



WES

SMT. MANORAMABAI MUNDLE
COLLEGE OF ARCHITECTURE

ARCHITECTURAL DESIGN VI

STRUCTURAL DESIGN AND SYSTEMS VII

BUILDING SERVICES-IV

ACOUSTICS & ILLUMINATION

RESEARCH SKILLS & PROJECT INTRODUCTION

ELECTIVE A- ADVANCED SPATIAL ANALYSIS

CONSTRUCTION TECHNOLOGY & MATERIALS VII

ELECTIVE B - VALUATION

ELECTIVE B - URBAN PLANNING

SEVENTH
SEMESTER

ACADEMIC BOOKLET

2022 – 2023

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YEAR INCHARGE

Prof. Poornima Deshpande

CLASS CO-ORDINATORS

Section A: Prof. Namrata Gaurkhede

Section B: Prof. Poornima Deshpande

SMMCA:Vision

Our vision is to reach global standards by deliberate modernization without losing the essential characteristics of our tradition. Being a women's college we find it more pertinent to imbibe both these qualities very consciously in our girl students.

We wish to produce socially responsible architects with sensitivity towards social issues of immediate contexts, national concerns and global effects and positive and creative approach towards life.

Mission

To create an educational environment in which students are prepared to meet the challenges of a fast developing and changing world.

Hence the students are equipped with:

- Up to date knowledge
- Analytical and practical skills
- Creative approach towards everything that they undertake
- Attitude to be sensitive towards national, social and environmental issues

While addressing the global challenges we believe strongly in anchoring ourselves to the immediate context. We accept gratefully our role in preserving and enhancing Vidarbha and Nagpur- the place, its people and architecture.

Core Values

- Integrity
- Creativity
- Innovation
- Discovery
- Collaboration
- Respect
- Discipline
- Excellence
- Diversity

Objectives

- To develop among students academic and Professional competency.
- To foster value-based, creative and critical learning
- To hone skills of living in a technological, globalized and ecologically aware environment
- To develop culture of commitment to excellence

Code of Conduct

Punctuality- It is mandatory for students to be punctual in the college and shall have to be present every day at 8.45 a.m. Every student is expected to attend the morning assembly. Attendance of the students will be taken at the time of assembly by respective class coordinators.

The attendance will also be taken at the beginning of the classes in the afternoon after lunch break. The record of attendance shall be displayed at the end of each month for students. Every student is expected to go through the displayed attendance and request rectification of the record within 8 days by talking to the class teacher if her attendance has been wrongly recorded.

In case of absentism, student shall bring a letter of absence duly signed by her parents/guardian. However, a student having less than 75% attendance will face disciplinary action and will not be permitted to appear for University Examination.

Dress Code – Salwar suit/ Jeans /Leggings with long Kurti.

Extracurricular activities- Credits are allotted to each activity and students are required to attend the activities to earn these credits.

Every student has to attend the programmes organized by the college from time to time.

Attendance for programme of 26th January and of 15th August is mandatory for every student and the dress code a white Salwar Suits/Leggings with Long Kurti.

Study tours- Every year study tours are arranged for students of different years as per their curriculum requirements. Active participation in Study Tour is necessary.

Academic Performance

Submission schedule of all the subjects of a semester will be displayed at the beginning of the session. Students must follow the submission schedules given by respective subject teachers. No late submissions will be accepted after the scheduled date.

Midterm assessment

A midterm assessment will be conducted to assess the progress of a student. It is mandatory for all the students to appear for this assessment.

Student Council

The Student Council will be formulated for the main purpose of empowering the students. Having a formal setup of a Student Council enables students to organize and conduct certain activities, co-ordinate publications like 'Her Space', and properly convey any concerns students may have to the college administration and teaching faculty.

The student council also takes the lead in organizing and coordinating many events in the academic year– like daily assembly, Republic day and Independence day celebrations, NASA, Teachers Day, Archiventure, Women's day celebration and all other major events conducted by the college. The structure of the council is such that students from all years find representation in it. The team is headed by fourth year students with representative from first, second and third year. Third year students take over the reins when fourth year students go for their training in the 8th semester. Final year students act as mentors to the council.

The organization set up for student council will comprise of –

President

Vice-president

Secretary

Vice-secretary

Treasurer

In addition, there are Class Representatives from first and second year – one representative from each of the three sections in a year.

Scheme of Examination

Fourth Year B. Arch Semester 7

| Sr. no | Sub Name | Load Per Week | | | | | Credits | | | | | Paper/Sessional | Duration in Hours | Max. Marks | Total Marks | Min. P Mar |
|--------|---|---------------|---|---|-----|-------|---------|---|---|-----|-------|---------------------|-------------------|------------|-------------|---------------|
| | | L | T | D | S/P | Total | L | T | D | S/P | Total | | | | | |
| 1 | Architectural Design VI | 2 | 0 | 0 | 10 | 12 | 2 | 0 | 0 | 10 | 12 | Sessional Viva-Voce | 12 | 150 50 | 150 50 | 100 |
| 2 | Construction Technology and Materials VII | 1 | 0 | 2 | 0 | 3 | 1 | 0 | 2 | 0 | 3 | Sessional Paper | 3 | 100 100 | 100 100 | 50 40 |
| 3 | Building Services - IV | 1 | 1 | 0 | 0 | 2 | 1 | 1 | 0 | 0 | 2 | Sessional Paper | 3 | 30 70 | 30 70 | 40 |
| 4 | Structural Design and Systems - VII | 1 | 1 | 0 | 0 | 2 | 1 | 1 | 0 | 0 | 2 | Sessional Paper | 3 | 30 70 | 30 70 | 40 |
| 5 | Research Skills and Project Introduction | 1 | 0 | 2 | 0 | 3 | 1 | 0 | 2 | 0 | 3 | Sessional Viva-Voce | 3 | 50 50 | 50 50 | 50 |
| 6 | Acoustics and Illumination | 1 | 0 | 0 | 1 | 2 | 1 | 0 | 0 | 1 | 2 | Sessional Paper | 3 | 30 70 | 30 70 | 40 |
| 7 | Elective A | 1 | 0 | 2 | 0 | 3 | 1 | 0 | 2 | 0 | 3 | Sessional | 3 | 100 | 100 | 50 |
| 8 | Elective B | 1 | 0 | 2 | 0 | 3 | 1 | 0 | 2 | 0 | 3 | Sessional | 3 | 100 | 100 | 50 |

Total Papers – 4, Sessional – 5, Viva-Voce – 2 (Passing Heads – 11)

Elective A – Architectural Education/Design Process/Interior Design/**Landscape Design**/Advanced Spatial Analysis

Elective B – **Urban Planning**/Conservation/ Urban Aesthetics/ Infrastructure Planning/ Valuation.

TEACHING PLANS

ARCHITECTURAL DESIGN VI

Design Co-ordinator - Ar. Poornima Deshpande

Teachers In charge –

Section A – Dr. Sujata Godbole, Ar. Namrata Tharwani

Section B – Ar. Rashmi Tijare, Ar. Poornima Deshpande

SEVENTH SEMESTER (150 marks)

Project I (Major Project) - Designing of a Tourist Hub at Maheshwar Ghat/ Ambala Ghat, Madhya Pradesh

Site Area for detailed site layout – 25,000 sq.m - 30,000 sq.m

Built up area– 6000-8000 sq.m

DURATION: 5-6 WEEKS

CO1: To determine the importance of Ghats and to analyse their significance in the Indian Context through precedent/case studies

CO2: To interpret the site, site context and to illustrate the developmental requirements around a Ghat

CO3: Understanding of the overall developmental/ design issues, and examine the challenges and logical design solutions through presentation.

CO4: Designing of proposed scheme with all the required details

CO5: Judge the overall competency of students in dealing with the chosen issues and challenges and their ability to resolve it.

CO6: Translating the given brief to develop the design concept and creating design solutions, depicted through 3D views

Introduction

A river bank or Ghat is a place that offers you the right vibes to contemplate, brood, think and plan ahead. Since ages, these river Ghats have been providing solace to whoever has sought their refuge.

Throughout recorded history, countless cities that formed the backbone of great civilizations have flourished along the river banks, especially in the Indian Sub-continent. And when riverbeds ran dry, or rivers changed their course, many of these cities and sometimes civilizations ceased to exist. The role of rivers, therefore, is crucial in supporting life.

Riverside cities and towns were not only centres of trade and commerce but also art and culture. Riverbanks (or Ghats) therefore became places of cultural gatherings and religious ceremonies. As a result, many Ghats found patronage from the ruling dynasties who beautified them by building temples, forts, palaces and promenades making river Ghats essential religious, strategic and social meeting spots.

Aim

To design a Tourist Hub for tourists visiting the Ghats for cultural or natural values.

Learning objectives

1. To design a Tourist Hub (all important amenities required) for tourists coming to the Ghats wrt infrastructure
2. To redevelop the Ghat area in terms of step cleaning, restoring hardscapes and built form around
3. Organizing formal and informal activities along with provision of streetscape elements

Design Scenario -

Designing a tourist hub keeping in mind the Urban scale and the required important infrastructure such as Tourist accommodations, Food Courts, Multipurpose halls, toilets etc.

Site -

This city has been the capital of the Haiyavanshi king Sahasrarjun, who had defeated Ravana. Because of persecution of Rishi Jamdagni, his son Bhagwan Parashuram had killed Sahasrangarh. In the mean time, the great goddess Ahilyabai has also been the capital of Holkar. Situated on the banks of river Narmada, this city is famous for its very beautiful and gorgeous Ghats and Maheshwari sarees. There are very artistic temples on the pier, from which the Raj Rajeshwar temple is the main. The famous legend of Adiguru Shankaracharya and Pandit Mandan Mishra was here. It is also the headquarters of a tehsil of the district. Is a popular tourist destination. 56 km from Khargone.



Site at Maheshwar, MP

The historic and the famous Lord Rama’s temple is located in Ramtek. Legend has that Ramtek was that particular place where the Hindu deity Rama rested while in exile for fourteen years. It is also believed that Agastya, the Hindu sage also had his ashram located very near to the city of Ramtek. The demons indulged in the process of disrupting the religious rites and activities that were performed by the sages and they also killed many holy men.



Site at Ambala Ghat, Ramtek

Design Program

| Sr. no | Stages | Description | Inputs | Expected Output | Date |
|--|--------|---|---|---|---------------------------|
| 1 | I | Introduction to Design | Introduction to Urban Level Site Planning | | 18th July |
| 2 | II | Relevant precedent studies to be carried out. Site study to be done by the students | Discussion with faculties and research | A3 size presentation on precedent studies | July W 4, Aug W1 & Aug W2 |
| Review 1 - Based on Precedent Studies | | | | | |
| 3 | III | Study tour to Maheswar, Madhya Pradesh/ Ambala Ghat, Ramtek (Aug W3) | | | |
| 4 | IV | Study tour documentation | Discussion with faculties and research | A3 size presentation | Aug W4 |

| | | | | | |
|---|----|---|--|--|------------------------|
| 5 | V | Site Planning keeping in mind Urban context <ul style="list-style-type: none"> •Detailing of interactive, recreational and open spaces including detailed landscape plans •Services layout •Area calculations | Discussion with faculties on site plan | Site Plan | Aug W5. Sep W1 & W2 |
| Review 2 - Based on Study Tour Studies and Site Analysis (26th Aug) | | | | | |
| 4 | IV | Concept Development / Thrust Area and individual detailed design program | Discussion with faculties | A3 Sheets | Sep W3 |
| 5 | V | Design of building blocks with its surroundings | Discussion with faculties | A3 Sheets for final plans, sections & elevations, 3D views simultaneously. | Sep W4 |
| Review 3 – Concept, Design Program and Design of building (intermediate review) 14th Sep | | | | | |
| 6 | VI | Architectural detailing: <ul style="list-style-type: none"> • Construction details • Building services • Architectural expression • Landscape | Discussion with faculties | A1 Sheet | Oct W2, W3 |
| Review 4 – All Plans, sections, elevations, views etc (final review) 12th Oct | | | | | |
| Final External Review 21st Oct | | | | | |

CO 6 Project II - Short Project

14th SA Deshpande Trophy, Conducted by IIA, Nagpur Chapter

Brief to be given by IIA Nagpur Chapter, along with the deadlines. Submission in the form of sheets.

Marks distribution -

| Review 1 | Review 2 | Review 3 | Review 4 | External Review | IIA | Attendance |
|----------|----------|----------|----------|-----------------|-----|------------|
| 10 | 15 | 15 | 30 | 40 | 20 | 20 |

CONSTRUCTION TECHNOLOGY AND MATERIALS VII**Teachers Incharge -** Ar. Sujata Godbole, Ar. Rashmi Tijare,

Ar. Namrata Gaurkhede, Ar. Poornima Deshpande

Objectives:**CO1** To introduce the different types of space structures**CO2** Reviewing shell structures and folded plate structures its various types, constructional aspects, merits and demerits etc.**CO3** Discussing and identifying Grid structures and Skeletal structures, space frames, domes**CO4** Evaluating Grid Structures in different materials with a focus on steel and its various types, constructional aspects, merits and demerits, etc.**CO5** Study and analysis of Temporary structures, various materials and techniques used, constructional aspects using timber and M.S Sections, designing and preparing detailed solutions for small temporary structures.**CO6** Understanding of Pre-cast concrete structure, its design considerations and constraints, advantages over cast-in-situ construction, construction techniques and jointing details, applications.**CO7** Demonstrate use of Modular coordination, RCC pre-fabricated roofing systems to cover large spans, with or without north light.**CO8** Defining and describing pre stressed concrete, principals and methods of pre-stressing, system of pre-stressing, advantages and disadvantages and applications.**CO9** General study of various external cladding materials and systems, curtain walling in various materials, construction details of glass curtain.

| UNIT | TOPIC | OBJECTIVES | TIME REQUIRED | TEACHING METHODS ACTIVE | EXPECTED OUTPUT |
|---------|---|---|--------------------------|--------------------------------|--|
| Unit I | Introduction to space structures, possibilities in different materials, to cover large spans. General study of shell structures and folded plate structures in concrete, various types, constructional aspects, merits and demerits etc. | To understand the meaning of space Str. To make students aware of Diff. Materials used to cover large spans. | July W3 and W4 Aug W1 | Lectures, presentation, videos | Online Test on CO1 + Sketch Book + Models (1: polyhedral solids, 2: Geodesic dome, 3: Hyperboloid, 4: Space frame) |
| Unit II | General study of Grid structures and Skeletal structures, space frames, domes etc. in steel, various types, constructional aspects, merits and | To make students aware of Different types of grid str. | Aug W2 and W3 | Lectures, presentation, videos | Online Test on CO2 + Sheet |

| | | | | | |
|---|---|---|------------------------|---------------------------------|---------------------------------------|
| | demerits, etc. | Study of solid geometry to understand diff. types of Domes To study diff. types of | | | |
| SUBMISSION OF MODEL PLATONIC SOLIDS, SKETCHBOOK/ SHEET | | | | | |
| Unit III | Study of pre stressed concrete, principals and methods of pre-stressing, system of pre-stressing, advantages and disadvantages and applications. | To understand the methods of pre stressing. | Aug W4, W5 | Lectures, presentation, videos. | Online Test on CO5 + Sheet |
| SESSIONAL EXAM | | | | | |
| Unit IV | Pre-cast concrete, Design considerations and constraints, advantages over cast-in-situ construction, construction techniques and jointing details, applications. Modular coordination, RCC pre-fabricated proofing systems to cover large spans, with or without north light. | To make students aware of prefabricated structural Systems & their joining details. | Sep W1 and W2 | Lectures, presentation, videos. | Online Test on CO4 + Sketch Book |
| Unit V | General study of various external cladding materials and systems, curtain walling in various materials, construction details of glass curtain. | To understand the meaning of Curtain walling, material and fixing details. | Sep W3 | Lectures, presentation, videos | Online Test on CO6 + Sheet + tutorial |
| Unit VI | Temporary structures, materials and techniques used, constructional aspects using timber and M.S Sections, design and detailing problems on small temporary structures. | To study diff. types of temporary str. & their Materials & erection. | Sep W3, Oct W1, W2, W3 | Lecture | CO3 - Sketches + Sheets |

| | | | | |
|-----------------|---|-------------|---|-----------------|
| Attendance (20) | Subject contents/ Sessional exam/ Surprise exams (30) | Plates (30) | Models, Sketch book, tutorials (10) | Site visit (10) |
|-----------------|---|-------------|---|-----------------|

Reference books:

Advanced Building Construction by Mitchell, Allied Publishers.
Construction Buildings by R.Barry, Orient Longman.
Space structures by N. Subramaniam, Wheeler.
A.J.Handbook of Building Structures by A. Hodgkinson.
Pre-stressed Concrete Structures by P.Dayaratnan.
Building Construction illustrated by Francis D.K.Ching, Van Nostrand.
Concrete Technology by M.S.Shetty, S.Chand and Co.
Erection of Pre-fabricated Reinforced Concrete Structures by Y.Bessar&V.Proskurnin.
Structures by Daniel L.Segodak,Prentice – Hall, Inc.
Structural Concepts and Systems for architects and Engineers by T.Y.Lin and Stotesbury

(7S-A-3) BUILDING SERVICES-IV

Subject Teachers – Ar. Rashmi Tijare & Ar. Anuradha Bhute

(Sessional Marks – 30 Paper Marks -70) =Total Marks – 100

Building services part 4 is about advanced and more building services. the syllabus is divided majorly under 3 parts 1st is Air Conditioning and HVAC systems 2nd is Electrical distribution in campuses and Highrise buildings and 3rd is Modern means of vertical and horizontal travel.

Aim: Aim of the subject is to make students well acquainted with the above-mentioned services and make them understand its design implications as in Architect.

- CO1 To define Principles of Psychometrics & heat transfer in Air conditioning
- CO2 To describe & evaluate Air conditioning systems and their applicability in different types of Airconditioning Systems
- CO3 To list & describe Components of A.C. systems such as chilling plants, cooling towers, air handling units, Air distribution systems, ducts and ducting layouts, space requirement etc.
- CO4 To design & Calculate Air distribution systems, AC Load & Water Demand for AC
- CO5 To discuss electric supply & distribution for group housing projects, urban complexes, high-rise building etc.
- CO6 To solve electric load calculations and distribution systems for larger areas as mentioned above.

- CO7 to describe and identify the importance and functions of bus bar, set up, step up and step-down transformers, electrical substation, lightning conductors, stand by generators, automatic relays, invertors, circuit breakers etc.
- CO8 to recognize Electromechanical means of vertical transportation in buildings (Escalators and Travolators), requirements, occupant load, study of elevators, various components of elevators, standard space requirements, various types of elevators, various components of elevators, standard space requirements, various types of elevators.
- CO9 To demonstrate its space implications in design

| Date/ Week | Topic | Course Outcomes | Expected Output |
|---|--|--|--|
| 5 th Week of July 2022, 1 st & 2 nd Week of Aug 2022 | Air Conditioning Principles of Psychometrics & heat transfer, Study of Air conditioning systems and their applicability, Unit A. Cs, Central A.Cs, Split A.Cs. Components of A.C. systems such as chilling plants, cooling towers, air handling units, etc. Calculation of A.C. loads and Air distribution systems, ducts and ducting layouts, space requirement, integration of A.C. system in design, Water demand for A.C. | -To define Principles of Psychometrics & heat transfer in Air conditioning - To describe & evaluate Air conditioning systems and their applicability in different types of Airconditioning Systems -To list & describe Components of A.C. systems such as chilling plants, cooling towers, air handling units, Air distribution systems, ducts and ducting layouts, space requirement etc. -To design & Calculate Air distribution systems, AC Load & Water Demand for AC | Test on CO1 & CO3 3 marks each 2 Marks Market Survey |
| 3 rd , 4 th Week of Aug 2022& 1 st Week of Sept 2022 | Electric supply & distribution Electric supply & distribution for group housing projects, urban complexes, high-rise building etc. Study of load calculations and distribution systems for larger areas as mentioned above. Importance and functions of bus bar, set up, step up and step-down transformers, electrical substation, lightning conductors, stand by | - To discuss electric supply & distribution for group housing projects, urban complexes, high-rise building etc. - To solve electric load calculations and distribution systems for larger areas as mentioned above. - To describe and identify the importance and functions of bus bar, set up, step up and step-down transformers, electrical substation, lightning | Test on CO5, CO6& CO7 10 marks each |

| | | | |
|---|---|---|--|
| | generators, automatic relays, invertors, circuit breakers etc. | conductors, stand by generators, automatic relays, invertors, circuit breakers etc. | |
| 2 nd & 3 rd Week of September 2022 | <p>Lifts & Escalators</p> <p>Electromechanical means of vertical transportation in buildings, requirements, occupant load, study of elevators, various components of elevators, standard space requirements, various types of elevators, various components of elevators, standard space requirements, various types of elevators and architectural implications.</p> <p>Escalators and Trav-o-lators, its components arrangements and functioning, space requirements, construction detailing.</p> | <p>- To recognize Electromechanical means of vertical transportation in buildings (Escalators and Travolators), requirements, occupant load, study of elevators, various components of elevators, standard space requirements, various types of elevators, various components of elevators, standard space requirements, various types of elevators.</p> <p>- To demonstrate its space implications in design</p> | <p>Test on CO8 5 marks each</p> <p>CO9 5 marks Market survey of lifts and escalators</p> |
| 4 th Week of Sept & 1 st Week of October 2022 | | Written Test on Full Syllabus | |

RESEARCH SKILLS AND PROJECT INTRODUCTION

Teachers-in-charge: Ar. Poornima Deshpande, Ar. Namrata Tharwani Gaurkhede

Objective: To introduce students to the basics of research methodology which can applied to a research project

CO1: For the students to recognize issues in architecture / society, and demonstrating a basic understanding of research methodology

CO2: Enhancing thinking abilities through existing and acquired knowledge

CO3: Identifying pertaining data for an issue and tools for analysis, such as survey, research papers, etc.

CO4: Enhancing analytical skills through literature review, processing of qualitative and quantitative data

CO5: Learning articulation of conclusion of data analysis & communication through verbal and graphical modes.

| Contents | Learning Objective | Faculty Input | Expected Output | Course Outcomes (COs) | Dates |
|--|--|--|--|---|----------------|
| Unit 1: Watch a movie and/or read a book | Identification of research component in the and/or book | Discussion to act as a research trigger | A summary (upto 500 words) and a poster/ any other creative method of displaying the leanings from the movie and/or book | For the students to recognize issues in architecture / society, and demonstrating a basic understanding of research methodology | July W3 and W4 |
| Unit 2: Basics of research methodology | Introduction to the basics of research, discussion regarding research question | PowerPoint presentation, sample papers and discussions | | | Aug W1 |
| Submission 1 –A4 sheet and mind map on learning from the movie(s) and/or book(s)– 1 st September | | | | | |
| Unit 3: Identification of contemporary architectural / social issues in a group of 6 | To explore various areas associated with the field of architecture. | Discussion with subject faculty and later with mentor | Mind map to be created on A1 size sheet | Enhancing thinking abilities through existing and acquired knowledge | Aug W3 |
| Showing sample papers and posters to students. Informing students on various dependable sources | To get acquainted with current work being undertaken by researchers in | PowerPoint presentation, sample papers and discussions | To search dependable online resources and if possible, college library for material on their selected | | Aug W4 |

| | | | | | |
|---|---|---|--|--|----------------|
| for online search. | their selected issue | | issue. | | |
| Submission 2 – Mind Map of issues– 15th September | | | | | |
| Unit 4: Students to work on selected issue in bifurcated groups of 3, after discussion with their mentor and after referring to digital/physical references and books. Student should be using other tools of research like physical experimentation, survey, modeling, etc. to identify method of study and start work. | To explore possibilities and ramifications of their identified issue. Better understanding of the identified issues through literature and to embark upon their research using chalked out methods. | Discussion with mentors and subject faculty | Identified literature, Studies, Research methods, etc. | Identifying pertaining data for an issue and tools for analysis, such as survey, research papers, etc. Enhancing analytical skills through literature review, processing of qualitative and quantitative data | Aug W5, Sep W1 |
| Identification of journals to publish the works. | To understand the system of writing papers and getting published | Journal searching techniques | Names of journals where the paper can be published | | Sep W2 |
| Submission 3(a)– Research work and survey data along with preliminary analysis | | | | | |
| Unit 5: Students to write aim objectives, overall methodology and challenges for the research project | Basic research design of the project | Discussions with mentor and subject faculty | Submission on A4 size sheets. | Learning articulation of conclusion of data analysis & communication through verbal and graphical modes. | Sep W3, W4 |
| Finalization of research work (in ready to be published form) | | Discussion with mentor | | | Oct W1 |
| Submission 3(b)– Final submission of poster -12th October 2022 | | | | | |

***Students to be allotted to prospective mentors. Students to do discussions with mentors and identify area of research for the project. Thesis in charge faculties would do the allotment.

| | |
|---|-----|
| ASSIGNMENTS (60) + FINAL SUBMISSION MARKS | 40 |
| ATTENDANCE (20) | 10 |
| EXTERNAL MARKS | 50 |
| GRAND TOTAL | 100 |

Some movies with research component

- The Imitation Game
- A Beautiful Mind
- Mission Mangal
- Baby
- No One Killed Jessica
- The Taking of Pelham 123
- Legally Blonde
- Hidden Figures
- Oxford Puzzles
- The curious case of Benjamin Button
- Bohemian Rhapsody
- Bhaag Milkha Bhaag
- Neerja

Some architecture books to read

<https://www.arch2o.com/50-architecture-books-make-best-architect/>

<https://mariaakhtar.com/blog/>

Recommended Online Resources

Journals and Books Online (Free)

1. Google scholar/books <https://scholar.google.com/>
2. Inflibnet <https://inflibnet.ac.in/>
3. Researchgate <https://www.researchgate.net/>
4. Academia.edu <https://www.academia.edu/>
5. National Digital Library <https://ndl.iitkgp.ac.in/>
6. SWAYAM Online Courses <https://storage.googleapis.com/uniquecourses/online.html>
7. National Knowledge Network <https://nkn.gov.in/>
8. NPTEL <https://finptel.ac.in>
9. InfoPort <https://infoport.inflibnet.ac.in/>
10. Talks to Teacher [https://www.ted.com/playlists/182/talks from inspiring teachers](https://www.ted.com/playlists/182/talks_from_inspiring_teachers)
11. A-VIEW <http://aview.in/>
12. Virtual Labs <https://www.vlab.co.in/>
13. FOSSEE <https://fossee.in/>
14. Spoken Tutorial <https://spoken-tutorial.org/>
15. e-Yantra <https://www.e-yantra.org/>
16. Oscar++ <https://www.it.iitb.ac.in/oscar/>
17. E-Kalpa <https://icar.org.in/content/e-kalpa>
18. NCERT Text Books <http://ncert.nic.in/textbook/textbook.htm>
19. Directory of Open Access Books <https://www.doabooks.org/>
20. Directory of Open Access Journals <https://doaj.org/>
21. Open Knowledge Repository — World Bank <https://openknowledge.worldbank.org/>
22. UG/PG MOOCs http://ugcmoocs.inflibnet.ac.in/ugcmoocs/moocs_courses.php
23. e-PG Pathshala <https://epgp.inflibnet.ac.in/>
24. e-Content courseware in UG subjects <http://cec.nic.in/cec/>
25. SWAYAMPRAKASHA <https://www.swayamprabha.gov.in>
26. e-Shodh Sindhu <https://ess.inflibnet.ac.in/>

27. Vidwan <https://vidwan.inflibnet.ac.in/>
28. SNLTR <https://www.nltr.org/>
29. Oxford Open https://academic.oup.com/journals/pages/open_access
30. Cambridge University Press <https://www.cambridge.org/core/what-we-publish/open-access>
31. Science Direct Open Access Content <https://www.sciencedirect.com/book/9781843342038/open-access>
32. ILOSTAT <https://ilostat.ilo.org/>
33. Project Euclid https://projecteuclid.org/librarians/lib_oa
34. AidData <https://www.aiddata.org/>
35. Springer Open Journals <https://www.springeropen.com/journals>
36. Taylor & Francis Open Access <https://www.tandfonline.com/openaccess>
37. Open Access Thesis & Dissertations <https://oatd.org/>
38. Legal Information-commonlii <http://www.commonlii.org/in/>
39. The OAPEN Foundation <http://www.oapen.org/home>
40. PubMed Central PMC <https://www.ncbi.nlm.nih.gov/pmc/>
41. Project Gutenberg <https://dev.gutenberg.org/>
42. High Wire <https://www.highwirepress.com/>
43. AGRIS <http://agris.fao.org/agris-search/index.do>
44. Southern Connecticut State University <https://libguides.southernct.edu/openaccess>
45. LibriVox — Audio Books <https://librivox.org/>
46. Wiley Open Access <https://authorservices.wiley.com/open-research/open-access/browse-journals.html>
47. Training and Courses by Tata Steel <http://www.capabilitydevelopment.org>
48. Directory of Open Access Journals (DOAJ) <https://doaj.org/>
49. Shodhganga-a reservoir of Indian theses <https://shodhganga.inflibnet.ac.in/>
50. International Journal of Academic research <http://ijar.org.in/>

SMMCA e-library - Login Credentials:

URL: www.k-hub.in

Username: KB1707NGP

Password: a6Dm!jYF

Online Magazine Sources

1. Domus India
2. Architecture Design InteriorDesign Home Decoration magazine – AD India
3. Design Detail
4. www.iabforum.com
5. Architecture Design
6. DownToEarth
7. A+U Magazine – Magazines – Idea Books
8. Digital magazines
9. Wallpaper Magazine : design interiors, architecture, fashion, art
10. architecture record
11. the architectural review
12. modern living, home design ideas, inspiration and advice
13. eVolo
14. Azure Magazine – Design Architecture Interiors Curiosity
15. Icon magazine: Architecture and design cult
16. Dezeen Magazine

17. Designboom magazine
 18. ArchDaily
 19. The platform for architecture and design
-

Structural Design and Systems - VII

Teachers Incharge – Prof. RupalWadegoankar

CO1 Study of IS 800 – Design Considerations.

CO2 Study of Steel Connections – Welded Joints a) Types of Welds b) Concentric Sections c) Eccentric Sections d) Sections in Bending e) Sections in Torsion.

CO3 Design of Tension Members.

CO4 Design of Compression members – Struts / Independent.

CO5 Design of Built in Columns. Design of Sections in Bending Sections Subjected to Biaxial Bending (design of purlin)

CO6 Structural behavior of Types of Large Span Steel Structures like: a) Arches b) Open Web Sections c) Bow String Girders d) Suspension Structures e) Geodesic Dome f) Space Structure

| Sr. No | Topic | Marks Allotted |
|--------|--|-----------------|
| 1 | Analysis of tension members | 30 Marks |
| 2 | Design of Tension Members | |
| 3 | Analysis of Compression members | |
| 4 | Design of Compression members | |
| 5 | Design of built up columns | |
| 6 | Design of girders/ beams | |
| 7 | Design of Purlins/biaxial | |
| 8 | Design of eccentric welded connections | |
| | Sessional Exam | |

ACOUSTICS AND ILLUMINATION

Teachers Incharge: Ar. MedhaPophale, Ar. Harpreet Kaur Saggu

Objective: To make students realize the importance of acoustics in interior spaces and necessity of manipulating acoustical environment in buildings and also to impart knowledge of basic illumination design & illumination system for the indoor spaces.

CO1 To explain Frequency range of audible sounds and Propagation of sound; and to define sound reflection, diffusion, diffraction.

CO2 To recall Sound Isolation, Mass law, Transmission loss, STC rating, TL for single & double walls; and to talk about sound leaks & flanking.

CO3 To choose Acoustical Material & interior finishes, Sound absorbing materials according to their properties.

CO4 To extract Constructional & planning measures for good acoustical design of building in general. Acoustical treatment of Auditorium / Lecture Halls / Conference Hall.

CO5 To define Light radiation, its units, Laws of illumination, inverse square law and cosine law.

CO6 To solve Artificial light calculation by Lumen Method.

CO7 To relate Light sources, various types of Lamps and their characteristics; and to classify Types of lighting systems, task lighting, accent lighting, general lighting, lighting for mood etc.

CO8 To recognize Luminaries, their types, properties and uses.

| Date 2022 | Content | Teacher's interaction | Expected output |
|--------------------------|---|----------------------------------|----------------------------|
| 19 th July | Frequency range of audible sounds. Propagation of sound. Sound reflection, diffusion, diffraction. Ref. Acoustics In Building Design by K.A. Siraskar. | Lecture, ppt | Notes |
| 26 th July | Sound Isolation, Mass law, Transmission loss | Lecture, ppt | |
| 2 nd Aug | STC rating, TL for single and double walls sound leaks and flanking. | Lecture, ppt | |
| 9 th Aug | Acoustical Material and interior finishes, Sound absorbing materials & their properties. Ref. Architectural Acoustics by David Egan. | | |
| 23 rd Aug | Constructional and planning measures for good acoustical design of building in general. | | Sketching |
| 30 th Aug | Acoustical treatment of Auditorium / Lecture Halls / Conference | | |

| | | | |
|----------------------|---|--------------|--|
| | hall. Ref. Auditorium Acoustics and Architectural Design by M. Barron. | | |
| 6 th Sep | Light radiation, its units, Laws of illumination, inverse square law and cosine law. | | |
| 13 th Sep | Artificial light calculation by Lumen Method. Light sources, various types of Lamps and their characteristics. | Lecture, ppt | |
| 20 th Sep | Types of lighting systems, task lighting, accent lighting, general lighting, lighting for mood etc. | | |
| 27 th Sep | Luminaries, their types, properties and uses. | | |

The Sessional exam would be on the COs.

ELECTIVE A - LANDSCAPE ARCHITECTURE II

Subject Teachers – Ar. SnehaMandekarTirale, Ar. MedhaPophale

INTRODUCTION

People nowadays, are more aware of the importance of preserving the environment and ecology, thus landscape architecture is now viewed as more important than it used to be. Landscape architecture provides solutions to many existing environmental issues, protects ecology and helps to protect national treasures.

The landscape design course, provided as a part of the 7th-semester curriculum, which is a continuation of the basic design course and allows basic design concepts to be transferred to landscape design. This elective aims to facilitate an understanding amongst students in order to take site planning decisions. To help them orient and locate group of structures on site, so that the buildings together with the interrelated spaces become one architectural entity and deal with open space structures.

To start the session on a lighter and interesting note, we will introduce Contemporary Landscape design, its different elements, scopes and limitations. By understanding this, the students will develop critical thinking towards the field of landscape and understand its scope in practical. Along with this, we also have a landscape competition named **Ar. Sunil Toye Landscape Competition** in which all students participates in groups, design for a live project and the winning group executes their design on the site.

This elective contributes to the following Learning Course Outcomes:

CO1: To synthesize and formulate the relationship and response of man to his environment through various factors of site planning and development.

CO2: To analyzecritically about contemporary design and sustainable practice parameters in and around Indian context.

Format of each class:

- Presentation on related theories and Concepts related to integration of landscape and architecturalprojects
- Discussions and Interaction with students based on design values and designConcepts.

- Activity introduction, Evaluation and feedback session

| Date | Learning objective for each topic/ Content | Teacher's interaction through lectures/ ppt/ site visit etc | Expected output | Evaluation |
|----------------------------------|--|---|--|----------------------|
| 21/07/22 | General introduction & orientation to Landscape Design Studio | Generic interaction with students about Landscape subject, its importance and the content | - | - |
| 28/07/22 | Introduction to Contemporary Landscape Design | Powerpoint Presentation on various aspects on Contemporary Landscape Design | Case studies on the given topic | 15 (Assignment 2) |
| 04/08/22 | Introduction to Site planning and development factors & Ar. Sunil Toye Landscape Competition | General discussion & orientation along with group formation | Studio work discussion – Sheet work | 30 (Assignment 1) |
| 11/08/22 | Landscape Studio | Siting and orientation of buildings to study | Studio work | |
| 18/08/22 | Landscape Studio | Strategies in design | Evolving strategies for own design | |
| 25/08/22 01/09/22 08/09/22 | Landscape Studio | The integration of outdoor spaces and built spaces, Parking lots, broader planting policies for the site. | Incorporating strategies at building level | |
| 15/09/22 - Sessional Exam | | | | |
| 22/09/22 | Submission of Design Competiton | | | |
| 29/09/22 | Introduction to Sustainable practices | Powerpoint Presentation on various aspects on Sustainable practices | Case studies on the given topic | 15 (Assignment 2) |
| 06/10/22 | Discussion | Discussion on selected case studies | | |
| 13/10/22 | Submission of Assignment 2 | | | |

Sessional Work: Could be in the form of a write-up, abstracts, Sketches, Manifestation of Design into Architectural Drawing, etc.

Evaluation Scheme –

| Attendance | CO1 (Assgn 1) | CO2 (Assgn2) | Total |
|------------|---------------|--------------|-------|
| 20 | 50 | 30 | 100 |

References:

1. Lynch, K. (1962). Site Planning. Cambridge : The MIT Press.
2. Design with Nature, Ian Mcharg.
3. Campus Design in INDIA by AchyutKanvinde.
4. Simonds, J. O. (2006). Landscape Architecture: A Manual of Land Planning and Design

ELECTIVEB–URBANPLANNING

TeachersIn-charge:Dr.Sujata Godbole,Ar.Sarika Joshi

CO1: Understanding of various basic terminologies and theories of urban planning

CO2: Students should be able to develop understanding of urban planning issues within the city.

CO3: Students should be able to do analysis of CDP and its components with respect to green areas along with policies

CO4: Students should be able to do the application of the policies / guidelines / principals with respect to urban passive green areas to make it active green area of the city.

| Date | LearningObjectiveforeachtopic/content | Teachers'i nteraction | Expected output | Evaluation |
|--|---|---|---|------------|
| Stage 1: Literature study through published papers, articles, books | Understandthebasicsof urbanplanning and ecologically sensitive areas within urban fabric andthe termsrelatedtoit. | Inputsinthef orm ofTa bleDiscussio nsandDispla y | Presentat ion in the form of PPT | 20 marks |
| Stage 2: Base map preparation | Zone wise Identification and delineationofthepassive urban green areas within the city | Inputsinthef orm ofTa bleDiscussio nsandDispla y | Base map of identified urban green space | |

| | | | | |
|---|--|---|--|----------|
| Stage 3: Conducting survey | Data collection To study following parameters related to green areas within the zone <ul style="list-style-type: none"> • Social aspects • Physical feature • Environmental and ecological aspects | Inputs in the form of Table Discussions and Display | Primary and secondary survey | 10 marks |
| Stage 4: Graphical representation of the data collected through various maps | Data analysis and drawing inferences Analysis of the data collected and updating of all the attributes in Base map <ul style="list-style-type: none"> • To identify various issues related to the green area • SWOT analysis • Drawing inferences from the analysis | Inputs in the form of Table Discussions and Display | Mapping of Existing Land use, Building Height, Ground Coverage, Age of Buildings, Road network & trees | 20 marks |
| Stage 5: Framing proposals | Framing proposals: Drawing Conclusions from inferences and frame proposals to make it active green urban space | | Proposal in the form of sheets | 10 marks |
| | Attendance | | | 20 marks |
| | Sessional | | | 20 marks |

| Teachers' evaluation | | | | | | | | | | | | |
|----------------------|------------|------|------------|------|------------|------|------------|-------|------------|-----------|------------|-------|
| CO 1 | Attainment | CO 2 | Attainment | CO 3 | Attainment | CO 4 | Attainment | Total | Attainment | Sessional | Attendance | TOTAL |
| Sta | | Sta | | Sta | | Sta | | | | | | |

| | | | | | | | | | | | | |
|---------|-----|---------|-----|------------|-----|---------|-----|----|-----|----|----|-----|
| ge 1 | | ge 2 | | ge 3, 4 | | ge 5 | | | | | | |
| 10 | Y/N | 10 | Y/N | 30 | Y/N | 10 | Y/N | 60 | Y/N | 20 | 20 | 100 |

1) Urban green spaces:

https://www.euro.who.int/_data/assets/pdf_file/0010/342289/Urban-Green-Spaces_EN_WHO_web3.pdf

2) Urban Green Areas and Design Principles

https://www.researchgate.net/publication/309285040_Urban_Green_Areas_and_Design_Principles

3) FIGURE 1. Categories and functions of city's green areas

https://www.frontiersin.org/files/Articles/823129/fenvs-10-823129-HTML/image_m/fenvs-10-823129-g001.jpg

SMT. MANORAMABAI MUNDLE COLLEGE OF ARCHITECTURE

TIME TABLE

ODD SEMESTER 2022-23

| DAY | YEAR | 8:45 to 9:15 | 9:15 to 12:15 | | 1:00 to 4:00 |
|-----------------------------------|------|--------------|---------------------|-------------------|--------------|
| MONDAY | IV | ASSEMBLY | ST | CONST | DESIGN |
| | A | | RW | SG, TIJ, NTG, PND | SG, NTG |
| | B | | | | TIJ, PND |
| | | | | | |
| TUESDAY | IV | ASSEMBLY | ST | ACO & ILU | DESIGN |
| | A | | RW | MP, HS | SG, NTG |
| | B | | | | TIJ, PND |
| | | | | | |
| WEDNESDAY | IV | ASSEMBLY | CONST | ABS | DESIGN |
| | A | | SG, TIJ, NTG, PND | TIJ, AB | SG, NTG |
| | B | | | | TIJ, PND |
| | | | | | |
| THURSDAY | IV | ASSEMBLY | ELEC A (i) | | ELEC B (i) |
| | A | | Landscape (MP, SMT) | | UP (SG, SJ) |
| | B | | | | |
| | | | | | |
| FRIDAY | IV | ASSEMBLY | RESEARCH | | DESIGN |
| | A | | PND, NTG | | SG, NTG |
| | B | | | | TIJ, PND |
| | | | | | |
| SATURDAY (For Working Saturdays) | | | MEETING | | ACTIVITY |