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DR. A.P.J. ABDUL KALAM TECHNICAL UNIVERSITY, LUCKNOW

FACULTY OF ARCHITECTURE

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**BACHELOR OF ARCHITECTURE**

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### Scheme of Teaching and Examination

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## Scheme of Teaching and Examination

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**Grand Total** | 1000 | 24 |
INTRODUCTION

A. TRAINING RULES:
   Extracts from Ordinances, Scheme of Examination & Syllabus:
   (For the award of the degree of B. Architecture by the Dr. A.P.J. Abdul Kalam Technical University. Lucknow)

Ordinance 16  PRACTICAL TRAINING:
   16.1 Each student will be required to proceed on ‘Practical Training’ for the VII semester after appearing
   at the VI semester examination. The Principal/Head of Department of Architecture of the concerned
   Institute will approve the office of the ‘Practical-Training’ for the student.
   16.2 The marks for ‘Practical Training’ will be awarded to each student in accordance with the
   Regulations and Guidelines issued separately by the Dr. A.P.J. Abdul Kalam Technical University.

B. AIMS OF PRACTICAL TRAINING:
   1. The aim of the ‘Practical Training’ is to enable the students to gain the kind and range of practical
   experience which will prepare them for their likely responsibilities, immediately after qualifying B. Arch.
   Course.
   2. The ‘Practical Training’ should be regarded as an important academic activity. Howsoever good the
   arrangement of training may be, the trainee student, still, has the responsibility to use his own initiative in
   making the best use of the opportunities which he/she gets during training period and prepare himself/herself
   for the profession.
   3. The student should try to seek a variety of experiences in his/her ‘Training office’ to acquaint himself/herself
   with various works, procedures etc. of building trade.

GUIDELINES FOR STUDENT TRAINEE

1. Criteria for selection of a Training Office
   • In case of proprietorship firm, the proprietor shall be an architect; also, the firm shall have at least two or
     more architects as employee/associates.
   • In case of ‘Partnership’ / ‘Pvt. Ltd.’ Firms, at least one of the partner/director shall be an architect, and the
     firm shall have at least one or more architects as Partner/director/employee/ associate.
   • In case of a ‘Public-sector’ / ‘State or Central Government office/ Academic institute or a multinational
     organization’, there shall be a separate wing for architectural consultancy works.
   • The said architect (Proprietor/Partner/Director/Head of Department/Chief Architect etc.) shall have at least
     10 years of working experience and the organization should have a variety of projects.

2. Working Relationship between Architect and Trainee
   • The architect shall provide enough jobs to the trainee to keep him/her occupied.
   • The Architect shall expose the trainee to difference aspects of professional practice. The tasks given to the
     trainee shall include the following-
     - Preparation of
       - Sketch designs, presentation drawings etc.
       - Municipal drawings according to the byelaws.
       - Workings drawings and details.
       - Estimates, bill of quantities & specifications.
- Discussions with
  - Clients.
  - Structural Consultants.
  - Services Consultants.
- Inspection and management of site.
- Preparation of
  - Models, perspectives and photographs.
  - Reports, progress charts etc.
- Other administrative works.

3. Honorarium/Stipend
   - The architects usually pay some amount as honorarium/stipend to meet out of pocket expenditure to the trainee. The Institute/College of the student shall have no objection if the trainees accept/receive such honorarium/stipend.
   - The mode and amount of the honorarium shall depend upon the office and be based upon a mutual agreement between the employing architect and the trainee. However, it shall neither be a claim of the trainee nor binding on the architect but in order of professionalism and to maintain the dignity of profession, the training office of architects pay a respectable amount as stipend/honorarium.
   - The Institute/Training and Placement cell of the Institute shall not in any way be responsible for the payment against any sorts of damages, whatsoever.

4. Code of conduct for the trainee
   - He/she shall abide by the rules, regulations and general instructions of the office/firm.
   - He/she shall remain punctual and regular in attendance.
   - He/she shall make all efforts to learn the work involved in the profession, and if so required for work, shall attend the office beyond the scheduled time in the office.
   - He/she shall respect and obey the senior members of the office/firm.
   - He/she shall take up the job with full responsibility and show utmost interest in the work allotted.
   - He/she shall inform the institute/training and placement cell about joining in the training office, its address and contact numbers. He/she shall also inform the address of the accommodation acquired during the training period.
   - He/she shall remain in regular touch with the institute/‘Training and Placement Cell’ and shall keep the Training and Placement Cell fully informed about his/her progress in the training office.
   - In case of any complaint or misconduct, the Institute/Training and Placement Cell may take suitable and strict action against the student.

5. Arranging/Fixing-up the Training office
   - The Department / Faculty of Architecture, directly or through the ‘Training and Placement Cell’ of the Institute shall provide a list of offices, along with their addresses of some well-established and recognized architects. Addition, alteration and deletion in such a list may be made from time to time in conformity to ‘Criteria’ as laid down for selection of a training office.
   - After seeking advice from ‘Training and Placement Cell’, the student shall make his/her options available to the Training and Placement Cell.
   - With the help of ‘Training and Placement Cell’, the student shall make all efforts to settle his/her appointment as trainee with an established and recognized architect.

6. Duration of Practical Training
   - The duration of practical training is equivalent to a semester. The dates to start and finish the practical training shall coincide with the starting and finishing dates of the respective semester, in accordance to academic calendar of Dr. A.P.J. Abdul Kalam Technical University. Lucknow. However, the candidate can start his/her practical training before the said schedule i.e. during summer vacations.

7. Joining and Leaving the Training Office
   - The trainee is expected to join the training office on the scheduled date, and submit his ‘Joining Report’ on the letterhead of the office duly signed by Head of the Training to the Institute in the Performa prescribed for the purpose and contained in the Log Book.
   - The trainee must obtain a ‘No Dues Certificate’ duly signed by Head of the Training and get relived from the office at the end of the training period or before changing the ‘Training Office’. The trainee must submit this ‘No Dues Certificate’ along with the Log Book.
8. **Change of Training Office**

- In case of any emergency, a trainee may be permitted to change the training office/place of training once only during the entire period of training. He/she shall inform the Principal/Director/Head of Department/Officer in-charge of the ‘Training and Placement Cell’, and seek prior permission for such a change.
- The total duration of the practical training shall be the sum of the period of stay in different offices. It shall be in conformity with the ‘Duration of Training’ as prescribed in the ‘Ordinances, Scheme of Examination & Syllabus’ of the Dr. A.P.J. Abdul Kalam Technical University.

9. **Final Submissions**

After completion of practical training, the trainee is required to submit the following to the parent Institute.

- ‘Certificate’ of successful completion of the practical training, from the architect, in two original copies.
- ‘Daily Diary’ with details of the day to day work record, which will be returned to the student after assessment and viva voce examination.
- ‘Log-Book’ in the prescribed format, duly filled up and signed by the ‘Supervisor’.
- ‘Training report’ supplemented with the prints and documents of work done during practical training. The prints and documents shall be obtained with the permission of the Training office and shall be duly signed by the ‘Supervisor’.
- Training report shall be submitted in two original copies. One copy shall be returned to the student after assessment of sessional marks and viva voce examination. The second copy shall be retained by the Training and Placement Cell/library. These shall be presented in A-3 size with ring binding.

10. **Failures**

- In case the student/trainee remains unsuccessful or fails in completing his/her practical training or viva-voce examination, the matter shall be dealt with in accordance with the relevant ‘Rules and Regulations’ of the Dr. A.P.J. Abdul Kalam Technical University.

**COMPOSITION OF JURY PANEL FOR INTERNAL EVALUATION / SESSIONAL OF PRACTICAL TRAINING**

- Practical training shall be evaluated internally by a panel, by questioning the candidate. The panel shall consist of at least two senior faculty members (Architect) and Practical Training Coordinator in addition. The assessment shall be made out of 300 marks (250 marks for Training report, 30 marks for Log-Book and 20 marks for Daily Diary) by the panel.
  - In case of more than one section, in the Institute, there can be equivalent numbers of panel. In this case the panel shall consist of at least two senior faculty members (Architects) and Practical Training Co-ordinator / Asst. Practical Training Coordinator in addition.
  - An assessment report (confidential) having a weightage of 100 marks out of the whole sessional marks, shall be obtained on a prescribed format (available on web site), from the training office. The report should be signed by the head of respective office.

**COMPOSITION OF JURY PANEL FOR FINAL EVALUATION / EXAMINATION OF PRACTICAL TRAINING**

**EXAMINERS –**

Each panel shall consist of:

- An Architect Director / Dean / Principal / Head of the Department / Professor of the parent institution / university.
- A faculty member (Architect) of the parent institution / university.
- An Architect Director / Principal / Head of the Department / Professor of other than the parent institution / university.
- An Eminent Architect from the profession with at least 15 years of field experience.

Kindly note that opportunity to evaluate a candidate shall be given once to a faculty member, in the semester i.e. either in jury panel of internal or final evaluation.

Further the Practical Training Coordinator(s) will act as facilitator.
OBJECTIVES

The presentation in this course shall cover, over and above the regular work done (in RAR - 701) by the trainee during the training period. It shall fulfill the following objectives -

- To make trainees understand and feel the importance of observation of Buildings of Importance, Historical places, Areas of prominence etc. within the city and nearby areas of training. The trainees shall present it through travelogue, photographs, measure drawings etc.
- To attend Conferences, Seminars, Workshops, Exhibitions etc. related to field of architecture during their period of training.
- To make students experience the issues related to Site Supervision and Execution through interactive outcomes with masons, site supervisors, vendors and other related professionals.

The trainee is expected to accomplish all the above three objectives during training period along with the period of summer break.

SUBMISSIONS

After completion of practical training, the trainee is required to present / submit the following to the parent Institute / university.

- All relevant drawings / sketches, site measures etc. as .jpeg image incorporated in power point format. The travelogue both in soft and hard copies in two numbers.
- Brochure / Study material etc. of Conferences, Seminars, Workshops, Exhibitions etc. attended in two sets.
- Diary, where interactive out comes at site is noted down, along with photographs of site visits in one set.

COMPOSITION OF JURY PANEL FOR INTERNAL EVALUATION / SESSIONAL OF SEMINAR / PRESENTATION

Seminar / Presentation shall be evaluated internally by a panel, by questioning the candidate. The panel shall consist of at least two senior faculty members (Architect) and Practical Training Coordinator in addition. The assessment shall be made out of 100 marksby the panel.

In case of more than one section, in the Institute, there can be equivalent numbers of panel. In this case the panel shall consist of at least two senior faculty members (Architects) and Practical Training Co-ordinator / Asst. Practical Training Coordinator in addition.

COMPOSITION OF JURY PANEL FOR FINAL EVALUATION / EXAMINATION OF SEMINAR / PRESENTATION

EXAMINERS –

Each panel shall consist of -

- An Architect Director / Dean / Principal / Head of the Department / Professor of the parent institution / university.
- A faculty member (Architect) of the parent institution /university.
- An Architect Director / Principal / Head of the Department / Professor of other than the parent institution /university.
- An Eminent Architect from the profession with at least 15 years of field experience.

Kindly note that opportunity to evaluate a candidate shall be given once to a faculty member, in the semester i.e. either in jury panel of internal or final evaluation.

Further the Practical Training Coordinator(s) will act as facilitator.
OBJECTIVES

• Understanding design as a process of problem identification, space standards, formulation of requirements, evolution of design criteria and development of design of buildings in urban context, phasing and development.

• Understanding relationship of buildings amongst themselves and with a given environment.

• Incorporating the agenda of building bye laws, structure, site planning and landscape and services within existing context.

Module-1 Introduction
Understanding the importance of ‘context’ and built urban environment in design and lessons to be learnt in contextual insertions.

Module-2 Study and Analysis
Examining an existing urban environment for establishing parameters that influence contextual insertion within that fabric.

Module-3 Design Proposal
Design of multi-utility buildings / campus / complexes incorporating the constraints derived from the context it is placed in.

SUGGESTED STUDIO EXCERCISES
1. Study of a given urban fabric with underlying context.
2. Urban Intervention Projects: Design of buildings / building complexes in specific urban contexts such as heritage zones, near existing and within built environments.
3. Development of projects containing group of buildings with multiplicity of constraints such as relationship of land uses, space, architectural character, circulation, movement landscape and buildings.
4. The exercises such as redevelopment and urban improvement projects shall be generated after understanding the existing physical, socio-cultural, economic and political context surrounding activities etc.

APPROACH

• Design methodology shall take precedence over design.

• Model of existing site and context shall be prerequisite for design insertions.

• Part of project may be done in groups to develop teamwork and multi-faceted approach to design.

REFERENCE BOOKS
1. Architecture Today.
2. Concept to the manifest.
3. Projects of various Architects of similar nature.

CRITERIA FOR ASSESSMENT OF SESSIONALS

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OBJECTIVES

- To introduce and familiarize the students with the usage of various metal/gypsum board partitions and false ceilings construction works.
- To introduce and familiarize the students with the various asbestos cement products for construction works.
- To introduce and familiarize the students with the various water proofing compounds used in construction works.
- To introduce and familiarize the students with the usage of various Plastics and Rubbers in construction works.
- To study the causes and remedies of various defects in existing and new construction.
- To familiarize the student with the advanced building construction practices on site.

SECTION – A, BUILDING MATERIALS AND SCIENCES

Module-1 Gypsum & Asbestos Products
Introduction - Gypsum Board, Suspended Ceiling (Board & Tiles), Gypsum Plaster, Components and Accessories. Jointing and Finishing.
Understanding of various Asbestos Cement products available for application in building industry.

Module-2 Water Proofing Compounds
Various waterproofing compounds - Neoprene, Butyl, EPDM, PVC, Polyurethane.

Module-3 Plastics and Rubbers
Thermoplastics - Polythene, Polyvinyl chloride, Poly-propylene, Polymethyl methacrylate, Acrylic butadiene styrene.
Thermosetting Plastics – Phenol formaldehyde, Urea formaldehyde, Melamine formaldehyde, Polyurethane, Siliconc resin. Rubber.

LIST OF ASSIGNMENTS (Market Surveys, Seminars & Report)
1. To study the availability, constituents, properties, manufacturing processes, storage, transportation and applications of above mentioned materials.
2. To visit gypsum, asbestos, plastic factory etc. for better understanding and submit report.

WORKSHOP/CONSTRUCTION YARD PRACTICE & SITE EXPOSURE

Module-4 Workshop/Construction Yard Practice
Practicing in construction yard by making the examples of Gypsum board partition & false ceiling, P.V.C. doors and windows.

Module-5 Site Exposure
Exposure to advanced building construction practices on site of various items of work from foundation to roof and finishes.

LIST OF ASSIGNMENTS
1. To study the various tools, equipments used in precast works.
2. To construct examples of precast works in construction yard.
3. To survey construction work on site and submit report.

SECTION – B, BUILDING CONSTRUCTION TECHNOLOGY

Module-6 Partitions & False Ceilings (Gypsum Board)
Construction details of Metal Stud Partition (single layer).
Construction details of Suspended Ceilings

Module-7 Water Proofing Works
Basements, Toilets, Kitchens, Terrace gardens. Expansion joints.

Module-8 Joints
Special Construction joints. Seismic joints.

Module-9 Doors & Windows (P. V. C.)
Door Frame and Shutters. Windows Frames and Shutters.

Module-10 Defects and Remedies
The study of various defects in buildings and their remedies. Defects caused by dampness, applied forces and changes in size.
CONSTRUCTION PLATES
1. To understand the application of gypsum board in metal stud partitions in building.
2. To understand the application of gypsum board in suspended / false ceilings in building.
3. To understand the application of water proofing works in building.
4. To understand the application of construction and seismic joints in building.
5. To understand the application of P.V.C. Doors.
6. To understand the causes and remedies of various defects in existing and new construction.

APPROACH
- The students would be familiarized with vernacular terminology as prevalent in this part of the country.
- The emphasis will be construction details as applicable to Indian conditions.
- Site visits and market surveys will be an integral part of sessional work.

REFERENCE BOOKS
5. Building Construction, Mitchell (Elementary and Advanced)
9. Mitchell’s Structure & Fabric-II
10. Prestressed Concrete Structures: P. Dayaratnam
11. Concrete: Microstructure, Properties and Materials P. Kumar Mehta
12. Properties of Concrete A. M. Neville
14. Modern Prestressed Concrete: J. R. Libby
15. Principle & Practices of Heavy Construction: Smith & Andres
22. Engineering Material-Roy Chowdary
28. Testing of Concrete in Structures J H Bungey and S. G. Millard
29. Non-destructive testing V. M. Malhotra
30. Learning from failure – deficiencies in Design, Construction and Service R N Raikar
31. Concrete: Repair and Maintenance Illustrated, Problem Analysis, Repair strategy and Techniques Peter Emons&Gajanan Sabnis
32. Construction Failure Jacob Feld, Kenneth Harper.
## CRITERIA FOR ASSESSMENT OF SESSIONALS

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B. ARCH. SEMESTER – VIII  
RAR – 803, ARCHITECTURAL STRUCTURES - VII

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<th>PERIODS</th>
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OBJECTIVES
- To understand the reinforcement cement concrete design of structural elements

Module-1  Analysis & Design of Roof Trusses (Steel)
- Introduction and terminology of Roof Trusses, Types of Trusses, Analysis and design of Roof Truss (Fan Type) in Steel.

Module-2  Analysis & Design of Raft Foundation (R.C.C.)
- Introduction and need of Raft foundation. Analysis and design in R.C.C.

Module-3  Analysis & Design of Shell Structures (R.C.C.)
- Introduction to various types of shell structures. Analysis and design of shell structure (Hemi-spherical Dome) in R.C.C.

Module-4  Analysis and design of Pre Stressed Concrete

Module-5  Multistoried Buildings
- Introduction, Structural systems, Stiffening elements, Need for redundancy, Regularity, Member stiffness, Loads (Dead loads, Live loads, Wind loads), Approximate analysis for vertical loads and lateral loads, Effect of sequence of construction, Partition walls or infill walls, Coupling effect in buildings, Effect of joint width, Beam to column joint. Introduction to various loads resisting system.

APPROACH
- Lectures by Experts in the field of Design and analysis will be arranged to make the student’s exposure to practical aspects of design.

REFERENCE BOOKS
1. Reinforced Concrete Design- AK. Jain.
2. Earthquake Resistant Design of Structures- Manish Shrikhande and Pankaj Agarwal.
4. Structural Design & Drawing Reinforced Concrete & Steel – N Krishna Raju
5. Steel Structures Design & Drawing – Prof. Harbhajan Singh Col. (Retd.)

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OBJECTIVES

- To develop an appreciation of the planning issues involved at the scale of a town or a city.
- To expose the students to the history and development of planning, its relevance & application to modern day principles of town planning.

Module 1 Introduction to Town Planning & Theories
Definitions of town planning, form of planning, Elements and planning principal of city plan, Shapes of plan in accordance to road networks. Introduction to basic planning theories Indus Valley, Ancient (Vedic) planning systems.

Module 2 Planning Concepts and Evolution
Planning concepts related to City beautiful movement (Chicago, Chandigarh), Urban Utopia (Broadacre), Garden city (Letchworth), Radburn Theory (Radburn) and Neighbourhood planning.

Module 3 Planning Process & Standards
Understanding of planning process. Relevance of standards in planning as per URDPFI guidelines prepared by TCPO.

Module 4 Roads and Traffic Studies
Awareness of concepts related to various traffic problems in India. Understanding of PCU, Traffic volume, Road capacities, Road types; their sections and intersections, Traffic calming as per IRC guidelines.

Module 5 Modern Transportation Systems
New concepts in mass and rapid transportation systems e.g. BRT, LRT and Metro rail.

Module 6 Modern Approach in Planning
Introduction, Benefits and Planning components of Green City (e.g. Vancouver), Compact City (e.g. Sky city, China) and Smart City (e.g. Malta)

REFERENCE BOOKS
1. John Ratcliffe, An Introduction to Town and Country Planning, Hutchinson 1981
3. Rangwala, Town Planning, Charotar publishing house
4. G.K.Hiraskar, Town Planning
5. Rame Gowda, Urban and Regional planning
6. V.N.Ambedkar, Town and country planning and Housing, orient longman, 1971
7. URDPFI Guidelines for Planning by TCPO.
8. IRC Guidelines.
10. Binode Behari Dutt, Town Planning in Ancient India.

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OBJECTIVES

- Demonstrate a thorough understanding of the elements of graphic design.
- Read, understand and communicate in the language of graphic design.
- Use technology such as Photoshop, Illustrator, Corel Draw and Internet Explorer.

**Module-1**
Introduction to the Graphic Design
History of Graphic Design, Future of Graphic Design.

**Module-2**
Basic Design
Development of aesthetic sensibility towards design. Elements and principles of design.

**Module-3**
Calligraphy and Typography
Anatomy of a letter, Typefaces, Typographic measurement, Typographic standards, Typographic guidelines

**Module-4**
Creating Images for Print & Web
Formats, Resolution, Raster Vs Vector. Ethics and Copyright laws.
Use of particular image formats for individual projects to create collages, logos, cd covers, etc. with the help of Photoshop. Corel Draw and illustrator software. Images scanned from the internet to create projects while learning to cite sources.

**APPROACH**

- In teams students create a business proposal and create branding for that business including a commercial and magazine ad. They present the product to all students.

**REFERENCE BOOKS**

2. John Krull, Graphis Design Annual, 2017

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OBJECTIVES
- To understand the versatility of clay, as a materials.
- To introduce ceramics, thereby creating various forms/pots while doing hands-on exercises.

Module-1 Study of Various Types of Clay
- Clay body making, building shapes by coil & slab.
- Practice & throwing on wheel.
- Simple glazes.

Module-2 Preparing Different Clay Bodies
- Creating three dimensional forms with the help of potter’s wheel.
- Methods of Biscuit firing.
- Glaze making & glaze firing.

Module-3 Callographs
- Round & relief shapes by coil, Slab moulding and wheel work.
- Moulding & casting tile making.
- Biscuiting and glaze firing.

Module-4 Pottery
- Pots and shapes made by coil method.
- Pot making by throwing on potter’s wheel (elementary)

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B. ARCH. SEMESTER – VIII
RAR – 805, ELECTIVE – I (SKILL BASED) ; C–ADVANCED MODEL MAKING

**PERIODS EVALUATION SCHEME SUBJECT CREDITS DURATION OF**
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**OBJECTIVES**
- To introduce model making as a generative process, a tool in Design generation.
- To inculcate the dynamic act of model making in thinking process.
- To explore conventional and less conventional techniques of representation in an attempt to creative visualization and to understand drawings as vehicles of thinking.
- To understand the versatility in making models ranging from study to presentation and in varying scales and materials.

**Module-1  Surface Development**

**Module-2  Model Making Techniques**
Generative / geometry, fractals, parametric / material explorations (both in traditional materials like mount, foam, thermacol, clay, plaster of Paris, paper Mache, wood and new age materials like polystyrene, Aerocon blocks, plastics, meshes, and processes like carpentry, casting, moulding, welding, laser cutting, CNC cutting etc.

**Module-3  Use of Advanced Tools and Materials**
Painting model surfaces with various finishes, development of topography and landscape elements, use of materials like cork, polyurethane foam, use of laser, acid etching, stereolithographic (3D printing) for development of building and their envelopes.

**Module-4  Presentation Models**
Skills to use the tools with precision, Techniques for preparation of presentation models. General information and practice with different finishing material. Exercises involving topography, textures, landscapes, human elements etc.

**APPROACH**
- Students are made to explore a variety of tools and software that are available for the design process, which includes form exploration, modeling, and producing drawings. For Project students will be asked to develop digital generative drawings and then encouraged to develop their abilities in modeling their designs.

**REFERENCE BOOKS**

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OBJECTIVES

- To impart the skills of taking aesthetically appealing and creative architectural photographs through the use of appropriate cameras / lenses and lighting conditions.

Module-1 Introduction

Introduction to architectural photography. Various types of compositions framing, silhouette photography.

Module-2 Types of Camera

Use of various cameras, lenses and accessories, handling of equipment. SLR, DSLR cameras, lenses for different focal lengths for various contexts. Use of wide angle, normal, tele, zoom, macro, close up lenses. Filters-UV, Skylight, colour filters, special effect filter. Shutter speeds - slow, normal and high and their various applications. Apertures - use of various apertures to suit different lighting conditions and to enhance depth of fields.

Module-3 Architectural Photography

Optimizing selection of shutter speed, aperture and ISO. Twilight and night photography. Various uses of photography - documentation, presentations, competitions, lecture etc. Architectural Photography, Exterior and Interior photography. Practical exercises to understand composition.

Module-4 Photographic Documentation

Creative photography / photo renderings for special effects using software. Play of light and shadows to achieve dramatic pictures. Effects of seasons, inclusion of greenery, foliage, clouds, human scale etc. Photo documentation of buildings highlighting quality of architectural elements and spaces.

APPROACH

- A teacher should give an intensive introduction to photography including darkroom techniques to develop visual perception through observation, composition, colour and light interaction, shades, as well as positive/negative space relationships.

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OBJECTIVES
- To understand the recent development of parametric design in architecture both as a discourse and as a tool.
- To provide a brief yet systematic conceptual framework to parametric design in contemporary architectural practices.
- To develop students’ basic skills in using parametric tools such as Grasshopper, Dynamo.

Module-1 Elements of Parametric Design and Design Patterns
Introduction to Parametric design, Historical development of parametric design, The structure of parametric design processes, their characteristics and reusable parametric design approaches

Module-2 Fundamental Concepts of Geometric Modeling
Spatial coordinates, Projections, Boolean operations, Formal transformations, Freeform surface creation, Surface development and deformations aimed at architecture applications, Discretization and meshing, Digital prototyping and geometry reconstruction. Concepts in computational geometry applied to parametric architectural geometry modeling.

Module-3 Parametric Modeling Techniques and Tools
Introduction of tools for model design parametrically to illustrate the construction of geometrical relationships among complex shapes. Focus on hands-on techniques that can be applied to the design process, to extend the efficiency and productivity of work during the process.
Use of softwares like Rhino, Grasshopper, Kangaroo, Revit and Dynamo.

Module-4 Digital Fabrication
Using 3D digital modeling to efficiently produce components without the need for 2D representation.

Module-5 Parametric Design & Environment
Use of Ladybird and honeybee plugins for simulation.

APPROACH
- Through the combination of lectures, hands-on workshops and project-based seminars

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OBJECTIVES

- To enable the students to understand the alternative building techniques other than conventional ones with relation to economic and environmental outcomes.

Module-1 Introduction

Types of alternative building techniques like, Earth, Flyash, Bamboo, Thatch, Ferro-cement, etc. Advantages of alternative building techniques over conventional methods. Alternative methods of construction related to different materials and their comparison. Upgradation, modification and revision of various methods of construction.

Module-2 Earth

Components of earth: gravel, sand, silt and clay. Characteristics, advantages and disadvantages, needs and usage of various methods of construction like walling, flooring and roofing techniques. Composite materials made from earth like rammed earth, compressed stabilised earth blocks, stacked earth, sun dried clay bricks, steam cured blocks, Wattle and Daub. Filler slab, Jack arch roof.

Module-3 Bamboo

Characteristics, advantages and disadvantages, needs and usage of various methods of construction like walling, flooring and roofing techniques. Preservation of bamboo, bamboo tiles, shingles, bamboo joints.

Module-4 Recycled Waste Materials

Types of waste used in construction. Benefits of using recycled waste materials. Materials made out from waste paper, wood, plastic bottles, plastic bags, earthen materials, steel, aluminium, copper, bricks, gypsum, straw, wool, carpets etc. Techniques of using these materials in building construction.

APPROACH

- A workshop should be conducted on any of the above mentioned building techniques.

REFERENCE BOOKS

2. Housing and building in hot-humid and hot dry climate/
3. Low-cost housing in developing countries/ Mathur,

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OBJECTIVES

- To understand the basic principles of physics of sound.
- To make them enable to apply the knowledge in various buildings.
- To get familiarized with sound system equipments, available in market.
- To familiarize the student with laws as per National Building Code of India/BIS.

Module-1 Building Acoustics

Introduction -
Terminology and unit.
Characteristics of audible sound – Propagation, Velocity, Frequency, Pitch, Quality/timbre, Loudness and Intensity.

Common acoustical defects and recommended remedies –
Echo, Sound foci, Dead spots, Sound shadows, Resonance, Insufficient loudness, External noise and Reverberation.
Sabine’s expression for calculation of Reverberation time.
Absorbents and absorption coefficient.

Noise control –
Noise and its types, Noise pollution.
Sources of indoor noise, Indoor noise levels, Planning and design against indoor noise.
Sources of outdoor noise, Traffic noise levels, Planning and design against outdoor (traffic & buildings in built-up area) noise.
Identification of various sources of noise and recommendations to control them in various types of buildings e.g. – Residential, Educational, Hospital, Office, Hotels & Hostels, Industrial, Laboratories & Test houses, Miscellaneous buildings etc.

Constructional measures for sound insulation of buildings –
Materials, Hollow & composite wall construction, Floors & Ceilings.
Properties of good acoustical materials.

Sound system –
Sound reinforcement system, Public address system.
Familiarization and understanding of sound system equipment specification e.g. Amplifiers, Microphones, Speakers, Mixers, Conference systems and accessories.

Acoustical design principles and factors –
Acoustical design principles for Auditoriums, Cinema halls, Conference rooms etc. and factors viz. Site selection & planning, Dimensions, Shape, Seats & seating arrangements, Treatment of interior surfaces, Reverberation & sound absorption.

SECTION – B, APPLICATION

Module-2 Acoustical Design

The understanding the audio needs and layout for projects e.g. Auditoriums, Cinema halls, Conference rooms etc.

Module-3 Field / Market Surveys

Familiarization and understanding of sound system equipment available in market manufactured by various brands e.g. Amplifiers, Microphones, Speakers, Mixers, Conference systems and accessories.
**REFERENCE BOOKS**
5. Catalogues of leading Audio equipments agencies e.g. Philips, Ahuja etc.

**CRITERIA FOR ASSESSMENT OF SESSIONALS**

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OBJECTIVES

- To provide to students a strong knowledge base on, the various theories and concepts of design and how philosophy and strategies are related to architecture.
- This course aims to evolve a conceptual framework for intelligent appreciation of Architecture and to develop a vocabulary for discussing design ideas at a broader level.

Module-1 Pre Modern
- Antonio Gaudi; Charles Rennie Mackintosh; Antonio Sant’Elia; Adolf Loos; Auguste Perret; Peter Behrens; Bruno Taut; Gerrit Reitveld; Tatlin

Module-2 Modern
- Gropius; Mies Van der Rohe; Frank Lloyd Wright; Le Corbusier; Alvar Aalto; Terragini; Louis Kahn.

Module-3 Post Modern
- Urbanist: Mario Botta, Aldo Rossi, Cesar Pelli.
- Classicists: Arata Isozaki, Michael Graves, Mario Botta.
- Vernacular: Hasan Fathy.
- Philosophy: Charles Jencks, Bernard Tschumi, Peter Eisenman, John Hejduk.
- Critical Regionalism: Charles Correa, B.V Doshi, Tadao.
- Materialist: Peter Zumthor.

APPROACH

Through the presentation of the work of the architects from Pre Modern, Modern and Post Modern, the students have to trace their ideology, their philosophical attitudes and the theories that may have contributed to their evolution. The architect may be associated with a theoretical movement or group, which needs to be highlighted through models, sketches and design assignments emphasizing the philosophy or style.

REFERENCE BOOKS

1. Pattern language-Christopher Alexander
2. The language of post Modern architecture –Charles Jencks
4. Kenneth Frampton, “Modern Architecture; A Critical History” by, Tames and Hudson
5. Colin Davies, “Thinking about Architecture and Introduction to Architectural Theory”
7. Le Corbusier, “Towards a New Architecture”
10. Aldo Rossi, “ The Architecture of City”
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OBJECTIVES
- To research on a theoretical topic which may be relevant to the final thesis topic and do the necessary backgrounds work.
- Present the findings in report form

INTRODUCTION
Preparation of an Architectural Dissertation including reference to an extensive study of architectural examples and precedents in the selected field of study. This can be a related study for the final thesis next semester.

Each student is expected to submit one or more synopsis for finalization of his/her topic. After finalization of topic, by set of faculty members, the student shall be allotted one or more faculty member(s)/Guide(s)under whose guidance he/she has to carry out his/her dissertation.

Module-1 Stage I
Dissertation Plan
Marks = 25
Aims, Objectives, Hypothesis, Methodology, Scope & limitations.
Brief literature review.

Module 2 Stage II
Mid-Term Review
Marks = 50
Detailed literature review, Case studies, Data collection & analysis.
Revised dissertation plan.

Module-3 Stage III
Final Stage
Marks = 50
Final presentation of dissertation after incorporating suggestions of jury.
Draft report.

Module-4 Stage IV
Final Report
Marks = 25
Submission of Final report (10 – 15 thousand words) after incorporating suggestions of jury. It shall be duly referenced in standard format.

COMPOSITION OF JURY PANEL FOR EVALUATIONOF DISSERTATION AT EVERY STAGE
- There shall be one or more jury panels. Each panel shall consist of the following -
  - Senior faculty member, an architect, (Professor/Asso. Professor) of the Department of the parent institution.
  - Junior faculty member, an architect, (Asst. Professor) of the Department of the parent institution.
  - Thesis Guide(s).
There shall be three juries/presentations for each student in order to assess Stage I, Stage II and Stage III. The assessment of Stage IV, i.e. Final Report shall be assessed by the same set of jury members as in Stage III.
Further the Dissertation Coordinator will act as facilitator.

REFERENCE BOOKS
OBJECTIVES

- This Design Studio attempts to foster an understanding required to handle large scale building projects like campuses and multi-utility building complexes.
- Understanding design as a function of specific agendas of complex building services, building sciences, building bye-laws in accordance to Master Plan of city and structural systems.
- Integrating aspects of Sustainability in design and Site planning as essential components of the projects.
- Incorporating active methods for achieving sustainability like Water Harvesting, Waste management, Solar and Wind Energy beside others for achieving a smaller carbon footprint of the project.

Module-1 Introduction

Understand and learn how to solve the Built Environment needs for multi-faceted public activities especially for large campuses. Recognizing and integrating aspects of Sustainable design and planning.

Module-2 Site Analysis & Case Study

Examining existing case and literature studies of similar nature to develop design criteria. Extensive Site analysis of the proposed site for assessing on-site and off-site potentials and constraints.

Module-3 Design Proposal

Design of large campuses incorporating principles of efficient and sustainable site planning, space planning, circulation and services.

Module-4 Integration of Advanced Services, Structure and Active Sustainable Strategies

Besides design and planning of buildings within the campus the concentrations also needs to be on integration of complex building services, building sciences, building bye-laws in accordance to Master Plan of city and structural systems. Strategies of water harvesting, waste management, utilization of solar and wind energy and reducing the overall carbon footprint of the project.

SUGGESTED STUDIO EXCERCISES

1. Major design exercise could include large institutional campuses, convention centers, large office campuses having auditoriums and other multi-utility buildings.
2. Small exercises could include design of high-rise buildings like offices, hotels, hospitals etc. incorporating development of advanced structural and service systems.

APPROACH

- Students should develop programs after prototype studies
- Effective Site planning of the campus will be emphasised upon
- Integration of complex services and structure will be deliberated upon.

REFERENCE BOOKS

1. Architecture Today.
2. Concept to the manifest.
3. Projects of various Architects of similar nature.
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OBJECTIVES
- The understanding for the system to be adopted for the construction of large span & multi storey structures.
- To introduce and familiarize the students with the various roofing products for construction work.
- To introduce and familiarize the students with the various construction equipments required for speedy and effective construction works.
- To familiarize the student with the advanced building construction practices on site e.g. composite construction.

SECTION – A, BUILDING MATERIALS AND SCIENCES

**Module-1**
Forms of Steel for Industrial construction & Roofing products
Classification, Availability, Characteristics and Uses of forms of steel and first to fourth generation steel roofing products.

**Module-2**
Advanced Structural Concretes
Materials for Pre-Stressing
Structural Light weight Concrete, High Strength Concrete-Classification, Availability, Characteristics and Uses.
Classification, Availability, Characteristics and Uses.

**Module-3**
Forms & Materials for Speedy Construction
Reinforcement types, RMC.
Advanced Formwork systems - Table Form / Flying Form, Column Formwork Systems, Horizontal Panel Systems, Vertical Panel Systems, Jump Form, Slip Form & Tunnel Form.
Classification, Availability, Characteristics and Uses.

LIST OF ASSIGNMENTS (Market Surveys, Seminars & Report)
1. To study the availability, constituents, properties, manufacturing processes, storage, transportation and applications of above mentioned materials.
2. To visit P.V.C. factory etc. for better understanding and submit report.

WORKSHOP/CONSTRUCTION YARD PRACTICE & SITE EXPOSURE

**Module-4**
Workshop/Construction Yard Practice
Practicing in construction yard by making the examples of pre stressed components, industrial construction and speedy construction.

**Module-5**
Site Exposure
Exposure to advanced building construction practices on site of various items of work from foundation to roof and finishes.

LIST OF ASSIGNMENTS
1. To study the various tools, equipments used in Precast and Prestressed works.
2. To construct examples of precast and prestressed works in construction yard.
3. To survey construction work on site and submit report.

SECTION – B, BUILDING CONSTRUCTION TECHNOLOGY

**Module-6**
Industrial Construction
Structural Steel Works - Portal Frame Construction, North-light truss and Lattice girder roof with various roof coverings (corrugated metal sheets as roof panels- first to fourth generation sheets).

**Module-7**
Pre-stressed Concrete
Introduction, methods of pre-stressing, types of post-tensioning systems.
Types of pre-stressed concrete structures- Beams (Short span, medium span, long span), Girders & Joists. Slabs (one way, two way, flat slabs, hollow core slabs, planks), Single & Double T slabs. Channel sections, Folded plate structures. Composite construction.
Module-8 Prefabrication & Precasting
Systems of pre fabrication – open prefab system, large panel prefab system, joints, pre-casting methods, materials, on-site and off-site prefabrication, components, etc.
Precast RCC Frames - Beams and Column Frames, Wall Frames, Hollow core slabs, Planks and Tee slabs resting on Beam & Column frames and Wall frames. Connections between various components - beam to column, column to column, beam to slab, wall to slab.

Module-9 Speedy Construction
Methods, Types of floor construction – cast in situ, precast & composite construction.
One-Way Slabs - Solid slabs, Slabs with wide beams, Ribbed slabs (One-Way Joists), One-Way joists with wide beams, Troughed slabs (ribbed slabs with integral beams and level soffits).
Two-Way Slabs - Solid slabs, Waffle slabs designed as Two-Way slabs, Waffle slabs designed as Two-Way slabs with integral beams and level soffits, Flat slabs, Flat slabs with drops, Flat slabs with column heads, Waffle slabs designed as flat slabs
Lift slab construction, Cast-in-situ service & stair cores, Cross wall & Box frame construction.

Module-10 Modular Coordination
Aims, basis, planning, dimensioning.
Assembly of components, tolerances, positioning of functional elements – slabs, walls, staircases.

CONSTRUCTION PLATES
1. To understand large span structural steel works e.g. portal frames and truss-girder frames with various roof coverings products.
2. To understand the application of pre-stressed concrete in buildings – planks, hollow core slabs, single & double tee slabs, beams, columns and composite construction.
3. To understand the joint details in prefabricated buildings.
4. To understand one way and two way slab system in speedy construction.
5. To understand speedy construction techniques in buildings.
6. To understand the modular coordination in buildings’ design and their components.

APPROACH
- The students would be familiarized with vernacular terminology as prevalent in this part of the country.
- The emphasis will be construction details as applicable to Indian conditions.
- Site visits and market surveys will be an integral part of sessional work.

REFERENCE BOOKS
5. Building Construction, Mitchell ( Elementary and Advanced)
9. Mitchell’s Structure & Fabric-II
10. Prestressed Concrete Structures: P. Dayaratnam
11. Concrete: Microstructure, Properties and Materials P. Kumar Mehta
12. Properties of Concrete A. M. Neville
14. Modern Prestressed Concrete: J. R. Libby
15. Principle & Practices of Heavy Construction: Smith & Andres
22. Engineering Material-Roy Chowdary
28. Testing of Concrete in Structures J H Bungey and S. G. Millard
29. Non-destructive testing V. M. Malhotra
30. Learning from failure – deficiencies in Design, Construction and Service R N Raikar
31. Concrete: Repair and Maintenance Illustrated, Problem Analysis, Repair strategy and Techniques Peter Emons&GajananSabnis
32. Construction Failure Jacob Feld, Kennith Harper.

CRITERIA FOR ASSESSMENT OF SESSIONALS

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OBJECTIVES

- To acquaint the students with the role of an architect in society; scale of charges; an architect’s conduct in architectural Practice.
- To familiarize a student with requirements of Architectural Competitions and appointment of a contractor through tenders.
- To familiarize the students with Easement rights.
- To familiarize students with Valuation of property.

Module-1 Organisation of Profession
Introduction to the professional Organisations e.g. the Indian Institute of Architects, the Uttar Pradesh Architects Association. Their Objectives, working constitution, byelaws, categories of membership, election procedure etc. Detailed Study of the Architects’ Act 1972, Council of Architecture and its role.

Module-2 Professional Conduct, Conditions of Engagement
Conditions of engagement of an architect - Duties: Responsibilities and liabilities of an architect towards the profession and society, Scale of Professional charges and mode of payment etc., Code of professional conduct and ethics, Need and types of competitions, procedure for conducting competitions.

Module-3 Tenders and Contracts

Module-4 Office Organisation and Management

Module-5 Valuation of Properties
Fundamental concepts of Valuation, classification and types of valuation, Elements and factors affecting valuation; Valuation of immovable properties, Techniques for valuation of landed and building property.

Module-6 Arbitration

APPROACH:
- The course will be covered through lectures citing practical examples.
- Specialist should supplement the course through extension lectures.

REFERENCE BOOKS
1. Dr. Roshan H. Namavati, Professional practice
3. The Indian Institute of architects, the handbook of Professional Practice.
4. MadhavDevshaktu, Professional Practice.
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## B. ARCH. SEMESTER – IX
RAR – 904, LANDSCAPE DESIGN

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### OBJECTIVES
- To make students aware of plant-scape around them
- To encourage hand drawing & drafting in landscape presentation drawings
- To familiarize students in preparation of simple landscape proposals.

### Module 1 Introduction to Landscape Architecture
- Role and scope of Landscape Architecture; Understanding its relationship with Earth, water, fire, air, ether/space.
- Factors affecting Landscape: Climatic / Natural conditions- (soil, water, landforms, vegetation, temperature, humidity, rainfall), Scale, Material, Cost, Time.
- Elements of Landscape Design: Natural elements (Landform, water, plantscape, microclimate)
- Design elements: (man-made water bodies, landscape furniture, lighting, hardscape and softscape)
- Principles of Landscape Design: Unity, Symmetry, Balance, Hierarchy, Repetition, Sequence with suitable examples

### Module 2 Landscape Graphics
- Techniques on making handmade landscape drawings: trees of varied textures, landforms, buildings, paving, foliage patterns, tone contrast, & balance, rock & water and other landscape features. Conventional symbols in landscape presentations.

### Module 3 Concise Theory and Evolution of Landscape Architecture
- Evolution of landscape from pre- history to present day (history of landscape through civilizations).
- Major Garden styles: Hindu, Buddhist, Mughal, Japanese, Italian, Renaissance, their Design and Philosophy in brief.

### Module 4 Site Planning
- Detailed site analysis, identifying potentials and constraints, Site Mobilization, Sequence of site activity, Site protection measures, Site implementation, Contour Sites.

### Module 5 Landscape Engineering
- Landscape details including- Road and Parking, Paths and Plazas, Wall, Steps, Ramps and Decks, Planters, Bed edges and Terraces, Pools and Water bodies, Terrace landscape and Vertical garden.

### Module 6 Planting Design
- Classification of Plants (Trees, shrubs, groundcovers, flowering plants)
- Selection criteria of plants on the basis of visual, functional, micro climate and ecological aspects.

### Module 7 Landscape Design
- Inventory, Site analysis and Site planning
- Conceptual design, design development and proposals
- Landscape constructional details paving, curbs, retaining wall, fountain, decks, terrace gardens etc.

### APPROACH
1. Emphasis would be in drawing in studios
2. Site-visits to botanical gardens, existing parks & urban spaces
3. Suggested design exercises of traffic islands; small residences, campuses etc.
REFERENCE BOOKS
1. Geoffry & Susan Jellicoe: landscape of Man: shaping the environment from pre-history to the present day.
2. Brian Hackett: planting design
4. Ian McHarg: Design with nature
5. Simonds: landscape architecture
6. Jay Appolon: Experience of Landscape
7. Paul Bannet: The language of Landscape
8. SimondsSwaffield: Theory in Landscape Architecture
9. Trees of Delhi

CRITERIA FOR ASSESSMENT OF SESSIONALS

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B. ARCH. SEMESTER – IX
RAR – 905, ELECTIVE - II (P.G. PREPARATORY); A–BUILDING CONSTRUCTION MANAGEMENT

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OBJECTIVES
- To provide an insight into Management of Building/Construction projects involving management of money, manpower and machinery.
- To enhance the professional ability of an Architect about the methodology of executing a Project.
- To expose the students to the currently prevalent techniques in the planning, programming and management of a project.

Module 1 Introduction

Module 2 Organization
Organization, types of organization study of organizational structures suitable for building and construction projects, the roles of the various members of a typical construction organization, responsibility & authority, functions in the management process, qualities of an ideal construction organization and ethics in construction industry.

Module 3 Construction Management Techniques

Module 4 PERT and CPM
Use of Management techniques – PERT and CPM; event, activity, dummy, network rules, graphical guidelines for network, numbering of events. CPM network analysis & PERT time estimates, time computation & network analysis. Cost time analysis in network planning using CPM.

Module 5 Mechanization
Advanced and automated technology in construction. Introduction to construction equipment, performance, characteristics of equipment. The role of equipment /machinery in construction industry, factors affecting selection of construction machinery, standard versus special equipment, and understanding of the various issues involved in owning, operating and maintaining of construction equipment, economic life of equipment.

Module 6 Resource Allocation & Quality Control

REFERENCES:
1. Construction Planning, Equipment and Methods by RL Peurifoy
2. Project Management for Architects by S P Mukopadhyay
3. Part and CPM by L S Srinath
4. Project management through network technologies M. Thyagarajah
6. Dr. B.C. Punmia et al. *Project planning and control with PERT and CPM*, Laxmi Publications, New Delhi

**CRITERIA FOR ASSESSMENT OF SESSIONALS**

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OBJECTIVES
• To create awareness about the causes and consequences of housing problems and to impart knowledge about the possible solutions.
• Understanding of the various issues involved in urban and rural housing and knowledge about the planning and design solutions for low income groups

Module 1 Introduction & Terminology
Housing Need and Demand in India - Present and Future.
House, Housing and Settlement. Detached and Attached House Types.
Net & Gross Residential Density, Perceived Density, Zoning.

Module 2 Settlement Patterns
Introduction to human settlement, Settlement types and patterns, Relation of housing in present day context with relation to human settlement patterns.

Module 3 Issues Affecting Housing

Module 4 Objectives of Housing Agencies
Objectives and role of government, urban local bodies and other agencies in housing development: Census, NSSO, HUDCO, State Housing Board, NBO.

Module 5 Housing Schemes
Understanding of various housing schemes- Rajiv AwasYojana (RAY), Pradhan MantriAwasYojna (PMAY), Site & Services Scheme, Rental Housing Policy, Slum Rehabilitation Policy.

Module 6 Housing Development & Design
Understanding of various Housing categories through case studies e.g., Condominiums, Co-operative Housing, Affordable Housing, Rural Housing, – Their Advantages and Disadvantages.
Understanding of Neighbourhood. Exercises of moderate magnitude on Neighbourhood Planning.

REFERENCE BOOKS:
6. Miglani O.P., Urban Housing in Developing Economy.
7. Jain A.K., Urban Housing and Slums.

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B. ARCH. SEMESTER – IX
RAR – 905, ELECTIVE - II (P.G. PREPARATORY); C–URBAN DESIGN

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OBJECTIVES
- The overall goal of the course is to help students formulate an understanding of the urban forms and spaces. City history and theory will be examined.
- The contemporary needs of the society and the role of spaces will be dealt along with the need for design control.

Module-1 Introduction
Emergence of urban design as a discipline, definitions and its ambiguities.

Module-2 Urban Space Study
Historical and contemporary example of urban space.
Piazza del campo, St. Peters, Campidglio, St. Marco.
Yerba Buena garden, San Francisco, Pike place market, Seattle Washington.
Indian cases, particularly towns on bazars & streets.

Module-3 Urban design Parameters
Space and place, morphology, urban form and structure, fabric, texture, grain, enclosure, human scale, complexity, etc.

Module-4 Basic Principles and Theories of Urban Design
Theories related to visual or perception aspect (Gorden Cullen)
Theories related to physical aspect (Kevin Lynch)
Theories related to social aspect (Jane Jacob)
(after understanding above aspect student will explain above theory on Indian space and context)

Module-5 Urban Design Details
Urban outdoor lighting, urban green infrastructure, acoustic consideration for urban fabric, air quality at street level.

REFERENCE BOOKS
8. Goden Cullen, the concise townscape.
9. Rob krier, urban space
10. Bernard tshumi, Manhattan transcript
11. Deependra Prasad, New architecture and urbanism,
12. John Lang, Architecture and Independence
13. Bill Hiller, Social logic of space
15. jangeh l, Life between buildings: using public space
16. iangeh l Cities for people
17. Christopher Alexander, Public spaces public lifePattern language
19. Lewis mumford – city in history
20. Rapoport, amos history and precedent in environmental design
21. Rapoport, amos the meaning of built environment.
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OBJECTIVES

- Sustainable architecture aims to create environment – friendly and energy efficient building by actively harnessing renewable nature sources of energy (solar energy etc.) and utilizing materials that least pollute the environment.
- The objectives include creating awareness of designing energy efficient building envelopes that respond to the climate of a place bldg. lighting of resource – efficient practices in India, advocating of the application of renewable energy system and the promotion of efficient lighting & HVAC system to reduce energy demand.
- Propose and evaluate strategies for improving the energy performance of buildings.

Module-1 Introduction to Sustainability

Sustainable development: Social, economic, environmental factors, ecological footprint, local and worldwide sustainable benchmarks.
Energy consumption of buildings in the India; Need of energy efficient building in India.

Module-2 Sustainable design Principals

Principles and strategies - site design, energy management, renewable energy, Sustainable material selection, water management, indoor air quality, alternative Energy.

Module-3 Solar Energy and Buildings

Solar geometry and built form – Various techniques of shading to reduce heat gain in tropical climate.
Various methods of Maximising exposure to solar radiation in cold & temperate climate.

Module-4 Energy Codes and Rating System

ECBC Code, LEED, IGBC, GRIHA, NBC, Internal load, ASHRAE 90.1 – compliance Paths.

Module-5 Building Envelope

Building envelope components- WALL, ROOF, FLOOR, DOOR, and WINDOW & SKYLIGHT.
Role of envelope in building design for Energy efficiency.

Module-6 Energy Simulation – eQuest- Energy Programming and Modelling

Interface, basics of Schematic Design Wizard – building footprint, zoning, envelope construction, exterior doors and windows, Internal loads, Schedules, performing simulations -
CAD floor plans. Detailed edit mode.

REFERENCE BOOKS:
5. Green Building Guidelines: Meeting the Demand for Low-Energy, Resource Efficient
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Module-1  Introduction to Architectural Conservation
Definition of heritage, what is an historic building? Introduction to architectural conservation of buildings of importance – definition, nature, purpose and scope. Values in conservation; Ethics of conservation building conservation legislation etc.

Module-2  Defects in Heritage
Causes of defects and decay of a heritage structure. Natural agents of deterioration and loss.

Module-3  Preparatory Procedures for Conservation.
Preparatory procedures for conservation. Initial inspection, Continuing Documentation, Analysis of the documentation. Role or need of documentation for the conservation & restoration of any Heritage built form, Heritage precincts or any sort of tangible and Intangible heritage.
- Listing of the Region or Precincts for generating a data base of the heritage properties.
- Development of regional level maps for various types of heritages. (Heritage site maps, Heritage land-use maps).
- Buildings and Precincts typology study according to is usage, Architectural style, religion (study of demography and its comparison past and present) study.
- Building material, Construction techniques of Heritage structures in various typologies of buildings with respect to time.

Module-4  Introduction to International Charters
Introduction to various charters their significance and their role in guiding our conservation policies and guidelines or regional level and structural level (special reference to Barra and Venice charter).

Module-5  Literature Study and Site Visit
Literature case study of Red Fort (available on ASI web site) and site visit of ASI protected heritage buildings (in local city/town) and along with condition assessment techniques and methods.

REFERENCE BOOKS:
1. An introduction to conservation by Feildon B. M.
2. Conservation of Building by I. H. Harvey.
3. A critical bibliography of Building Conservation by Smith I. H.
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B. ARCH. SEMESTER – IX
RAR – 905, ELECTIVE - II (P.G. PREPARATORY); F-PRODUCT DESIGN

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OBJECTIVES

- To give students basic understanding about Product and Industrial design process.
- The emphasis of the course is on group product design projects.

Module-1 Introduction

Definition of product design, design by evolution & design by innovation, essential factors, morphology of design, primary design phases and flow charting.

Module-2 Product Strategies & Analysis

Standardization, industrial design organisation, role of aesthetics in product design, functional design practice, strength, stiffeners and rigidity considerations in product design.

Module-3 Review Of Production Processes

Primary, machining & non-traditional machining processes, manufacturing requirements in design of machine components, design for forging, pressed components, casting & machining, designing with plastics, rubber, ceramics & wood.

Module-4 Economic Factor and Anthropometrics Effecting Design

Product value, design for safety, reliability and environmental considerations, economic analysis, human considerations in product design, anthropometry.

Module-5 Product Development

Product development from concept to product designing for function, production, handling, use and maintenance.

APPROACH

- Basic knowledge has to be given by the teacher through presentation or any other technique supplemented by student seminars to make it interactive.
- Product development: Selection of the projects is based on the possibility of user interaction leading to innovation. Projects end with a comprehensive presentation through working/mock up models, design drawing and a report.

REFERENCE BOOKS


CRITERIA FOR ASSESSMENT OF SESSIONALS

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### OBJECTIVES
- To develop an understanding of the advanced building services and their application in the design proposals of buildings of slight complex nature such as multi-storied.
- The thrust shall be on understanding the use and application of the services and not the calculation or numerical part.

### CONTENTS
- **Module 1 Gas Installation**
  - L.P.G / Bio-gas installations, their location and layouts in residential and non-residential buildings
- **Module 2 Automated Parking System**
  - Introduction, Types, Working and Advantages of automated parking system
- **Module 3 Mechanical Ventilation**
  - Standard requirements of ventilation for different conditions of living and works. Conditions for comfort. Control of quality, quantity, temperature and humidity of air.
- **Module 4 Control Room & Management**
  - Code of Safety prescribed in NBC
  - Biological waste treatment
  - Waste water treatment
- **Module 5 Waste Treatment & Management**
  - The objectives of the Integrated Building Management System (IBMS), the list of utility, safety and security systems that are generally monitored and controlled through IBMS, the various components of IBMS, types of integration with the utility, safety and security systems and the basic knowledge on how they are designed and installed.

### SUGGESTED EXERCISES
- Site visits of buildings where different types of advanced services equipments have been installed, their working and the merits and demerits of the system.
- In an already designed project of a large covered area & multi-storied building installation of these systems and the location of their parts and how they will be connected.

### APPROACH
- Specialized lectures from technical people in the field.
- Practical and site based exercises to make the data more comprehensive.

### REFERENCES
4. Building Automation Online by McGowan; McGowan, John J.
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<th>S. NO.</th>
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OBJECTIVES

- To develop knowledge and skills related to advanced surveying, photogrammetry, remote sensing and Geographic Information Systems (GIS) principles and practice.
- To impart knowledge about the basic principles of geomatics engineering techniques for data collection and mapping for planning infrastructural facilities, including various architectural applications.
- To provide basic knowledge of GIS, Remote Sensing, GPS theory and their applications using the existing state-of-the-art GIS software.

Module-1   Total Station Survey
Introduction, Working principle of total station and its use. Use of software for different applications.

Module-2   Photogrammatery
Definition, Principles and application of photogrammetry and stereoscopy in surveying.

Module-3   GIS (Geographic Information System)
Introduction togeographical concepts and terminology, Difference between Image Processing system and GIS, Utility of GIS. Raster and Vector Data - Introduction, Descriptions about Raster and Vector data, Raster Versus Vector, Raster to Vector conversion, Remote Sensing Data in GIS, Topology and Spatial Relationships, Data storage verification and editing. Data preprocessing, Geo-referencing, Interpolation of data, Database Construction, Data Output, GIS analysis functions, Generation of thematic maps, Digital Elevation Model (DEM), Introduction to software.

Module-4   Remote Sensing
Basics concepts of remote sensing, Electromagnetic spectrum, Platforms and sensors, Remote sensing data products, Introduction to visual and digital image interpretation techniques and image processing software, Field verification.

Module-5   GPS (Global Positioning System)
Introduction to GPS surveys, GPS data collection for mapping.

Module-6   Application
Application of geomatic engineering techniques to architecture and planning, Utility of high resolution remote sensing data for infrastructural planning, 3D visualization.

LIST OF ASSIGNMENTS (Practicals, Field Exercises & Drawings)
1. Preparing topographical map of given area using total station.
2. Study various aerial images.
3. Demo on various GIS software and their salient features. Practice on GIS for layers creation.
4. Customized application in GIS.
5. 3D GIS.
6. Use of remote sensing images for Landuse and landcover classification.
7. Use of GPS for taking field measurements.
8. Practice on Image Processing System to use remote sensing images.

REFERENCE BOOKS
1. Surveying Volume I & II by Dr. B.C. Punmia
2. Surveying and Leveling (Part – I) by Kanetkar TP and Kulkarni SV
3. Surveying Volume -1 by Dr. K.R.Arora.

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OBJECTIVES

- To prepare a student to conduct in-depth study of one focus area of thrust emerging from architectural domains like structure, climate responsiveness, vernacular, architecture theory/philosophy, low cost construction techniques, parametric design and simulation, universal design, disaster management, green and intelligent buildings, advanced construction, services and materials etc. and form it as the basis of designing his/her thesis project proposal.

- To educate the student to independently handle and present all aspects of an architectural design, from its evolution to final solution in totality.

- To understand the importance of the evolutionary stages of a design process and various techniques required for a successful presentation of an architectural design.

- To develop in students the ability to handle specific aspects/thrust area of design relevant to the topic.

INTRODUCTION

- The multiple challenges of ‘built environment’ offer unlimited scope for the choice of an architectural design thesis. The selection of the thesis subject may result either from issue/s involved, or from the challenges of design, or the inherent and acquired aptitude of a student, which he/she wishes to perfect and present. The variety of the intentions give students the choice to select the topic of the thesis from a purely hypothetical to a ‘live’ programme, as long as the topic can result in tangible ‘built environment’ solution. Consequently, the size of the project has no relevance in the selection of the topic; the riding clause being the topic’s relevance to serve the laid down specific objectives inherent in the philosophy of the institution.

- For reasons of maintenance of uniformity in results and standards, the thesis presentation shall be in two distinct compartments: a report comprising of all the preliminary studies required for the thesis topic, and the final design solution.

- Thesis I in 9th semester shall comprise of the research part of thesis in form of report part while the 10th semester shall carry forward the design stages in form of drawings.

- The Thesis report shall also consist of thrust area studies/research and all relevant contextual studies: of user, place and time to enable the formulation of design criteria and should be spiral bound for the thesis I submission.

**Module-1 Stage I**

Marks = 50

**Selection and research of thrust area**

Identification & brief Description of Literature/library/case studies to form background study.

Thesis Plan: Identifying aims and objectives (for implementing thrust area in subsequent design proposals), methodology, scope and limitations.

**Module-2 Stage II**

Marks = 50

Detailed Literature Review of selected Thrust Area/Issue forming the Design Criteria for Thesis Project.

All Literature and Library studies including prescribed standards for selected Thesis Project.

Selection of Site(s) for implementation of Thesis Project.

Selection of case Studies, along with criteria.

The Students will be expected to complete all Background Study for the Selected/Proposed Thesis Project before leaving for winter break when he/she will conduct extensive site studies and visit case/prototype studies for submission of Stage I in next semester.
COMPOSITION OF JURY PANEL FOR INTERNAL EVALUATION OF THESIS AT EVERY STAGE
- There shall be one or more jury panels. Each panel shall consist of the following -
  - Senior faculty member, an architect, (Professor/Asso. Professor) of the Department of the parent institution/ university.
  - Junior faculty member, an architect, (Asst. Professor) of the Department of the parent institution/ university.
  - Thesis Guide(s).
There shall be two juries/presentations for each student in order to assess Stage I and Stage II. Further the Thesis Coordinator (s) will act as facilitator.

COMPOSITION OF JURY PANEL FOR FINAL (EXTERNAL) EVALUATION / EXAMINATION OF THESIS.
- There shall be one or more jury panels. Each panel shall consist of the following -
  - An Architect Director / Principal / Head of the Department / Professor of the parent institution / university.
  - An Architect Director / Principal / Head of the Department / Professor of other than the parent institution / university.
  - An eminent architect from the profession with at least 15 years of field experience.
  - Thesis Guide(s) as member, but not part of evaluation.
Further the Thesis Coordinator (s) will act as facilitator.
OBJECTIVES

- To prepare a student to independently handle and present all aspects of an architectural design, from its evolution to final solution in totality.
- To understand the importance of the evolutionary stages of a design process and various techniques required for a successful presentation of an architectural design.
- To develop in students the ability to handle specific aspects / thrust area of design relevant to the topic.

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- For reasons of maintenance of uniformity in results and standards, the thesis presentation shall be in two distinct compartments: a report comprising of all the preliminary studies required for the thesis topic, and the final design solution.
- The Thesis report shall consist of all relevant contextual studies: of user, place and time to enable the formulation of design criteria.
- The design solution shall be in the form of drawings and models of the concept and design and shall further include the presentation of at least one specific aspect relevant to the selected topic in complete detail.
- The report, in duplicate, shall be submitted in bound form together with prints/photos of all the drawings and model/s.
- All relevant/ pertinent drawings, sketches, models from previous stages to be put up for the jury to show evolution of design.

Module-1 Stage III
Marks = 100
Summary of previous stages, Revised Design Criteria.
Detailed Case Studies identified for Thesis Project.
Detailed Site Studies and Analysis for implementation of Thesis Project.
Concept and Sketch Design through drawings and models.

Module 2 Stage IV
Marks = 100
Finalised Sketch Design through well drafted double line plans, sections, elevations and models.

Module-3 Stage V
Marks = 100
Design development in form of Site Plan(s), floor Plan(s), Sections and Elevations, Views and Working Models fully explaining the design, Structural Systems, Services Compliance.
Selection of Elective: Criteria, Objectives, Methods, Scope and Limitations.

Module-4 Stage VI
Marks = 75
Developed working Drawings incorporating all structural systems, services and electives.

Module-5 Final (Internal)
Marks = 75
Finalized Detailed Drawings complete with electives, 3Ds views, walk throughs and models with Final Thesis report

COMPOSITION OF JURY PANEL FOR INTERNAL EVALUATION OF THESIS AT EVERY STAGE
- There shall be one or more jury panels. Each panel shall consist of the following -
  - Senior faculty member, an architect, (Professor/Asso. Professor) of the Department of the parent institution / university.
  - Junior faculty member, an architect, (Asst. Professor) of the Department of the parent institution / university.
  - Thesis Guide(s).
There shall be five juries/presentations for each student in order to assess Stage I to Stage V. Further the Thesis Coordinator(s) will act as facilitator.

**COMPOSITION OF JURY PANEL FOR FINAL (EXTERNAL) EVALUATION / EXAMINATION OF THESIS.**

- There shall be one or more jury panels. Each panel shall consist of the following -
  - An Architect Director / Principal / Head of the Department / Professor of the parent institution / university.
  - An Architect Director / Principal / Head of the Department / Professor of other than the parent institution / university.
  - An eminent architect from the profession with at least 15 years of field experience.
  - Thesis Guide(s) as member, but not part of evaluation.

Further the Thesis Coordinator(s) will act as facilitator.
B. ARCH. SEMESTER – X  
RAR – 1002, PROFESSIONAL PRACTICE – II

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OBJECTIVES

- To familiarize the students with elementary knowledge of various instruments of legislation to safeguard the professional interest of architects as also societal interest.

Module-1 Law related to Land

Introduction to the Land Acquisition Act - 1894 and its subsequent amendments through Act of 2013 and 2015, a study of the LAND ACQUISITION AMENDMENT BILL 2018. Notification to acquire land under various sections, concept of public purpose, and compensation apportionment etc.
The Uttar Pradesh Urban Buildings (Regulation of Letting, Rent and Eviction) Act, 1972- Its important provisions and effect on the urban development.

Module-2 Urban Development Law

Introduction to the UP Urban Planning and Development Act-1973- Concept of Urban Development Authority its power authority and Role in regulating the urban development, Salient features of the provisions of the act.
The Uttar Pradesh Slum Areas (Improvement and Clearance) (Amendment) Act- 1981 and its important provisions for achieving.

Module-3 Law of Easement

Concept of Easement and essential elements of valid easement, creation of easement – types of Easement, Easement by prescription, Easement by necessity and quasi easement. Termination, suspension and revival of easement and other related concepts.

Module-4 Mercantile Law

Indian Partnership Act - 1932 and subsequent amendments, Relationship of Partners, sharing of profits, Exit of a partner, liabilities of and rights of other partners.

Module-5 The Law of Environment

A general understanding of purpose, provisions, and the impact of various components of the environmental law e.g. The National Green Tribunal Act-2010; The Air (Prevention and Control of Pollution) Act- 1981; The Water (Prevention and Control of Pollution) Act- 1974; The Environment Protection Act, 1986; The Hazardous Waste Management Regulations, etc.

Module-6 Real Estate (Regulation and Development) Act, 2016 (RERA)

Concept of real estate, Need of the RERA and its impact on real estate, RERA authority, registration under the Act, Role and responsibilities and liabilities of architects under the provisions of the RERA.

APPROACH

- The spectrum of lectures will be covered through lectures citing practical examples. Specialist should supplement the courses through extension lectures.

REFERENCE BOOKS

1. Dr. Roshan H. Namavati, Professional practice
4. MadhavDevshaktu, Professional Practice
5. Governance of Societies under Multistoried buildings/housing
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B. ARCH. SEMESTER –X  
RAR – 1003, ELECTIVE – III (MISCELLANEOUS): A–ARCHITECTURAL PEDAGOGY

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OBJECTIVES
• Seeking Responsive Forms of Pedagogy in Architectural Education.
• To develop students’ critical thinking abilities about the role of community involvement in different phases of the design process.
• To enhance students’ understanding of the core concepts, methods, and techniques that pertain to community design as they relate to different phases of the design process (programming, design, post occupancy evaluation), and as they relate to different types of environments.
• To understand the techniques of teaching a specialized course like architecture.
• The course would attempt encouraging students to evolve individual, creative yet pragmatic thought process.

Module-1 Introduction To Architectural Pedagogy
Understanding Pedagogy, Importance of Pedagogy, Role of Pedagogy in Architecture.
Nature of Interaction between teacher and students, Level of participation / involvement of both Educators and Students in various subjects / experiences. The routines of students and educators. The rules that govern the relationship between students and teachers.

Module-2 Instructional Methods and Techniques
Instructional Methods - Lecture method, Demonstration method, Case Study method, Project method, Programmmed Instruction/ Learning, Studio method.
Instructional Media - Meaning, Need and importance, Projected media, Non-projected media, Computer Based multimedia.

Module-3 Field Studies in Architecture
Learning of various aspects of architecture through site visits. Understanding the methods of learning, observing and experiencing these aspects.
Preparation of report of the particular case study.

Module-4 Hands – on - Studios as a Tool for Learning
Development of exercises for various subjects in Architectural Studios. Learning about programme making for the various studios and workshops.

REFERENCE BOOKS

REFERENCE WEBSITES
2. www.architectural-review.com/...pedagogies...architectural...

CRITERIA FOR ASSESSMENT OF SESSIONALS

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TOTAL 35
OBJECTIVES:
- To impart the students latest and relevant knowledge from the field of management theory and practice.
- To provide opportunities to the students for developing necessary managerial skills.

Module-1 Basic Concepts of Management
Definition, Need and Scope, Introduction to Management Science, Theory & Practice, Environment of Management, Managers & Entrepreneurs, Managerial Roles & Skills, Manager's Social & Ethical Responsibilities.

Module-2 Functions of Management
Planning – Concept, Nature, Importance, Steps, Limitations, Management by objectives

Module-3 Financial Management
Cost of project, Means of finance, Estimates of sales and production, Cost of production, Working capital requirement and its funding, Profitability projections, Break Even Point(BEP), Projected cash flow statement, Projected balance sheet, Project profitability at market prices, Techniques of financial appraisal, Financial risk and over-all financial viability of the project through Internal Rate of Return (IRR)

Module-4 Marketing Management and Skills

Module-5 Marketing Environment and Planning
Promotion decisions, Integrated Marketing communications concept, Communication tools, Contents of Marketing Plan, Developing Marketing Plan for variety of goods and services, Promotion decisions, Integrated Marketing communications concept, Communication tools, Personal selling & Sales management

REFERENCE BOOKS
1. Essentials of Management – Koontz – TMGH
2. Essentials of Management- Thomson Southwestern, Andrew J. Dubrin
4. Modern management: concepts and skills- Samuel C. Certo and TervisCerto,
5. Principles and Practices of Management - Shejwalkar and Ghanekar
9. Principles of Marketing - Philip Kotler and Gary Armstrong
10. Fundamentals of Marketing - Stanton
11. Marketing Management – RajanSaxena
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OBJECTIVES:

- To have an overview of the innovative concepts for future in terms of design, infrastructure and latest technology.
- To understand the limitations in terms of energy and area to build and sustain.

Module-1 Theoretical and Imaginative Ideas
Overview of the theoretical texts and drawings of the ideas by architects over the ages, who have imagined beyond today. E.g. Scholari, Archigram (Peter Cook), Raimund Abraham, Boullee, Ledoux etc.

Module-2 Alternate Sustainable Ideas through Design and Technology
Enumerating the varied innovative energy alternatives and their harnessing through design ideas, materials, techniques and functions. Prefabrication as a basic module for building.

Module-3 Social and Practical implications of a new world
Comprehending the new social order, modes of transport, physical dimensions of an alternate world.

Module-4 Futuristic Geometry
Understanding a higher geometry (minimal surfaces) and its eventual spatial order. Fractals, Fuzzy Logic in architecture.

APPROACH:
- Presentations would be made by the teacher. The students are expected to do library studies and seminars on varied topics to supplement the information base and make it more interactive.

REFERENCE BOOKS:
1. Fantasy Architecture: 1500-2036 [Neil Bingham, Clare Carolin, Rob Wilson, Peter Cook]
3. Futuristic : Visions of Future Living, Caroline Klien (Editor), Stefanie Lieb (Text by)
4. Future Architecture by Eduard Broto

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OBJECTIVES

- To make students aware about Architectural Journalism
- To encourage them for Architectural writing, Documentation and Page Composition
- To familiarize students in preparation of Book Reviews and Articles.

Module-1  Introduction To Architectural Journalism

What is Journalism and why it is important?
Relation between Architecture and Journalism.
Looking at the ways design and the built environment are covered in the media today
Reading a broad range of contemporary and historical writings by journalists and critics and discuss how these stories reveal different approaches, attitudes, and biases in covering design.

Module-2  Introduction To Architectural Writing

Writing on different kinds of articles - from news stories to critical essays on particular buildings and social issues.
Sometimes students will report on buildings under construction and other times they will reflect on and criticize projects that are completed.
Learning how to gather information and do research for stories and then write various kinds of articles about built environment in Architecture, which will help them to understand the built environment and express their ideas on it.

Module-3  The state of Architectural Criticism

Introduction to Criticism and Importance of Criticism.
Relationship between Architecture and Criticism.
Reading the various articles from the magazines, newspapers and websites about the built environment to understand the criticism and social commentary. Failures of Architectural Criticism.
Analysis of various critical themes, and their comparison and learn how to criticize a built environment in various aspects and writing about criticism.

Module-4  Structure of Architectural Journals & Photo Journalism

Learning of documenting the collected information.
Formatting, page composition, editing write-ups, content writing.
Learning the techniques of clicking photographs through specific angles of built environment and their editing and modification.
Learning the technique of how the photographs are supporting the write-ups about built environment, to help them understand the expression of pictorial, verbal and visual relationship of architecture journalism.

Module-5  The Built Environment & How We Live Today?

Looking at and explaining a building in today’s scenario.
What’s happening now and what should be the future.
Read article and write an essay on recent projects.
Writing about the new technologies in today’s architecture and new construction techniques.

APPROACH

- Each week, students will have a reading and a writing assignment. Usually, readings will come from a newspaper, magazine, or website and students will have to respond with their own piece of writing. In class, everyone will discuss the readings and present their ideas about the topic in question.
- Students will be assessed by the quality of their writing, the level of understanding they bring to the readings and topics, and the quality of their in-class presentations and participation.
- Writing is a critical skill for all architects, one that they can use to communicate with clients, the public, and other Architects.
REFERENCE BOOKS
5. Architecture and the Journalism of Ideas by Bender, Thomas
6. Architectural Criticism and Journalism by Mohammad al-Asad w/ Majd Musa
7. Nieman Reports: *Architectural Criticism: Dead or Alive* by Blair Kamin.

REFERENCE WEBSITES
1. [http://niemanreports.org/articles/architecture-criticism-dead-or-alive/](http://niemanreports.org/articles/architecture-criticism-dead-or-alive/)
3. Architectural website, such as [archrecord.com](http://archrecord.com); [archpaper.com](http://archpaper.com); [archdaily.com](http://archdaily.com); and [dezeen.com](http://dezeen.com)

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OBJECTIVES

- The knowledge and understanding of the universal and timeless qualities that identify all great art.
- To introduce the students to the importance of art in today’s world and the purposes art has served from pre-historic through modern times in a variety of cultures both western and oriental.
- To understand artistic intent and expression through basic element of art and architecture and to increase appreciation of art in today’s society.

Module-1 Introduction & Terminology


Module-2 Ideologies of Aesthetics in Art

Complete understanding of Ideologies of aesthetics in art while discussing the art of Western and Oriental.
- Plato, Aristotle, Baumgartan, I.A. Richards, Leo Tolstoy, Sigmund Freud.
- Shadanga: Six limbs of Indian painting.
- Rasa theory of ‘Bharat Muni’.
- Iconography.

Module-3 Development of Art

Development of art over the period of time.
- Tracking the progress in art in aspects of the Functional diversity of styles, Art as form of social consciousness, Impact of Cultural and Religion on art, Understanding the role of art in contemporary society.

APPROACH

- Presentation would be made by the teacher. The students are expected to do library studies and seminars (Reports, Tutorials and PPT’s) on varied topics to supplement the information base and make more interactive.

REFERENCE BOOKS

1. What Is Art For? (June 1, 1990) by Ellen Dissanayake.
5. Learning to Look at Modern Art by Mary Acton.
7. Art: Over 2,500 Works from Cave to Contemporary Hardcover – October 20, 2008 by Iain Zaczeckand Mary Acton.
8. Aesthetics- YURI BOREV.
9. Approaches to Art in Education- LAURA H. CHAPMAN.
10. Panorama of the Arts- RUDEL.

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OBJECTIVES
- To study the Evolution and Growth of Human Settlements
- To expose students to the development of Human Settlements in the Indian Context
- To Critically analyse learnings from development of informal and formal Human Settlements
- To discuss new and emerging concepts, methods and tools to face new challenges in built environment in Developing countries.

Module-1 Evolution and Development of Human Settlements
Origin and Growth of Human Settlements, River Banks as carriers to growth of Human Settlements; River valley Settlements: Greek, Roman, Medieval, Renaissance and Modern.

Module-2 Human Settlements in India
Human Settlements in India since the ancient to Medieval and Modern periods. Factor affecting their development and extinction: Socio-Cultural, Disasters and Environmental Aspects.

Module-3 Study and Analysis of Informal and Formal Settlements
Detailed Analysis of selected informal and formal human settlements in the world and India for deriving learnings for contemporary usage especially in the context of Efficient management of Resources, Solid Waste Management, Sustainability, Preservation of Cultural Practices.

Module-4 Establish criteria for contemporary Sustainable human settlements
A critical evaluation and discussion of new emerging concepts methods and tools, and cases like Masdar City, Auroville for upcoming challenges in human settlements for developing countries.

APPROACH
- Focus shall be on learning from growth and development of traditional human settlements.
- Aspects affecting their evolution and socio-cultural and other related aspects.
- Learning through case studies and literature studies along with relevant site visits shall be preferable.

REFERENCE BOOKS
3. The Evolution of Human Settlements from Pleistocene Origins to Anthropocene Prospects by Bowen, William M., Gleeson, Robert E.
5. Evolution of human settlements in India by S.P. Chatterjee

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