 2 | 4 | 20 | 20 | 40 | 60 | 60 | 200 | 4 |
| MAR20300004 | Advanced Building Technologies | 2 | 4 | 20 | 20 | 40 | 60 | 60 | 200 | 4 |
| MAR20300005 | Elective - III | 2 | 0 | 20 | 20 | 0 | 0 | 60 | 100 | 2 |
| | Heritage Conservation | | | | | | | | | |
| | Post Occupancy Evaluation | | | | | | | | | |
| | Energy Efficient Buildings | | | | | | | | | |
| MAR20300006 | Dissertation - I | 0 | 6 | 30 | 30 | 0 | 0 | 90 | 150 | 3 |
| | Total | 10 | 20 | 160 | 160 | 80 | 120 | 480 | 1000 | 20 |

Dr.BabasahebAmbedkar Technological University**Second Year****Masters in Architecture - General****Semester -4**

| Subject Code | Subject | Teaching Scheme | | Evaluation Scheme | | | | | | Credits |
|--------------|--------------------|-----------------|-----------|-------------------|------------|----------|-----------|------------|------------|-----------|
| | | L | S | CA1 | CA2 | MSE | ESE-Paper | ESE-SV/STW | Total | |
| MAR20400001 | Project Management | 2 | 4 | 30 | 30 | 0 | 0 | 90 | 150 | 4 |
| MAR20400002 | Dissertation - II | 0 | 20 | 100 | 100 | 0 | 0 | 300 | 500 | 10 |
| | Total | 2 | 24 | 130 | 130 | 0 | 0 | 390 | 650 | 14 |

**Dr.BabasahebAmbedkar Technological University, Lonere,
Raigad**

MASTERS IN ARCHITECTURE – GENERAL

FIRST YEAR

SYLLABUS 2018

SEMESTER I

| | | | | | | | | |
|----------------------------------|--------|-------------------|-----|-----|-----------|----------|-------------------|----------|
| Architectural Design Studio | | | | | | | Semester-I | |
| Subject Code– MAR10100001 | | | | | | | | |
| Teaching | | Evaluation Scheme | | | | | | |
| Theory | Studio | CA1 | CA2 | MSE | ESE Paper | ESE / SV | Total | Credit |
| 2 | 6 | 50 | 50 | 0 | 0 | 150 | 250 | 5 |

1: Learning Objectives

Understanding of functional activities to be performed in building, aspects of ergonomics, Architectural and engineering aspects of building design, Site planning and environmental considerations.

2: Learning Outcomes

To explore the design and form of building typologies that are the result of deep minute study of ergonomics, economics, technology & ecology.

3: Teaching Modules

UNIT I -

Understanding of functional activities to be performed in building, aspects of ergonomics-

Understanding of interactions among humans and other elements of a system, which applies theory, principles, data and methods to design in order to optimize human well-being and overall system to fulfill the two goals of health and productivity through ergonomics

UNIT II

Architectural and engineering aspects of building design-

Understanding the technological aspects of buildings, including the properties and behaviour of building materials and components, foundation design, structural analysis and design, environmental system analysis and design, construction management, building operation, Environmental systems including all the building services

UNIT III

Site planning and environmental considerations-

Understanding the Environmental Planning the process of facilitating decision making to carry out development with due consideration given to the natural environmental, social, political, economic and governance factors and provides a holistic frame work to achieve sustainable outcomes. It involves the organization of land use zoning, access, circulation, privacy, security, shelter, land drainage etc; by assessing a potential site for development through site analysis. Information about slope, soils, hydrology, vegetation, parcel ownership, orientation

4: Exercises:

Major design exercises in residential, educational, commercial and Recreational buildings
Office buildings, multi use centre, convention centre, multiplex, corporate complex, health care and hospitality building, transportation hub, etc.

5: Mode of Examination as per teaching and evaluation scheme:

Sessional work with Viva

6: List of Reference Books.

1. Edward D. Mills: Planning for Architects
2. Time Saver Standards from Building Types

| | | | | | | | | |
|---|--------|-------------------|-----|-----|-----------|---------|------------|--------|
| Contemporary Architecture : Theories & Trends | | | | | | | Semester-I | |
| Subject Code– MAR10100002 | | | | | | | | |
| Teaching | | Evaluation Scheme | | | | | | |
| Theory | Studio | CA1 | CA2 | MSE | ESE Paper | ESE STW | Total | Credit |
| 2 | 4 | 20 | 20 | 40 | 60 | 60 | 200 | 4 |

1: Learning Objectives

To get acquainted with all the terms and terminologies of contemporary architecture.

To study the effect of technology on architecture.

2: Learning Outcomes

To study new concepts of contemporary architecture which are the result of changing parameters of technology, ecology, urbanization, social pattern etc.

3: Teaching Modules

UNIT I -

- **Blobitecture-** a movement in architecture in which buildings have an organic, amoeba-shaped, bulging form.
- **Critical Regionalism-** is an approach to architecture that strives to counter placelessness and lack of identity in Modern Architecture by using the building's geographical context..
- **Deconstructivism** - is characterized by ideas of fragmentation, an interest in manipulating ideas of a structure's surface or skin, non-rectilinear shapes which serve to distort and dislocate some of the elements of architecture, such as structure and envelope.
- **Futurist architecture** - characterized by anti-historicism, strong chromaticism, long dynamic lines, suggesting speed, motion, urgency and lyricism:
- **High-tech architecture-** also known as Late Modernism or Structural Expressionism, is an architectural style that emerged in the 1970s, incorporating elements of high-tech industry and technology into building design.
- **Modern architecture** - is generally characterized by simplification of form and creation of ornament from the structure and theme of the building.
- **Neomodern architecture**-especially in corporate offices. It tends to be used for a certain segments of buildings.
- **Novelty architecture** -is a type of architecture in which buildings and other structures are given unusual shapes as a novelty, such as advertising, notoriety as a landmark, or simple eccentricity of the owner or architect.
- **Postmodernism** - The functional and formalized shapes and spaces of the modernist style are replaced by diverse aesthetics: styles collide, form is adopted for its own sake, and new ways of viewing familiar styles and space abound.
- **Conceptual architecture** - is characterized by an introduction of ideas or concepts from outside of architecture often as a means of expanding the discipline of architecture.
- **Neoclassicism** - Neoclassical architecture emphasizes the wall rather than chiaroscuro and maintains separate identities to each of its parts.

UNIT II: Overview of world architecture since 1970 with the study of Late Modernism, Post Modernism and Deconstructivism.

UNIT III: Theories governing contemporary architecture through case studies, evolving architectural trends and their impact on urban built environment.

UNIT IV: Emerging building typologies with emphasis on residential developments, offices, skyscrapers, institutional and public buildings.

UNIT V: Evolving building materials and technologies, contemporary approach towards disaster mitigation in the built environment.

UNIT VI: Energy efficient and built environment with emphasis on the use of energy simulation modelling, embodied energy estimation and application of governing codes, viz., LEED and ECBC in contemporary buildings

UNIT VII: Applications of advanced software by architects, viz, virtual reality, parametric design, program generated architecture and building information modelling (BIM) in contemporary architecture

4: Exercises:

Notes on above topics in the file, Power Point Presentations on above topics in groups.

5: Mode of Examination as per teaching and evaluation scheme:

End semester theory examination and Sessional term work.

6: List of Reference Books.

| S. No. | Name of Authors/ Books/ Publishers | Year of Publication/ Reprint |
|---------------|--|---|
| 1. | Ballard B. and Rank, V. P., "Materials for Architectural Design", Laurance King. | 2006 |
| 2. | Frampton, K., "Modern Architecture-A Critical History", 3rd ed. Thames and Hudson.. | 2002 |
| 3. | Gossel, P. and Leuthauser, G., "Architecture in the 20th Century", Vol. 1, Taschen. | 2005 |
| 4. | Gossel, P. and Leuthauser, G., "Architecture in the 20th Century", Vol. 2, Taschen. | 2005 |
| 5. | Troman, R. (ed.), "History of Architecture, From Classic to Contemporary", Parragon. | 2009 |

| | | | | | | | | |
|---------------------------|--------|-------------------|-----|-----|-----------|-----------|------------|--------|
| Urban Design | | | | | | | Semester-I | |
| Subject Code– MAR10100003 | | | | | | | | |
| Teaching | | Evaluation Scheme | | | | | | |
| Theory | Studio | CA1 | CA2 | MSE | ESE Paper | ESE / STW | Total | Credit |
| 2 | 4 | 20 | 20 | 40 | 60 | 60 | 200 | 4 |

1: Learning Objective

To Study various aspects of Urban Design

2: Learning Outcomes

To impart knowledge on various aspects, elements, concepts and principles of Urban Design.

3: Teaching Modules

UNIT I :Relationship of urban design to architecture, planning and landscape; Evolution of professional discipline.

Review of urban forms, patterns and spaces in different periods of history viz. ancient river valley civilization, Greek, Roman, Medieval, Renaissance, Baroque, post industrial revolution period in Europe and India and their influencing factors

UNIT II :Elements of urban environment-urban form, townscape, urban spaces, streetscapes, building forms and facades, public art. Concepts of urban design, public perception, imageability and townscape

UNIT III :Emerging concepts in urban design, modern examples of urban settlements, town centers and urban spaces in India and foreign countries. Urban design principles, tools, techniques and paradigms; Role and types of urban design guidance

4: Exercises:

Field studies- observational and analytical studies of important urban/ public spaces, roads; Imageability and townscape of selected areas/ settlements.

Design evaluation/ analytical study of modern examples.

Urban design proposal for improvement/ renewal/ redevelopment/ new development of an area.

5: Mode of Examination as per teaching and evaluation scheme:

End semester theory examination and Sessional term work.

6: List of Reference Books.

| S. No. | Name of Authors/ Books/ Publishers | Year of Publication/ Reprint |
|--------|---|------------------------------|
| 1. | Broadbent, G., "Emerging Concepts of Urban Space Design", Van Nostrand Reinhold. | 1990 |
| 2. | Cowan, R., "Urban Design Guidance by UD Group", Thomas Telford Publishing. | 2002 |
| 3. | Punter, J. and Carnoma, M., "The Design Dimension of Planning-Theory, Content and Best Practices for Design Policies", E&FN Spon. | 1997 |
| 4. | Spreiregen, P. D., "Urban Design; Architecture of Towns & Cities", McGraw Hill. | 1965 |
| 5. | Watson D. et. al (ed), "Time Saver Standard for Urban Design", McGraw Hill. | 2003 |

| Computer Aided Design & Planning | | | | | | | Semester-I | |
|----------------------------------|--------|-------------------|-----|-----|-----------|-----------|------------|--------|
| Subject Code– MAR10100004 | | | | | | | | |
| Teaching | | Evaluation Scheme | | | | | | |
| Theory | Studio | CA1 | CA2 | MSE | ESE Paper | ESE / STW | Total | Credit |
| 0 | 4 | 20 | 20 | 0 | 0 | 60 | 100 | 2 |

1: Learning Objective

To educate the students to use different software to help in planning & designing.

2: Learning Outcomes

To illustrate and present various aspects of a chosen design scheme by means of 2-D drafting and 3-D modelling and rendering techniques, and to impart knowledge of GIS applications in architecture and planning projects

3: Teaching Modules

UNIT I Application of software such as Revit Architecture Suite including building information modeling (BIM) and 3D Max. Application of software such as Sketchup, Podium and E-view

UNIT II Application of software such as Design Builders or Eco-Tech, and other software related to energy simulation modeling. Application of software such as M.S. Pro, Power Sim, MATLAB, Arc GIS for planning

4: Exercises:

Revit Architectural Suite: Auto cad 2009 and 3D max for design studio problems.

Building Information modeling for a given project. Sketchup Pouching and E-view for a given design

Application of Eco-Tech, Energy Plus, Design Builders for any design exercise earlier or current

M.S. Pro, Power Sim, MATLAB, Arc GIS application in planning/ architectural design studio problem/s.

5: Mode of Examination as per teaching and evaluation scheme:

Sessional Term work

6: List of Reference Books.

Sl. No. Name of Authors/ Books/ Publishers

1. Omura G., "Mastering Revit 2009", Sybex Publication.
2. Omura G., "Bible 3D. Max 2009", Sybex Publication.
3. Manuals of Sketchup, Podium, E-view,
4. Manuals of Design Builders and Energy Simulation Modeling.
5. Manuals of M.S. Pro and Power Sim.
6. Manuals of MATLAB and Arc GIS.

| | | | | | | | | |
|---|--------|-------------------|-----|-----|-----------|-----------|-------------------|----------|
| ELECTIVE - I , Tall Buildings, Pre Engineered Structures, Product Design | | | | | | | Semester-I | |
| Subject Code– MAR10100005 | | | | | | | | |
| Teaching | | Evaluation Scheme | | | | | | |
| Theory | Studio | CA1 | CA2 | MSE | ESE Paper | ESE / STW | Total | Credit |
| 2 | 0 | 20 | 20 | 0 | 0 | 60 | 100 | 2 |

1: Learning Objective

To achieve breadth of knowledge across disciplines and depth of knowledge in a particular chosen subject area.

ELECTIVE – I Tall Buildings

2: Learning Outcomes

To understand the design and construction process of Tall buildings

To explore and address the qualitative issues of design in Tall buildings.

3: Teaching Modules

UNIT I : Definition, international and Indian concepts, History of Tall Buildings, Need and criteria for development of Tall Buildings, economics, social conditions, psychological factors, geographical, political and other forces in development, socio – psychological factors affecting such developments. Analysis, studies and methodology to solutions – user’s need and demand.

UNIT II : Design and construction process. Impact of Tall buildings on urban development in terms of increased density, accessibility, transportation and parking; ownership, management and maintainance. Fire safety, municipal codes, standardization. Landscaping in Tall Buildings.

ELECTIVE – I Pre Engineered Structures

2: Learning Outcomes

- To understand the design parameters for pre fabricated buildings
- To explore the systems for industrialized building components.

3: Teaching Modules

UNIT I - Introduction to modern principles and practices. Corbusier approach, modular number pattern, notations of modular design, terminologies in modular coordination, dimensioning modular components, modular grids, ISI recommendations with exercises. • Basic module, planning and component module

UNIT II- System of proportions. Introduction to building systems, objectives, criteria etc, different types of building systems; traditional, improvised, mechanized, industrialized etc with special reference to Indian conditions. Introduction to pre fabrication of building components, standardization, dimensioning of components and design of pre fabricates.

UNIT III -Pre cast concrete; design considerations and constraints, advantages over cast in situ construction, construction techniques and jointing details, applications. RCC pre fabricated roofing systems to cover large spans, with or without north light. Study of pre stressed concrete, principles and methods of pre stressing, system of pre stressing, advantages, disadvantages and applications.

Elective – I Product Design

2: Learning Outcomes

To understand the design, development and challenges of product development. To develop skills to conceptualize, create and market an appropriate product.

3: Teaching Modules

Customer Needs, Terminologies of Ergonomics – Biomechanics, Comfort zone - Elements of comfort Analysis and designing product based on ergonomics, materials, working parameters and visual perception for product. General awareness of the role of ergonomics in work effectiveness and efficiency. Creativity and uniqueness in design. Visual composition, theory of Colours, function and character. Product impact through design – aesthetics and functionality, Concept Generation - Selection – Testing, Product Specifications, Study of materials and finishing, Market survey, Product Data Management, Software's for designing, Virtual Design and Manufacturing Proto Typing Product Planning and Marketing Product Analysis and Cost Optimization

4: Exercises:

According to faculty in charge, can be in the format of reports or exercises according to teaching module.

5: Mode of Examination as per teaching and evaluation scheme:

Sessional Term work

| | | | | | | | | |
|---|--------|-------------------|-----|-----|-----------|-----------|------------|--------|
| Advanced Studies & Research Methodologies | | | | | | | Semester-I | |
| Subject Code– MAR10100006 | | | | | | | | |
| Teaching | | Evaluation Scheme | | | | | | |
| Theory | Studio | CA1 | CA2 | MSE | ESE Paper | ESE / STW | Total | Credit |
| 2 | 2 | 10 | 10 | 40 | 60 | 30 | 150 | 3 |

1: Learning Objective

To develop the skills and understanding necessary for

- The accessing and searching, both locally and remotely, of library and information sources and use of bibliographical database
- The undertaking of critical literature review, the use of sampling, statistical analysis and evaluation
- The development of a detailed investigative program.
- The writing of scholarly paper, the presentation of conference/ seminar papers

2: Learning Outcomes

To develop a research strategy, programme and a project appropriate in early stages of dissertation/ thesis

3: Teaching Modules

UNIT I The relationship between activities of design and research

Developing own research proposal, presenting and evaluating it

UNIT II Research methods and data capturing from various streams/ fields

Experimental design, populations, sampling

UNIT III Probability significance and inference

Descriptive statistics

4: Exercises:

To prepare a critical literature review for thesis/ dissertation

To prepare a detailed outline of the research methods to be used in the investigation

5: Mode of Examination as per teaching and evaluation scheme:

End semester theory examination and Sessional term work.

6: List of Reference Books.

| Sl. No. | Name of Authors/ Books/ Publishers | Year of Publication/ Reprint |
|---------|---|------------------------------|
| 1. | Nortledge, A. "The Good Study Guide" Milton Keynes, | 1990 |
| 2. | Philips, E. M. and D. S. Pugh " How to get PHD: A Handbook for Students and their Supervisors | 1994 |
| 3. | Siegel, S. and N. J. Castellan "Nonparametric Statistics for the Behavioural Science" McGraw- Hill, | 1988 |

SEMESTER II

| | | | | | | | | |
|---------------------------|--------|-------------------|-----|-----|-----------|----------|-------------|--------|
| Applied Design Studio | | | | | | | Semester-II | |
| Subject Code– MAR10200001 | | | | | | | | |
| Teaching | | Evaluation Scheme | | | | | | |
| Theory | Studio | CA1 | CA2 | MSE | ESE Paper | ESE / SV | Total | Credit |
| 2 | 6 | 50 | 50 | 0 | 0 | 150 | 250 | 5 |

1: Learning Objective

Expose to design issues arising from a range of sectors and sources and apply appropriate analysis so as to derive deep understanding. To utilize the techniques and knowledge in the design proposal to achieve effective solution.

2: Learning Outcomes

To provide skills, knowledge and experience related to the use of variety of analytical approaches for the design

3: Teaching Modules

To understand the design issues associated with the built environment across a range of building types.

To acquire the information in an appropriate and critical manner, related to design.

To propose the optimal design solution based on analysis of existing schemes.

4: Exercises:

Number of assignments can be taken to present the findings through presentations, using learnt techniques or any other way for the analysis Sustainable housing scheme design as a design project for its optimal solution.

5: Mode of Examination as per teaching and evaluation scheme:

End Semester Sessional Work with Viva

6: List of Reference Books.

| Sl. No. | Name of Authors/ Books/ Publishers | Year of Publication/ Reprint |
|---------|--|---------------------------------|
| 1. | Smith P F & Pitts A C, "Concepts in Practice: Energy" Batsford, | 1997 |
| 2. | Cofaigh E O, Olley J A & Lewis J O "The Climatic Dwelling" James & James Publishers, | 1996 |
| 3. | Pitts, A C "Planning & Design Strategies for sustainability and Profit" Architectural Press, | 2003 |

| | | | | | | | | |
|----------------------------------|--------|-------------------|-----|-----|-----------|----------|-------------|--------|
| Resource Conserving Architecture | | | | | | | Semester-II | |
| Subject Code– MAR10200002 | | | | | | | | |
| Teaching | | Evaluation Scheme | | | | | | |
| Theory | Studio | CA1 | CA2 | MSE | ESE Paper | ESE / SV | Total | Credit |
| 0 | 4 | 20 | 20 | 0 | 0 | 60 | 100 | 2 |

1: Learning Objective

Expose to design issues arising from a range of sectors and sources and apply appropriate analysis so as to derive deep understanding. To utilize the techniques and knowledge in the design proposal to achieve effective solution.

2: Learning Outcomes

To understand how to develop a strategy, program such as would be appropriate to manage the available resources at optimum.

3: Teaching Modules

UNIT I :Basic concepts, parameters and principles of energy conservation; patterns and efficiency of energy use in architecture; technologies, methods of energy conservation.

UNIT II :Fundamentals of planning and design of resource conserving architecture; innovative and appropriate design concepts and construction technologies.

UNIT III :Storage of recyclables, building reuse, construction management, development of environmental management system with focus on ISO 14000, Implementation of environmental management systems, regional materials, rapidly renewable materials, certified wood etc.

4: Exercises:

Discussion of Indian and foreign case studies, Notes on above topics in the file.

5: Mode of Examination as per teaching and evaluation scheme:

Sessional Term Work

6: List of Reference Books.

| S. No. | Name of Authors/ Books / Publishers | Year of Publication |
|--------|---|---------------------|
| 1. | Greg P., "Natural Home Heating", Sterling Hill Production. | 2003 |
| 2. | Hyde R., Wodson S., Chehire W. and Thowson M., "The Environmental Brief Pathways for Green Design", Taylor & Francis. | 2006 |
| 3. | Yudelson J., "Greening Existing Buildings", McGraw Hills. | 2009 |
| 4. | Baker, N. and Steemers, K., "Energy and Environment in Architecture: A Technical Design Guide", Routledge. | 2000 |
| 5. | Gonzalo R. and Habermann K.J., "Energy-efficient Architecture: Basics for Planning and Construction", Birkhauser. | 2006 |
| 6. | Clark W.H., "Retrofitting for Energy Conservation", McGraw Hills. | 1997 |

| Low Cost Building Materials & Construction | | | | | | | Semester-II | |
|--|--------|-------------------|-----|-----|-----------|-----------|-------------|--------|
| Subject Code– MAR10200003 | | | | | | | | |
| Teaching | | Evaluation Scheme | | | | | | |
| Theory | Studio | CA1 | CA2 | MSE | ESE Paper | ESE / STW | Total | Credit |
| 2 | 4 | 20 | 20 | 40 | 60 | 60 | 200 | 4 |

1: Learning Objective

To make students understand the methods of low cost housing construction with emphasis on local building materials and their use.

2: Learning Outcomes

To impart knowledge on various building materials, construction and execution techniques for designing low cost buildings.

3: Teaching Modules

UNIT I :Introduction to low cost buildings, building components influencing cost of buildings.

Modular coordination in building design, prefabrication- total and partial, impact of prefabrication on employment.

Use of CPM and PERT methods in building construction Building construction detailing for cost reduction.

Application of low cost building materials and various construction techniques. Building cost control techniques, research and development by various organizations in the country and foreign countries to reduce the cost.

UNIT II :Construction technologies:

Technologies that require fewer resources are easy to maintain and have less of an impact on the environment compared to techniques from main stream technology.

Traditional, ancient techniques used all over the world. CBRI techniques, ferro concrete, modular, prefabrication, curtain wall etc.

UNIT III :Materials:

Recycled materials, regional materials, low VOC materials, etc

Environmental impact of building materials, Eco friendly building materials, their composition and recycling, physical properties, heat resistance, sound resistance, Embodied energy of materials and recycled materials etc. Life cycle assessment of materials

4: Exercises:

Minimum five sheets of construction technologies covering all topics.Journals on materials, surveys for their practical use.Notes on above topics in the file

5: Mode of Examination as per teaching and evaluation scheme:

Sessional Term Work and End semester Theory Paper for Mid Semester

6: List of Reference Books.

| S. No. | Name of Authors/ Books/ Publishers | Year of Publication/ Reprint |
|---------------|---|-------------------------------------|
| 1. | Davis, S., "Architecture of Affordable Housing", University of California Press. | 1995 |
| 2. | Ruiz, F.P., "Building an Affordable House", Taunton Press. | 2005 |
| 3. | Nunan, J., "The Complete Guide to Alternative Home Building Materials and Methods", Atlantic Publishing. | 1980 |
| 4. | Lal, A.K., "A Handbook of Low Cost Housing ", New Age International. | 1995 |
| 5. | Mathur, G.C., "Low Cost Housing in Developing Countries", South Asia Book. | 1999 |
| 6. | Sowman, M. and Urquhart, P., "A Place called Home: Environmental Issues and Low-Cost Housing", Juta Academic. | 1998 |

| | | | | | | | | |
|-----------------------------------|--------|-------------------|-----|-----|-----------|-----------|-------------|--------|
| Sustainable Architecture & Design | | | | | | | Semester-II | |
| Subject Code– MAR10200004 | | | | | | | | |
| Teaching | | Evaluation Scheme | | | | | | |
| Theory | Studio | CA1 | CA2 | MSE | ESE Paper | ESE / STW | Total | Credit |
| 2 | 4 | 20 | 20 | 40 | 60 | 60 | 200 | 4 |

1: Learning Objective

To make students understand the impact of climate on the built environment in different climatic conditions. And sustainability parameter related to buildings.

2: Learning Outcomes

To design buildings & their surroundings optimized with respect to sustainability, environmental aspects. Analysis of climate information & data in a way that conclude the design decisions

3: Teaching Modules

UNIT I :Introduction to different aspects of Sustainable Design and architecture.Introduction to tools of sustainability.

UNIT II Environmental design with respect to local conditions and human need. Climate and climatic assessment including collection and analysis of climatic data and hence the determination of appropriate design techniques.

UNIT III : Site selection, air movement, day lighting &orientation,Building envelope, fenestration pattern, thermal & acoustical environment planning, internal materials, own user systems for services design modeling, site planning etc. building operation & maintenance for energy efficiency.

4: Exercises:

Journal on above mentioned theories and concepts, Case studies in groups analyzing above concepts

5: Mode of Examination as per teaching and evaluation scheme:

End semester theory examination and Sessional term work.

6: List of Reference Books.

1]Climate Responsive Architecture by ArvindKrishan, Nick Baker, SimosYannas,S.V.Zokole.

2] Manual of Tropical Housing and Building by O.H.Koenigsberger, T.G.Ingersoll& other.

| | | | | | | | | |
|---------------------------|--------|-------------------|-----|-----|-----------|-----------|-------------|--------|
| Elective - II | | | | | | | Semester-II | |
| Subject Code– MAR10200005 | | | | | | | | |
| Teaching | | Evaluation Scheme | | | | | | |
| Theory | Studio | CA1 | CA2 | MSE | ESE Paper | ESE / STW | Total | Credit |
| 2 | 0 | 20 | 20 | 0 | 0 | 60 | 100 | 2 |

1: Learning Objective

To understand the current need for finding new systems of interventions on existing situations

Elective - II -- Re Architecture

2: Learning Outcomes

To explore the methods for establishing logic for Interventions.

3: Teaching Modules

UNIT I : The various type of interventions in existing situations; Re-Design, Re-Develop, Re-structure, Re-vitalize, Removal, Restoration, Regeneration, Rehabilitate, Reorganize, Renewal, Relocate.

UNIT II :Need for Interventions. The factors affecting the decisions for specific interventions–social, cultural, economic, structural, spatial.The Stake holders and their participation in the process.

UNIT III :Methodologies and system for intervention.Challenges in implementation of interventions.Future trends and speculations.Impact of Re-Architecture on the Precinct.

Elective - II -- Architectural criticism

2: Learning Outcomes

To acquaint the students with the art, Skill and Techniques of critical appreciation and communication of aesthetics.

To develop the techniques of critical writings in the Field of Architecture in a Journalistic manner.

3: Teaching Modules

UNIT I:Critical appreciation Modes, self assessment, expert criticisms, jury reports, Research papers, Authoritative Reports.

UNIT II: Nature of Appreciation, Subjective, Specific,Evaluating evaluative, interpretative and descriptive, biographical, Historical, Standard and norm based Iconographical and design principle based and appreciation.

UNIT III :Methodology, data collection, processing, analysis derivations and conclusions. Verbal presentation, written representation and graphical presentation etc.

Elective - II-- [Land Economics]

2: Learning Outcomes

- To understand the basic economic ideas related to land use
- To understand the impact of speculation on future trends of Construction industry.

3: Teaching Modules

UNIT I: Basic economic Ideas related to land use, behaviour of individuals, firms and markets, Need for governmental intervention, land use policy and its economic significance. Economic behaviour of construction industry, economic implications of design decisions.

UNIT II :Real Estate market, demand analysis, Profitability, social constraints, housing policy, assessment of cost and tax burdens. The assessment of life Expectancies of buildings.

UNIT III :Means of Financing, Financial projection. Financial cost and benefits, Cash flow, internal rate of return. Risk analysis, social cost benefit analysis, Concordance and discordance analysis. Estimation of total construction cost Budgeting and financing – Financial projections, Types of finance.

4: Exercises:

As per exercises designed by the teacher eg Journal on above mentioned theories and concepts, Case studies in groups analyzing above concepts

5: Mode of Examination as per teaching and evaluation scheme:

Sessional term work.

| | | | | | | | | |
|---------------------------------------|--------|-------------------|-----|-----|-----------|-----------|-------------|--------|
| Building Byelaws, Codes & Legislation | | | | | | | Semester-II | |
| Subject Code– MAR10200006 | | | | | | | | |
| Teaching | | Evaluation Scheme | | | | | | |
| Theory | Studio | CA1 | CA2 | MSE | ESE Paper | ESE / STW | Total | Credit |
| 2 | 2 | 10 | 10 | 40 | 60 | 30 | 150 | 3 |

1: Learning Objective

To make students understand the effect of by- laws and various codes on the Built environment.

To make students understand the By-Laws of various local bodies like Mun-corp MIDC Cidco etc.

2: Learning Outcomes

To impart knowledge of building byelaws and various aspects of professional practice

3: Teaching Modules

UNIT I Introduction to building byelaws, its needs, objectives, nature, purpose and scope of byelaws. Critical evaluation of building byelaws, need of reform in building byelaws to achieve good built environment.

UNIT II Building byelaws of selected towns, cities and development authorities.

UNIT III Architects Act of 1972, code of conduct, professional responsibilities and scale of charges, architectural competitions.

UNIT IV Building contract systems, administration of building contract, and invitation of tenders and procedure of award. Architects office management, methods of communication, documentation and computerization.

4: Exercises:

Journal on above mentioned theories and concepts, Case studies in groups analyzing above concepts

5: Mode of Examination as per teaching and evaluation scheme:

End semester Theory Paper and Sessional term work.

6: List of Reference Books.

| S. No. | Name of Authors/ Books/ Publishers | Year of Publication/ Reprint |
|--------|---|------------------------------|
| 1. | Development Controls/ Building Byelaws of various Development Authorities of Indian cities. | |
| 2. | Namavati, R. H., "Professional Practice with Elements of Estimating, Valuation, Contract and Arbitration" Lakhani Book Depot. | 2009 |
| 3. | Orr F., "Professional Practice in Architecture", Van Nostrand Reinhold. | 1982 |
| 4. | Demkin J. A., "Architect's Handbook of Professional Practice; Ethics and the Practice of Architecture", 14th ed. John Wiley & Sons. | 2001 |
| 5. | Bureau of Indian Standards, "National Building Code (NBC)" | 2005 |
| 6. | Puri V.K, "Compendium of Delhi Building Bye-laws and Development regulations as per Master Plan of Delhi 2021", Nabhi Publication. | 2007 |

SEMESTER III

| | | | | | | | | |
|---------------------------|--------|-------------------|-----|-----|-----------|----------|--------------|--------|
| Integrated Design Studio | | | | | | | Semester-III | |
| Subject Code– MAR20300001 | | | | | | | | |
| Teaching | | Evaluation Scheme | | | | | | |
| Theory | Studio | CA1 | CA2 | MSE | ESE Paper | ESE / SV | Total | Credit |
| 2 | 6 | 50 | 50 | 0 | 0 | 150 | 250 | 5 |

1: Learning Objectives

To develop an understanding of the need for an integrated approach to design of a building.

To apply the skills, knowledge and techniques of other streams in an integrated way to the design of a building and its environment.

The applied units may be climate & bioclimatic analysis, insulation materials and thermal material, mass, lighting, ventilation techniques, HVAC, passive and active climatic, solar design technologies, etc.

2: Learning Outcomes

To provide skills, knowledge and experience related to the use of variety of analytical approaches of other systems than design for optimal building environment and so as to develop a feasible base approach for dissertation/ Thesis

3: Teaching Modules

Students are expected actually to integrate with other technical streams like civil engineering, electrical engineering, mechanical engineering, environmental science, botany etc. as a part of design solution and estimating the feasibility of the required components.

4: Exercises:

Number of assignments can be taken to present the findings through presentations, using learnt techniques or any other way for the analysis

Students may be grouped with other streams for preparation of

- Site analysis
- Working out services
- Working out renewable energy outputs etc.
- Any other required analysis

Students may be grouped of max three for working out the project architecturally at the completion.

5: Mode of Examination as per teaching and evaluation scheme:

Sessional work with Viva Examination

| | | | | | | | | |
|---------------------------|--------|-------------------|-----|-----|-----------|----------|--------------|--------|
| Futuristic Architecture | | | | | | | Semester-III | |
| Subject Code– MAR20300002 | | | | | | | | |
| Teaching | | Evaluation Scheme | | | | | | |
| Theory | Studio | CA1 | CA2 | MSE | ESE Paper | ESE / SV | Total | Credit |
| 2 | 0 | 20 | 20 | 0 | 0 | 60 | 100 | 2 |

1: Learning Objectives

To impart the students about the concepts of futuristic architect by some of the architects in the profession.

2: Learning Outcomes

To understand and explore new building materials, future building technologies and various futuristic architectural concepts

3: Teaching Modules

UNIT I :Future concepts envisioned by Antonio Saint Elia, Frank Lloyd Wright, Corbusier.

Future trends being evolved by Marcos Novak, Neil Denari, Greg Lynn, Toyo Ito and others.

UNIT II :Evolution of contemporary architectural concepts such as biomimcry, adaptive reuse, low cost development and urban regeneration

UNIT III :Futuristic building materials, building tectonics and systems of the future“Zero energy” and “Energy +” buildings with emphasis on an integrated approach.

Socio-cultural and economic impacts of future urban habitats.

4: Exercises:

Number of assignments can be taken to present the findings through exercises, using learnt techniques or any other way for the analysis.

5: Mode of Examination as per teaching and evaluation scheme:

Sessional term work

6: List of Reference Books.

| S. No. | Name of Authors/ Books/ Publishers | Year of Publication/ Reprint |
|--------|---|------------------------------|
| 1. | Bell, J., “21st Century House”, Laurence King Publishing. | 2006 |
| 2. | Jodidio, P., “Building a New Milleneum”, Vol.1 Taschen | 2003 |
| 3. | Jodidio, P., “Architecture Now”, Vol. 2, Taschen. | 2004 |

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|---------------------------------------|--------|-------------------|-----|-----|-----------|----------|--------------|--------|
| Advanced Landscape Design & Materials | | | | | | | Semester-III | |
| Subject Code– MAR20300003 | | | | | | | | |
| Teaching | | Evaluation Scheme | | | | | | |
| Theory | Studio | CA1 | CA2 | MSE | ESE Paper | ESE / SW | Total | Credit |
| 2 | 4 | 20 | 20 | 40 | 60 | 60 | 200 | 4 |

1: Learning Objectives

To impart knowledge on advanced concepts of landscape design ranging from local to regional scales.

2: Learning Outcomes

Students should design landscape spaces efficiently according to regions.

3: Teaching Modules

UNIT I

Introduction to landscape design, types of landscapes and their characteristics, linkages with nature and built environment.

Elements and materials of landscapes, characteristics of various types of plants, topography and their suitability of landscaping. Landscape conservation- its purpose, preparatory procedure, maintenance of existing landscape.

UNIT II

Urban and regional landscapes- ecological and environmental aspects of landscape design and planning.

Landscape profession and practice in relation to architecture and total built environment

Landscape design schemes for various building types, formal and informal design schemes, landscaping paths, gardens and roads.

4: Exercises:

Case studies- critical appraisal of few selected projects

5: Mode of Examination as per teaching and evaluation scheme:

End Semester Theory Examination and Sessional term work.

6: List of Reference Books.

| S. No | Name of Authors/ Books/ Publishers | Year of Publication/ Reprint |
|-------|---|---------------------------------|
| 1. | Barlow, R.E., "Landscape Design: A Cultural and Architectural History", Harry N. Abrams. | 2001 |
| 2. | Hunt, J.D., "Greater Perfections: The Practice of Garden Theory", Thames & Hudson. | 2000 |
| 3. | Kaplan, R., Kaplan, S. and Ryan, R., "With People in Mind: Design and Management of Everyday Nature", <i>Island Press</i> . | 1998 |
| 4. | Reid, G.W., "Landscape Graphics", Watson-Guption. | 2002 |
| 5. | Ruggles, D.F., "Islamic Gardens and Landscapes", Univ. of Pennsylvania Press. | 2008 |
| 6. | Simonds, J.O., "Landscape Architecture, A Manual of Land Planning and Design", <i>McGraw Hill</i> . | 2006 |

| | | | | | | | | |
|--------------------------------|--------|-------------------|-----|-----|-----------|----------|--------------|--------|
| Advanced Building Technologies | | | | | | | Semester-III | |
| Subject Code– MAR20300004 | | | | | | | | |
| Teaching | | Evaluation Scheme | | | | | | |
| Theory | Studio | CA1 | CA2 | MSE | ESE Paper | ESE / SW | Total | Credit |
| 2 | 4 | 20 | 20 | 40 | 60 | 60 | 200 | 4 |

1: Learning Objectives

To impart knowledge on advancements in different disciplines related to building technology.

2: Learning Outcomes

Students should design landscape spaces efficiently according to regions.

3: Teaching Modules

UNIT I

Evolution of building technology and advancements; Industrial Revolution and its impact, mass housing, rapid construction methods and materials; Structural systems as elements of architectural expressions, modernism and post-modernism.

Shells, cable, frame, prismatic and geodesic structures, load carrying mechanism, large span structure, lessons from failures.

UNIT II

Passive building technologies, building skin, material and construction details for thermal, light and ventilation control; Traditional Architecture- vernacular vocabulary.

Indoor environment, HVAC and artificial lighting, Sick Building Syndrome, performance efficiency, energy efficiency, CFL and LED.

UNIT III

Building management system(BMS); Safety-entry control; CCTV; Fire and smoke detection, alarm; Thermal and working environment - temperature, humidity, air movement, light level; Occupancy sensors; Simulation techniques.

4: Exercises:

Submission of detail drawings showing above mentioned building technologies and systems, With a seminar presentation on latest advancement in construction technologies and its various aspects

5: Mode of Examination as per teaching and evaluation scheme:

End Semester Theory Examination and Sessional work.

6: List of Reference Books.

| S. No. | Name of Authors/ Books/ Publishers | Year of Publication/ Reprint |
|--------|--|---------------------------------|
| 1. | Clements, C. D.J, "Intelligent Buildings – Design, Management & Operation", Thomas Telford. | 2004 |
| 2. | Haulden, G., Saldanha, M. and Liedt P., "Climate Skin : Building Skin Concepts that can do more with less energy", Birkhauser. | 2008 |
| 3. | Alarcen, L., "Lean Construction", Balkema | 1997 |
| 4. | Salvadori, M. and Heller R., " Structure in Architecture", Engle Wood. | 1986 |
| 5. | Bansal, N.K., "Practical Handbook on Energy Conservation in Buildings", IndianBuilding Congress, Nabhi Publication. | 2008 |

| Elective - III | | | | | | | Semester-III | |
|----------------------------------|----------------------------|-------------------|-----|-----|-----------|----------|--------------|----------|
| Subject Code– MAR20300005 | | | | | | | | |
| Teaching | | Evaluation Scheme | | | | | | |
| Theory | Studio | CA1 | CA2 | MSE | ESE Paper | ESE / SW | Total | Credit |
| 2 | 0 | 20 | 20 | 0 | 0 | 60 | 100 | 2 |
| A | Heritage Conservation | | | | | | | |
| B | Post Occupancy Evaluation | | | | | | | |
| C | Energy Efficient Buildings | | | | | | | |

Elective – III :Heritage Conservation

1: Learning Objectives

To understand conservation concepts & understand the methodology for arriving at such solutions and formulating policies aimed at preservation & conservation.

2: Learning Outcomes

A brief study of various developments related to conservation and heritage across the world, including case studies of various conservation solutions.

3: Teaching Modules

UNIT I - Ethics & Philosophy of Conservation

Defining heritage – Cultural value and Cultural capital –Terminologies, attitudes and approaches to conservation.

UNIT II - Listing Of Buildings & Heritage Precincts

Various criteria for listing buildings & documentation techniques. Statues of listed buildings – spot listing & delisting, Inter disciplinary approaches to building recording. Conservation & management – adoptive re use, character & issues of heritage towns- delineating zones, planning for heritage precincts and areas.

UNIT III - Conservation Techniques

Documenting material, use and structural issues of historic buildings, focus on restoring and conserving brick structures, technology, use and repair of iron and steel members, understanding wooden and timber structures / methods of conserving timber structures, traditional plaster work skills, introduction to the significance and use of lime, working with lime- repairing and replacing plaster, conserving stone structures, issues concerning terracotta and mud structures.

UNIT IV - Legislation, Policy and Organisations

Explore legislation for the heritage from an international perspective, reviewing various charters of ICOMOS, ICCROM, UNESCO, World heritage sites- review legislative measures adopted in India – Ancient sites and monument protection act.

Role of various agencies in the promotion of conservation such as ASI / INTACH/ Heritage societies / Urban arts commission.

UNIT V - Economics of Heritage

An introduction to the economic aspects of conservation, cultural value and economic , incentives for conservation like transferable development rights and the institution of National Cultural fund, overview of incentive schemes adopted in other countries.

4: Exercises:

Case studies live and book in groups analyzing above concepts. Exercises can be designed by concerned teacher.

5: Mode of Examination as per teaching and evaluation scheme:

Sessional work Examination

6: List of Reference Books.

1. Charles Mynors (1995) Listed Buildings and Conservation Areas FT Law &Tax, London
2. R.D.Pickard (1996) Conservation in the built environment , Longman, HarlowJames Stevens Curl, Encyclopaedia of architectural terms, DonheadPublishing , 1993 Stewart
3. Stewart Brand, how buildings learn: What happens after they are built,London, Viking, 1994.

Elective – III :Post Occupancy Evaluation`

1: Learning Objectives

To understand design parameters for evidence based design process.

2: Learning Outcomes

To explore the system for user feedback to enhance design qualification.

3: Teaching Modules

UNIT I

Building performance concept, measuring performance, elements of building performance; spatial, technological and technical criteria, total environmental quality, the POE process model ;planning , conducting and implementing POE in various environment.

UNIT II

Independent and impartial evaluations, regular monitoring and measure feedback and feed forward, the base line and benchmarks for measurements, data management systems

UNIT III

Quantitative and qualitative techniques/ measures, various survey methodology, environmental monitoring, sustainable measures, space measurement and cost analysis, impact on the design process, case studies.

4: Exercises:

Journal on above mentioned theories and concepts, Case studies in groups analyzing above concepts

5: Mode of Examination as per teaching and evaluation scheme:

Sessional work Examination

Elective – III : Energy Efficient Buildings

1: Learning Objectives

To review energy efficient building technologies, understand scope of their applications and design on energy on energy efficient building

2: Learning Outcomes

To analyze building elements for energy efficiency – integration at building level.

3: Teaching Modules

UNIT I

Energy and environmental concerns, energy efficiency in buildings, nation-owner-designer- user concerns, climate and site, building envelope building systems, embodied energy, passive cooling and sun control, day lighting, HVAC system, active solar & photovoltaic, bio climatic design, building thermal and energy simulation.

UNIT II

Building energy audit, exogenous- indigenous systems, introduction to simulation software, case studies for building energy efficiency and design guidelines for sustainable and environment friendly architecture.

4: Exercises:

Reports on above mentioned theories and concepts, Case studies in groups analyzing above concepts

5: Mode of Examination as per teaching and evaluation scheme:

Sessional work Examination

Masters in Architecture- General

| Dissertation - I | | | | | | | Semester-III | |
|----------------------------|--------|-------------------|-----|-----|-----------|----------|--------------|----------|
| Subject Code – MAR20300006 | | | | | | | | |
| Teaching | | Evaluation Scheme | | | | | | |
| Theory | Studio | CA1 | CA2 | MSE | ESE Paper | ESE / SW | Total | Credit |
| 0 | 6 | 30 | 30 | 0 | 0 | 90 | 150 | 3 |

1: Learning Objectives

To develop independent critical thinking and design / research activities with reference to advancement scheme design.

2: Learning Outcomes

Reference material related to the topic selected by students, and draft black book report.

3: Teaching Modules

UNIT I

Introduction to architectural thesis project, selection of topics for Architectural design based on building typologies, preparation of synopsis, and methodology of design thesis.

UNIT II

Research in architecture tools and methods required to handle design projects. Scientific methods of research and special emphasis on Architectural research methods, Architectural enquiry, Methods for case studies, literature review, Data analysis, techniques and interpretation of data.

4: Exercises:

Choice of topic, with synopsis, case studies, data collection.

5: Mode of Examination as per teaching and evaluation scheme:

Sessional term work

6: List of Reference Books.

Related to topic selected by student.

SEMESTER IV

| | | | | | | | | |
|----------------------------|--------|-------------------|-----|-----|-----------|----------|-------------|--------|
| Project Management | | | | | | | Semester-IV | |
| Subject Code – MAR20400001 | | | | | | | | |
| Teaching | | Evaluation Scheme | | | | | | |
| Theory | Studio | CA1 | CA2 | MSE | ESE Paper | ESE / SV | Total | Credit |
| 2 | 4 | 30 | 30 | 0 | 0 | 90 | 150 | 4 |

1: Learning Objectives

To impart knowledge on project management methods and techniques.

2: Learning Outcomes

To understand Significance and Architect's role in Project Management, & Process of Project Management.

3: Teaching Modules

UNIT I

Introduction to project management, probability theory and its application in construction planning and project management

UNIT II

Introduction to network techniques LOB, CPM, PERT application to mass housing; Scheduling and controlling of construction projects.

UNIT III

Personal management- concept, definition, growth, role and function of manpower estimation for company and for projects; Personal administration at the project site.

UNIT IV

Building construction industry- components of building industry, building material industry.

UNIT V

Development of value analysis techniques and life cycle costing of buildings, components of cost, criteria for cost companies and cost industries.

4: Exercises:

Case studies- critical appraisal of few selected projects

5: Mode of Examination as per teaching and evaluation scheme:

Sessional work with Viva.

6: List of Reference Books.

| S. No. | Name of Authors/ Books/ Publishers | Year of Publication/ Reprint |
|--------|---|------------------------------|
| 1. | Naik, B.M., "Project Management: Scheduling and Monitoring by PERT/CPM", South Asia Books. | 1985 |
| 2. | Kerzner, H., " Project Management: A Systems Approach to Planning, Scheduling, and Controlling", 10th ed., John Wiley & Sons. | 2009 |
| 3. | Lewis, J. P., " Fundamentals of Project Management", Amacom. | 2007 |
| 4. | Wholey, J. S., Harry, P. H. and Newcomer, K.E., "Handbook of Practical Program Evaluation", John Wiley & Sons | 2004 |
| 5. | Binnekamp, R., Gunsteren L. A. and Peter-Paul van Loon, " Open Design- A Stakeholder Oriented Approach in Architecture, Urban Planning and Project Management ", Tudelft. | 2006 |
| 6. | Berger, S. and Godel, J.B., "Estimating and Project Management for Small Construction Firms", Van Nostrand Reinhold Co. | 1977 |

| Dissertation - II | | | | | | | Semester-IV | |
|----------------------------|--------|-------------------|-----|-----|-----------|----------|-------------|--------|
| Subject Code – MAR20400002 | | | | | | | | |
| Teaching | | Evaluation Scheme | | | | | | |
| Theory | Studio | CA1 | CA2 | MSE | ESE Paper | ESE / SV | Total | Credit |
| 2 | 4 | 30 | 30 | 0 | 0 | 90 | 150 | 4 |

1: Learning Objectives

To demonstrate ability to comprehend the nature of Architectural challenge and develop pertinent solutions with the help of knowledge grasped through the course.

2: Learning Outcomes

Application of different learning of the complete course

3: Teaching Modules

The Dissertation/ thesis project is to be undertaken independently by each student on a topic of his/her choice selected and approved by faculty during previous semester as part of course requirement of subject dissertation. Thrust area of work may include Architectural design, non conventional construction systems, large span structures, hi-tech Architecture, Public facilities, urban design, sustainable architecture, Building system design, landscape design, Detailing in design etc.

The projects can be of any scale and size as long as the required rigor and depth is demonstrated by the student to merit consideration as a final project.

The project development will involve the aspects of structural systems, construction technologies, building services, detailing and materials along with design considerations to develop a comprehensive project proposal.

4: Exercises:

Three stages of Thesis;

- 1) Pre project : Dissertation
- 2) Abstract and Introduction
- 3) Scope and focus of Project.
- 4) User activity study
- 5) Case study
- 6) Formulation of design brief
- 7) Site studies and guidelines
- 8) Conceptual development
- 9) Final design solution

5: Mode of Examination as per teaching and evaluation scheme:

Sessional work with Viva.

6: List of Reference Books.

| S. No. | Name of Authors/ Books/ Publishers | Year of Publication/ Reprint |
|--------|---|------------------------------|
| 1. | Naik, B.M., "Project Management: Scheduling and Monitoring by PERT/CPM", South Asia Books. | 1985 |
| 2. | Kerzner, H., " Project Management: A Systems Approach to Planning, Scheduling, and Controlling", 10th ed., John Wiley & Sons. | 2009 |
| 3. | Lewis, J. P., " Fundamentals of Project Management", Amacom. | 2007 |
| 4. | Wholey, J. S., Harry, P. H. and Newcomer, K.E., "Handbook of Practical Program Evaluation", John Wiley & Sons | 2004 |
| 5. | Binnekamp, R., Gunsteren L. A. and Peter-Paul van Loon, " Open Design- A Stakeholder Oriented Approach in Architecture, Urban Planning and Project Management ", Tudelft. | 2006 |
| 6. | Berger, S. and Godel, J.B., "Estimating and Project Management for Small Construction Firms", Van Nostrand Reinhold Co. | 1977 |