### Affiliated Institutions
**Anna University, Chennai**

**Regulations - 2013**

**M. Arch (Full Time)**

**I to IV Semesters of Curricula and Syllabi**

#### Semester I

<table>
<thead>
<tr>
<th>SL. No.</th>
<th>Course Code</th>
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### Total

**Semester I**: 19

**Semester II**: 21

**Semester III**: 21

**Total**: 61
### SEMESTER IV

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Total no of credits required for the award of the degree 75

### LIST OF ELECTIVES

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| **Elective III, IV** |             |                                                   |    |    |     |    |
| 25.     | MH7006      | Material Conservation                             | 3  | 0  | 0   | 3  |
| 26.     | MH7007      | Landscape Ecology and Planning                    | 3  | 0  | 0   | 3  |
| 27.     | MH7008      | Sustainability and Energy Conservation in Landscape Architecture | 3  | 0  | 0   | 3  |
| 28.     | MH7009      | Urban Landscape Design                            | 3  | 0  | 0   | 3  |
| 29.     | MH7010      | Web Design and Portfolio Production               | 0  | 0  | 6   | 3  |

L- Lecture  T- Tutorial  P- Practical / S- Studio  C- Credits
OBJECTIVES:
- To investigate the contemporary theories of media and their influence on the perception of space and architecture.
- To provide an overview of various contemporary design processes and its relation to computation.

UNIT I INTRODUCTION  

UNIT II ASPECT OF DIGITAL ARCHITECTURE  

UNIT III CONTEMPORARY PROCESS  
Overview of various Contemporary design process and it relation to computation: Diagrams – Diagrammatic Reasoning – Diagrams and Design Process – Animation and Design – Digital Hybrid Design Protocols – Concept of Emergence - Introduction to Cellular Automata and Architectural applications – Genetic algorithms and Design Computation

UNIT IV GEOMETRIES AND SURFACES  
Fractal Geometry and their properties – Architectural applications - Works of Zvi Hecker--- Shape Grammar - Shapes, rules and Label - Shape Grammar as analytical and synthetic tools- Combining Shape grammar and Genetic algorithm to optimize architectural solutions - Hyper Surface – Introduction to Hyper surface and concepts of Liquid architecture.

UNIT V CASE STUDIES  
Case studies- Study, understanding and analysis of known examples at the national and international levels which demonstrates the contemporary theories of media and their influence on the perception of space and architecture, contemporary design processes and its relation to computation.

TOTAL:45 PERIODS

OUTCOMES:
- Understanding of the effect of contemporary theories of media on contemporary architectural design.
- Understanding of various contemporary design process and their relation to computation

REFERENCES:
1. Peter Eisenmann, Diagram: An Original Scene of Writing, Diagram Diaries
2. MOVE, UN Studio
OBJECTIVES:
- To introduce to the students the idea of conservation as enhancing quality of life, as effective planning strategy, as means of particularization of place and as a way to address issues of memory and identity.
- To introduce the students to issues and practices of urban conservation at various levels and scales.
- To give an overview of current status of conservation in India.

UNIT I  INTRODUCTION TO CONSERVATION 15

UNIT II  CONSERVATION IN INDIA 15

UNIT III  CONSERVATION PRACTICE 15
Listing of monuments – documentation of historic structures – assessing architectural character – historic report – guidelines for preservation, rehabilitation and adaptive re-use of historic structures – seismic retrofit and disabled access /services additions to historic buildings – heritage site management.

UNIT IV  URBAN CONSERVATION 15
Over view of urban history of India and Tamil Nadu – understanding the character and issues of historic cities – select case studies of sites like Thanjavur, Kumbakonam, Kanchipuram, Chettinad – historic districts and heritage precincts.

UNIT V  CONSERVATION AND URBAN PLANNING 15
Norms for conservation of heritage buildings and sites as part of Development Regulations - Conservation as a planning tool – financial incentives and planning tools such as TDR, (transferable development right) – Urban conservation and heritage tourism.

TOTAL :60 PERIODS

OUTCOMES:
- The students would gain an understanding of the need and benefits of urban conservation.
- The students would be sensitised as well as informed to carry forth this understanding in the realm of practice/ research.

REFERENCES:
OBJECTIVES:

- To study the social and cultural influences on traditional landscapes through analysis of form and space, siting principles of each period with examples.
- To study contemporary landscape and the manifestation in the western and Indian context.

UNIT I  EASTERN TRADITIONS AND ISLAMIC LANDSCAPES  15

UNIT II  RENNAISSANCE AND THE EVOLUTION OF NEW THOUGHTS  6

UNIT III  THE EVOLUTION OF THE MODERN LANDSCAPE  15
Industrialization and urbanization – impacts and development of the concept of public open spaces, open space development in new towns, parks movement. Open space development and its urban design and planning context, Early industrial towns and the garden city movement. Public park as a major component of urban landscape, the works of F.L.Ohmstead, and other pioneers. Open space development and Close conceptual relationship between Town planning, urban design and landscape architecture. Examples.

UNIT IV  THE MODERN MOVEMENT, CONTEMPORARY CONCEPTS AND CONCERNS  9
Changing concepts of space and the relationship of architecture to landscape. Study of selected works of modern architects and landscape architects. Postwar development in Europe. The influence of Ian Mcharg on Landscape architecture. The works of Jellicoe, Burle Marx and others.
Concept of sustainable landscape development, Cultural landscapes their definition, identification, characteristics, policies, Artistic sensibility in landscape architecture and land art, New development in urban Landscape design.

UNIT V  INDIAN CONTEXT  6
Issues in contemporary India, Analysis and understanding of philosophies of contemporary landscape works in India, case studies.

TOTAL : 45 PERIODS

OUTCOMES:

- Relationship between culture and Landscape design.
- Perception of open spaces in different cultures.
REFERENCES:
3. Penelope Hill, Contemporary history of garden design, Birkhauser publishers, 2004

MH7111 SUSTAINABLE AND GREEN BUILDING DESIGN L T P/S C 2 0 6 5

OBJECTIVES:
- To sensitize the students to the various aspects of sustainable and green building design in the context of global warming and climate change
- To study the building material for its impact on environment.
- To expose the students to green rated buildings.

UNIT I INTRODUCTION
Attitudes to architecture: a historical perspective- General premises and strategies for sustainable and green design- objectives and basis- Eco-mimicry as a design tool based on ecosystem analogy- theoretical basis for a sustainable and eco friendly design.

UNIT II ECO HOUSE
The form of the house: the building as an analogy- design from first principles: conserving energy; working with climate; passive solar design; conserving energy; minimizing new resources; respect for users; respect for site and holism- photovoltaics and solar hot water systems; water usage; small scale wind systems and hydro power; Case studies- Studio project on design of eco houses: context specific.

UNIT III ENVIRONMENTAL IMPACT OF BUILDING MATERIALS
Measuring the impact of building materials- calculating embodied energy- recycling and embodied energy- processing and embodied energy- time and embodied energy- embodied energy of different building materials- low energy building and masonry materials- life cycle analysis- Case studies and analysis.

UNIT IV GREEN CONSTRUCTION AND ENVIRONMENTAL QUALITY
Sustainable architecture and Green Building: definition- Green building Evaluation Systems; LEED Certification; Green Globe Certification; Case studies which look at the environmental approach- renewable energy- controlling the water cycle- impact of materials on the environment – optimizing construction- site management- environmental management of buildings.

UNIT V SUSTAINABLE AND GREEN BUILDING DESIGN STUDIO
This studio will explore collaborative learning to explore, investigate and apply various parameters of sustainability for design development of projected building/ urban scenarios

TOTAL: 120 PERIODS

OUTCOMES:
- An understanding on sustainability
- Knowledge on renewable energy and energy conservation through material usage.
- A through understanding on designing green buildings.
REFERENCES:
1. Ken Yeang; Eco design - A Manual for Ecological design, Wiley- Academy; 2006
2. Sue Roaf et al; Ecohouse: A design Guide; Elsevier Architectural Press; 2007
3. Thomas E Glavinich; Green Building Construction; Wiley; 2008
4. Brenda and Robert Vale; Green Architecture- Design for a Sustainable Future; Thames and Hudson; 1996.
5. Daniel Vallero and Chris Brasier; Sustainable Design- The science of sustainability and Green Engineering; Wiley; 2008

MH7112 URBAN DESIGN STUDIO L T P/S C 2 0 6 5

OBJECTIVES:
• To introduce and identify the issues/ aspects of contemporary urban form through study of history of urbanism, contemporary urban theories, urbanism and urban design precedents.
• To intervene through design, addressing the effects of some of these aspects/ issues

UNIT I INTRODUCTION 25
Introduction to origin and evolution of cities and urbanism- historic review of the development of the urban design discipline and principles- introduction to various issues and aspects that impinge on the urban condition today such as globalisation, digital revolution, contemporary processes, sustainability, splintering urbanism through changes in information and communication networks and transportation.

UNIT II READING THE URBAN FABRIC 20
Introduction to different ways of reading of the urban fabric- ways of interpreting the city such as type, phenomenology, etc.,- tools of mapping

UNIT III SUSTAINABLE DEVELOPMENT 25
Sustainable development– Sustainable Cities Program - Revitalization of brown field sites- Transit Metropolis- Case Studies

UNIT IV RESTRUCTURING THE CITY 20
Contemporary Processes in Urban Design- Place making in the Digital Age – reconfiguring public realm – Urbanisation and Excursions on density

UNIT V APPLICATION OF DIGITAL TECHNIQUES IN URBAN DESIGN 30
Depiction of Urban Spaces in Digital Media - Role of Digital Media in Reconfiguring Urban Space – Case studies – Application of Geographic Information Systems, diagramming and 3D Modeling tools in Urban Design - Digital Media as a facilitator for participatory, sustainable urban design.

TOTAL:120 PERIODS

OUTCOMES:
• The students would become aware of the determinants of contemporary urban form and ways to understand their effects.
• The students would learn to address issues of contemporary urban form through planning and design using appropriate tools.

REFERENCES:
2. William J. Mitchell, City of Bits: Space, Place and the infobahn, MIT Press, 1996
3. Charles Correa, Housing and Urbanisation, Thames and Hudson, 1999
7. Donald Appleyard, Kevin Lynch, John R. Myer, The View from the Road, MIT Press 1965
MH7201 CONTEMPORARY PROCESSES IN ARCHITECTURAL DESIGN II L T P/S C
3 0 0 3

OBJECTIVES:
- To provide an overview of various contemporary architects in terms of their works, design philosophies and processes.
- To investigate the effect of various digital technologies on architecture in the real and virtual realms

UNIT I QUALITIES OF VIRTUAL ARCHITECTURE
Discussing the differences between the real and virtual space. Virtual space as the potential space. Qualities of the new space: Disconnection of the body, new laws of proximity and increased automatism and its influence on architectural form and space

UNIT II MEDIA AND ARCHITECTURE
Visions unfolding/ Media Architecture as desirable/ Films as a space for virtual architecture

UNIT III ISSUES
Towards new paradigm – A myth or a promise. / Need versus desire/ anxiety of new/ identity and Fashion.

UNIT IV IDEAS AND WORKS OF CONTEMPORARY ARCHITECTS

UNIT V SEMINAR PRESENTATION
Students presentation on the ideas and works of architects known for process oriented approach to architecture. Topics to be discussed with course faculty prior to presentation.

TOTAL: 45 PERIODS

OUTCOMES:
- The student will learn about various design methodologies employed by contemporary architects.
- The student will be acquainted with the use of computation and digital technologies in contemporary architectural design.
- The student will learn to investigate the influence of various media, especially films, on architecture and vice versa.

REFERENCES:
OBJECTIVE:

- To investigate the simulation and audit techniques for assessing the energy performance, environmental response and impact of built form.

UNIT I INTRODUCTION TO BUILDING PERFORMANCE EVALUATION

Emerging role of performance evaluation in building design and master planning - Performance audit and rating systems - GRIHA, LEED IGBC and BREAM – Architectural Computation and performance audit - Introduction to ECOTECT.

UNIT II PRINCIPLES OF SUSTAINABLE DESIGN

E's of sustainability - Integrated approach to environmental design – Case studies – Comparative analysis of green rating systems, LEED, BREAM and GRIHA – Cognitive, analytical and simulated modeling and design of buildings. Zero Carbon Footprint Building.

UNIT III ENVIRONMENTAL ASSESSMENT METHODS AND MODELING FOR PASSIVE SYSTEMS.

Modelling and experimental techniques for building assessment/ evaluation and design – Basics of thermal comfort, solar shading/access/ control, day lighting, acoustics air movement etc. – issues and opportunities with current assessment modes/ evaluation tools - Evaluation and assessment based on Building type/ function and program – Building performance with respect to function, program, microclimate, urban planning, envelope design, material – Computer studio and simulation-Mathematical models of heat and mass transfer phenomena through building components: transfer function methods and numerical methods – Models of radiative and convective heat transfer phenomena within buildings.

UNIT IV ADVANCE ECOTECT AND ENERGY MODELLING

Integration of ECOTECT with BIM, RAPID ENERGY MODELLING- Modelling and performance simulation of existing buildings – residential-institutional- design of a new residential building with ECOTECT.

UNIT V SEMINAR AND CASE STUDY PRESENTATION

Case study presentation of students on performance evaluation of a building identified by them and approved by the course faculty – Seminar on topics approved by the course faculty.

TOTAL: 45 PERIODS

OUTCOMES:

- The students will gain knowledge on environmental assessment methods, audit and simulation techniques.
- Will add value to architectural design processes and equip students with energy modeling skills.

REFERENCES:

OBJECTIVES:

- This course will examine various services in high rise buildings.
- Understand how services integration can translate into an intelligent and energy efficient system which will enable sustainability of the structure.

UNIT I INTRODUCTION

Standards of high Rise buildings- Indian Standards and Global Standards on High Rise Buildings; Introduction to various services; their significance with regards to High Rise Buildings; Some examples of Buildings and services used in them. A brief on evolution of High Rise Buildings. Aspects and Integration of services- Concepts of Intelligence Architecture and Building Automation

UNIT II WATER SUPPLY AND WASTE DISPOSAL

Water supply and waste water collection systems- water storage and distribution systems- Planning and Design- Selection of pumps- rain water harvesting – Sewage collection systems and recycling of water- solid waste disposal. Some latest Trends Observation, NBC’s recommendations in these areas can be included.

UNIT III HVAC, ELECTRICAL AND MECHANICAL SYSTEMS

Natural and Mechanical Ventilation systems- Air conditioning systems and load estimation- Planning and design for efficiency-Basic concepts- Automation and Energy Management-concepts. Natural lighting systems- Energy efficiency in lighting systems- load and distribution- Planning and Design for energy efficiency- Automation- basic concepts, Glass and Glazing system for natural lighting. Types of elevators, systems and services- Lobby design- Escalators- safety principles, Some latest Trends, NBC’s recommendations

UNIT IV SAFETY AND SECURITY


UNIT V CASE STUDIES

Case Studies of High Rise buildings and skyscrapers through appropriate examples- Norman Foster; Ove Arup; Ken Yeang, etc.

TOTAL: 45 PERIODS

OUTCOME

- Students can apply some or all of these services in one of their design projects.

REFERENCES:

MH7211    ADVANCED ARCHITECTURAL DESIGN STUDIO I    L T P/S C
          0 0 12 6

OBJECTIVES:

- To understand in depth the increasing complexity of buildings today with respect to technology, services and planning.
- To design within this context.

The design studio will focus on emerging transformations in architecture in terms of aspects such as planning, building heights, floor area, technology, management, etc. It will explore the challenges of designing high rise and high tech buildings. It will enable collaborative learning through exploration, investigation and application of various parameters such as energy efficiency, green concepts, sustainability, services. The studio will integrate all these aspects through appropriate design projects.

OUTCOMES:

- Students would be made aware of the emerging technical areas of architecture.
- Students would get an understanding of designing optimally, balancing the basics of architectural design with emerging new technical and planning parameters.

TOTAL: 180 PERIODS

MH7301    EMERGING PRACTICES IN HOUSING    L T P/S C
          2 0 2 3

OBJECTIVE:

- This course will examine the redefinition of contemporary housing within the contexts of multicultural cities due to globalisation.

UNIT I    INTRODUCTION

Introduction to this building type, from its industrial beginnings in London and Paris to New York City’s Lower East Side and the 20th-century designs of Le Corbusier, Antonio Sant’Elia, and Mies van der Rohe to mention a few.
Investigation of contemporary life and its influence on space and architecture - Globalization and influences on economy - Alternate housing solutions: Commune, Co Housing, Cooperatives, etc.

UNIT II    SINGLE FAMILY, MULTI FAMILY HOUSING

Review of latest developments in single family and multi family housing by examining the works of Wiel Arets, Shigeru Ban, Ben van Berkel, Kees Christiaanse, Philippe Gazeau, Frank O. Gehry, Steven Holl, Hans Kolhoff, Morger & Degelo, , Jean Nouvel, Kas Oosterhuis, MVRDV

UNIT III    HIGH DENSITY HOUSING

Issues and concerns - Review of the current state of high density houses - the perspectives and future developments through a study of a few international projects.

UNIT IV    NEW FORMS OF LIVING AND HOUSING IN THE DIGITAL ERA

Hyper Housing- Multi cultural Housing- lab rooms and cyber homes- Network housing- hybrid buildings- individual sheltered residences; residence cities and bio homes for senior citizens- Works of UN Studio; FOA;; OMA

UNIT V    DEFINITION OF HOUSING IN THE INDIAN CONTEXT

Design strategies in the context of Indian metropolitan cities will be explored through a studio exercise

TOTAL: 60 PERIODS
OUTCOME:

- The students will understand the latest development, issues and design strategies governing the Housing in National and international level.

REFERENCES:
1. Manuel Gausa and Jaime Salazer; Housing+ Single Family Housing; Birkhauser- Publishers for Architecture; 2005
2. Vincene Guillart; Sociopolis:Project for a city of the Future; ACTAR; 2004
3. Jingmin ZHOU; Urban housing Forms; Architectural Press; 2005
4. Adrienne Schmitz; Multifamily Housing Development Handbook; Urban Land Institute; 2001
5. Carles Bronto; Innovative Public Housing; Gingko Press; 2005

MH7302 RESEARCH METHODOLOGIES IN ARCHITECTURE

OBJECTIVES:

- To make the students to distinguish various theoretical ideologies influencing the philosophy and values of architecture.
- To establish the sense of systematic inquiry in students mind to analyze and infer the issues and aspects relating to Architecture.

UNIT I INTRODUCTION
Basic research issues and concepts- orientation to research process- types of research: historical, qualitative, co-relational, experimental, simulation and modeling, logical argumentation, case study and mixed methods- illustration using research samples

UNIT II RESEARCH PROCESS
Elements of Research process: finding a topic- writing an introduction- stating a purpose of study- identifying key research questions and hypotheses- reviewing literature- using theory- defining, delimiting and stating the significance of the study, advanced methods and procedures for data collection and analysis- illustration using research samples

UNIT III RESEARCHING AND DATA COLLECTION
Library and archives- Internet: New information and the role of internet; finding and evaluating sources- misuse- test for reliability- ethics
Methods of data collection- From primary sources: observation and recording, interviews structured and unstructured, questionnaire, open ended and close ended questions and the advantages, sampling- Problems encountered in collecting data from secondary sources-

UNIT IV REPORT WRITING
Research writing in general- Components: referencing- writing the bibliography- developing the outline- presentation; etc.

UNIT V CASE STUDIES
Case studies illustrating how good research can be used from project inception to completion- review of research publications

OUTCOMES:

- The student will develop the skill to identify, decipher and interpret the issues relating to Architecture, based on research enquiry methods.
- The student will widen the information and will prepare the students for scientific method of researching and research process.
REFERENCES:
1. Linda Groat and David Wang; Architectural Research Methods;
2. Wayne C Booth; Joseph M Williams; Gregory G. Colomb; The Craft of Research, 2nd Edition; Chicago guides to writing, editing and publishing;
4. Ranjith Kumar; Research Methodology- A step by step guide for beginners; Sage Publications; 2005
5. John W Creswell; Research design: Qualitative, Quantitative and Mixed Methods Approaches; Sage Publications; 2002

MH7311
Dissertation

OBJECTIVES:
- To expose the students to the various thrust areas in architecture.
- To inculcate the spirit of research in architecture by providing opportunities to read on various issues.
- To expose the students to the finer details of technical writing.
- To provide a platform for a prelude to the ‘Design Thesis’.

Dissertation is best expressed as ‘Design in text’. It offers an opportunity to look at the research component in architecture in various thrust areas such as history, theory, design and other value based aspects through texts. Students are encouraged to choose any topic of their interest. This may range from analyzing and a critique of the works of an architect, ideologies and philosophies of architects that get transformed spatially, history, typological architecture, sustainability issues and so on. The dissertation must comprise of an aim, the objectives, the scope and limitations of their dissertation, hypothesis (if any), methodology followed by extensive review of literature through references and documentation. The analysis of the work must be substantiated either empirically or through extensive arguments.

A dissertation could also be a Thesis preparation course and gives the student scope for independent study and opportunity to explore specific area of interest which will form the basis of his/her design thesis project in the next semester. The topic will have to be approved at the start of the semester and reviewed periodically to a jury at the end of the semester.

TOTAL: 90 PERIODS

OUTCOMES:
- A Dissertation book which is based on accepted norms of technical writing.
- An understanding leading to formation of thesis ideas.

REFERENCES:
3. Wayne C Booth; Joseph M Williams; Gregory G. Colomb; The Craft of Research, 2nd Edition; Chicago guides to writing, editing and publishing.
4. Ranjith Kumar; Research Methodology- A step by step guide for beginners; Sage Publications; 2005
5. John W Creswell; Research design: Qualitative, Quantitative and Mixed Methods Approaches; Sage Publications; 2002.
MH7312 ADVANCED ARCHITECTURAL DESIGN STUDIO II

OBJECTIVES:
- To understand contemporary processes and tools in architectural design.
- To integrate the processes and tools in the design of projects, including those with increased complexity of parameters.

The design studio will focus on the role of emerging tools and processes for understanding and of complex and macro forces in the realm of the built environment as well as designing within this context. It would explore relationships between user group activity, movement, landform and urban form using diagramming and mapping tools to come up with creative prescriptions of certain projected scenarios. The studio will also emphasize on collaborative learning processes. The projects would be of macro scale involving large campus/ township oriented architectural projects as well as urban design.

TOTAL: 180 PERIODS

OUTCOMES:
- Students would be aware of contemporary processes and tools of design.
- Students would use these processes and tools in the design projects to identify and address specific aspects of the project, as well as integrate complexity of connections and issues.

MH7401 BUILDING INFORMATION MODELING

OBJECTIVE:
- To equip students with skills and information to build comprehensive Building Information Models (BIM) using appropriate Digital software and Media.

UNIT I INTRODUCTION TO THE FUNDAMENTALS
Key concepts of BIM - reading and manipulating the software interface - navigating within views - selection methods - the importance of levels and grids - creating walls, doors, windows, and components - working with essential modification commands and load family. Creating floors, ceilings, and stairs - working with type and instance parameters - importing CAD drawings - understanding the project browser and type properties palettes - adding sheets - inserting views onto sheets - adding dimensions and text to the model and plotting

UNIT II ADVANCED MODELING – FAMILY TYPES AND TOPOSURFACE MODELLING
Creating curtain walls, schedules, details, a custom family, and family types - “flex” a family with family types and work with reference planes - creating rooms and an area plan - tag components - customize existing wall styles. Create and edit a toposurface, add site and parking components - draw label contours - work with phasing - understand groups and links - work with stacked walls - and learn the basics of rendering and create a project template.

UNIT III RENDERING AND MATERIAL APPLICATION
Creating custom walls, floors, and roofs - keynoting - working with mass elements - enhancing rendering with lighting - producing customized materials - Using sun and shadow settings - Walkthrough technique - adding decals - working with design options and worksets - and calculating energy analysis - managing revisions

UNIT IV BIM FOR COST ESTIMATING, PROJECT PHASING AND ADMINISTRATION
UNIT V  BIM FOR BUILDING ENERGY SIMULATION

Energy simulation for conceptual BIM models using massing- Detailed modeling using design elements- Rapid energy modeling and simulation with Autodesk® Revit® Conceptual Energy Analysis features to simulate performance from within Revit Architecture -Use Autodesk® Green Building Studio® to produce energy consumption, carbon neutrality and renewable potential reports.

TOTAL : 90 PERIODS

OUTCOMES:
- This is a project-based course where students gain knowledge on the implementation of BIM concepts throughout the lifecycle of a building, from planning and design, to construction and operations.
- The students will learn about how to use BIMs for building energy performance simulation, construction administration

REFERENCES:

MH7411  THESIS  L  T  P/S  C
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OBJECTIVES:
- To integrate the knowledge gained in the previous semesters with respect to issues/ tools of architectural design at a more advanced level.
- To understand and identify issues appropriate to a particular project or area of architecture , through independent thinking as well as to design in a manner appropriate to the project context.

The students will synthesize the areas of knowledge, skills and techniques acquired in the various courses of the previous semesters through a thesis project of their choice. This thesis project would be a design project with a strong research component. The project would desirably extend the critical position developed within the theory and studio projects as well as dissertation. The scale of the project could extend from individual site to settlement levels. The initial process shall be rigorous, incorporating background research on the topic, case studies, documentation of project issues, context, site and building information, programming. The process would culminate in design interventions at scales appropriate to the topic. The project shall desirably have the potential to serve as a starting point for practice and/ or further research.

Students will submit a detailed proposal on their topic of interest(s). The Proposal shall be approved by the thesis review committee. The thesis project will be reviewed periodically by the review committee. At the end of the semester, the final thesis will be submitted and presented through a viva voce examination before a jury.

TOTAL: 330 PERIODS

OUTCOMES:
- Students would be able to integrate various contemporary/ advanced issues and techniques into the architectural design process.
- Students would be able to identify and go in depth into specific and appropriate aspects relating to the discipline of architecture and reflect this in the realm of design.
OBJECTIVES:
- This course provides a detailed exposure to students regarding the design & application in the field of life safety, electronic security & services automation requirements.
- To expose the students to the mandatory and inevitable integration of building management systems in building construction.

UNIT I  SAFETY SYSTEMS – FIRE ALARM & PUBLIC ADDRESS SYSTEM
Objective of a Fire Alarm System, essential components of a Fire Alarm System, Type of detection technology currently in use and Statutory Standards to be followed in design. Explanation of the essential Clauses of the the codes, and various types of Technologies employed in the Fire Alarm System, basic knowledge on how a Fire Alarm system works, designed and installed.

Objective of a Public Address System, essential components of a Public Address System, various types of technologies currently in use and design guidelines to be followed and basic knowledge on how a Public Address System works, is designed and installed.

UNIT II  SAFETY SYSTEMS – FIRE SUPPRESSION SYSTEM
Objective of a Fire Suppression System, Explanation on Fire triangle, Essential Components of a Fire Suppression System, different type of Fire Suppression Systems, detailed design criteria for Hand held extinguishers Wet Riser, Sprinkler Systems and various gas Based Fire Suppression System, and Type of Statutory Standards followed in Suppression, Explanation on the essential Clauses and Basic Knowledge on how a Fire Suppression System works, is designed and installed.

UNIT III  SECURITY SYSTEMS – ACCESS CONTROL SYSTEM AND INTRUDER ALARM SYSTEM
Introduction to Access Control, Intruder Alarm, Essential Components of each System, and Various types of Technologies employed in the system, Basic knowledge as how they work, are designed and installed.

UNIT IV  SECURITY SYSTEMS – CCTV AND PERIMETER PROTECTION
Introduction to CCTV, Perimeter protection system, Essential Components of each System, and Various types of Technologies employed in the system, Basic knowledge as how they work, are designed and installed.

UNIT V  INTEGRATED BUILDING MANAGEMENT SYSTEM
The objective of the Integrated Building Management System (IBMS), the list of utility, safety & security systems that are generally monitored & controlled through IBMS, the various components of IBMS, types of integration with the utility, Safety & security systems, explanation in detail on how each utility, safety & security system is integrated to IBMS, details of various parameters that can be monitored & controlled on each utility, safety & security system and the basic knowledge on how they work, are designed and installed.

OUTCOME:
- To ensure that every architect understands & designs the buildings that facilitates safe, code compliant, secure & comfortable buildings for the occupants

REFERENCES:
2. The Principles and Practice of Closed Circuit Television, Mike Constant & Peter Turnbull
4. CCTV Surveillance, Herman Kruegele.
OBJECTIVES:
- The course will provide necessary knowledge and skills to enable the facilitation and transformation of places and spaces where culture and technology are in a state of rapid change and resources are scarce.
- It will examine self help techniques of construction, adaptation, repair and management to understand what is involved in sustainable construction of domestic and community architecture.

UNIT I INTRODUCTION
Architecture and the survival of the planet- Assessing patterns of consumption and their alternatives- Profit and politics- Natural building movement – new context for codes and regulations

UNIT II DESIGN PRINCIPLES
Principle 1: Conserving energy; Principle 2: Working with Climate; Principle 3: minimizing new resources; Principle 4: respect for users; Principle 5: respect for site; Principle 6: holism- Illustrated with examples

UNIT III SUSTAINABLE CONSTRUCTION
Design issues relating to sustainable development including site and ecology, community and culture, health, materials, energy, and water- Domestic and Community buildings using self help techniques of construction; adaptation, repair and management- Portable architecture-

UNIT IV SYSTEMS, MATERIALS AND APPLICATIONS
Adobe- Cob- Rammed Earth- Modular contained earth- light clay- Straw bale- bamboo- earthen finishes, etc.- their sustainability; adaptability to climate; engineering considerations, and construction methods; Waste as a resource
Portable architecture to Applications through specific case studies

UNIT V CASE STUDIES FROM THE CONTEMPORARY SCENARIO
Ranging from small dwellings to large commercial buildings, drawn from a range of countries to demonstrate best current practice

OUTCOMES:
- An understanding on the needs of alternative technologies in buildings.
- An exposure to sustainable materials and construction.

REFERENCES:
1. Brenda and Robert Vale; Green Architecture: Design for a sustainable future; Thames and Hudsson;1996
2. Lynne Elizabeth and Cassandra Adams; Alternative Construction: Contemporary Natural Building Methods
3. Victor Papanek; The Green Imperative; Thames and Hudson; 1995
4. Steven Harris and Deborah Berke; Architecture of the Everyday; Princeton Architectural Press; 1997
5. Pilar Echavarria; Portable Architecture- and unpredictable surroundings; Page One Publishing Pvt. Ltd.; 2005
OBJECTIVES:

- To introduce the idea of architecture as enmeshed in the society and a product of larger socio-cultural issues and practices, and not as an autonomous object determined by a hermetically sealed discipline.
- To introduce the various interdisciplinary critical theories and explain their interpretation of architecture.

UNIT I INTRODUCTION

UNIT II POWER AND BUILT ENVIRONMENT
Definition of power - Forms of power - Power in the built environment at various scales - ideas of power and society, power-knowledge - Colonialism in India as a form of dominance - introduction to architecture and urbanism of colonialism in India - Production of Indo-Saracenic architecture - New Delhi as a part of imperial vision - Case studies of the architecture and urbanism of power in the modern world.

UNIT III PLACE AND ARCHITECTURE
Critical reactions to modernity/ modernism with reference to the concept of context/ place - Critical Regionalism and architectures of resistance - Place and phenomenology in architecture.

UNIT IV SEMIOTICS AND ARCHITECTURE
Architecture as communication and representation - introduction to linguistic concepts of semiotics, structuralism, post structuralism and deconstruction - brief overview of postmodern and deconstructivist architecture with reference to these concepts.

UNIT V CONTEMPORARY ISSUES IN ARCHITECTURE
Conditions of late capitalism and postmodern society - Society of spectacle - Architecture as spectacle and seduction - Theme parks and shopping malls - privatisation of public spaces - aesthetisation of architectural issues - influence of globalisation and digital revolution on architectural processes - debates of heritage - gender and space.

OUTCOMES:

- The students would gain an understanding of architecture as an integral production of society as well as engage in critical thinking to interpret architecture.
- The students’ awareness through this course would inform their practice/ research.

REFERENCES:
5. Thomas Metcalf Imperial vision, Oxford, 2002
8. Neil Leach, Anaesthetics of Architecture, MIT Press 1999,
OBJECTIVE:
- To examine the role and application of Geographic Information Systems in environmental design, community charities and other urban design projects.

UNIT I  INTRODUCTION  6
GIS – Spatial data, non Spatial data, Plan, Map, Scale, Map Projection, GPS, GCP collection, Spectral signature curve, Image processing – Geo coding / Geo referencing, GIS software, Two tier architecture, Three tier architecture, Thin client, Thick client

UNIT II  DATABASE CONCEPTS  9
Data structures, Databases, Files, Types of Tables, Table operations, Creating a Table, Accessing Records in a Table, Manipulating records in a Table, Modifying Table structure, Reports, Advantages of database, Primary key and data access, Composite primary key, Defining a primary key, Sorting, Indexing, Master Detail relationships, Types of relationships, Foreign key, Deleting, updating and adding records to linked tables, ER Diagram, Data Model – Physical, logical and conceptual.

UNIT III  SPATIAL DATA  9

UNIT IV  INTRODUCTION TO GIS SOFTWARE  9
Arc Info – Coverage – Arc, Node, Tics, Add, get, put, Map extent, edit, Topology creation – Clean, Build, Tables – Creating tables, updating tables, join, drop item, Export, Import, overlay, union, intersection, buffer.

UNIT V  MODELLING GIS PROJECTS FOR URBAN AREAS  12
Preparation of Land use map, Land use suitability analysis, Screen design, Visual Basic application using Map objects.

OUTCOMES:
- The student will increase the knowledge on GIS and the various characteristics of Data.
- The student will accept the potential of GIS and develop integrated practice of using the GIS application with architecture.

REFERENCES:
1. Information systems for Urban Planning – Robert Laurini
2. Modelling our world – ESRI Press
3. An Introduction to Data base Systems – C.J.Date
4. Fundamentals of Data base Management System by Elmasri & Navethi
5. ESRI (1992) Understanding GIS, The Arc Info Methods, ESRI, USA

OBJECTIVES:
- To understand the relationship between society and the making of the built environment.
- To understand phenomenology and the role of meaning in built form.
- To look at place making from the architectural as well as urban design point of view.
UNIT I  RELATIONSHIP BETWEEN CULTURE, SOCIETY, ANTHROPOLOGY AND ARCHITECTURE  6

UNIT II  ANTHROPOLOGY OF TRADITIONAL ARCHITECTURE  10
Architecture as a Process – kinship and house societies – perceptions of built form – conceptions of space – symbolism and technology – study of the above through case study of traditional architecture in India, Asia and Africa.

UNIT III  ANTHROPOLOGY AND PLACE MAKING  15

UNIT IV  AN OVER VIEW OF URBAN ANTHROPOLOGY  6
Meaning of urban studies and urban anthropology – role of cities – urban ethnography, primary units, major components and units of integration – anthropology and contemporary urban issues.

UNIT V  SEMINAR  8
Students would make presentations exploring the relevance and impact of anthropological studies on contemporary architecture and design through readings/case studies. The proposal must be discussed with course faculty prior to presentation.

TOTAL: 45 PERIODS

OUTCOME:
• A comprehensive understanding of architecture and urbanism as expressions of particular societies in time and place.

REFERENCES:
1. Roxanna Wasterson; The living House Anthropology of Architecture in S E Asia; Oxford Press.
2. Claire Melhuish (ed); Architecture and Anthropology – AD Vol 66 No 11/12 Nov - 1996
4. O F Bollnow; Mann, Bensch and Raum, Stuttgart; 1963.
7. Edwin James; Anthropology of the City; Prentice Hall; 1977.
8. J Carstern and S H Jones; About the house: Levi Strauss and Beyond; Cambridge University Press; 1955.

MH7006  MATERIAL CONSERVATION  L T P/S C
3 0 0 3

OBJECTIVES:
• To study materials, structural systems, buildings and elements produced by historical technologies in order to develop understanding of their evolutionary, chronological and stylistic context.
• To use this understanding to outline causes of deterioration and repair as well as look at the remedial and preventive measures that need to be taken to preserve the building fabric.
UNIT I  CONSERVATION TECHNIQUES  9

UNIT II  COMPOSITION, CHARACTERISTICS AND DETERIORATION OF MASONRY MATERIALS  9
Brick- Stone- Composite masonry- causes for decay and deterioration- remedial measures- Introduction to the significance and use of the lime – working with lime – repairing and replacing plaster - Issues concerning terracotta and mud- use of consolidants.

UNIT III  COMPOSITION, CHARACTERISTICS AND DETERIORATION OF OTHER STRUCTURAL MATERIALS  9
Use and repair of iron and steel members – Understanding wood and timber structures / methods to conserving timber structures-

UNIT IV  CASE STUDIES  9
Case studies at the national, international and state level conservation projects done by ASI, INTACH & Conservation Architects- assessment and evaluation.

UNIT V  MATERIAL CONSERVATION AND ADAPTIVE REUSE  9
Studio on Adaptive reuse/ restoration project / building in Existing fabric.

TOTAL: 45 PERIODS

OUTCOMES:
- A holistic understanding of the physical processes of building, including gaining knowledge about historical, material and cultural aspects.
- Gaining sensitivity and knowledge with respect to process of physical interventions in historic buildings.

REFERENCES:
3. J. Stanley Rabun; Structural Analysis of Historic buildings: Restoration, Preservation and Adaptive Reuse; Applications for Architects and Engineers; Wiley 2000
5. Ernest Burden; Illustrated Dictionary of Architectural Preservation; MCGraw hill 2003

MH7007  LANDSCAPE ECOLOGY AND PLANNING  L T P/S C
3 0 0 3

OBJECTIVES:
- To understand any developmental activity involves intervention in the natural processes and to minimize the impact due to this intervention.
- To outline the evolution of landscape planning, its premises and the process.
UNIT I ECOLOGY

UNIT II LANDSCAPE ECOLOGY
Introduction to landscape ecology – formation of various landforms – landforms and landscape process — pattern and structure of landscapes— concepts of patch, corridor and matrix - landscape dynamics and function — topological and chorological process within landscape - concept of landscape metrics – understanding dynamic interaction between landscape structure and function – ecological services of landscape.

UNIT III LANDSCAPE PLANNING
Relationship between man and nature – analytical aspect of landscape - the natural and cultural setting - evolution of landscape planning – concepts and projects of McHarg, Carl Steinite, Warren Manning, Augus Hills, Phil Lewis – Izank Zonneveld, Ervin Zube - landscape planning models – METLAND concept

UNIT IV PROCESS IN LANDSCAPE PLANNING
The purpose of landscape planning – domain and context for landscape planning – principles of planning – procedure in landscape planning - problem defining, goal setting, inventory and analysis - basic of collecting and analyzing, projecting and presenting data in landscape planning, visual assessment and aesthetic dimension.— Suitability analysis – techniques for identifying preferences - Planning options – proposing landscape plan.

UNIT V CASE STUDIES: LANDSCAPE PLANNING
Reclamation and restoration of derelict landscapes - conservation and preservation of ecological fragile areas such as wetlands, creeks etc. - conservation ordinances. Case studies on landscape regional planning - policies and landscape.

OUTCOMES:
- Landscape planning history, evolution, process and case studies.

REFERENCES:
MH7008 SUSTAINABILITY AND ENERGY CONSERVATION IN LANDSCAPE ARCHITECTURE.

OBJECTIVES:
- To expose the students on the issues of sustainability at the global level.
- To Focus on the energy conservation landscape and sustainability at the micro level.
- Sustainable landscape design for various climates of India

UNIT I INTRODUCTION TO SUSTAINABILITY 10

UNIT II SUSTAINABLE SITE 7
Sustainable site – LEEDS, BREAM, rating erosion and sedimentation control, site selection, urban development, landscape and exterior design etc., Green Building in the context of sustainability. Ecology and sustainability. Eco-City.

UNIT III INTRODUCTION TO ENERGY CONSERVATION IN LANDSCAPE 9
Energy conservation and sustainability, principles of energy systems, energy and global environment, scope for energy conservation in landscape.

UNIT IV ENERGY CONSERVATION METHODS IN LANDSCAPE ARCHITECTURE-CASE STUDIES 10
Various methods of energy conservation in landscape architecture, energy conservation techniques in various climates- hot and humid, hot dry, etc. Energy efficient site planning and landscape development. Energy efficient planting design.

UNIT V SUSTAINABLE LANDSCAPE PRACTICES 9
Sustainable landscape maintenance and management, Sustainable planning and city form. Sustainable urban landscape, landscape sustainability at the national and regional level.

TOTAL: 45 PERIODS

OUTCOMES:
- Understanding of sustainability from macro to micro level.
- Knowledge on Energy conscious Landscape design

REFERENCES:
2. O.R.Gray, Landscape Planning for Energy Conservation,
4. Publications of Centre for science and environments, TERI, New Delhi
MH7009  URBAN LANDSCAPE DESIGN  L T P/S C  3 0 0 3

OBJECTIVE:
- To expand the students knowledge on landscape within urban areas and open spaces in Urban context.

UNIT I  INTRODUCTION  6
City and pattern – hierarchy of streets and squares – spatial organization and land use – road net works and basic services. Open spaces with in urban environment.

UNIT II  URBAN SPACES  9
Cultural, social and aesthetic value of urban spaces and its perception, Imageability, Townscape elements. Urban space enhancement.

UNIT III  OPEN SPACE SYSTEM  9

UNIT IV  ELEMENTS IN URBAN LANDSCAPE  12
Design of public parks, roads, green ways, parkways, promenade and plaza. Public art. Plant selection criteria, furnishings and lighting of public space, maintenance and management of public spaces and parks.

UNIT V  CASE STUDIES  9
Contemporary urban landscape issues. Case studies-Study, understanding and analysis of known examples at the national and international levels.

TOTAL: 45 PERIODS

OUTCOME:
- Types, characteristics and elements of urban open spaces.
- Case studies of urban landscapes.

REFERENCES:
8. Tom turner, city as landscape, Eand FN spon, 1996.

MH7010  WEB DESIGN AND PORTFOLIO PRODUCTION  L T P C  0 0 6 3

UNIT I  INTRODUCTION TO WEB DESIGN  15
Basics of web design – Introduction to software used for web design – ADOBE IMAGE READY, DREAMWEAVER, FLASH etc.
UNIT II  STATIC PAGES  15
Slice – URL in ADOBE IMAGEREADY. Creation and Editing of site map – layer, tables, frameset, - CSS style – Forms – tools like insert, roll over etc., in DREAMWEAVER

UNIT III  ANIMATION IN FLASH  15
Introduction to MACROMEDIA FLASH, importing other file formats to Flash- saving and exporting Flash files, Frame by frame animation – Motion Tweening – Shape Tweening

UNIT IV INTRODUCTION TO SCRIPTING  15
Using Timeline – Frames –Key frames- Creating and using Symbols- Simple scripting in flash – Publishing SWF files

UNIT V DEVELOPING A WEB SITE  30
Using the skills and concepts learnt with the ADOBE IMAGEREADY,DREAMWEAVER, FLASH softwares . students will develop their portfolio in the form of web pages. These pages have to be uploaded in free public domains.

TOTAL: 90 PERIODS

REQUIRED READING

REFERENCES