



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

2021 – 2022

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YEAR INCHARGE

Prof. Namrata Gaurkhede

CLASS CO-ORDINATORS

Section A: Prof. Poornima Deshpande

Section B: Prof. Namrata Gaurkhede

Section C: Prof. Anuradha Bhute

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. Pass Marks
		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	150	100
2	Construction Technology and Materials VII	1	0	2	0	3	1	0	2	0	3	Sessional Paper	3	100	100	50
3	Building Services - IV	1	1	0	0	2	1	1	0	0	2	Sessional Paper	3	30	30	40
4	Structural Design and Systems - VII	1	1	0	0	2	1	1	0	0	2	Sessional Paper	3	30	30	40
5	Research Skills and Project Introduction	1	0	2	0	3	1	0	2	0	3	Sessional Viva-Voce	3	50	50	50
6	Acoustics and Illumination	1	0	0	1	2	1	0	0	1	2	Sessional Paper	3	30	30	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. Namrata Gaurkhede

Teachers In charge –

Section A – Dr. Sujata Godbole, Ar. Poornima Deshpande, Ar. Isha Pawar, Dr. Roopal Deshpande

Section B – Ar. Sanjeevani Mohgaonkar, Ar. Namrata Tharwani, Ar. Priyanka Sambare,

Section C- Ar. Shriram Marathe, Ar. Rashmi Tijare, Ar. Anuradha Bhute, Dr. Tarika Mohite

SEVENTH SEMESTER (150 marks)

Project I (Minor Project) – Vertical Studio 2021-22 - for 5th and 7th Semesters

Studio In-charge: Dr. Sujata Godbole

Ar. Sarika Joshi, Ar. Sneha Mandekar, Ar. Namrata Gaurkhede

DURATION: 2 WEEKS

CO1: To understand the National Education Policy 2020 and its impact on the planning of higher educational institutes, the components of educational campuses as a base for major design through case studies.

Introduction and brief

The introduction of the National Education Policy (NEP 2020) has a completely new vision for Indian Education System. Honorable President, Ramnath Kovind stated that the NEP 2020 has a holistic vision of transforming the way children and youth will be educated to make learning a part of personal development while also serving the needs of society. It is bound to bring changes from Montessori to Post-doctoral programs. A major difference in the higher education system will be that the students will have the freedom to take up courses of the interest, which may or may not be related directly to their core subject. It would be based on major and minor credits for course works. It will mean intermingling of multiple disciplines in one campus. There would be a conglomerate of departments, instead of the currently dedicated colleges and universities. It will focus on a lot more on application-based learnings and hands-on experiences. The curriculum of architecture studies will also take its due twists and turns accordingly and thus it will be interesting to work on a project of similar idea. The students will also be of a mix of disciplines. This will call for an open campus with adequate accommodation facilities.

The vertical studio is focused to work upon development for a campus which will offer architecture course along with its allied subjects. The site selected to this project is L. A. D. College Campus, Seminary Hill, Nagpur.

Aim

The vertical studio aims at making students familiar with the components of campus planning and the impact of the National Education Policy 2020 on design of educational campus.

Learning objectives

1. Understanding of the National Education Policy 2020 and its impact on the planning of academic institutes.
2. To research and comprehend components of educational campus planning and design as a base for major design project.
3. To design the campus of higher education institute, which can be detailed out in major design project

S. No.	Activity	Important dates
1	Address by Principal Madam Launch of the vertical studio project Formation of student groups	18 th August 2021
2	Allotment of mentors and initiation of work	18 th August 2021
3	Review of Data collection and analysis	23 rd August 2021
4	Introduction of case studies for major design project & Submission of Data Collection & Analysis of the given topics	25 th August 2021
5	Final jury and submission in PowerPoint presentations of Case studies in .pdf format	30 th & 31 st August 2021

Project II (Major Project) - Design of Institutional Area in a Campus

Site Area for detailed site layout – 50,000 sqm.

Total Students Intake – 1500-2000

Built up area of individual student – 6000-7000 sq.m

DURATION: 5-6 WEEKS

CO2: To understand the site, site context and developmental requirements in an educational campus

CO3: Detailing of proposed scheme with understanding of the overall developmental/ design issues, challenges and logical design solutions through presentation

CO4: Understanding the overall competency of students in dealing with the chosen issues and challenges and their ability to resolve it.

Introduction

The National Education Policy (NEP 2020) is all set to change the education system of the country. It has a holistic vision of transforming the way children and youth will be educated to make learning a part of personal development while also serving the needs of society. For higher education, it focuses on a credit based open system allowing students to pursue various courses of their interests as a part of curriculum. This calls for reimagining the educational campuses right from the entrance of the campus, to the buildings, recreational and interactive spaces.

It will lead to more interaction between students taking up courses outside of their core department.

The importance of research studies will increase along with vocational training. The intake in certificate and diploma courses will be much higher compared to the degree courses. It will focus on a lot more on

application-based learnings and hands-on experiences. There will be a paradigm shift in designing campuses for faculty of architecture and allied faculties.

The major design project will focus on designing institutional area of the campus with detailing of all buildings including architecture & allied departments and related activities.

Aim

To explore the changes which will necessitate the changes in the infrastructure of the institute of higher education, bearing in mind the flexibility in system due to NEP 2020.

Learning objectives

1. To understand the changes in design that would be brought in educational campuses, focusing on architecture and allied departments with the introduction of the National Education Policy 2020
2. To design transition spaces promoting interaction of students belonging to various faculties and age groups
3. To understand integration and sharing of spaces in a multi-disciplinary educational campus

Design Scenarios

Semester 7 th	Section A	Section B	Section C
Design of architecture and allied departments for -	Co-educational institute as per Campus Plan of Scenario B (vacant site)	Girls educational institute as per Campus Plan of Scenario B (vacant site)	Girls educational institute as per Campus Plan of Scenario A (existing site)

Design Program

Sr. no	Stages	Description	Inputs	Expected Output	Date
1	I	Introduction to Design	Introduction to Site Planning, based on Zoning of Campus as per the National Education Policy (NEP)2020		1 st Sept.
2	II	Relevant precedent studies to be carried out section wise in different groups: <ul style="list-style-type: none"> • Identification of requirements of each department • Area and design requirement for various components of detailed site plan like studios, workshops, administration, auditorium, cafeteria, etc. 	Discussion with faculties and research on building and site planning details	A3 size presentation on precedent studies	2 nd Sept to 15 th Sept.

3	III	Site Planning in section-wise as per departments in the design program. Detailing out the educational zone based on the campus plan provided from vertical studio: <ul style="list-style-type: none"> • Location of all institutional buildings • Detailed road layout with parking • Detailing of interactive, recreational and open spaces including detailed landscape plans • Services layout • Area calculations 	Discussion with faculties on site plan	Site Plan for each section	
CO3	Review 1 - based on Precedent Studies and Site Planning				
4	IV	Concept Development / Thrust Area and individual detailed design program based on 1/2 selected individual buildings	Discussion with faculties	A3 Sheets	15 th to 21 st Sept.
5	V	Design of 1/2 individual building blocks with its surroundings	Discussion with faculties	A3 Sheets for final plans, sections & elevations, 3D views simultaneously.	22 nd Sept. to 19 th Oct.
CO4	Review2 – Concept, Design Program and Design of individual buildings (intermediate review)				5th Oct.
	Review 3 – Concept, Design Program and Design of individual buildings (final review)				19th Oct.
6	VI	Architectural detailing: <ul style="list-style-type: none"> • Construction details • Building services • Architectural expression • Landscape 	Discussion with faculties	A3 Sheet	20 th Oct.
CO5	Prefinal Review 4 and submission				26 th and 27 th Oct.
	Final Submission				31st Oct.

Project III

13th 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.

CO5: To cultivate lateral thinking in terms of design projects, while encouraging creative outputs

CONSTRUCTION TECHNOLOGY AND MATERIALS VII

Teachers Incharge - Ar. Sujata Godbole, Ar. Rashmi Tijare, Ar. Medha Pophale, Ar. Namrata Gaurkhede, Ar. Isha Pawar

Objectives:

CO1 Introduction to space structures, its types. General study of shell structures and folded plate structures its various types, constructional aspects, merits and demerits etc.

CO2 Introduction to Grid structures and Skeletal structures, space frames, domes etc. in steel and its various types, constructional aspects, merits and demerits, etc.

CO3 Study of Temporary structures, various materials and techniques used, constructional aspects using timber and M.S Sections, design and detailing problems on small temporary structures.

CO4 Study of Pre-cast concrete structure, its 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.

CO5 Study of pre stressed concrete, principals and methods of pre-stressing, system of pre-stressing, advantages and disadvantages and applications.

CO6 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	<p>Introduction to space structures, possibilities in different materials,</p> <p>Types of space structures and possibilities in different materials to cover large spans.</p> <p>General study of shell structures and folded plate structures in concrete, various types, constructional aspects, merits and demerits etc.</p>	<p>To understand the meaning of space Str.</p> <p>To make students aware of Diff. Materials used to cover large spans.</p>	23 rd , 26 th , 30 th Aug week	Lectures, presentation, videos	<p>Online Test on CO1 + Sketch Book + Models (1: polyhedral solids, 2: Geodesic dome, 3: Hyperboloid, 4: Space frame)</p>
Unit II	<p>General study of Grid structures and Skeletal structures, space frames, domes etc. in steel, various types, constructional aspects, merits and demerits, etc.</p>	<p>To make students aware of Different types of grid str.</p> <p>Study of solid geometry to</p>	Sep 1 st – 2 nd week	Lectures, presentation, videos	<p>Online Test on CO2 + Sheet</p>

		understand diff. types of Domes To study diff. types of			
16th SEP, 20TH JULY 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.	Sep 3 rd week	Lectures, presentation, videos.	Online Test on CO5 + Sheet
SESSIONAL EXAM 20 to 24th Sep 2021					
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.	1 st week of Oct	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.	2 nd week of Oct	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.	3 rd , 4 th week of Oct	Lecture	CO3 - Sketches + Sheets

Attendance (20)	Subject contents/ Sessional exam/ Surprise exams (40)	Plates (20)	Models, Sketch book, tutorials (10)	Site visit if possible	Viva (10)
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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. Priyanka Sambre

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.

Objective:

The objective of the subject is not only to transmit knowledge but to provide a deeper insight into the subject.

CO1- Principles of Psychometrics & heat transfer, Study of Air conditioning systems and their applicability, Unit A.Cs, Central A.Cs, Split A.Cs.

CO2- 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.

CO3- 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.

CO4- 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.

CO5- Electromechanical means of vertical transportation in bldgs, requirements, occupant load, study of elevators, various components of elevators, standard space requirements

CO6- Studying Escalators & Trav-o-lators, its components arrangements and functioning, space requirements, construction detailing.

Date/Week	Topic	Learning Objectives	Input	Expected Output
20-08-2021, 27-08-2021, 03-09-2021 , 10-09-2021,	Air Conditioning (10 marks)	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.	Lectures, ppts. brochures	Online Test on CO1 & CO2, 20 marks each
17-09-2021, 24-09-2021, 01-10-2021,	Electric supply & distribution (10 marks)	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 generators, automatic relays, invertors, circuit breakers etc.	Lectures, ppts. brochures	Online Test on CO2 & CO3, 20 marks each
08-10-2021, 15-10-2021, 22-10-2021,	Lifts & Escalators (10 marks)	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. Escalators and Trav-o-lators, its components arrangements and functioning, space requirements, construction detailing.	Lectures, ppts. brochures	Online Test on CO5 & CO6, 20 marks each
29-10-2021,		Written Test on Full Syllabus		

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

Min Pass Marks - 40

RESEARCH SKILLS AND PROJECT INTRODUCTION

Teachers-in-charge: Dr. Ujwala Chakradeo, Dr. Sampada Peshwe, Ar. Namrata Tharwani Gaurkhede

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

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	CO1: Sensitizing the students towards issues in architecture / society, and creating a basic understanding of research methodology	17th Aug and 20 th August
Unit 2: Basics of research methodology	Introduction to the basics of research, discussion regarding research question	PowerPoint presentation, sample papers and discussions			27 th August and 2 nd Sept
Submission 1 –A4 sheet and mind map on learnings 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	CO2: Enhancing thinking abilities through existing and acquired knowledge	3 rd and 9 th Sept.
Showing sample papers and posters to students. Informing students on various dependable sources for online search.	To get acquainted with current work being undertaken by researchers in their selected issue	PowerPoint presentation, sample papers and discussions	To search dependable online resources and if possible, college library for material on their selected issue.		17 th Sept.
Submission 2 – Mind Map of issues– 15 th September					
Unit 4: Students to work on selected issue in bifurcated groups of 3, after discussion with	To explore possibilities and ramifications of their	Discussion with mentors and subject faculty	Identified literature, Studies, Research methods, etc.	CO2: Identifying pertaining data for an issue and tools for analysis, such as	24 th Sept., 1 st and 7 th Oct.

their mentor and after referring to digital/physical references and books. Student should be using other tools of research like physical experimentation, survey, modelling, etc. to identify method of study and start work.	identified issue. Better understanding of the identified issues through literature and to embark upon their research using chalked out methods.			survey, research papers, etc. CO3: Enhancing analytical skills through literature review, processing of qualitative and quantitative data	
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		8 th Oct
Submission 3(a) – Research work and survey data along with preliminary analysis 13 th October 2021					
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.	CO4: Learning articulation of conclusion of data analysis & communication through verbal and graphical modes.	14 th Oct
Finalization of research work (in ready to be published form)		Discussion with mentor			22 nd Oct
Submission 3(b) – Final submission of poster -27 th October 2021					

***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
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 Interior Design 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. Rupal Wadegoankar

CO 1 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)

CO 6 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. Medha Pophale, Ar. Vaijayanti Yadav

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 Study of Frequency range of audible sounds. Propagation of sound, sound reflection, diffusion, diffraction.

CO2 Sound Isolation, Mass law, Transmission loss, STC rating, TL for single & double walls sound leaks & flanking.

CO3 To study Acoustical Material & interior finishes, Sound absorbing materials & their properties.

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

CO5 Study of Light radiation, its units, Laws of illumination, inverse square law and cosine law. Artificial light calculation by Lumen Method. Light sources, various types of Lamps and their characteristics.

CO6 Learning Types of lighting systems, task lighting, accent lighting, general lighting, lighting for mood etc.

CO7 Luminaries, their types, properties and uses.

Date 2021	Content	Teacher's interaction	Expected output
25 th Aug	Frequency range of audible sounds. Propagation of sound. Sound reflection, diffusion, diffraction. Ref. Acoustics In Building Design by K.A. Siraskar.	Lecture, ppt	Notes
1 st Sep	Sound Isolation, Mass law, Transmission loss	Lecture, ppt	
8 th Sep	STC rating, TL for single and double walls sound leaks and flanking.	Lecture, ppt	
15 th Sep	Acoustical Material and interior finishes, Sound absorbing materials & their properties. Ref. Architectural Acoustics by David Egan.		
22 nd Sep	Constructional and planning measures for good acoustical design of building in general.		Sketching
29 th Sep	Acoustical treatment of Auditorium / Lecture Halls / Conference hall. Ref. Auditorium Acoustics and Architectural Design by M. Barron.		
6 th Oct	Light radiation, its units, Laws of illumination, inverse square law and cosine law.		
13 th Oct	Artificial light calculation by Lumen Method. Light sources, various types of Lamps and their characteristics.	Lecture, ppt	
20 th Oct	Types of lighting systems, task lighting, accent lighting, general lighting, lighting for mood etc.		
27 th Oct	Luminaries, their types, properties and uses.		

The sessional exam would be in online on Google forms on the COs. (in case of online learning).

ELECTIVE A (ADVANCED SPATIAL ANALYSIS)

Teachers-in-charge: Priyanka Sambare, Namrata Gaurkhede, Isha Pawar

Course Objectives:

CO1: To enhance the students' ability in preparation of internship portfolio.

CO2: To prepare presentable drawings, use of advance commands of software like Microsoft PowerPoint, AutoCAD, Adobe Photoshop, CorelDRAW, Lumion and Vray.

CO3: To increase proficiency in usage of Autodesk Revit

CO4: To expose students to graphic designing field

Date	Unit to be covered	Faculty Inputs	Evaluation & CO
2nd July 2021	Microsoft PowerPoint For quick rendering and portfolio making techniques	Demonstration Lectures	Assignment 1 and 2 CO1 and CO2
5th July 2021	AutoCAD and Photoshop Advanced For quick rendering and portfolio making	Demonstration Lectures	
12th July and 26th August 2021	Lumion and Vray Rendering 3D views	Demonstration Lectures from faculty and guests	Assignment 3 CO3
13th and 14th July	Autodesk Revit <ul style="list-style-type: none"> • Campus / Site Planning • Contour management • Form handling • Addition of props and landscape elements • Walkthroughs 	Demonstration Lectures from faculty and guests	
9th September	VectorArts	Demonstration Lectures	Sessional exam CO4
12th July 2021	Assignment 1 – PowerPoint presentation using the techniques taught in class with showcasing sheet composition of any one project.		
17th August 2021	Assignment 2 – Internship portfolio with 10 sheets		
With Design	Assignment 3 – 7 th semester design project in Autodesk Revit and a walkthrough of the same.		

Evaluation Scheme

Attendance	Sessional exam	Assignment 1	Assignment 2	Assignment 3	Total
20	20	10	20	30	100

ELECTIVE B – VALUATION

Teachers-in-charge: Ar. Vishwas Dikhole, Ar. Isha Pawar

Aim: To sensitise students towards the Valuation subject

Course Objectives

CO1: To understand Role of a Valuer, Purpose of valuation, Forms of valuation, Factors affecting changes in market value, supply & demand forces.

CO2: To understand Methods of valuation, Investment in real properties and factors affecting real property market. Outgoings, depreciation, floating, FSI, dilapidations, life of structure, Forms of rent, easement etc.

CO3: To Study Market rates survey and ready reckoner rates, Valuation report format and how to read documents (sale deed, lease deed, city survey record, 7/12 record, etc).

Sr. No.	Allotted Hours	Topic	Input	Assignment
1	2	Introduction to Valuation, Role of Valuer and purpose of valuation. To understand Forms of valuation Knowing Factors affecting changes in market value, supply & demand forces. Studying Investment market and opportunities	Presentation, Interaction.	Assignment 1 on CO1: Submission on Co-ordination mapping
2	2	Knowing Characteristics of ideal investment. Investment in real properties and factors affecting real property market. To understand Methods of valuation. To understand different terminologies like Outgoings, depreciation, floating, FSI, dilapidations, life of structure, Forms of rent, easement	Lecture, Discussion.	Assignment 2 on CO2: Submission on Undivided share
3	2	Study of Market rate survey and ready reckoner rates. To know Valuation report format, how to read documents (sale deed, lease deed, city survey record etc)	Lecture, Discussion, Valuation Report	Assignment 3 on CO3: Submission on Valuation report

Evaluation scheme

1 st Assignment CO1	2 nd Assignment CO2	3 rd Assignment CO3	Attendance (CO1, CO2, CO3)	Total Marks
20	30	30	20	100

ELECTIVE B – URBAN PLANNING

Teachers In-charge: Ar. Anuradha Bhute, Ar. Poornima Deshpande

Date	Learning Objective for each topic/ content	Teachers interaction	Expected output	Evaluation
Submission: 4th July 2021 Assignment 1: Identifying terms related to Urban Planning and explaining them in the form of a PPT	For students to understand the basics of Urban planning and the terms related to it.	Explaining a few terms	PPT	20 marks
Submission: 23rd Sept 2021 Assignment 2: Impact Assessment of Neighborhood Aim: To understand the impact of present situation in the neighborhood.	Stage I 1. To study the concept of Impact Assessment and delineation of the neighborhood.		Sheets	40 marks
Stage II 1. To understand the types of surveys (primary and secondary) 2. To study the existing situation <ul style="list-style-type: none"> • Existing Land use Plan • Building Height • Ground Coverage • Age of Buildings • Road network & Open Areas 	Inputs in the form of Table Discussions and Display	Sheets		
Stage III: 1. To generate statistical & graphical data analysis. 2. Analysis of the data collected and updating of all the attributes in Base map	Inputs in the form of Table Discussions and Display (Discussion - 19th August 2021)	Sheets		
Stage IV: 1. To study the existing issues & problems in the area.	(Discussion - 9th	Sheets		

	2. To analyse the neighborhood and apply the impact Assessment 3. Inferences and Conclusions	September 2021)		
	Attendance			20 marks
	Sessional			20 marks

CO1	Study the various terms related to Urban Planning	Assignment 1: Identifying terms related to Urban Planning and explaining them in the form of a PPT Assignment 2: Impact Assessment of Neighborhood Aim: To understand the impact of present situation in the neighborhood.
CO2	To understand the impact of present situation in the neighborhood.	
CO3	Understanding of various types of surveys (Primary & Secondary)	
CO4	Understanding Statistical and graphical data analysis. Understanding the importance of SWOT analysis Knowing Existing Land use plan & Land values	
CO5	To analyse the neighborhood and apply the impact Assessment	
CO6	Giving suggestion for problems resolution wrt to COVID norms	

