Estd. 1962
"A++" Accredited by NAAC(2021)
With CGPA 3.52

SHIVAJI UNIVERSITY, KOLHAPUR - 416 004, MAHARASHTRA
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शिवाजी विद्यापीठ, कोल्हापूर - ४१६ ००४, महाराष्ट्र
दूरध्वनी - ईपीएबीएक्स - २६०९०००, अभ्यासमंडळे विभाग दुरध्वनी विभाग ०२३१–२६०९०९३/९४

SU/BOS/Sci & Tech/ 544 **Date: 13/07/2023**

To,

The Principal/ Director,
All affiliated Architecture Colleges,
Shivaji University, Kolhapur..

Subject: Regarding revised syllabus of **B. Arch. (CBCS) Fifth Year (Sem IX & X)** under the Faculty of Science & Technology

Sir/Madam,

With reference to the subject mentioned above, I am directed to inform you that the university authorities have accepted and granted approval to the revised and Structure **B.Arch. (CBCS) Fifth Year (Sem IX & X)** under the **Faculty of Science & Technology.**

This revised syllabus and equivalence shall be implemented with effect from the academic year 2023-2024 (i.e. from July 2023) onwards. A soft copy containing syllabus is attached herewith and it is also available on university website www.unishivaji.ac.in. (Online Syllabus).

You are, therefore, requested to bring this to the notice of all students and teachers concerned.

Thanking you,

Yours faithfully,

Dr. S. M. Kubal
Dy. Registrar

Copy to:

1	The I/c Dean, Faculty of Science & Technology	6	Appointment Section
2	The Chairman, Respective Board of Studies	7	Affiliation Section (T.1)
3	Director, Examination and Evaluation	8	Affiliation Section (T.2)
4	Eligibility Section	9	P.G.Admission Section
5	O.E. – 4	10	P.G Seminar Section

SHIVAJI UNIVERSITY, KOLHAPUR

REVISED SYLLABUS
ARCHITECTURE DEGREE
COURSE (CBCS) FINAL YEAR
(SEM IX & X)

IN

B. Architecture.

To be introduced from the academic year 2023-24 (w.e.f. July 2023) onwards.

SHIVAJI UNIVERSITY, KOLHAPUR

SYLLABUS FOR NINTH SEM-ARCHITECTURE DEGREE COURSE

(PC-901)**

SUBJECT:-

****ADVANCED ARCHITECTURAL DESIGN-II**

Course Code : **PC-901**	Semester : **IX**
Teaching Scheme : **L : 01 S : 06 Total : 07**	Credits : **10**
Examination Scheme : Term Work - 10**0 Marks** Viva-Voce - **100 Marks** Theory paper – **100 marks**	Total marks: **300**

Note:

1. (**) Means combine passing for internal Term work &Theory paper &External oral as applicable.

COURSE DESCRIPTION:

It includes design and planning of a campus for large scale projects in Urban Areas such as publicamenities, civic areas, merchant buildings, and transportation and sports facilities.

COURSE OBJECTIVE:

During the course following objectives shall be considered to process the design of large scale urbanprojects:

- To review and do comparative analyses required to formulate design program withunderstanding of a wide range of related issues in urban context.
- To understand design of complex buildings and planning of campuses involving analytical study of building spaces with consideration of sociological, economic, cultural and climaticfactors.
- To be exposed to appropriate material and construction technology to deal with large scalepublic projects.
- To understand socio economic demands, parameters like role of population density, usersatisfaction, participative architecture, pedestrian safety and vehicular movement, easy evacuation in panic situation etc.
- To take design decisions in a comprehensive manner, understanding their implications in theoverall planning.
- To be aware of prevailing rules and regulations along with standards and technical aspects required for better planning of assembly buildings and special type of campuses. Also to know norms related to provisions made for differently abled (‘D*ivyang*’) persons in designingpublic buildings and campus planning.

COURSE OUTCOMES (COs):

At the end of the course the student should be able to:

- Understand campus planning for large scale project in Urban Areas along with contemporaryarchitectural practices.

- Understand Bye-laws and planning guidelines with respect design typology.
- Understand and implement in design assignments, structural aspects for large scale building
- Understand and implement in design assignments, various architectural services such as Electrical, Plumbing, Drainage, HVAC, Waste disposal, Firefighting, Acoustics, CCTV surveillance etc.
- Understand and implement in design assignments Interior design and Landscape planning.
- Understand technical aspects and standards required for special projects such as projectsrelated to transportation and sports etc.

COURSE CONTENT:

Unit no. 1-(5%) • Understanding analysis of design requirements. • Analysis of site proximities • Understanding the local building byelaws
Unit no. 2-(5%) • Case study, literature reviews, internet reviews, site visits of similar design project • Comparative analysis and presentation of case studies
Unit no. 3-(5%) • Data collection of the proposed design project • Site visit and site analysis i.e. topography, vegetation, surrounding, contour levels,accessibility etc. • Implication of local bye-laws, standards, rules regulations if any.
Unit no. 4-(30%) • Design development process from concept to final solution, campus planning considering aspects for building services, structural aspects, climatic factors, firefighting provisions, parking requirement, internal road network ,provisions fordifferently able (‘D*ivyang*’) persons, landscape considerations etc. • Application of advance material and construction technology.
Unit no. 5-(25%) • Final design presentation with supporting details, sketches, 3D views, models etc.
Unit no. 6-(30%) • Detail design of related area of Major project with interior design, fire safety layouts,services and landscape layouts etc.

SESSIONAL WORK:

1. Minor Project (First): Including Survey/analysis, individual urban inserts. This project willhave 30% weightage of Marks. Sessional work includes detailed Architectural drawings portfolio including 3D Views, models, walkthroughs, etc.
2. Major Project (Second): Projects involving Architectural design solutions in Urban areas suchas Transportation hub, Amenity Space, Urban Centre, Institutional Projects, Recreational Projects, Residential Projects, Mix use projects, Religious projects, Redevelopment projects, etc. It shall have minimum built up area in the range of 7000 Sqm& above. This project willhave 70% weightage of Marks.

Sessional work includes Architectural drawings portfolio including 3D Views, models, walkthroughs and supporting details etc. and also the detail design of related area of Major project with interior design, fire safety layouts, services and landscape layouts etc.

EXPECTED PRESENTATION OUTPUTS:

Design Portfolio must include 1) graphical presentations for pre stage design work like concept formation work, site analysis, zoning and other planning strategies etc. 2) Architectural drawings forpost stage design with required details and services layouts as mentioned above supported with 3DViews, Models, Walkthroughs etc. to explain complete scheme of design project.

REFRENCES:

1. Achyut Kanvinde& H. James Miller, 'Campus Design in India- Experience of DevelopingNation'.
2. National Building Code of India, Relevant Local Building Bye-Laws (Development controlregulations), Master or Development Plans.
3. Technical manuals, standards and Planning norms for special projects under transportationand sports category issued by Government.
4. Monologues of eminent architects
5. Books on Building Services, Interior and Landscape design and large span structures
6. Neufert Architects Data and Time Saver Standardsfor building types and landscapearchitecture

SHIVAJI UNIVERSITY, KOLHAPUR

SYLLABUS FOR NINTH SEM-ARCHITECTURE DEGREE COURSE

(PC-902)

SUBJECT:

Architectural Project 1 + 2 (Synopsis, Literature Review, Data Collection, case study analysis and conclusions)

Course Code: PC -902	**Semester: IX**
Teaching Scheme: L : 02 St: 06 Total:8	**Credits: 5**
Examination Scheme: **Term work: 50** **External: 100**	Total marks: **150**

COURSE DESCRIPTION:

Students of Architecture pursue their undergraduate Architectural project thesis as Designthrough research. The whole course is divided into two semesters of final year B.Arch. in (Sem. 9 & Sem. 10)

Architectural Project 1+2 gives the core idea about the topic of how the research will lead to the design. The whole course is divided into three parts.

1. Synopsis, literature review, framing project, and research methodology.
2. Case study analysis and conclusions
3. Data collection

COURSE OBJECTIVES:

- To prepare a student to independently handle all aspects of Architectural design from its evolution to the final outcome.
- To understand the evolutionary stages of design, process, importance etc. through rigorous literature review.
- To justify the whole project from topic selection to design outcome by practical and research approach.
- To deal the project through analysis, investigation and thoughtful synthesis of whole study.

COURSE OUTCOMES (COS):

At the end of the course the student should be able:

- To prepare a proposal which include introduction, need of the study, scope and limitations, Aim and objectives and project methodology.
- To Study, analyze, compile the data, information which is already available in the realm of Architecture.
- To enrich the knowledge through thoughtful Synthetization of literature review, casestudy conclusion and data collection in the form of design program.

Course Content

Unit No. 1 – literature review (14) • Area of interest • Topic selection Evolutionary journey/timeframe about topic • Relevant examples, cases • Identify the gap in contemporary • Any other relevant literature useful for progress of project
Unit No. 2 – Writing proposal (Synopsis) (14) • Introduction • Need/relevance of the project • Literature review • Scope and limitations • Aim • Objectives • Project methodology • Bibliography/ references Note – At the mid of 9th semester Principal should final the Title of the Project and takethe Approval from Board of Studies - Chairman.
Unit No. 3 – Data Collection (10) Primary, secondary or by Tertiary sources (Survey, interviews, government norms, rules, regulations, etc.)
Unit No. 4 – Case study analysis and comparative conclusion (12) • One live case study • Two net/book case studies • Comparative analysis of the all-case studies with overall conclusion
Unit No. 5 – Design program Prepare design program based on Synthetization of literature review, case study conclusions and data collection (Matrix of all heads)

SESSIONAL WORK:

Synopsis (A4 Size)Sheets

- Graphical presentation of literature review, project methodology, aim, objectives, etc.
- Case study analysis and comparative conclusions

Report in spiral bound format includes chapters –

- Introduction
- Literature review
- Project methodology
- Case study analysis and conclusions
- Bibliography

REFERENCES

Thesis manual for Bachelor of Architecture – A handbook of requirements and suggestions, Navneet Mounoth, Mahafuzuar Rahman Barbhuiya.

SHIVAJI UNIVERSITY, KOLHAPUR

SYLLABUS FOR NINTH SEM-ARCHITECTURE DEGREE COURSE

(BS &AE-903)

SUBJECT:-

Advanced Structure- II

Course Code :**BS & AE-903**	**Semester : IX**
Teaching Scheme : L-3Hr per Week	Credits : 3
Examination Scheme: Theory **- 100 Marks(3Hrs)** Term Work - **50 Marks**	Total Marks:**150**

COURSE DESCRIPTION:

The course **Advanced Structures - II,** Aim and object of this subject is to make the students to learn conceptual structural design aspects of advanced structural systems and components, their structural behavior and structural detailing for Industrial Buildings, Various types of Girders, Earthquake Resistant Structures , Portal frames, Composite structures, Shells, Geodesic domes, Space frames, Pneumatic & Tensile structures, Introduction to application of computers in structural analysis & design.

The course Advanced Structures–II, at Semester -IX, aims to give an idea to the students to understand concepts behind modern structural systems and economics in structural design systems. The intent of the syllabus is to explore the Students to investigate the structural behavior of various structural systems and elements through design exercises, case studies, and site visits etc.

COURSE OBJECTIVES:

To make the students to understand structural behavior of advanced structural systems. To become familiar with conceptual designs of various structural systems & components.To create ability to visualize structural shapes, forms, approximate structural sizes etc.
To detail reinforcement in RCC structural members based on their structural behavior and
To detail steel structures.

COURSE OUTCOMES (COS):

At the end of the course the student should be able to:

Students are able to understand structural behavior of advanced structural systems & their components, choice & suitability of different structural systems.
Students are able to Analyze & Conceptually Design advanced structural components
Students are able to Detail reinforcement in structural members
Students are able to Prepare structural layouts of their projects

Prerequisite: Student should have internalized knowledge of the courses –Building Construction and Technology, Knowledge of Construction Materials and Reading skills of working drawings from their previous semesters syllabi.

Contents

Unit No. 1 – INDUSTRIAL BUILDING:

- Concept & structural behavior of Industrial Buildings
- Planning and designing of bays, ht. of columns etc.
- Different types of trusses for large Span > 15m,
- Pre Engineered Building Systems (PEB),
- Concept of truss less roofing.

Unit No. 2 – GIRDERS:

- Gantry Girder- span, crane girder, cab, various forces acting on gantry girders, different cross section of gantry girders.
- Concept of plate girder, Different elements and theirfunctions, Curtailment of flange plate.
- Concept of Virendell girder.
- Concept of castellated girder.

Unit No. 3 – EARTHQUAKE RESISTANT STRUCTURES:

- Precautions in planning, different shapes in plan Aspect ratio, Separation Joint.
- Behavior of Buildings for EQ forces.
- Earth quake resistant Detailing of load bearing structures.
- Earth quake resisting Detailing of framed structures.
- Ductile detaining, IS Code 1893 and IS Code 13920.
- Concept of Base isolation techniques.
- Use of dampers in EQ resistant structures.

Unit No. 4 – COMPOSITE STRUCTURE:

- Concept & detailing, Multistoried load bearing and non-load bearing structures.

Unit No. 5 – ADVANCED STRUCTURAL SYSTEMS:

- Fixed and hinged portal frames in RCC & steel structure.
- Shells & Folded plates: Concept of Shells &Folded plate, Hyperboloids, Paraboloids, Geodesic dome.
- Concept of space frames and Pneumatic structures.
- Concept of Tensile structures.

Unit No.6 - APPLICATION OF COMPUTERS IN STRUCTURES:

- Introduction to advanced analysis of building,
- Advantages & Limitations of computer applications.
- Introduction of different software's used in analysis anddesign of structures.

SESSIONAL WORKS:

1. Prepare structural Layout of and Industrial structures withKey elevations.
2. Sketches showing Structural behavior, Arrangements &Components of any two Girders.
3. Sketches showing detailing for earthquake resistant detailingof Load Bearing & Framed structures.

4 . Sketches showing Structural behavior, Arrangements &Components of any two Advanced structural systems.

5 . Short notes (minimum Five) based on above syllabus.

REFERENCE BOOKS:

Design of Reinforced Concrete structures by S.Ramamrutham.

Advanced Reinforced Concrete Design by N.Krishnaraju.

Space Structures by Subramanian Narayanan.

Design of Steel structures by Dr.P.Dayaratnam.

IS Code 1893 & 13920

SHIVAJI UNIVERSITY, KOLHAPUR

SYLLABUS FOR NINTH SEM-ARCHITECTURE DEGREE COURSE

(PAECC-904)

SUBJECT:-

Professional Practice and Building Bye-Laws

Course Code : **PAECC-904**	**Semester : IX**
Teaching Scheme : **L:02 St : 02 Total: 04**	Credits **: 3**
Examination Scheme : Theory- **100 Marks** Term Work - **50 Marks** Viva-Voce - -	Total marks: **150**

COURSE DESCRIPTION:

To familiarize students with architectural practice, its nature, opportunities and scope of Architectural profession. At the end itmay raise thinking about the career of students as an architect.

COURSE OBJECTIVES:

The purpose of the course is to introduce student toward theprofessional Liabilities, duties and behavior. It will also guide them towardsopportunities in Architectural profession.

COURSE OUTCOMES (COS):

At the end of the course the student should be able to

- Gain clear aspect towards Architectural practice
- Develop their vision towards nature of practice

Prerequisite: Student should have internalized knowledge of the course – Professionalduties, liabilities and sound knowledge of building bye laws for practice.

COURSE CONTENT
Unit No. 1 – Introduction & Office Administrator – (20%) • Council of Architecture • Relationship between Client, Professional Brothers, Community, Employees, Associates& Consultants. • How to Secure Client. • Option on Entering the Profession. • Office & Its Management. • Structure of An Architect's Office. • General Accounting (Balance Sheet, Assets, Liabilities, Profit & Loss Account, Petty Cash Book, Cash Book, Ledger)

Unit No. 2 – Code of Conducts And Fees - (15%)

- The Code of Professional Conduct.
- Scale of Professional Fees and Charges.
- Conditions of Agreement.
- Standard Terms.
- Architectural Dwg.
- Execution of the Assignment.
- Schedule of Payment.
- Arbitration (Including Arbitrator Act)

Unit No. 3 – PROFESSIONAL PRACTICE - (20%)

- Introduction to Title
- Duties And Liabilities As Per The Architect Act.-1972
- What Is The Architect Act 1972
- Professional conduct
- Process towards Architects Registration.
- Architect's Services.
- Architect's Rights and Contractor Duties.

Unit No. 4 – Architectural Competition - (15%)

- Eligibility to compete
- Registration method
- Type of Competition (Open, Limited or Competition by Invitation, Special, Regional)
- Conditions for Conducting Architectural Competition.
- Duties of Assessors in Competitions.
- Architectural Copyright.
- Essential Characteristics of Copyrights.
- Copy Right and Right of Ownership in Competition.

Unit No. 5 – Tender - (15%)

- Invitation Of Tender (Private, Public, Negotiation)
- Nature of Tender.
- Earnest Money.
- Security Deposit.
- Retention Amount.
- Mobilization Fund.
- Tender Documents.
- Tender Notice and Tendering Process.
- Essential Characteristics of a Tender Notice.

Unit No. 6 – Introduction to Building Bye –Laws - (15%)

- UDCPR – Chapter 01 To 06 (Definitions, Submission Requirements, Land Use And Classification, Dwg. Requirement, Set Back, F.S.I, Type of Buildings.)
- NBC – (Part-I – Definitions (Introductions), (Part-II – Fire Fighting)
- Environmental Clearance (Introduction, Title, Applicable, Preparation or Requirement)

SESSIONAL WORK:

i) Notes based on units
ii) Data collection on Bye laws
iii) Professional document formats to be studied w.r.t. professional act
iv) Unit no.6 only for sessional work should be excluded from theorypaper.

REFERENCES:

- Professional Practice by Roshan Namavati.
- UDCPR
- NBC
- Handbook of Council of Architecture

SHIVAJI UNIVERSITY, KOLHAPUR

SYLLABUS FOR NINTH SEM-ARCHITECTURE DEGREE COURSE

(BS &AE-905)

SUBJECT:-

Advance Services

Course Code : **BS & AE-905**	Semester **: IX**
Teaching Scheme : **L: 01, St :03, Total:04**	Credits : **02**
Examination Scheme : **Theory - 100 Marks** **Term Work - 50 Marks**	Total marks: **150**

COURSE DESCRIPTION:

This course is designed to give architects an overview and introduction to domestic and Industrial water supply and drainage systems; solid waste management system for large area such as city and rural level, Architectural considerations and their coordination with other services in architectural designs should be incorporated at the preliminary stage of planning and design.

COURSE OBJECTIVES:

To understand the need and importance of building services.
To understand the water supply system at urban and rural level.
To apply knowledge gained on water supply system in small, medium and large multi-story buildings.
To design water supply system in a residential commercial and Industrial building.
To understand components of water supply and sewage systems.
To understand the sewage water system at urban and rural level.
To design sewage system for a multistoried building, a colony and city level.
To design rain water disposal system for a residential building.

COURSE OUTCOMES (COS):

Discuss the active and passive components of water supply, sewage and refuse disposal system.
Develop understanding and design of water supply system at town, city and rural area level.
Design rain and waste water system in domestic building
Design of water-sewer system in buildings (except hydraulics design calculation parts) and understand refuse disposal system.
Develop an understanding of domestic gas and its design parameters.

Course Content

Unit No.1- Water Supply at city and township level—35%

- Sources of water supply, Water demand, Quality of water, Standards for hard, soft and potable water; standards for different uses of water
- Basic principles of water purification system (Introduction only)
- Distribution of water
- Water Purification system and plant, Purification of water
- Water Distribution and methods of distribution of water- advance systems.
- Distribution for single and multistoried buildings and Industrial projects, and rural area

- Appurtenances in the distribution system
- Water buy principles and implementations.

Unit No. 2- Sewage disposal of large areas (Introductory only)—35%

- Sewage disposal system for housing colony, small and medium sized project, for smaller, bigger towns and in rural areas.
- Methods and pattern of sewage collection, Quantity of sewage collection.
- Design of sewers and drains
- Sewer Appurtenances-connections of large complexes to Municipal sewers and ventilation of sewers to public sewerage system.
- Sewage disposal -relevant norms to be referred.
- Sewage disposal methods
- Sewage treatment plants and types
- Bye products
- Drainage systems of multistoried building.
- Rural sanitation

Unit No. 3- Refuse Disposal system --20%

- Refuse disposal system for a small house, colony and town.
- Refuse types, collection & transportation system, disposal problems and methods of disposal.
- Municipal solid waste
- Refuse disposal in multistoried buildings.
- Solid waste management rule & regulations,
- Composting, bio-methenation, Vermiculture.

Unit No. 4- Gas Plant and Distribution (Introductory only)--10%

- Gas plant, laying of pipes, controls, security measure and fire hazard precautions, metering,
- Energy supply with special reference to piped gas (manifold), its utility, integration and management at building and site level, safety measures.

REFERENCES:

- Plumbing Engineering by Dr. Subhash Patil
- International Plumbing Code by Indian Code Council
- Modern Plumbing by E. Keith Blankerbaker
- Plumbing Basics byDr. Rick Peters
- Building Construction Illustrated by Dr. F.D.K Ching
- Building Construction by Sushil Kumar
- Building Construction by B.C.Punmia
- Building Construction by Rangwala
- Mechanical and Electrical Equipment for Building by Walter T. Gondzik
- Building Construction by P.C Varghese

SHIVAJI UNIVERSITY, KOLHAPUR

SYLLABUS FOR NINTH SEM-ARCHITECTURE DEGREE COURSE

(PE-906A)

SUBJECT:-

Elective –VI Graphic and Product Design

Course Code: **PE - 906**	Semester : **IX**
Teaching Scheme : **L : 01 P: 01 Total : 02**	Credits : **02**
Examination Scheme : Term Work – **50 Marks** Viva Voce – **50 Marks**	Total Marks : **100**

COURSE DESCRIPTION:

- The course will focus on the principles, techniques, and processes involvedin product designing through graphics to create functional and aesthetic appealing designs.

COURSE OBJECTIVES:

- To understand the fundamentals of Graphics and Product Design.
- To understand and apply the elements of design in product design.
- To introduce various digital design tools, techniques and various materials in product design.

COURSE OUTCOMES (COS) :

The students to develop a comprehensive understanding of graphics and product design, enabling them to apply their knowledge effectively in creatinginnovative and user- friendly product designs.

COURSE OUTLINE

The course outline for architectural journalism may vary based on the expertise and available resources at individual colleges. Each college has theflexibility to select topics that align with their overall philosophy and mission statement.

COURSE CONTENT
Unit No. 1 Introduction to the fundamentals of Graphics and Product Design
Unit No. 2 Elements of Design
Unit No. 3 Digital Design Tools and various materials

SESSIONAL WORK:

- Individual 2-assigments based on above 2 units.
- Group assignment based on any 1 unit.
- The students can take any product from there thesis and can design it.

REFERENCE BOOKS:

1. The Fundamentals of Product Design by Richard Morris
2. The Indian Smart Product Design by Sendpoints
3. The Design of Everyday Things by Don Norman
4. Basics Product Design 02: Material Thoughts by David Bramston.
5. Product Design by Alex Milton
6. Elements of Design by Anderson, Donald M. Holt – Rinehart and Winston, New York (1961)
7. Graphic Design School: A Foundation Course for Graphic, by David Dabner and Sandra Stewart, Thames & Hudson
8. Product Design and Development, by Karl Ulrich and Steven D. Eppinger, McGraw-Hill Education (India) Pvt. Limited.
9. Ergonomics in Product Design, Send points Publishing Company Limited.
10. Kathy Baxter and Catherine courage, Understanding your users: A Practical guide to user requirements methods, tools.
11. How to use graphic design to sell things, explain things, make things look better, make people laugh, make people cry, and (every once in a while) change the worldby Michael
    Bierut, Thames & Hudson.

12 The design of everyday things' by Don Norman, Basic Books; 2nd edition

SHIVAJI UNIVERSITY, KOLHAPUR

SYLLABUS FOR NINTH SEM-ARCHITECTURE DEGREE COURSE

(PE-906B)

SUBJECT:-

Elective VI Architectural Journalism

Course Code : **PE – 906**	Semester : **IX**
Teaching Scheme : **L : 01 P : 01 Total : 02**	Credits : **2**
Examination Scheme : Term Work - **50 Marks** Viva-Voce - **50 Marks**	Total marks: **100**

COURSE DESCRIPTION:

To understand the basic ideas and principles of architectural journalism, and learn how to analyze, interpret, and share architectural information effectively.

To help students develop their skills in architectural journalism, and providing them with the necessary knowledge, practical experience so that they can take it as potential career.

COURSE OBJECTIVES:

To understand the basic ideas and principles of architectural journalism, and toanalyze, interpret, and share architectural information effectively.
To understand documentation and technical writing.
To introduce and make students aware about new age journalism and technology.

COURSE OUTCOMES:

To make students understand key concepts of architectural journalism.
To help students to develop their skills in architectural journalism, and providing themwith the necessary knowledge, practical experience so that they can take it as potential career.

COURSE CONTENT:
The course outline for architectural journalism may vary based on the expertise and available Resources at individual colleges. Each college has the flexibility to select topics that align with their overall philosophy and mission statement.
UNIT I INTRODUCTION TO JOURNALISM: Introduction, key concepts and objectives of journalism. Overview of different Journals in architecture. Outline of journalism skills: research, reporting, writing, editing, photography, columnists, public relationships, criticism. Introduction to copyright, code of ethics.
UNIT II ARCHITECTURAL JOURNALISM: Types of architectural journals. Works of key architectural journalists. Public discourse on the internet. Mass media and public opinion. Analyze
Unit III TECHNOLOGY AND MEDIA: Introduction to software needed in journalism. Understanding the individual demands in the context of newspapers, radio, film, and television. Multimedia/ online journalism and digital developments.

SESSIONAL WORK:

Notes based on above each units.

Assignments:

Unit 01- Synopsis writing of their architectural project, Literature review writing.

Unit 02: Article writing for newspaper/ short film, radio news etc. related to architectural subjects. Article for college magazine.

Unit03: Research paper on their architectural project/conference paper/ write report on works of architectural journalist/own architectural design project.

REFERENCES:

- Architecture and the Journalism of Ideas by Bender, Thomas
- Architectural Criticism and Journalism by Mohammad al-Asad w/ Majd Musa
- Niemen Reports: Architectural Criticism: Dead or Alive by Blair Kamin.
- The Failures of Architecture Criticism, by Lance Hosey in the Huffington Post.
- Edward Jay Friedlander and John Lee, 'Feature Writing for Newspapers and Magazines', 4th edition, Longman, 2000.
- James Foust, 'Online Journalism Principles and Practices of News for the Web',Holcomb Hathaway Publishers, Scottsdale, AZ, 2005.
- Wiseman, Carter (2014), "Writing Architecture: A Practical Guide to Clear Communication about the Built Environment", Trinity University Press
- Lange, Alexandra (2012), "Writing About Architecture: Mastering the Language of Buildings and Cities", Princeton Architectural Press
- Schmalz, Bill 92014), "The Architect's Guide to Writing: For Design andConstruction Professionals", Images Publishing Dist Ac
- Sykes, A. Krista (2007), "The Architecture Reader: Essential Writings from Vitruvius to the Present", George Braziller Inc.

SHIVAJI UNIVERSITY, KOLHAPUR

SYLLABUS FOR NINTH SEM-ARCHITECTURE DEGREE COURSE

(PE-907A)

SUBJECT:

Elective VII Disaster mitigation and management

Course Code : **PE – 907 A**	Semester : **IX**
Teaching Scheme : **L : 01 S : 02 Total : 03**	Credits : **2**
Examination Scheme : Term Work - **50 Marks** Viva-Voce - **50 Marks**	Total marks: **100**

COURSE OBJECTIVE

- To understand the concept of Disaster and its causes
- To Learn the hazard maps of India & legal framework of India regarding disaster management
- To understand impacts of Disaster on human lives and mitigation strategies by case study method

COURSE OUTCOMES:

- Knowledge of types of Disasters: Students will acquire a comprehensive understanding of various types of disasters and its causes
- Students will be able to understand hazard maps of India with respect to mitigation strategies of disaster management
- Students will be able to understand mitigation strategies with respect to chosen case study

COURSE CONTENTS

UNIT-1-INTRODUCTION

Definition & classification of Disasters
Natural Disasters
Manmade Disasters
Disaster Management Act 2005
Hazard maps of India- discussion only

UNIT 2

Case Study of natural disaster or manmade disaster

UNIT 3

Analysis of case study with respect disaster mitigation management

SESSIONAL WORK:

- Written assignments on unit 1 Definition and classification of disasters, National Disaster Management Authority brief commentary on disaster management Act 2005,
- Presentation - Case study of natural or manmade disaster (any one)- unit 2
- Presentation - Analysis of case study and disaster mitigation management -unit 3

REFERENCE STUDY MATERIAL:

1. Disaster Management by Kumar N., Alfa Publications, New Delhi
2. Disaster Management by Ghosh G. K., A.P.H Publishing Corporation, New Delhi
3. Disaster Management by Goel, S.L., Deep & Deep Publication Pvt. Ltd., New Delhi
4. Disaster Management by R Subramanian Vikas Publishing House Pvt Ltd, New Delhi
5. Annual Reports by National Disaster Management Authority
6. Website: National Disaster Management Authority

SHIVAJI UNIVERSITY, KOLHAPUR

SYLLABUS FOR NINTH SEM-ARCHITECTURE DEGREE COURSE

(PE-907B)

SUBJECT:

Elective VII Services in Tall Building

Course Code : **PE – 907 B**	Semester : **IX**
Teaching Scheme : **L : 01 S : 02 Total : 03**	Credits : **2**
Examination Scheme : Term Work - **50 Marks** Viva-Voce - **50 Marks**	Total marks: **100**

COURSE OBJECTIVE

- To understand the concept of tall buildings and their development
- To understand various services related to tall buildings.
- To understand water supply services in tall buildings
- To understand the Drainage & Sanitation in Tall Building

COURSE OUTCOME:

- Introduction to tall buildings: Students will understand necessity, evolution, planningstrategies of tall buildings
- Students will acquire a comprehensive understanding of services required in tall buildingsStudents will develop the skills necessary to conceptualize water supply and drainage services effectively in tall buildings.
- Students will gain knowledge of relevant building codes, standards, and regulationsgoverning tall buildings services.
- By achieving these course outcomes, students will be equipped with the necessary knowledge, skills, and attitudes to contribute effectively to understanding services in tallbuildings.

COURSE CONTENTS

UNIT-1
Definition & classification of tall buildings Overview of Tall Buildings and their unique architectural & Engineering Challenges. Evolution of tall buildings Planning strategies of tall building, importance of core in tall building Introduction to various services, and their significance with regard to tall buildings planning of service ducts

UNIT-2 Water supply in Tall Building Water Storage & Distribution by a) Gravity b) Pumping c) Hydro-pneumatic) Water supply sources. (e.g. Municipal water supply) Alternative water sources such as rainwater harvesting & grey water reuse. Calculating Water requirement for tall building considering domestic use and firefighting Selection of plumbing fixtures & piping & in a tall building Sprinkler provision for tall buildings Relevant NBC recommendation
UNIT-3
Drainage & Sanitation in Tall buildings and its challenges Selection of proper piping systems for wastewater

SESSIONAL WORK:

Written assignments
Case study and presentations
Class participation and discussions
Expected Presentations Outputs: (In sheets or presentation format individual or ingroup)

REFERENCE BOOKS:

Services in High-Rise Buildings by M.Y.H. Bangash and A.H. Sheikh
Building Services for High-Rise Buildings in India by S.K. Singh
Tall Building Systems and Concepts: Planning, Design, and Services by S.K. Jain and A.K.Jain
Design of Services in High-Rise Buildings by S.S. Gupta
Development in tall building 1983 CTBUH- by Lynn S. Beedle
Advances in Tall Buildings CTBUH - by Lynn S. Beedle Highrise
manual- by Johann Eisele, Elen Klotz
Skyscraper-By Eric Howeler
Best Tall Buildings- CTBUH International Award-winning projects
Relevant NBC 2016

SHIVAJI UNIVERSITY, KOLHAPUR

SYLLABUS FOR 10th SEM-
ARCHITECTURE DEGREE COURSE

SHIVAJI UNIVERSITY, KOLHAPUR

SYLLABUS FOR TENTH SEM-ARCHITECTURE DEGREE COURSE

(PC-1001)

SUBJECT:

Architectural Project III (Design program/Site/selection /Final Design and Presentation Drawing / Report)

Course Code: PC -1001	**Semester: X**
Teaching Scheme: L: 02 St: 08 Total:10	**Credits: 14**
Examination Scheme: **Term work: 200** **External: 200**	Total marks: **400**

COURSE DESCRIPTION:

Students of Architecture pursue their undergraduate Architectural project thesis as Designthrough research. The whole course is divided into two semesters of final year B.Arch. in (Sem. 9 & Sem. 10)

Based on Architectural Project 1+2 study outcome the student will proceed for Architectural Project III.

Architectural Project III leads for finalization of design program, site selection and analysis, concept and zoning and whole architectural drawing set with technical and services details as well as in the form of report.

COURSE OBJECTIVES:

- To maintain the correlation of each stage and complete the chain process of whole architectural project.
- To enrich the knowledge through thoughtful Synthetization of whole study.
- To develop student's ability to handle specific strategy/aspect which is relevant to the topic.

COURSE OUTCOMES (COS):

At the end of the course the student should be able:

- To reflect the knowledge gained from all the course undertaken by the student in all previous semesters.
- To comprehend the design philosophy, theories, analysis, Synthetization of wholestudy to define final outcome of the project.

COURSE CONTENT
Unit No. 1 – Design program Prepare design program based on Synthetization of literature review, case study conclusions and data collection (Matrix of all heads)
Unit No. 2 – Site selection and site analysis • Based on design program selection of site • Site analysis **Macro level** – National, state, Regional, City level analysis to justify the level, need and scale of project **Micro level –** Area analysis, study of site surroundings, and actual site analysis with geography, geology, climate, etc.
Unit No. 3 – Concept and zoning Based on overall site analysis and the whole journey of project (1,2 &3) define zoning and concept Site and building zoning in correlation with each other in the schematic 3D
Unit No. 4 – **Drawing sheets of the whole study includes Architectural project 1 +2** **Final set of Architectural drawing** • Types of site plans required as per project • Other drawings required to define design approach • All building plans, elevations and sections • Calculations • All site and building services as per each project requirement • Technical details
Unit No. 5 – Report Technical format of report as per ideal guidelines.

SESSIONAL WORK:

Synopsis (A4 Size)

Report hard bounds in two copiesSheets –

Drawing sheets of the whole study includes Architectural project 1 +2Final set of Architectural drawing

- Types of site plans required as per project
- Other drawings required to define design approach
- All building plans, elevations and sections
- Calculations
- All site and building services as per each project requirement
- Technical details

REFERENCES

Thesis manual for Bachelor of Architecture – A handbook of requirements and suggestions, Navneet Mounoth, Mahafuzuar Rahman Barbhuiya

SHIVAJI UNIVERSITY, KOLHAPUR

SYLLABUS FOR TENTH SEM-ARCHITECTURE DEGREE COURSE

(BS&AE-1002)

SUBJECT:-

Advance Building Construction

Course Code : **BS & AE - 1002**	Semester : **X**
Teaching Scheme : **L : 01 P : 03 Total : 04**	Credits : **3**
Examination Scheme : Term Work- **100 Marks** Theory - **100 Marks** Viva-Voce-**100 Marks**	Total marks: **300**

COURSE DESCRIPTION:

To familiarize students with construction methods for large scale construction projects with emphasis on construction methods, reinforcement details, joint details etc.

COURSE OBJECTIVES:

- To introduce potentials of various building materials.
- To introduce special foundations for High rise structures.
- To introduce special structures like cold storage &swimming pool.
- To introduce the structural systems for long span roofs.
- To introduce earthquake resistant structural systems.
- To introduce methods of waterproofing of basements.

COURSE OUTCOMES (COS):

At the end of the course the student are able to:

1. **Identify** the potentials and properties of construction materials.
2. **Select** the appropriate type of foundation for High-rise structures.
3. **Understand** the Structural systems of Long span roofs, Special structures & Earthquake resisting structures.
4. **Prepare** construction details of basement waterproofing.
5. **Design** earthquake resistant buildings.

COURSE CONTENT

Advance Building Materials (20%)

Unit No. 1 – Paints And Varnishes– (5%)

Unit No. 2 – Sound And Thermal Insulating Materials (5%)

Unit No. 3 – Epoxy Materials – (5%)

Unit No. 4 – Mastic Sealants And Adhesive (5%)

Advance Building Construction (80%)

Unit No. 1- Foundation – (20%)

- Understanding methods of construction of special types of foundations for Mid-rise and High- rise structures (Piled Raft foundation, Cellular Raft foundation).
- Understanding the methods of Underpinning for foundation(Pit method, Pile method, Mass concrete stripe foundation, Needle and pile Underpinning, Jack Pile underpinning).

Unit No. 2 – Special Structures – (20%)

- Understanding constructional details of cold storage (Multi-chamber Layout, Detail plan of single chamber with internal details).
- Understanding dimensional and constructional details of Olympic size swimming pool. (Wall& floor joint, Deck and skimmer details, water circulation Layout).
- Understanding methods of Demolition of structures(Manual demolition ,Wrecking Ball demolition method, Pusher arm demolition method, Controlled demolition, Chemical demolition).

Unit No. 3 – Structural systems for long span roof – (20%)

- Understanding basic concepts of Portal frames and its types.
- Understanding basic concepts of Shell roof and its types.
- Understanding basic concepts of Space frame and its types.
- Understanding basic concepts of Geodesic dome and Long span vault.
- Understanding basic concepts of Pneumatic structure.

Unit No. 4 – Earthquake resisting structure– (10%)

- Overview of Earthquake resisting structural systems for Load bearing structure, RCC. framed structure.
- Overview of Earthquake resisting structural systems for High-rise structures (Moment resisting frames, Cross-braced frames and Shear walls. (Introductory)

Unit No. 5 – Waterproofing– (10%)

- Understanding methods of basement waterproofing.(Internal tanking, Externaltanking, &Drained cavity system).
- Types of Lifts and construction details of Passenger lift.

SESSIONAL WORK:

- Notebook for Advance Building Materials.
- Hand drafted sheets on units 1,2 and5 to cover all the aspects of course outline with sufficient details; (5-6 sheets)
- Freehand sketches with nomenclature, on units 3 and 4 including notes. (2-3 sheets)
- Market survey for Advance building materials. (Report)

REFERENCES :

Dr. B.C Punmia (2012) Building Construction (10th edition) Laxmi Publications. S. C.

Rangwala (2013) Engineering materials (Fortieth edition), Charotar Publishing pvt. ltd.

S.K. Duggal (2016) Building materials (4th edition) – New age international publishers.

W.B. Mckay (2015) Building construction

National Building Code of India 2016 (Volume 1) and relevant I.S.I. Specifications.

SHIVAJI UNIVERSITY, KOLHAPUR

SYLLABUS FOR TENTH SEM-ARCHITECTURE DEGREE COURSE

(PC-1003A)

SUBJECT:

Elective- VIII Green Building

Course Title : **Green Building**	
Course Code : **PE -1003 A**	Semester : **X**
Teaching Scheme : **L : 02 St : 02 Total : 4**	Credits : **3**
Examination Scheme : Term Work - **50 Marks** Viva-Voce - **50 Marks**	Total marks: **100**

COURSE DESCRIPTION:

This course enables students to understand the fundamentals of Green building for better present and future along with environmental, social and economical living aspects. Through theoretical assignments, practical applications, and presentations.

COURSE OBJECTIVES:

- To understand the Global Environmental Scenario.
- To study introduction and need of Green Building.
- To discuss the green building materials.
- To study different concepts of green building
- To understand the green technical standards and certification systems.

COURSE OUTCOMES (COS):

At the end of the course the student should be able to aware of the Global Scenario of environmental crises, how construction industry has part in this Global destruction, how GreenBuildings can help by reducing the negative impact and to make students realize their responsibilities as Architects.

COURSE CONTENT

Unit No. 1 – Environmental Crises– (15%) (Introduction, Theory lectures supported by presentations)

- Basic concepts of environment – Environment, ecosystem, Food Chain, Energy Chain, Carbon Cycle
- Environmental Crises (Ozone layer depletion, Loss of bio diversity, Global warming) - Definition, Causes and impacts.
- Carbon footprint – Global efforts to reduce carbon emissions

Unit No. 2 – Introduction to Green Building – (30%) (Theory lectures with detailed presentations, class participation & discussion)

- Definition of Resources, different types of Resources (Land, Water, Energy, Fuels, Waste) – Global Scenario, Challenges and Opportunities, Onsite Sources and Sinks
- Introduction to Green Building -Definition, concept & objectives - What is Green Building, Why to go for Green Building, Benefits of Green Buildings, Green Building Materials and Equipment in India, What are key Requisites for Constructing a Green Building, Important Sustainable features for GreenBuilding,
- Green buildings as a Solution – Environmental benefits, Economic Benefits, Social Benefits

Unit No. 3 – Green Building Materials – (10%) (Introduction & discussion)

- Green building Construction Measure
- Uses of different types of materials and their availability
- Embodied energy & Environmental issues related to quarrying of building materials
- Listing of various Green building materials & life cycle analysis.

Unit No. 4 –Concepts of Green Building –(15%) (Introduction & discussion)

- Definition, concept & objectives
- Various concepts of Green Buildings for Green Infrastructure (Green roof, greenfaçade, Active and Passive design strategies, Energy Efficiency, Water Conservation, Waste Management, and Indoor Environmental Quality)

Unit No. 5 – Green building rating systems – (30%) (Lectures supported with presentationsand Case studies of different green rated buildings for term work, class participation & discussion)

- Indian Green Building Council, Green Building Moment in India, Benefits Experienced in Green Buildings, Launch of Green Building Rating Systems, Residential Sector, Market Transformation; Green Building Opportunities And Benefits: Opportunities of Green Building, Green Building Features, Material and Resources, Water Efficiency, Optimum Energy Efficiency, Typical Energy Saving Approach in Buildings, LEED India Rating System and Energy Efficiency,
- Various rating systems worldwide, LEED, GRIHA, IGBC, BREEM etc.

SESSIONAL WORK:

S Written assignments
Case study and presentations
Class participation and discussions
Expected Presentations Outputs: (In sheets or presentation format individual orin group)

- Study of current global environmental crisis (Unit -01)
- Presentations on introduction to Green Building (Unit -02)
- Study of Different green Building Materials (Unit -03)
- Study of Different energy and water conservation strategies, waste management strategies, Building Monitoring systems. (Unit -04)
- Case studies different green rated buildings. (Individual) (Unit-0

REFERENCES:

Text Books:

1. GRIHA Manual Volume -01 , Version 2019
2. Green Building Hand Book by Tomwoolley and Samkimings, 2009.

Recommended References:

- Manual of tropical housing- Otto koenigs berger
- Complete Guide to Green Buildings by Trish riley
- Standard for the design for High Performance Green Buildings by Kent Peterson, 2009
- IGBC new building rating system manual

SHIVAJI UNIVERSITY, KOLHAPUR

SYLLABUS FOR TENTH SEM-ARCHITECTURE DEGREE COURSE

(PE-1003B)

SUBJECT:-

Elective VIII Barrier free Architecture

Course Code : **PE -1003B**	**Semester : X**
Teaching Scheme : **L : 02 St : 02 Total : 4**	**Credits : 3**
Examination Scheme : **Term Work - 50 Marks** **Viva-Voce - 50 Marks**	**Total marks: 100**

COURSE DESCRIPTION:

This course enables students to understand the fundamentals of Barrier-Free Environment in Architecture which enables people with disabilities and elderly to move about safely andfreely and to use the facilities within the built environment.

COURSE OBJECTIVES:

- To study Barrier-Free Architecture for people with disabilities to move about safelyand freely and to use the facilities within the built environment.
- To study the environment that supports the elderly people and people with disabilities with functioning of individuals without assistance, in everyday activities.

COURSE OUTCOMES (COS):

At the end of the course the student should be able to:
Sensitize towards the needs of individuals with disabilities in architectural spaces.
Apply universal design principles in creating inclusive environments.
Incorporate design elements for accessible external spaces.
Implement guidelines and space standards for barrier-free built environments.
Analyse case studies of successful barrier-free elements in public buildings.
Design interior elements and site plans with a focus on accessibility for all.
Communicate effectively barrier-free architecture concepts through graphical presentations.

COURSE CONTENT
Unit No. 1 - Introduction to Barrier Free Architecture – (10%) • Definition of barrier free design, • Need for barrier free concepts in architecture, • Concepts of universal design and types of disabilities. • Design principles for barrier free architecture and accessibility for all
Unit No. 2 - Barrier free elements in Interior Architectural Design spaces and Urban Designspaces and Urban Planning – (10%) • Study of design elements inside and outside the building like curb ramps, pedestrian crossing, public toilets, and parking, signage, flooring and street furniture.

Unit No. 3 - Standards for barrier- free built Environment – (20%)

- Guidelines and space standards for barrier- free built Environment for disabled and elderly persons in various buildings such as institutes, hospitals, public spaces, shopping complexes and office buildings etc.

Unit No. 4 - Case Study- Analysis, Presentation & Study of design elements - (20%)

- Barrier free architecture in Public Buildings – dimensions and standards.
- Case Study analysis of Barrier free elements in Public buildings along with photographic documentation and Presentation.

Unit No. 5 - Design elements within buildings and in Site planning-(40%)

Students should design following elements at a conceptual level which will be interpreted in their Architectural design project such as-

- Parking, approach to plinth levels, corridors, entrance and exit, windows, stairways, lifts, toilets, signage, guiding and warning systems.
- Floor materials, Design elements outside the buildings - curb at footpath, road crossing, public toilet, bus stop, toilet booths, and signage.
- Provisions for residential buildings and public buildings and places like auditorium, parks, restaurants, railway station.

SESSIONAL WORK:

- Theory Assignments
- Application of graphical presentation to explain the concept of barrier-freearchitecture.

REFERENCES:

- Guidelines and Space Standards for Barrier Free Built Environment for Disabled and Elderly Persons – Central Public Works Department, Ministry of Urban Affairs &Employment, India, 1998
- IS – 4963 (1987), Recommendations for buildings and facilities for Physically Handicapped
- Barrier-Free Design: Principles Planning, Examples, by Oliver Heiss, Christine Degenhardt, Johann Ebe (Birkhauser Architecture, 2010)

SHIVAJI UNIVERSITY, KOLHAPUR

SYLLABUS FOR TENTH SEM-ARCHITECTURE DEGREE COURSE

(PE-1004A)

SUBJECT:-

Elective IX A Sustainable Cities and Communities

Course Code **: PE-1004 A**	**Semester : X**
Teaching Scheme : **L: 01 St :03 Total:04**	Credits : **2**
Examination Scheme : Term Work - **50 Marks** Viva-Voce - **50 Marks**	Total marks: **100 Marks**

COURSE DESCRIPTION:

This course aims to provide undergraduate architecture students with a comprehensive understanding of sustainable cities and communities. It focuses on the integration of social, environmental, and economic factors in urban development, with an emphasis on the role of architecture in creating sustainable built environments. It explores the principles, strategies, and design approaches required to create environmentally, socially, and economically sustainable built environments. Students will critically examine the challenges and opportunities associated with urban development and explore innovative solutions to create sustainable cities and communities.

COURSE OBJECTIVES:

- Understand the concept of sustainable cities and communities and its significance in addressing contemporary urban challenges.
- Explore the social, environmental, and economic dimensions of sustainability in urban design and architecture.
- Analyze and evaluate successful examples of sustainable cities and communities worldwide.
- Develop skills to integrate sustainability principles in architectural design projects.
- Gain knowledge of sustainable urban infrastructure systems, transportation, energy, and waste management.
- Recognize the importance of community engagement and participatory design in sustainable urban development.
- Foster critical thinking and problem-solving skills through case studies and design exercises.

COURSE OUTCOMES (COS):

At the end of the course the student should be able to:

Understand the principles, concepts, and theories related to sustainable urban development and its significance in contemporary architecture.

Develop critical thinking and problem-solving skills, enabling them to identify challengesand propose sustainable solutions in the context of urban development and architecture. Gain knowledge and understanding of current trend and needs through Sustainable Development

Enhance their communication skills through presentations, case-studies, written assignments, and class discussions, effectively articulating concepts, ideas, and design proposals related to sustainable cities and communities.

COURSE CONTENT
Unit No. 1 – Introduction to Sustainable Cities and Communities (20 %) • Definition and key concepts of sustainable urban development • Historical perspectives on urban sustainability • Sustainable development goals and their relevance to cities and communities, with a focus on Goal 11
Unit No. 2 – Urban Design and Planning for Sustainability (10 %) • Principles of sustainable urban design • Urban planning strategies for sustainable cities • Mixed-use development and compact city concepts
Unit No. 3 – Green Infrastructure, Urban Biodiversity, Sustainable Transportation and Mobility (20 %) • Importance of green spaces and urban biodiversity • Sustainable landscaping and urban greening • Storm water management and sustainable drainage systems • Sustainable transportation planning • Non-motorized transportation and pedestrian-friendly designs • Integration of public transit systems in urban areas
Unit No. 4 – Social Sustainability in Cities and Communities (10%) • Social equity and inclusivity in urban design • Affordable housing and community development • Community engagement and participatory design approaches
Unit No. 5 – Resilient Cities and Climate Change Adaptation (introduction only) (10 %) • Climate change impacts on cities and communities • Designing resilient infrastructure and buildings • Urban resilience strategies and disaster preparedness
Unit No. 6 – Case Studies and Best Practices (30 %) • Analysis of sustainable cities and communities around the world • Examination of exemplary sustainable architecture projects • Lessons learned and best practices in sustainable urban development

SESSIONAL WORK

- Written assignments/tutorials /presentations to be conducted in group/individual.
- Case study with critical analysis and presentations
- Class participation and discussions in groups.

REFERENCES:

- Green Cities: Urban Growth and the Environment by Matthew E. Kahn
- Sustainable Urban Development Reader edited by Stephen M. Wheeler and Timothy Beatley
- Designing the Sustainable Site: Integrated Design Strategies for Small-Scale Sites and Residential Landscapes by Heather L. Venhaus
- Ecological Urbanism edited by Mohsen Mostafavi and Gareth Doherty
- Sustainable Cities in India: Challenges and Future Perspectives edited by Poonam Sharma and Sumita Saxena
- From Poverty, Inequality to Smart City- Proceedings of National conference on sustainable built environment edited by Fumihiko Seta, Joy Sen, Arindam Biswas, Ajay Khare
- Urbanism in the Age of Climate Change by Peter Calthorpe and William Fulton
- Eco cities of Tomorrow: Insights from the Eco city World Summit 2017 editedby Sujata Govada and Samarth Das
- Indian Cities in Transition edited by Darshini Mahadevia
- Planning Sustainable Cities: Policy, Practice, and Design edited by Vinayak Bharne and Michael W. Meh

SHIVAJI UNIVERSITY, KOLHAPUR

SYLLABUS FOR TENTH SEM-ARCHITECTURE DEGREE COURSE

(PE-1004B))

SUBJECT:-

Elective IX Intelligent Building

Course Code **: PE-1004 B**	**Semester : X**
Teaching Scheme : **L: 01 St :03 Total:04**	Credits : **2**
Examination Scheme : Term Work - **50 Marks** Viva-Voce - **50 Marks**	Total marks: **100 Marks**

COURSE DESCRIPTION:

The course "Intelligent Building in Architecture" explores the integration of technology, automation, and smart systems in the design and operation of buildings. It provides students with an understanding of the principles, technologies, and strategies involved in creating intelligent and responsive built environments. The course emphasizes the role of architecture in leveraging technology to enhance the performance, efficiency, and user experience of buildings. It covers topics such as building automation, sensor networks, energy management, occupant comfort, and data-driven design.

COURSE OBJECTIVES:

- To introduce students to the concept of intelligent buildings and their significance in contemporary architecture.
- To explore the various technologies and systems used in intelligent building Design.
- To understand the role of automation and smart systems in improving building performance and user comfort.
- To analyze the social, economic, and environmental impacts of intelligent buildings.
- To develop critical thinking and problem-solving skills related to the integrationof technology in architectural design.

COURSE OUTCOMES (COS):

At the end of the course the student should be able to:

- Understand the concept of intelligent buildings and their significance in contemporary architecture, including their potential to enhance building performance, energy efficiency, and user comfort.
- Understand the role of automation and smart systems in improving building performance and occupant comfort, including the integration of HVAC controls, lighting systems, security systems, and occupant feedback mechanisms.
- Enhance their communication skills by effectively conveying intelligent building concepts, technologies, and their implications through presentations, reports, and design projects.

COURSE CONTENT
Unit No. 1 – Introduction to Intelligent Buildings (20 %) • Definition and key concepts of intelligent buildings • Historical perspectives on smart building design • Benefits and challenges of intelligent buildings
Unit No. 2 – Building Automation Systems (10 %) • Fundamentals of building automation and control • Integration of HVAC, lighting, and security systems • Building management systems and protocols
Unit No. 3 – Energy Management and Sustainability and Data-Driven Design and Performance Optimization (20 %) • Energy-efficient building systems and equipment • Smart metering and monitoring for energy optimization • Integration of renewable energy systems in intelligent buildings • Building information modeling (BIM) for intelligent design • Tools for performance simulation and optimization • Post-occupancy evaluation and feedback mechanisms
Unit No. 4 – Indoor Environmental Quality, Occupant Comfort and Integration of Smart Technologies (20 %) • Intelligent lighting and day-lighting systems • HVAC controls for thermal comfort and air quality • Acoustic control and noise reduction strategies • Integration of smart devices and wearable technology in buildings • User interface design for smart building applications • Human-centric design and user experience considerations
Unit No. 5 – Case Studies and Best Practices (30 %) • Analysis of intelligent building projects around the world • Examination of exemplary smart systems and technologies • Market Survey of the Automation systems available locally

SESSIONAL WORK

- Written assignments/presentations to be done in group or individually.
- Any one Case study of intelligent building with critical analysis and presentations of same.
- Market Survey of the Automation systems available locally to be done in groups /individual.

REFERENCES:

- "Intelligent Buildings: Design, Management and Operation" by Derek Clements-Croome
- "Smart Buildings: Advanced Materials and Nanotechnology to Improve Energy-Efficiency and Environmental Performance" by Marco Casini
- "Intelligent Building Systems" by G. D. Tiwari and S. M. Shiva Nagendra

"Building Automation: Communication Systems with EIB/KNX, LON and BACnet" by Hermann Merz

- "Smart Buildings Systems for Architects, Owners, and Builders" by James M. Sinopoli

SHIVAJI UNIVERSITY, KOLHAPUR

SYLLABUS FOR TENTH SEM-ARCHITECTURE DEGREE COURSE

(SEC-1005)

SUBJECT:-

Entrepreneurship Skills for Architects

Course Code : **SEC-1005**	Semester : **X**
Teaching Scheme : **L : 02 St : 00 Total :02**	Credits : **02**
Examination Scheme : Term Work- **50 Marks** Viva-Voce-**50 Marks**	Total marks: **100**

COURSE OBJECTIVE

The course "Entrepreneurship for Architects" aims to equip architects with the necessary knowledge and skills to succeed in the dynamic and competitive business environment of the architectural industry. Many architectural firms have grown beyond traditional small or medium-sized businesses, requiring architects to develop entrepreneurial and business management skills to thrive in this evolving landscape.

The curriculum of this course integrates principles and practices from the field of entrepreneurship with the specific needs and challenges faced by architects. It emphasizes the development of an entrepreneurial mindset and provides practical guidance on various aspects of starting, managing, and growing an architectural firm.

COURSE OUTCOME:

UNIT 1
Introduction to Entrepreneurship
Unit 2
Opportunity Recognition and Idea Generation focus on equipping architects with technique
Unit 3
Legal and Ethical Responsibilities
Unit 4
Marketing and Branding
Unit 5
Innovation and Technology

COURSE CONTENT:

Unit No. 1 – Introduction to Entrepreneurship – (10 marks) Meaning of entrepreneur. Concept of entrepreneurship. Role of entrepreneurship in economic development. Management and future of entrepreneurship. The skills required to be an entrepreneur
Unit 2: Opportunity Recognition and Idea Generation focus on equippingarchitects with Technique – (10 marks) Market Research

Trend Analysis Client Segmentation Competitive Analysis
Unit 3: Legal and Ethical Responsibilities – (10 marks) Legal Structures and Contracts Professional Liability and Insurance Ethical Responsibilities Client Relationships and Communication Regulatory Compliance Professional Ethics in Design
Unit 4: Marketing and Branding – (10 marks) Understanding Architectural Branding: Target Market Identification Developing a Marketing Strategy Online Presence and Website Development Social Media Marketing Content Marketing and Thought Leadership Client Relationship Management
Unit 5: Innovation and Technology – (10 marks) Introduction to Innovation in Architecture Parametric Design and Computational Architecture Digital Fabrication and 3D Printing Virtual and Augmented Reality (VR/AR Emerging Technologies

SESSIONAL WORK:

It will be a compilation of study notes with respect to each unit's content. The support documentation file is to be compiled to support understanding.

BOOKS:

Architect and Entrepreneur: A Field Guide to Building, Branding, and Marketing Your Startup Design Business- by Eric Reinholdt

Architect's Essentials of Starting, Assessing, and Transitioning a Design Firm- by Peter Piven

Design Professional's Guide to Business Development: Practical Strategies for Architects, Engineers, and Environmental Consultants- by Sylvia Montgomery and David H. Maister.