SDGI GLOBAL UNIVERSITY

SCHOOL OF ARCHITECTURE, PLANNING AND DESIGN, GHAZIABAD

Evaluation Scheme & Syllabus
For

Bachelor in Architecture
B.Arch.

[Effective from the Session: 2025-2026]

SDGI GLOBAL UNIVERSITY, GHAZIABAD
Program Curriculum for
Bachelor in Architecture
B.Arch.
(Effective from Academic Session 2025-26)

Introductions:

The Bachelor of Architecture (B.Arch) is a five-year undergraduate program designed to cultivate creative, technical, and analytical skills essential for the field of architecture. The course blends art, science, and technology to equip students with a comprehensive understanding of architectural design, construction techniques, sustainable practices, urban planning, and the socio-cultural impact of built environments. Through a balanced mix of studio work, theoretical studies, field visits, workshops, and hands-on projects, the program nurtures design thinking, problem-solving abilities, and professional competence, preparing students to contribute meaningfully to the architectural profession and address the dynamic challenges of the modern world.

Program Educational Objectives (PEOs)
PEO1: To prepare graduates with strong foundational knowledge in architectural design, building science, construction technology, and sustainability, enabling them to create innovative and functional built environments.
PEO2: To develop competent professionals capable of addressing architectural challenges through critical thinking, ethical practice, interdisciplinary collaboration, and effective communication in both local and global contexts.
PEO3: To encourage lifelong learning, research aptitude, and adaptability in graduates, empowering them to integrate emerging technologies, materials, and design philosophies into their professional practice.
PEO4: To nurture socially responsible architects who are sensitive to cultural heritage, environmental sustainability, and human-centric design, and who actively contribute to the betterment of society through architecture and urban development.

Program Specific Objectives (PSOs)
PSO1: Apply architectural design principles, technical knowledge, and creative thinking to conceptualize, develop, and present innovative and contextually responsive architectural solutions.
PSO2: Demonstrate proficiency in the use of architectural drawing, drafting tools, digital software, and model-making techniques to effectively communicate design ideas, construction details, and project documentation.
PSO3: Integrate knowledge of building materials, structural systems, environmental sustainability, and construction technology into the design and execution of safe, efficient, and responsible built environments.
PSO4: Analyze social, cultural, historical, and environmental factors in the design process, and engage in ethical architectural practices that address the needs of society while contributing to sustainable urban and rural development.

Program Outcomes (PSOs)
PO1: Architectural Knowledge
Apply knowledge of architectural design, building construction, structural systems, environmental science, and technology to solve complex architectural problems.
PO2: Design Thinking and Creativity
Demonstrate the ability to think critically, creatively, and analytically in developing innovative, sustainable, and user-centered architectural solutions.
PO3: Problem Analysis
Identify, analyze, and interpret research-based knowledge and contextual factors to address design challenges and formulate appropriate architectural responses.
PO4: Modern Tool Usage
Use appropriate techniques, modern tools, digital applications, and advanced software for architectural design, analysis, documentation, and presentation.

PO5: Environment and Sustainability
Design built environments that are environmentally responsible, energy-efficient, and sensitive to ecological balance, ensuring long-term sustainability.

PO6: Ethics and Professional Responsibility
Understand and practice architecture ethically, adhering to professional codes of conduct, legal frameworks, and social responsibility.

PO7: Individual and Team Work
Function effectively as an individual, as a member, and as a leader in multidisciplinary teams, fostering collaboration and mutual respect.

PO8: Communication Skills
Communicate effectively with clients, peers, communities, and the architectural fraternity using visual, verbal, and written means appropriate to professional practice.

PO9: Project Management and Finance
Understand principles of project management, cost estimation, and resource allocation for the successful delivery of architectural projects.

PO10: Lifelong Learning
Recognize the need for and engage in independent and lifelong learning to keep pace with emerging trends, technologies, and practices in architecture.

Credit System-Credit requirement for award of B.Arch.:

Credit distribution in each semester (264 credits to 10 semesters)

Semester	**Credits**		
	Theory	Studio/ Practical	Total
1ST	11	15	26
2ND	10	16	26
3RD	11	16	26
4TH	12	14	26
5TH	11	16	27
6TH	11	16	27
7TH	-	26	26
8TH	10	17	27
9TH	12	15	27
10TH	4	22	26
Total			264

The Weightage in terms of Credits for each of the above in the prescribed curriculum of the institution are as per Council of Architecture(COA).

(1) Professional Core Courses (PC) : 50 per cent.
(2) Building Sciences and Applied Engineering (BS and AE) : 20 per cent.
(3) Elective Courses
(i) Professional Electives (PE) : 10 per cent.
(ii) Open Electives (OE) : 5 per cent.
(4) Professional Ability Enhancement Courses (PAEC)
(i) Professional Ability Enhancement Compulsory Courses (PAECC) : 10 per cent.
(ii) Skill Enhancement Courses (SEC) : 5 per cent.

SDGI GLOBAL UNIVERSITY, GHAZIABAD

SCHOOL OF ARCHITECTURE , PLANNING AND DESIGN

SCHEME OF STUDY AND EVALUATION

Course- Bachelor in Architecture (B. Arch.)

Batch: 2025-2030 **A.Y: 2025-2026** **SEMESTER - Ist**

S. No	Status	Subject Code	Subject Name	Study Scheme Lec/ Week			Hours	Credits	Marks in Evaluation Scheme						Passing Criteria (%age)	Passing Marks	Total Marks
									Continuous Internal Evaluation (CIE)			End of Semester Examination (ESE).					
				L	T	P/S			Th	Pr	Total	Th	Pr	Total			
1	BS& AE	B080125101	Architectural Structures– I	3	0	0	3	3	50	0	50	50	0	50	45%	45	100
2	PC	B080125102	History of Architecture-I	3	0	0	3	3	50	0	50	50	0	50	45%	45	100
3	BS& AE	B080125153	Building Materials and Construction-1	0	0	6	6	3	0	75	75	0	75	75	45%	67.5	150
4	PC	B080125154	Architectural Drawing-I	0	0	6	6	3	0	75	75	0	75	75	45%	67.5	150
5	PC	B080125155	Architectural Design-I	0	0	6	6	6	0	100	100	0	100	100	45%	90	200
6	PE	B080125156	Architectural Graphics-I	0	0	6	6	3	0	50	50	0	50	50	45%	45	100
7	BS& AE	BSGUVA2401	Environmental Education	3	0	0	3	3	50	0	50	50	0	50	45%	45	100
8	SEC	BSGUAE2404	Professional Communication	2	0	0	2	2	50	0	50	50	0	50	45%	45	100
Total				11	0	24	35	26	200	300	500	200	300	500	45%	450	1000

PC - Professional Core
AE - Ability Enhancement
BS& AE - Building Science and Applied Engineering
VAC - Value Added Course
SE - Skill Enhancement
PE- Professional elective

Evaluation Guidelines:

1. B080125153 (Building Materials and Construction-I) & B080125154 (Architectural Drawing-I): Practical Exam: 50 marks &Viva voce:25 MARKS based on studio assignments.
2. B080125155 (Architectural Design-I): Practical Exam: 75 marks & Viva Voce: 25 marks Based on studio assignments
3. B080125156 (Architectural Graphics-I): Practical Exam: 50 marks

NOTE: The Scheme of Studies (SOS) and Evaluation is completely in accordance with the Council of Architecture (COA) guidelines.

Ar. Anjali Kawatra
Director, SAPD

SDGI GLOBAL UNIVERSITY, GHAZIABAD

SCHOOL OF ARCHITECTURE , PLANNING AND DESIGN

SCHEME OF STUDY AND EVALUATION

Course- Bachelor in Architecture(B. Arch.)

Batch: 2025-2030 **A.Y.: 2025-2026** **SEMESTER - IInd**

S. No	Status	Subject Code	Subject Name	Study Scheme Lec/ Week			Hours	Credits	Marks in Evaluation Scheme						Passing Criteria (%age)	Passing Marks	Total Marks
									Continuous Internal Evaluation (CIE)			End of Semester Examination (ESE).					
				L	T	P			Th	Pr	Total	Th	Pr	Total	45%		
1	BS& AE	B080125201	Architectural Structures– II	3	0	0	3	3	50	0	50	50	0	50	45%	45	100
2	PC	B080125202	History of Architecture-II	3	0	0	3	3	50	0	50	50	0	50	45%	45	100
3	BS& AE	B080125253	Building Materials and Construction-1I	0	0	6	6	3	0	75	75	0	75	75	45%	67.5	150
4	PC	B080125254	Architectural Drawing-II	0	0	6	6	3	0	75	75	0	75	75	45%	67.5	150
5	PC	B080125255	Architectural Design-II	0	0	6	6	6	0	100	100	0	100	100	45%	90	200
6	PE	B080125256	Architectural Graphics-II	0	1	4	5	3	0	50	50	0	50	50	45%	45	100
7	BS& AE	B080125207	Architectural climatology	2	0	0	2	2	50	0	50	50	0	50	45%	45	100
8	SEC	B080125208	Digital Office Skills	2	0	0	2	2	25	0	25	25	0	25	45%	22.5	50
9	SEC	B080125258	Digital Office Skills Lab	0	0	2	2	1	0	25	25	0	25	25	45%	22.5	50
Total				10	1	24	35	26	175	325	500	175	325	500	45%	450	1000

PC - Professional Core
AE - Ability Enhancement
BS& AE - Building Science and Applied Engineering
VAC - Value Added Course
SE - Skill Enhancement
PE- Professional elective

Evaluation Guidelines:

1. B080125253 (Building Materials and Construction-II & B080125255 (Architectural Drawing-II):Practical Exam: 50 marks & Viva voce: 25 MARKS based on studio assignments.
2. B080125255 (Architectural Design-II): Practical Exam: 75 marks & Viva Voce: 25 marks Based on studio assignments
3. B080125256 (Architectural Graphics-II): Practical Exam: 50 marks

NOTE: The Scheme of Studies (SOS) and Evaluation is completely in accordance with the Council of Architecture (COA) guidelines.

SDGI GLOBAL UNIVERSITY, GHAZIABAD

SCHOOL OF ARCHITECTURE , PLANNING AND DESIGN

SCHEME OF STUDY AND EVALUATION

Course- Bachelor in Architecture(B. Arch.)

Batch: 2024-2029 **A.Y.: 2025-26** **SEMESTER - IIIrd**

S. No	Status	Subject Code	Subject Name	Study Scheme Lec/ Week			Hours	Credits	Marks in Evaluation Scheme						Passing Criteria (%age)	Passing Marks	Total Marks
									Continuous Internal Evaluation (CIE)			End of Semester Examination (ESE).					
				L	T	P/S			Th	Pr	Total	Th	Pr	Total			
1	BS& AE	B080125301	Architectural Structures– III	3	0	0	3	3	50	0	50	50	0	50	45%	45	100
2	PC	B080125302	History of Architecture-III	3	0	0	3	3	50	0	50	50	0	50	45%	45	100
3	BS& AE	B080125353	Building Materials and Construction-III	0	0	6	6	3	0	75	75	0	75	75	45%	67.5	150
4	PC	B080125354	Architectural Drawing-III	0	0	6	6	3	0	75	75	0	75	75	45%	67.5	150
5	PC	B080125355	Architectural Design-III	0	0	6	6	6	0	100	100	0	100	100	45%	90	200
6	PE	B080125356	Architectural Graphics-III	0	0	4	4	2	0	50	50	0	50	50	45%	45	100
7	BS& AE	B080125307	Architectural services-I	2	0	0	2	2	50	0	50	50	0	50	45%	45	100
8	VAC	BSGUVA2402	Human Values &Professional Ethics	3	0	0	3	3	50	0	50	50	0	50	45%	45	100
9	SEC	B080125358	Auto Cad Lab	0	0	2	2	1	0	50	50	0	50	50	45%	45	100
Total				11	0	24	35	26	200	350	550	200	350	550	45%	495	1100

PC - Professional Core Courses
BS& AE - Building Science and Applied Engineering
SE - Skill Enhancement
AE - Ability Enhancement
VAC - Value Added Course
PE- Professional elective

Evaluation Guidelines:

1. B080125353 (Building Materials and Construction-III & B080125354 (Architectural Drawing-III: Practical Exam: 50 marks &Viva voce:25 MARKS based on studio assignments.
2. B080125355 (Architectural Design-III): Practical Exam: 75 marks & Viva Voce: 25 marks Based on studio assignments
3. B080125356 (Architectural Graphics-III)& B080125358 (Auto Cad) Lab : Practical Exam: 50 marks

NOTE: The Scheme of Studies (SOS) and Evaluation is completely in accordance with the Council of Architecture (COA) guidelines.

Ar. Anjali Kawatra
Director, SAPD

SDGI GLOBAL UNIVERSITY, GHAZIABAD

SCHOOL OF ARCHITECTURE , PLANNING AND DESIGN

STUDY AND EVALUATION SCHEME

Course- Bachelor in Architecture(B. Arch.)

Batch: 2024-2029 **Session: 2025-26** **SEMESTER - IVth**

S. No	Status	Subject Code	Subject Name	Study Scheme Lec/ Week			Hours	Credits	Marks in Evaluation Scheme						Passing Criteria	Passing Marks	Total Marks
									Continuous Internal Evaluation (CIE)			End of Semester Examination (ESE).					
				L	T	P/S			Th	Pr	Total	Th	Pr	Total			
1	BS& AE	B080125401	Architectural Structures– IV	3	0	0	3	3	50	0	50	50	0	50	45%	45	100
2	PC	B080125402	History of Architecture-IV	3	0	0	3	3	50	0	50	50	0	50	45%	45	100
3	BS& AE	B080125453	Building Materials and Construction-IV	0	0	6	6	3	0	50	50	0	50	50	45%	45	100
4	PC	B080125404	Architectural Research Writing-I	2	1	0	3	3	50	0	50	50	0	50	45%	45	100
5	PC	B080125455	Architectural Design-IV	0	0	6	6	6	0	100	100	0	100	100	45%	90	200
6	PE	B080125406	Vernacular Architecture	2	0	0	2	2	50	0	50	50	0	50	45%	45	100
7	BS& AE	B080125407	Architectural Services-II	2	0	0	2	2	50	0	50	50	0	50	45%	45	100
8	SEC	B080125458	Architectural Representation and Visualization Tools(Photoshaop & sketchup)	0	0	4	4	2	0	50	50	0	50	50	45%	45	100
9	BS& AE	B080125459	Surveying & Levelling	0	0	4	4	2	0	50	50	0	50	50	45%	45	100
Total				12	1	20	33	26	250	250	500	250	250	500	45%	450	1000

PC - Professional Core Courses
AE - Ability Enhancement
BS& AE - Building Science and Applied Engineering
VAC - Value Added Course
SE - Skill Enhancement
PE- Professional elective

Evaluation Guidelines:

1. **B080125453 (Building Materials and Construction-IV(:** Practical Exam: 25 marks &Viva voce:25 MARKS based on studio assignments.
2. **B080125455 (Architectural Design-IV):** Practical Exam: 75 marks & Viva Voce: 25 marks Based on studio assignments
3. **B080125458 (Architectural Representation and Visualization Tools)) :** Practical Exam: 50 marks
4. **B080125459 (Surveying & Levelling) :** Practical Exam: 50 marks

DETAILED FIRST YEAR CURRICULUM CONTENTS

PROGRAM: Bachelor in Architecture(B.Arch.)

I SEMESTER

School Name- School of Architecture , Planning & Design			
Program- B. Arch.			**Semester-I**
Course Name- Architectural Structures-I			
A.Y 2025-26	**Course Code- B080125101**	**Batch- 2025-30**	**CIE Marks-50**
Total Teaching Hours: 42	**Total Credits-3**		**ESE Marks-50**
Type of Course- Theory			**Total Marks-100**

Course Objectives

1. To introduce the fundamental concepts of statics and the principles governing the equilibrium of forces.
2. To develop a clear understanding of stress-strain behaviour and material properties under various loading conditions.
3. To familiarize students with methods to calculate the centre of gravity and moment of inertia for various geometrical shapes and composite sections.
4. To provide knowledge about shear force and bending moments in beams and their importance in structural analysis.
5. To analyse the stresses in beams and understand concepts such as section modulus, moment of resistance, and shear stress distribution.

UNITS	Topics	No. of Teaching hours/ (Lecture)
1. Force	Elements of Statics Force, Law of parallelogram of forces, Law of triangle of forces, Polygon Law of forces, Resolution of forces. Resultant of number of concurrent coplanar forces. Condition of equilibrium, Moment of force, Moment and arm of couple, Theorems on couples.	**6**
2. Stress & Strain	Simple Stresses and Strains Elasticity, Stress, Strain, Types of stresses, Elastic limit, Hook's law, Modulus of elasticity, Modulus of rigidity, Bulk modulus, Stresses in composite bars/section, Modular ratio, Equivalent area of a compound section. Primary or Linear strain, Poison's ratio, Shear stress, Principal stresses and strains (for simple cases), Mohr's circle.	**8**
3. Gravity& Moment of Inertia	Centre of Gravity& Moment of Inertia Definition, Methods of finding out centre of gravity of simple figures, Centre of parallel forces. Definition, Important theorems, Calculation of moment of inertia of different shapes and its application, Moment of inertia of composite sections.	**10**
4. Shear Force and Bending Moments	Shear Force and Bending Moments Beams shearing force and bending moment, Shear force and Bending moment diagrams for cantilever and simply supported beam, and overhanging beam.	**8**
5. Beam	Stresses in Beams Simple beams bending, Section modulus, Moment of resistance, Shear stress in section of beam.	**10**

Course Outcomes
Upon successful completion of this course, students will be able to:

- **CO1:** Apply the principles of statics to solve problems related to forces, equilibrium, and moments.
- **CO2:** Evaluate stresses, strains, and deformation in materials using fundamental elasticity concepts and Hooke's law.
- **CO3:** Determine the centre of gravity and moment of inertia of simple and composite geometries for practical applications.
- **CO4:** Analyse shear force and bending moment diagrams for different types of beams and loading conditions.
- **CO5:** Calculate stresses in beams and evaluate the section modulus, moment of resistance, and shear stress distribution to design safe and efficient structural members.

Reference Books / Textbooks

- Strength of Materials – R.S. Khurmi – S. Chand
- Engineering Mechanics (Statics and Dynamics) – R.K. Bansal – Laxmi Publications
- Engineering Mechanics – S.S. Bhavikatti – New Age International Publishers
- Mechanics of Materials – B.C. Punmia, Ashok Jain, Arun Jain – Laxmi Publications
- Strength of Materials – Timoshenko & Young – CBS Publishers
- Engineering Mechanics – Ferdinand L. Singer – Harper & Row Publishers

Assessment method: (Continuous Internal Assessment = 50%, Final Examination = 50%)

School Name- School of Architecture , Planning & Design			
Program- B. Arch.			**Semester-I**
Course Name- History of Architecture-I			
A.Y 2025-26	**Course Code- B080125102**	**Batch- 2025-30**	**CIE Marks-50**
Total Teaching Hours: 42	**Total Credits-3**		**ESE Marks-50**
Type of Course- Theory			**Total Marks-100**

Course Objectives

1. To introduce the origins of architecture through the study of prehistoric eras, including early human dwellings and settlements.
2. To explore the architectural, cultural, and societal developments of the Egyptian River Valley Civilization, focusing on religious and social architecture.
3. To study the Mesopotamian River Valley Civilization and its contributions to architecture, art, and intellectual achievements.
4. To examine the urban planning principles, cultural ethos, and economic aspects of the Indus Valley Civilization in India.

UNITS	Topics	No. of Teaching hours/ (Lecture)
1- Introduction – beginning of architecture	Prehistory and Introduction to Three Age System: Stone Age (Palaeolithic and Neolithic Systems); Cave Dwellings in Europe: Lascaux, Chapelle Aux-Saints; First attempts at Marking Nature: Terra Amata, Skara Brae, the megaliths, obelisks. Compositions such as Stone Henge; Beginnings of Agriculture and Settled Life, First Settlements like Jericho, CatalHuyuk..	**10**
2- River valley civilizations in Egypt	Growth of Settlements, Religious and Social Architecture, Egypt: Social systems, religious beliefs, science and writing; Evolution of Tomb Architecture: Mastabas, Pyramids at Saqqara, Medium and Giza; Mortuary Temples: Hatshepsut; Cult Temples: at Luxor and Karnak.	**10**
3- River valley civilizations in Mesopotamia	Mesopotamia: the Sumerians, Babylonians, Assyrians and the Persians; their Art, Intellectual Achievements and Developments in Law; the Ziggurats at Ur, Choga Zanbil, etc.; the cities of Ur, Babylon, Khorsabad and Persepolis	**10**
4- Indus valley civilization in India	Town Planning Principles, Cultural ethos, Economy Exemplified with valley Civilisation with Examples from MohenJodaro and Harappa.	**12**

Course Outcomes:

Upon completion of this course, students will be able to:

- **CO1**: Analyse the evolution of early human dwellings and settlements, understanding their role in the origins of architecture.

- **CO2:** Demonstrate knowledge of Egyptian architecture, including tombs, mortuary temples, and cult temples, while contextualizing their social and religious significance.
- **CO3**: Assess the architectural and cultural contributions of Mesopotamian civilizations, including ziggurats, cities, and intellectual advancements.
- **CO4:**: Apply principles of town planning and urban design from the Indus Valley Civilization to contemporary architectural contexts.

Reference books/Text:

1. **Sir Banister Fletcher, A History of architecture,** CBS publications (Indian Edition)20th - Edition 2002.
2. **Archana Venkatesan, Crispin Branfoot**‗ In Andal‘s Garden‖ -Marg‘s quarterly publications.
3. **George Mitchell , Indira Viswanathan Peterson** ‘The great Temple of Thanjavur‖ -Marg‘s quarterly publications.
4. **Christopher Tadgell**, ‘The history of Architecture in India-From the dawn of civilization to the end of Raj‘-Phaidon 2002.
5. **Burton Stein,‘ A history of India**‘, John Wiley & Sons 2010.
6. **K.A NilakantaSastri**, ‘A History of South India: From the prehistoric Times to the fall of Vijayanagara‘- Oxford University press, 2007.

Assessment method: (Continuous Internal Assessment = 50%, Final Examination = 50%)

School Name- School of Architecture , Planning & Design			
Program- B. Arch.			**Semester-I**
Course Name- Building Materials & Construction-I			
A.Y 2025-26	**Course Code- B080125153**	**Batch- 2025-30**	**CIE Marks-75**
Total Teaching Hours: 84	**Total Credits-3**		**ESE Marks-75**
Type of Course- Studio & Practical			**Total Marks-150**

Course Objectives

1. To introduce students to the terminology and nomenclature of building components from foundation to roof.
2. To provide a comprehensive understanding of basic building materials such as mud, bricks, stone, sand, lime, and cement, focusing on their properties and applications.
3. To educate students on the principles and methods of constructing various types of foundations, including their design and failure prevention.
4. To impart knowledge about brick masonry, including different bonds, junctions, and construction techniques.
5. To explore advanced brickwork details such as piers, corbelling, coping, and decorative brick jali walls.

UNITS	Topics	No. of Teaching hours/ (Lecture)
1- Element of building terminology	Nomenclature of various parts of building from foundation to roof.	**15**
2- Introduction to basic building materials	Mud: Study of soil map of India, Type of soils, making mud bricks, cob, adobe, Stabilization and use for walling and terracing. Bricks: Kinds, types, constituents and properties of brick earth, manufacturing of various types of bricks, decorative brickwork and jail work Stone: Study of stone map of India, Kinds, properties, varieties and their characteristics, stone masonry. Sand: Sources, classification and properties Lime and Cement: Sources, classification, properties and method of manufacturing, testing, mixing and uses	**15**
3- Foundation	Definition, safe bearing capacity of soils and methods of improving the depths and width of foundations, causes of failure and remedies, simple, steeped, combined and cantilevered footing, RCC footing and raft foundation. Foundation details up to plinth level.	**18**
4- Brick Work- I	Masonry walls in bricks in various thicknesses. Brick bonds English, Flemish and Rat Trap Bond, Tee and cross-junctions, L Junctions. Stopped ends	**18**
5- Brick Work- II	Detail of Piers(attached and Detached), corbelling, coping, Brick jali walls.	**18**

All units – material Sample Collections and Site Visit and detailed drawing.		

Course Outcomes:

Upon completion of this course, students will be able to:

- **CO1**: Identify and explain the nomenclature and elements of building components from foundation to roof.
- **CO2**: Demonstrate knowledge of the properties, classifications, and uses of basic building materials like mud, bricks, stone, sand, lime, and cement.
- **CO3**: Understand the design principles, construction methods, and failure remedies for various types of foundations.
- **CO4**: Construct masonry walls using different brick bonds and apply techniques for Tee, cross, and L-junctions.
- **CO5**: Execute advanced brickwork elements such as piers, corbelling, coping, and decorative brick jali walls in building construction.

Text/Reference books:

1. Don A. Watson, 'Construction Materials and Processes', McGraw Hill, 1972.
2. W.B. McKay, 'Building Construction', Person India, Vol, 1 2013,Vol II, 2012.
3. S.C Rangwala 'Building Construction' Charotar Publishing House, India, 2016.
4. S.K.Sharma, 'A Text book of Building Construction', S. Chand & Co Ltd., New Delhi, 1998.
5. S.K. Duggal, 'Building Materials', New Age International Publishers, 2016.
6. R.J. S. Spence and D.J. Cook, 'Building Materials in Developing Countries', John Wiley and sons 1983.
7. S. C. Rangwala, 'Engineering Materials', Charotar Publishing House India, 2015.
8. Roy Chudley, Roger Greeno, 'Building Construction Handbook', Routledge, 2010

Assessment method: (Continuous Internal Assessment = 50%, Final Examination = 50%)

Practical Exam: 50 marks &Viva voce:25 Marks based on studio assignments.

School Name- School of Architecture , Planning & Design			
Program- B. Arch.			**Semester-I**
Course Name- Architectural Drawing-I			
A.Y 2025-26	**Course Code- B080125154**	**Batch- 2025-30**	**CIE Marks-75**
Total Teaching Hours: 70	**Total Credits-3**		**ESE Marks-75**
Type of Course- Studio & Practical			**Total Marks-150**

Course Objectives

1. To introduce students to the fundamentals of drawing, drafting, and graphical representation techniques.
2. To develop an understanding of scales, proportions, and their applications in technical drawings.
3. To familiarize students with orthographic projection principles and methods.
4. To provide knowledge of solid and hollow geometry, including the development of surfaces.
5. To equip students with the skills to create isometric and axonometric projections for three-dimensional visualization of solids.

UNITS	Topics	No. of Teaching hours/ (Lecture)
1- Introduction	Introduction to fundamentals of drawing/ drafting – Construction of Lines, Planes, form – grade of pencils and usage-Understanding the scale with units and dimensions. Understanding the graphical representations of arrows, lettering techniques, composition etc – Line weights, Line type etc. Construction of planes.	**10**
2- Scales and Proportion	Scales: Engineers scale, Graphical scale and Representation factor (R.F.) Scales on drawings. Types of scales: Plain scale and Diagonal scale	**12**
3- Orthographic Projection	Definition, Meaning & concept. Principles and Methods of projection, Orthographic projections, Orthographic projection (First angle projection) Planes of projection, Projection of points, lines & planes and solids.	**12**
4- Solid geometry	Hollow and solid geometry, Development of surfaces and multifaceted forms	**18**
5- Axonometric, Isometrics Projections	Isometric and axonometric projections and three-dimensional views of solids and composition of solids	**18**

Course Outcomes:

Upon completion of this course, students will be able to:

- **CO1**: Demonstrate proficiency in drawing and drafting techniques, including the use of scales, line types, and lettering.

- **CO2:** Apply knowledge of scales, proportions, and graphical representation factors to technical drawings.
- **CO3**: Construct orthographic projections of points, lines, planes, and solids using the principles of first-angle projection.
- **CO4**: Develop and visualize surfaces of hollow and solid geometry
- **CO5**: Visualize and represent three-dimensional objects using axonometric and isometric projections, and compose complex solid forms in spatial views.

Text/Reference books:

1. **Francis D. K. Ching**; Design Drawing; John Wiley & Sons; 2010
2. **Rerdow Yee; Architecture Drawing** - A Visual Compendium of Types & Methods; John Wiley & Sons; 2012
3. **John Montague; Basic Perspective Drawing** - A Visual Approach; John Wiley & Sons; 5th edition 2010.
4. **Mo Zell; The Architecture Drawing Course** - Understand the principles & master the practices; Thames & Hudson; 2014
5. **Tokyo Musashino Academy of Art** - Introduction to Pencil Drawing, Graphic - Shaw Publishing Co. Ltd., Japan, 1991.
6. **Francis D. K. Ching, Architectural Graphic**s, Van Nostrand Rein Hold Company, New York, 1964,2002
7. **Griffin, A.W. and Brunicardi**, V.A., ―Introduction to Architectural Presentation Graphics‖, Prentice Hall, 1998
8. **Ciriello, M., ―**Architectural Design Graphics‖, McGraw-Hill, 2002

Assessment method: (Continuous Internal Assessment = 50%, Final Examination = 50%)
Practical Exam: 50 marks &Viva voce:25 Marks based on studio assignments.

School Name- School of Architecture , Planning & Design			
Program- B. Arch.			**Semester-I**
Course Name- Architectural Design-I			
A.Y 2025-26	**Course Code- B080125155**	**Batch- 2025-30**	**CIE Marks-100**
Total Teaching Hours: 84	**Total Credits-6**		**ESE Marks-100**
Type of Course- Studio & Practical			**Total Marks-200**

Course Objectives

1. Understand the concept of design, design thinking, and the designer's role.
2. Apply basic elements of design in 2D and 3D compositions using various media.
3. Demonstrate principles of design relationships through creative compositions.
4. Develop 3D models showcasing form and transformation concepts.
5. Analyse the concept of scale in architecture through measurement exercises.
6. Explore and represent order in architecture using 2D and 3D transformations.

UNITS	Topics	No. of Teaching hours/ (Lecture)
1- Design Definition	Design Thinking: What is Design? Changing Role of the Designer; Route map of the Design Process; Components of Design Problems; Measurement, Criteria & Judgment in Design; Types and Styles of Thinking – Creative thinking, Guiding Principles.	**9**
2- Basic elements of design	Introduction to Elements of design.-Properties, qualities, and characteristics of (I) line, (ii) direction, (iii) shape,(iv) size, (v) texture, (vi) space (vii) time and motion (viii) value and (vii) colour Exploration in mixed media & collage to convey a specific theme and meaning. Analytical Studies to be undertaken in two and three dimensions using various materials and tools.	**9**
3- Principles of design	The principles of design relationships/ Composition – Unity & Harmony, Balance, Scale & Proportion, Contrast and Emphasis, and Rhythm.-Exploration in mixed media & collage to convey specific theme and meaning. - Analytical Studies will be undertaken in two and three dimensions using various media.	**15**
4- Design exercise and model	Form and Transformations, Additive, Dimensional, Subtractive- exercises primarily through 3-D models of simple geometrics	**15**
5- Scale in Architecture	Simple measurement exercises.	**18**

6- Oder in Architecture	Geometrical, Structural, Dimensional, Material, Spatial order – through observation of surroundings as well as simple exercises in 2-D and 3-D. Exercises in order and transformations of form and space.	**18**

Course Outcomes:
Upon successful completion of the course, students will be able to:

- **CO1:** Define design, design thinking, and the designer's evolving role.
- **CO2:** Identify and apply the elements of design in creative compositions.
- **CO3:** Explore and utilize principles of design in 2D and 3D exercises.
- **CO4:** Create 3D models demonstrating form and transformation techniques.
- **CO5:** Interpret the concept of scale in architecture through practical exercises.
- **CO6:** Demonstrate order in architecture using geometrical and spatial transformations.

Text/Reference books:

1. Owen Cappleman& Michael Jack Jordon, Foundations in Architecture: An Annotated Anthology of Beginning Design Project, Van Nostrand Reinhold New York, 1993., latest edition 2015
2. Charles Wallschlacgerm& Cynthia Busic-Snyder, Basic Visual Concepts and
3. Principles for Artists, Architects and Designers, McGraw Hill, New York 1992., 2014
4. Ching, F.D.K., ―Design Drawing‖, Van Nostrand Reinhold, 1998, 2016

Assessment method: (Continuous Internal Assessment = 50%, Final Examination = 50%)

Practical Exam: 75 marks &Viva voce:25 Marks based on studio assignments.

School Name- School of Architecture , Planning & Design			
Program- B. Arch.			**Semester-I**
Course Name- Architectural Graphics-I			
A.Y 2025-26	**Course Code- B080125156**	**Batch- 2025-30**	**CIE Marks-50**
Total Teaching Hours: 42	**Total Credits-3**		**ESE Marks-50**
Type of Course- Studio & Practical			**Total Marks-100**

Course Objectives

1. To introduce students to the fundamental concepts and importance of art in human perception, representation, and appreciation.
2. To familiarize students with the vocabulary and principles of art, including elements like line, shape, colour, and texture, and their applications.
3. To develop a comprehensive understanding of colour theory, including psychology, systems, mixtures, and applications in various contexts.
4. To engage students in practical exercises for two-dimensional compositions, fostering creativity using different media and materials.
5. To explore the study of three-dimensional forms and their compositional arrangements in architectural and design contexts.

UNITS	Topics	No. of Teaching hours/ (Lecture)
1- Introduction to Art	Definition of art – need for art – role of art – art reality, perception, representation – categories of art in terms of media and technique – appreciating: form, content and context	**10**
2- Vocabulary of Art and Principles	Introducing the vocabulary of art constituted by elements (line, shape, form, space, colour, light, value, texture) and principles (Unit, variety, harmony, rhythm, balance, proportion, emphasis, contrast, movement)	**10**
3- Colour Theory	Psychology of colour, colour mixtures, colour systems, colour organization, application of colour schemes, national and international standards on colour.	**10**
4- Study of Elementary Two-Dimensional Shapes	Compositional exercises in 2D compositions in various materials and media.	**12**
5- Study of Elementary Two-Dimensional Volume	Study of elementary three-dimensional form. Compositional exercises in 2D and 3D compositions and models in various materials and media. - Ordering combination principles and their application in building	

Course Outcomes:
Upon successful completion of this course, students will be able to:

- **CO1**: Understand the definition, need, and role of art, and appreciate art in terms of form, content, and context.
- **CO2**: Analyse and apply the vocabulary of art elements and principles to create visually appealing compositions.
- **CO3**: Utilize colour theory effectively, demonstrating an understanding of psychology, standards, and appropriate colour schemes in design projects.
- **CO4**: Create elementary two-dimensional compositions using various materials and techniques, enhancing their artistic expression.
- **CO5**: Develop and design three-dimensional volumes and models, applying ordering principles to solve practical design challenges.

Reference Books/Text:

1. **Peter and Linda Murray**, ―The Penguin Dictionary of Art and Artist‖ Penguin books 1989.2000
2. **Artist Handicrafts Association**, ―Indian Art science the early
3. **Ching Francis, ―**Drawing a Creative Process‖, Van Nostrand Reinhold, New York, 1990., 2017
4. **Alan Swann**, ―Graphic Design School‖, Harper Collins, 1991.,2016
5. **Envisioning Architecture** – an analysis of drawing, Iain Fraser & Rod Henmi, 1991
6. **Moivahuntly, ―**The artist drawing book‖, David & Charles,

Assessment method: (Continuous Internal Assessment = 50%, Final Examination = 50%)

Practical Exam: Viva voce:50 Marks based on studio assignments.

School Name- School of Architecture , Planning & Design			
Program- B. Arch.			**Semester-I**
Course Name- Environmental Education			
A.Y 2025-26	**Course Code- BSGUVA2401**	**Batch- 2025-30**	**CIE Marks-50**
Total Teaching Hours: 42	**Total Credits-2**		**ESE Marks-50**
Type of Course- Theory			**Total Marks-100**

1. Aims and objectives of environmental education emphasize the relationship between man and the environment and educate young people about the importance of nature and the environment.
2. Environmental education aims to **impart ecological knowledge** and promote environmentally conscious behaviour towards nature.
3. It encourages young minds to take **responsibility for protecting** the natural environment protection through information and knowledge and to develop environmental awareness.
4. Incidentally, promoting awareness and a sense of respect for nature leads to a comprehensive understanding of the environment and a reasonable attitude towards protecting it.
5. The focus of environmental education is Awareness, Knowledge, Attitude, Skills, Capacity Building and Participation.

UNITS	**Topics**	**No. of Teaching hours/ (Lecture)**
1- Environment	Definition, Types and Segments of Environment. Importance and Need for Public Awareness, Effects of Human Activities on Environment (Housing, Agriculture, Industry, Mining and Transportation).Sustainable Development and its challenges. Sustainable life style	**8**
2- Natural Resources and their Conservation	Introduction and Classification natural Recourses, Water, Mineral, Forest Resources; Depletion and their Conservation. Energy Resources; Conventional and Non-conventional Sources of Energy and their impact on Environment.	**8**
3- Concept of Ecosystem	Definition, Structure and function of an Ecosystem, Types of Ecosystem Balanced Ecosystem-Food chains, food webs and ecological pyramids. Biodiversity and Its Conservation-Value of biodiversity, Threats to biodiversity, In-situ and Ex- situ conservation of biodiversity.	**8**
4- Environmental Pollution and Waste management	Definition and types of Environmental Pollution, Air, Water, Soil, Noise Pollution; cause, effect and control measures. E-waste and Solid Waste; cause, effect and management.	**10**
5- Current Environmental	Global Warming and Climate Change Acid Rain and Ozone Layer Depletion	**8**

issues and Protection	Population Growth and Women Education. Role of Government in Environmental Protection. Environmental Protection Act 1986	

Course Outcomes:

Upon successful completion of this course, students will be able to:

- **CO1:** Gain in-depth knowledge on natural processes that sustain life, and govern economy.
- **CO2:** Estimate and predict the consequences of human actions on the web of life, global economy and quality of human life.
- **CO3:** Develop critical thinking for shaping strategies (scientific, social, economic and legal) for environmental protection and conservation of biodiversity, social equity and sustainable development.
- **CO4:** Acquire values and attitudes towards understanding complex environmental- economic social challenges, and participate actively in solving current Environmental problems and preventing the future ones..
- **CO5:** Adopt sustainability as a practice in life, society and industry.

Text/Reference books:

1. Environmental Studies by S **Deswal,** Dhanpat Rai & Co.
2. Environmental Studies by **VK Ahluwal**ia, 2nd Edition,TERI Press, New Delhi.
3. Environmental Studies by **R Rajgopalan**, Oxford University Press.
4. **Environment & Ecology by Singh & Malviya**, Acme Learning

Assessment method: (Continuous Internal Assessment = 50%, Final Examination = 50%)

School Name- School of Architecture , Planning & Design			
Program- B. Arch.			**Semester-I**
Course Name- Professional Communication			
A.Y 2025-26	**Course Code- BSGUSE2504**	**Batch- 2025-30**	**CIE Marks-50**
Total Teaching Hours: 42	**Total Credits-2**		**ESE Marks-50**
Type of Course- Theory			**Total Marks-100**

Course Objectives

1. This course is designed to give you a comprehensive view of communication.
2. Its scope and importance in business and the role of communication in establishing a favourable outside the firm environment, as well as an effective internal communications program.

UNITS	Topics	No. of Teaching hours/ (Lecture)
1- Concept of Communication	1. Definition of Communication: Understanding what communication is. 2. Elements of Communication: Sender, message, medium, receiver, feedback. 3. Importance of Communication: Why communication is crucial in personal and professional life. 4. Communication Process: How communication works, including encoding, transmitting, and decoding messages.	**8**
2- Types of Communication	1. Verbal Communication: Speaking and listening. 2. Non-Verbal Communication: Body language, facial expressions, and gestures. 3. Written Communication: Writing emails, reports, and other documents. 4. Visual Communication: Using images, charts, and graphs to convey information. 5. Digital Communication: Understanding communication via digital platforms like social media, email, and Messaging apps.	**8**
3- Email Writing and Business Letters	**1. Email Writing:** a. Structure of an email (subject line, salutation, body, closing). b. Professional language and tone. c. Email etiquette. d. Common mistakes to avoid. **2. Business Letters:** a. Types of business letters (cover letters, inquiry letters, complaint letters, etc.). b. Format and structure of business letters. c. Language and style for formal correspondence.	**8**

	d. Practical exercises in writing emails and business letters.	
4- Barriers to Communication	1. Physical Barriers: Noise, distance, and environmental factors. 2. Psychological Barriers: Stress, emotions, and perceptions. 3. Language Barriers: Differences in language and vocabulary. 4. Cultural Barriers: Different cultural backgrounds and norms. 5. Organizational Barriers: Hierarchies, rules, and regulations within organization	**9**
5- Application of Communication Skills	1. **Presentation and Interviews** - Speeches - Customer Care/Customers Relations - Public Relations (Concept, Principles, Do's and Don'ts etc. to be studied for each type). **2. Overcoming Communication Barriers** a. Strategies for Effective Communication: Clear messaging, active listening, and feedback. b. Improving Verbal and Non-Verbal Skills: Practice and techniques. c. Cultural Sensitivity: Understanding and respecting cultural differences. d. Technological Aids: Using technology to enhance communication. e. Practical Exercises: Role-playing, group discussions, and case studies.	**9**

Course Outcomes:

Upon successful completion of this course, students will be able to:

- **CO1** communicate effectively in a corporate setting and otherwise
- **CO2** overcome the varied obstructions to communication and be an adept listener
- **CO3** display effective interpersonal communication, maintaining the decorum of the settings
- **CO4** have hands-on writing business letters and expertise in drafting technical documents
- **CO5** deliver effective presentations in professional environment, tackle group discussions and face interviews

Text/Reference books:

1. Business Communication: By **P.D Chaturvedi**
2. Business Communication: By **Shirley and Taylor**
3. **Simply Said:** Communicating Better at Work and Beyond By Jay Sullivan
4. Business Communication: Building Critical Skills by **Kitty O. Locker**, Stephen Kyo Kaczmarek, Hardcover: 637 pages,Publisher: Irwin/McGraw-Hill.3

Assessment method: (Continuous Internal Assessment = 50%, Final Examination = 50%)

DETAILED FIRST YEAR CURRICULUM CONTENTS

PROGRAM: Bachelor in architecture(B.Arch.)

II SEMESTER

School Name- School of Architecture , Planning & Design			
Program- B. Arch.			**Semester-II**
Course Name- Architectural Structures-II			
A.Y 2025-26	**Course Code- B080125201**	**Batch- 2025-30**	**CIE Marks-50**
Total Teaching Hours: 42	**Total Credits-3**		**ESE Marks-50**
Type of Course- Theory			**Total Marks-100**

Course Objectives

1. To analyse stresses in trusses using analytical, sectional, and graphical methods for different types of frames and supports.
2. To understand the principles of torsion in circular shafts, including pure torsion, power transmission, and torsional rigidity.
3. To study the properties and behaviour of plain cement concrete, including curing, strength, and factors like temperature and fatigue.
4. To calculate the deflection and slope of cantilever and simply supported beams using various methods such as Double Integration, Macaulay's Method, and Moment Area Method.
5. To examine the behaviour of columns and struts under various end conditions, buckling, and critical loads, and understand stress distribution in eccentrically loaded sections.

UNITS	Topics	No. of Teaching hours/ (Lecture)
1- Stresses in Trusses	Introduction, Perfect frame, Deficient frame, Redundant frame, Type of supports and their reactions, Analysis of cantilever and simply supported trusses by Analytical method, Method of sections, Graphical method.	**6**
2- Torsional Stress in circular shaft	Introduction, Torsion in shafts - Pure torsion, Theory of pure torsion, Torsional moment of resistance, Assumptions in the theory of pure torsion, polar modulus, Power transmitted by a shaft, Torsional rigidity.	**8**
3- Plain Cement Concrete	Concrete mix, Curing and strength of concrete, Effect of temperature, Shrinkage, Fatigue.	**10**
4- Deflection of Beams	(Cantilever and Simply supported) Introduction, Calculation of slope and deflection by Double Integration, Macaulay's Method, and Moment area Method. Conjugate beam method.	**8**
5- Column and Stress	Definition, End conditions, Buckling and critical loads, Slenderness ratio, Various column theories. Stress distribution of the section of an	**10**

	eccentrically loaded rectangular column, the middle third rule, Core or kernel of section (Rectangular and Circular sections).	

Course Outcomes

Upon successful completion of this course, students will be able to:

1. **CO1:** Analyze and evaluate stresses in cantilever and simply supported trusses using different methods.
2. **CO2:** Apply the theory of pure torsion to calculate torsional stress, polar modulus, and power transmitted by circular shafts.
3. **CO3:** Understand and implement the mix, curing, and strength properties of plain cement concrete in construction projects.
4. **CO4:** Compute slope and deflection in beams accurately using standard analytical methods.
5. **CO5:** Analyze columns and struts for buckling and critical loads, apply theories of stress distribution, and design eccentrically loaded sections.

Reference Books / Textbooks

1. . Nautiyal B. D., “Introduction to Structural Analysis”, B.H.U.
2. Punmia P. C., “Strength of Materials & Mechanics of Structures”.
3. Khurmi R. S., “Strength of Materials”.
4. Senol Utku , “Elementary Structural Analysis”.
5. Rama Armarutham S., “Strength of Materials”

Assessment method: **(Continuous Internal Assessment = 50%, Final Examination = 50%)**

School Name- School of Architecture , Planning & Design			
Program- B. Arch.			**Semester-II**
Course Name- History of Architecture-II			
A.Y 2025-26	**Course Code- B080125202**	**Batch- 2025-30**	**CIE Marks-50**
Total Teaching Hours: 42	**Total Credits-3**		**ESE Marks-50**
Type of Course- Theory			**Total Marks-100**

Course Objectives

1. Explore the architectural, social, political, and cultural evolution of early Iron Age civilizations in Greece, Rome, and India.
2. Analyze the philosophical, scientific, and literary contributions of Classical Greece and their impact on Western thought.
3. Investigate the architectural and engineering innovations of ancient Roman structures like the Pantheon, Colosseum, and aqueducts.
4. Examine the development of Hindu temple architecture in ancient India during the Gupta and Chalukya dynasties.
5. Assess the factors behind the collapse of ancient civilizations, including environmental, social, and military causes, and their long-term effects

UNITS	Topics	No. of Teaching hours/ (Lecture)
1-Early Iron Age Civilizations In Greece	Introduction to Minoan civilization, social structure, and notable architectural developments. Palace at Knosos. Rise of Mycenaean Greece, social organization, and architectural advancements- the Lion Gate, the appearance of the Megaron. Classical Greek: Developments in philosophy: Socrates, Aristotle, Plato; science; literature; Greek City states; Evolution of the Temple; the Orders; the Parthenon, Temple of Zeus, Temple of Athena; Polis and Acropolis.	**8**
2- Early Iron Age Civilizations In Rome	Political, social, philosophical and military developments. Structural and Engineering Achievements: the arch, vault and the dome; Developments of the orders; Temples: Pantheon; Arenas: Colosseum; Thermae: Caracalla; Aqueducts; the forum and the basilica.	**8**
3- Early Iron Age Civilizations In India	Settlement planning pattern and town forms by planning pattern (Dandaka, Nandyavartha etc.), typical Vedic village, shelter types by shape and materials used, Torana and sacred railings. Motifs and patterns used. The brick altars and their significance.	**8**
4- Beginning Of Buddhist, Jain & Hindu Architecture In India	Hinayana and Mahayana Buddhism – Interaction of Hellenic and Indian ideas in North India- Architectural Production during Ashoka ‘s rule- Ashokan Pillar, Saranath, and Rock cut caves at Barabar, Sanchi Stupa. Salient features of a chaitya hall	**8**

	and vihara, Rock cut architecture in the western and Eastern ghats-Karli, Viharas at Nasik, Ranigumpha, Udaigiri. Beginning of Hindu Temple Architecture under the Guptas and Chalukyas. Appearance and Evolution: Experiments at Badami, Aihole of examples such as Ladh Khan, Durga, Maleguti	
5- Collapse Of Some Civilizations	Causes of collapse with suitable examples; economical, environmental, social and cultural, natural disaster, overpopulation or resource depletion, lack of loyalty to a central power structure and result in an oppressed lower class rising up and taking power from a smaller wealthy elite, Foreign Invasions, Sub-replacement fertility.	**10**

Course Outcomes:

Upon completion of this course, students will be able to:

- **CO1:** Identify and explain the key architectural features Minoan and Mycenaean societies.
- **CO2:** Analyse the evolution of Greek temples and the influence of Greek philosophers on architectural practices through structures.
- **CO3:**Examine the architectural innovations of ancient Rome, including the arch, vault, dome, and orders, and assess their application on Roman structures
- **CO4:** Evaluate the development of Hindu temple architecture under the Guptas and Chalukyas, comparing it with earlier architectural traditions, using examples.
- **CO5:** Develop an argument on the causes of the collapse of ancient civilizations, integrating economic, social, environmental, and political factors, supported by case studies.

Text/Reference books:

1. **Tadgell Christopher** (1990). A History of Architecture in India – From the Dawn of Civilization to the End ofthe Raj. London. Phaidon Press Ltd.
2. **Fletcher Sir Banister** (1987). A History of Architecture. London (UK). Butter-worth Heinemann Ltd.
3. **Arjun Dev, The Story of Civilisation**, Vol. I (Old) NCERT History Textbook for Class IX.
4. **Kostof Spiro(1995) A History of Architecture** – Settings and Rituals. N.Y. Oxford University Press.
5. **Hiraskar G.K.(1994)** The Great Ages of World Architecture. Delhi. Dhanpat Rai Ltd.
6. **Brown Percy (2004).** Indian Architecture- Buddhist and Hindu Periods. Bombay. D.B. Taraporevala and Sons Co. Pvt. Ltd.

.

Assessment method: (Continuous Internal Assessment = 50%, Final Examination = 50%)

School Name- School of Architecture , Planning & Design			
Program- B. Arch.			**Semester-II**
Course Name- Building Materials & Construction-II			
A.Y 2025-26	**Course Code- B080125253**	**Batch- 2025-30**	**CIE Marks-75**
Total Teaching Hours: 84	**Total Credits-3**		**ESE Marks-75**
Type of Course- Studio & Practical			**Total Marks-150**

Course Objectives

1. To study various types of timber and their uses, including timber products, roof coverings, and secondary building elements such as doors, windows, and staircases.
2. To understand different roofing systems, including flat, curved, and sloping roofs, with a focus on timber roofs and vernacular traditions in India.
3. To comprehend the principles and techniques of damp-proofing in load-bearing walls.
4. To explore elementary stone masonry techniques, joint types, and applications in construction. To understand the principles of arch and lintel construction, including types, technical terms, and methods for constructing brick and stone arches

UNITS	Topics	No. of Teaching hours/ (Lecture)
1- Building Materials	Timber- Timbers of India, Forest cover, Timber sawing and seasoning, timber products, roof tiles, and sheets, Introduction to secondary elements door, windows, railing and sunshades, staircase etc. Identification of basic woods like teak, sal, sheesham, mango, eucalyptus etc Roof Coverings (Conventional)-Clay Tiles (Country, Allahabad, Mangalore tiles etc.), Stone Slating, Shingles, Thatch.	**15**
2- Roofing System	Flat, curved, sloping roofs Timber roofs: Roofing: Different types of roofing systems- investigation of roofing systems in vernacular traditions of India.	**15**
3- Damp Proof Course	Horizontal and vertical DPC on Load bearing walls	**18**
4- Stone Work	Elementary Stone Masonry, Types of joints. Random, Course and Ashlar Stone Work in walls.	**18**
5- Arches and Lintels	Elementary principles of Arch construction. Definition of various technical terms and Types of Arches. Construction of Brick and Stone Arches.	**18**

All units – material Sample Collections and Site Visit and detailed drawings

Course Outcomes:

Upon completion of this course, students will be able to:

1. **CO1:** Identify various timbers, timber products, and roof coverings, and apply their knowledge to design and construction.
2. **CO2:** Evaluate and implement different roofing systems, including vernacular techniques, in architectural projects.
3. **CO3:** Apply damp-proofing methods to ensure the durability and functionality of load-bearing walls.
4. **CO4:** Demonstrate proficiency in stone masonry techniques and utilize appropriate joints in construction.
5. **CO5:** Design and construct arches and lintels, understanding their technical aspects and construction methods.

Text/Reference books:

1. Kumar, S.K. (2001) “Building Construction”, 19th Ed., Standard Publishers Distributors.
2. Allen, E. and Iano, J. (2004) “Fundamentals of Building Construction: Materials and Methods”, Wiley.
3. Mehta, M., Scarborough, W. and Armpriest, Diane. (2008) “Building Construction: Principles, Materials and
4. Systems”, Pearson Prentice Hall
5. Rangwala, S.C. (2001) “Building Construction”, 19 th Ed., Charotar Publishing House
6. Mckay, W.B., (2005) “Building Construction”, Vols. I, Longman.
7. Mckay, W.B., (2005) “Building Construction”, Vols. II, Longman.
8. Mckay, W.B., (2005) “Building Construction”, Vols. III, Longman.

Assessment method: (Continuous Internal Assessment = 50%, Final Examination = 50%
Practical Exam: 50 marks &Viva voce:25 Marks based on studio assignments.

School Name- School of Architecture , Planning & Design			
Program- B. Arch.			**Semester-II**
Course Name- Architectural Drawing- II			
A.Y 2025-26	**Course Code- B080125254**	**Batch- 2025-30**	**CIE Marks-75**
Total Teaching Hours: 42	**Total Credits-3**		**ESE Marks-75**
Type of Course- Studio & Practical			**Total Marks-150**

Course Objectives

1. To involve students in a number of exercises that will help them develop the skill of intersection and interpenetration of solids.
2. To make them understand the concepts of perspective drawing
3. To make them understand the process of perspective drawing.
4. To understand and Develop the skill of documentation of building with interiors.

UNITS	Topics	No. of Teaching hours/ (Lecture)
1- Intersection of Solids	Intersection and interpenetration of solids. Prism to prism ,cylinder to cylinder, cone to cylinder intersection.	**8**
2. **Introduction to Perspective Drawing**	Introduction, Purpose and use, Differences with metric projections, Anatomy of a perspective –cone of vision, Station point, Picture plane, Eye level, Horizon line, Ground line, Vanishing point, etc.Types of perspective- One Point Perspective, Two Point Perspective, Three point perspective.	**8**
3.**Perspective Drawing**	One Point Perspective-Perspectives of simple and complex box blocks, Perspective of simple curved surface, Perspective of simple household furniture items. Two Point Perspective- Perspectives of simple and complex box blocks, Perspective of simple curved surface., Perspective of simple household furniture items. Three point perspective	**8**
4. **Documentation of a built structure with interiors**	Site visit, studying architecture of a built structure. Documentation of a complete building, collection of data, construction material, Photo Documentation.Aassignments involving sketches of small spaces (Plans, Sections, elevations, Isometric view etc) such as Kitchen Interiors, bed room interiors, toilet interiors etc to specific scale-detailing in larger scale etc.	**8**
5. **Architectural Drawing of Small Scale building**	Iintroduction to fundamentals of architectural drawing, line value, lettering, drawing representation, methods and technique of measuring objects by measuring tape –photographs – aesthetic components and details. Exercises and assignments involving architecture (Plans, sections, Elevations, Perspective etc) of small spaces such as guard room, studio apartment etc	**10**

Course Outcomes:

Upon completion of this course, students will be able to:

- **CO1:** Student will be able to develop the skill of intersection and interpenetration of solids.
- **CO2:** Student will understand the terminology of perspective drawing.
- **CO3:** Student will develop the skill of perspective drawings.

- **CO4:** Student will learn to Collect the building data and document accordingly
- **CO5:** Student will develop the skill of making the Architectural & Interior Drawings.

Text/Reference books:

1. Bhatt, N.D. and Panchal, V.M., "Engineering Drawing – Plane and Solid Geometry", 48th Ed., Charotar Publishing House. 1996
2. Francis D. K. Ching; Design Drawing; John Wiley & Sons; 2010
3. Rerdow Yee; Architecture Drawing - A Visual Compendium of Types & Methods; John Wiley & Sons; 2012
4. John Montague; Basic Perspective Drawing - A Visual Approach; John Wiley & Sons; 5th edition 2010.
5. Mo Zell; The Architecture Drawing Course - Understand the principles & master the practices;
6. Bernard Alkins - 147, Architectural Rendering, Walter Foster Art Books, 1986

Assessment method: (Continuous Internal Assessment = 50%, Final Examination = 50%)

Practical Exam: 50 marks &Viva voce:25 Marks based on studio assignments.

`

School Name- School of Architecture , Planning & Design			
Program- B. Arch.			**Semester-II**
Course Name- Architectural Design-II			
A.Y 2025-26	**Course Code- B080125255**	**Batch- 2025-30**	**CIE Marks-100**
Total Teaching Hours: 84	**Total Credits-6**		**ESE Marks-100**
Type of Course- Studio & Practical			**Total Marks-200**

Course Objectives

1. To introduce students to the fundamentals of the design process, including drawing skills, abstraction, and communication techniques.
2. To study space standards and anthropometrics, focusing on the needs of physically handicapped and elderly individuals.
3. To explore design strategies and methods, including contextual design, material usage, and generative processes.
4. To develop design skills through simple functional exercises, emphasizing universal accessibility and passive energy spaces.
5. To understand spatial organization and interrelationships in design, with practical exercises involving multiple spaces and building anatomy basics.

UNITS	Topics	No. of Teaching hours/ (Lecture)
1- Design Process	Design Process: Basics: Drawing skills, Conventions, Abstraction and Expression; Application: Analysis, Exploration, Discovery and Verification; Communication: Process, Individual Design, Team Design, and Public Design. Evolution from Program and Conditions to Concept & Design - Graphical Representation of the Process.	**15**
2- Space and Standards	The study of space standards and anthropometrics related to each problem. Anthropometry as related to physically handicapped and elderly persons is required to be studied. Different Techniques shall be used for presentation.	**15**
3- Design Projects	Design Strategies and Methods. Designing in Context; Design & Function; Constituents of Design; Working with materials and Structures; Arriving at Ideas. Methods: Nature & Geometry as generators; Music and Mathematics as models; Precedent; Responses to Site; Generative Processes. Traditional Methods, New Methods, The Three Stage Process – Divergence, Transformation, Convergence; Choosing Design Strategies.	**18**
4- Design Exercises-I	Horizontal movement - single bay - passive energy type spaces. Design Exercises shall be simple functional units with universal access compliance such as: Toilet for a physically handicapped person. Hostel room, bed room, kitchen, Shop, Workshop, pavilions, snack bar;	**18**

5- Design Exercises-II	The problems involve simple space organization. Design Exercises shall be multiple spaces and understanding their inter-relationships, such as: Residence, petrol bunk, fire station, police station, Cottage for an elderly couple. The basics of building anatomy from parapet to foundation and an overview of the different building materials shall be explained at the beginning of the design studio.	**18**

Course Outcomes:

Upon successful completion of the course, students will be able to:

1. **CO1:** Apply the design process, from concept development to graphical representation.
2. **CO2:** Analyse and incorporate space standards and anthropometric principles into design solutions.
3. **CO3:** Utilize various design strategies and methods to address functional and contextual requirements.
4. **CO4:** Create functional designs for single-unit spaces with universal accessibility.
5. **CO5:**Organize and design multiple spaces while understanding their interrelationships and basic building anatomy

Text/Reference books:

1. Joseph De Chiara, Michael J Crosbie, Time Saver Standards for Building Types, McGraw Hill Education; 4th edition, 2014.
2. Joseph De Chiara, Julius Panero, Martin Zelnik, Time Saver Standards for Interior Design and Space Planning, McGraw Hill 2011.
3. Ernst Neuferts Architects Data, Blackwell 2012.
4. Ramsey et al, Architectural Graphic Standards, Wiley 2008

Assessment method: (Continuous Internal Assessment = 50%, Final Examination = 50%)

Practical Exam: 75 marks &Viva voce:25 Marks based on studio assignments.

School Name- School of Architecture , Planning & Design			
Program- B. Arch.			**Semester-II**
Course Name- Architecture Graphics -II			
A.Y 2024-25	**Course Code- B080124256**	**Batch- 2024-2029**	**CIE Marks-50**
Total Teaching Hours: 90	**Total Credits-3**		**ESE Marks-50**
Type of Course- Studio & Practical			**Total Marks-100**

Course Objectives

1. Understand the importance of presentation techniques in architectural drawings.
2. Learn manual methods of representing materials, textures, and finishes in 2D and 3D.
3. Develop basic skills in rendering human figures, vehicles, and furniture in architectural contexts.
4. Explore artistic techniques like collage, mural, and sculpture to enhance visual expression.
5. Improve manual presentation skills for communicating design ideas clearly and effectively.

UNITS	Topics	No. of Teaching hours/ (Lecture)
1- Presentation Techniques (Manual)	Graphical representation of textures (wood, glass, metal, stone, etc.) Rendering materials in plan and elevation Shading techniques and line weights Composition and layout of sheets	**18**
2- Graphical Representation in Architecture	Drawing human figures, furniture, and vehicles in plan, elevation, and perspective Scale and proportion practice Use of entourage to enhance presentation	**18**
3- Collage and Mural	Creating collages with paper and recycled materials Introduction to mural design on a live scale Theme-based creative composition	**18**
4- Sculpture and Form Exploration	Creating simple sculptures using clay, POP, wood, metal, etc. Study of solids and voids Light and shadow play Colour application and contrast	**18**
5. Manual 3D Presentation Techniques	Freehand sketching of perspectives Isometric and axonometric views Textural detailing with pencils and markers Step-by-step 3D object drawing practice	**18**

Course Outcomes:

Upon successful completion of this course, students will be able to:

- **CO1:** Represent various materials and finishes manually using different graphic techniques.
- **CO2:** Draw and render human figures, furniture, and accessories accurately in design drawings.
- **CO3:** Create impactful collages and murals using various materials.

CO4: Develop sculptural models and understand the relationship of form, void, and light.

CO5: Produce well-composed manual architectural presentations for academic submissions.

Text/Reference books:

Assessment method: (Continuous Internal Assessment = 50%, Final Examination = 50%)

Text / Reference Books

1. **Francis D.K. Ching** – *Architectural Graphics*
2. **Robert W. Gill** – *Rendering with Pen and Ink*
3. **Bert Bielefeld & Sebastian El Khouli** – *Basics Architectural Presentation*
4. **Iain Fraser and Rod Henmi** – *Envisioning Architecture: An Analysis of Drawing*
5. **Narayanan & Iyer** – *Manual of Graphic Techniques for Architects, Graphic Designers, and Artists*

Practical Exam: 50 Marks based on studio assignments.

School Name- School of Architecture , Planning & Design			
Program- B. Arch.			**Semester-II**
Course Name- Architectural Climatology			
A.Y 2025-26	**Course Code- B080125207**	**Batch- 2025-30**	**CIE Marks-50**
Total Teaching Hours:42	**Total Credits-2**		**ESE Marks-50**
Type of Course- Theory			**Total Marks-100**

Course Objectives

1. To understand the relationship between Architecture and Climatology.
2. To study the various factors affecting climate.
3. To get acquainted with tropical zones of the world with their characteristics.
4. To understand the terminology of human thermal comfort and its indices.
5. To study ventilation and its importance in building design.

UNITS	Topics	No. of Teaching hours/ (Lecture)
1- Introduction to Climatology	Relationship between Architecture and Climatology; Global Warming and the Need for Climate responsive building; Building as a third skin. Climate and weather; Global weather; Seasonal changes, Factors responsible for changes.	**6**
2- Micro Climate	Air Temperature: Factors that influence air temperature – latitude, altitude seasons, water, trees, areas etc.; inversion of temperature, thermal diffusivity, thermal conductivity and heat transmission through building elements. Solar Radiation and its variations over the year.	**6**
3- Tropical Climate	Climatic-Tropics, climatic zones, macro climate, elements of climate, sun, temperature, wind, precipitation, and climatological data needed for planning of buildings.	**10**
4- Human Thermal Comfort	Human Comfort, Human heat balance and comfort; thermal comfort, heat stress, effective temperature, bio climatic analysis, individuals' variation. Concept of Adaptive Comfort.	**10**
5- Ventilation	Wind: Study of diurnal and seasonal variations, heating and cooling, effect of topography; effect of wind on location on industrial areas, airports and other land uses and road patterns; Promoting and inhibiting air movement in and around buildings, wind eddies, size and positions; effect of wind on design and siting of buildings. Understanding Wind Rose diagrams. Precipitation and humidity: Water vapor, relative humidity, condensation, rain, fog, snow and architectural responses to them.	**10**

Course Outcomes:

Upon successful completion of this course, students will be able to:

- **CO1:** Relationship between Architecture and Climatology.
- **CO2:**The various factors affecting climate.
- **CO3:**The tropical zones of the world with their characteristics.
- **CO4:**The terminology of Human thermal comfort and its indices.
- **CO5:**Ventilation and its importance in building design.

Text/Reference books:

1. **Givoni, B. (1998).** Climate considerations in building and urban design. New York: Van Nostrand Reinhold.
2. **Bansal, N.K**., Hauser, G. and Minke, G., "Passive Building Design: A Handbook of Natural Climatic Control", Elsevier Science. 1994
3. **Hausladen, G**., "Climatic Design: Solutions for Buildings that can Do More with Less Technology", Birkhauser. 2005
4. **Drake, S.,** "The Third Skin: Architecture, Technology and Environment", UNSW Press. 2007.
5. **Koenigsberger**, O. H., Ingersoll, T. G., Mayhew, A. and Szokolay, S. V. "Manual of Tropical Housing and Building: Climatic design" Hyderabad : Orient Longman. 1980

Assessment method: (Continuous Internal Assessment = 50%, Final Examination = 50%)

School Name- School of Architecture , Planning & Design			
Program- B. Arch.			**Semester-II**
Course Name- Digital Office Skills			
A.Y 2025-26	**Course Code- B080125208**	**Batch- 2025-30**	**CIE Marks-25**
Total Teaching Hours: 28	**Total Credits-2**		**ESE Marks-25**
Type of Course- Theory			**Total Marks-50**

Course Objectives

1. To introduce students to the basic concepts and components of computer systems and their role in office automation.
2. To develop proficiency in using word processing software for creating, formatting, and managing professional documents.
3. To equip students with the skills to perform calculations, data analysis, and visualization using spreadsheet software.
4. To train students in designing effective presentations using multimedia tools and presentation software.
5. To familiarize students with cloud-based tools and services, including Google Suite and basic database management for efficient data handling and collaboration.

UNITS	Topic	No. of Teaching hours/ (Lecture)
1- Introduction to Office Automation	• Role of computers in office automation • Categories of application software • Importance of office applications	**3**
2- Word Processing Software (MS Word, LibreOffice, OpenOffice)	• Text formatting: Fonts, styles, colors, and sizes. • Paragraph formatting: Bullets, numbering, alignment, justification • Page setup: Headers, footers, page numbers, and margins • Tables and charts in documents • Advanced features: Mail merge, macros, spelling & grammar check	**5**
3- Spreadsheet Software (MS Excel, Google Sheets)	• Basics of spreadsheet management • Formulas and functions (SUM, AVERAGE, LOOKUP, etc.) • Creating and formatting tables • Charts and graphs for data visualization • Data management techniques: Sorting, filtering, and validation	**5**
4- Presentation Software (MS PowerPoint, Google Slides)	• Basics of slide creation • Slide design, transitions, and animations • Adding multimedia elements (images, videos, sound) • Presenting data using charts and tables	**5**

	• Printing and saving presentations in different formats	
5- Google Suite & Cloud Storage	• Introduction to Google Drive, Google Docs, Google Sheets, and Google Forms • File sharing and collaboration tools • Security and data management in the cloud	**5**
6-Database Management Basics	• Creating and managing simple databases • Using templates for forms and tables • Data entry, retrieval, and reports	**5**

Course Outcomes:

Upon successful completion of this course, students will be able to:

- **CO1:** Understand the fundamentals of application software and office automation.
- **CO2:** Explain the features and functions of word processors, spreadsheets, and presentation software.
- **CO3:** Describe the role of automation in data management and documentation
- **CO4:** Analyze the importance of file organization and database management.
- **CO5:** Understand the role of Google Suite in professional environments

Assessment method: (Continuous Internal Assessment = 50%, Final Examination = 50%)

School Name- School of Architecture , Planning & Design			
Program- B. Arch.			**Semester-II**
Course Name- Digital Office Skills Lab			
A.Y 2025-26	**Course Code- B080125258**	**Batch- 2025-30**	**CIE Marks-25**
Total Teaching Hours: 28	**Total Credits-1**		**ESE Marks-25**
Type of Course- Practical			**Total Marks-50**

Course Objectives

1. **To develop hands-on proficiency in word processing tools** such as Microsoft Word, LibreOffice Writer, and OpenOffice for creating professional documents using formatting, tables, charts, macros, and mail merge features.
2. **To train students in spreadsheet software** (Microsoft Excel / Google Sheets) for organizing data, applying formulas, using lookup functions, and creating visual data representations through charts and graphs.
3. **To enable effective use of presentation tools** like Microsoft PowerPoint and Google Slides for designing impactful slides, incorporating multimedia, and using transitions for professional presentations.
4. **To familiarize students with cloud-based collaboration tools** in the Google Suite for document creation, sharing, real-time editing, and data collection using Google Forms and Google Drive.
5. **To introduce basic database management skills**, including the creation of tables, forms, data entry, queries, and report generation using templates and database software.
6. **To equip students with essential file management and printing skills**, ensuring their ability to produce, format, and share output in various formats with correct page settings.

6.

UNITS	Topic	No. of Teaching hours/ (Lecture)
1- Microsoft Word / LibreOffice Writer / OpenOffice Writer	• Create and format documents • Insert tables, images, and charts • Use mail merge and macros • Perform spell check, grammar check, and thesaurus functions	**3**
2- Microsoft Excel / Google Sheets	• Create, format, and manage spreadsheets • Apply functions and formulas • Generate charts and graphs • Implement lookup functions (VLOOKUP, HLOOKUP)	**5**
3- Microsoft PowerPoint /	• Create slides with different templates • Apply transitions and animations	**5**

Google Slides	• Add multimedia elements (videos, sounds) • Use slide navigator for effective presentations	
4- Google Suite Applications	• Create and share documents via Google Docs • Manage and collaborate on spreadsheets via Google Sheets • Design and analyze forms via Google Forms • Store and share files on Google Drive	**5**
5- Database Management	• Create database tables and forms • Enter and manage data using templates • Generate reports and queries	**5**
6- Printing & File Management	• Print documents, spreadsheets, and presentations • Adjust page settings for professional output. •	**5**

Course Outcomes:

Upon successful completion of this course, students will be able to:

- **CO1:** Use office automation software to create and manage documents.
- **CO2:** Perform data analysis using spread sheet applications.
- **CO3:** Create professional presentations with animations and transitions.
- **CO4:** Utilize Google Suite for collaborative tasks and file sharing.

Assessment method: (Continuous Internal Assessment = 50%, Final Examination = 50%)

SDGI GLOBAL UNIVERSITY

SCHOOL OF ARCHITECTURE, PLANNING AND DESIGN

DETAILED SECOND YEAR CURRICULUM CONTENTS

PROGRAM: Bachelor in architecture(B.Arch.)

A.Y. 2025-26

III SEMESTER

School Name- School of Architecture , Planning & Design			
Program- B. Arch.			**Semester-III**
Course Name- Architectural Structures-III			
A.Y 2025-26	**Course Code- B080125301**	**Batch- 2024-29**	**CIE Marks-50**
Total Teaching Hours: 45	**Total Credits-3**		**ESE Marks-50**
Type of Course- Theory			**Total Marks-100**

Course Objectives

1. To impart knowledge about soil mechanics and its influence on building design and construction.
2. To introduce students to the design and detailing of RCC structural elements such as staircases and footings.
3. To develop understanding of continuous beams and moment distribution techniques.
4. To explain the design principles of foundation systems including isolated footings and pile foundations.
5. To explore load transfer mechanisms in structural frames through theoretical and practical case studies.

UNITS	Topics	No. of Teaching hours/ (Lecture)
1.Soil Mechanics	Understanding different types of soil by studying their Classification, Properties of Soil, Types of pressure Passive and Active earth pressure Safe bearing capacity of different types of soil.	**6**
2.Designing of RCC Staircases	Understanding the designing of RCC Staircases, Classification of Staircases and their types, Effective span of stairs, Different types of loading on staircases and understanding their structural system. Analysis and design of stairs (dog legged with waist slab) and detailing of its reinforcement.	**10**
3.Continuous Beams	Introduction to continuous beams and their role in construction. - Basic explanation of Clapeyron's Theorem (concept only). - Moment Distribution Method (easy stepwise approach). - Understanding bending moments and shear forces for multi-span beams.	**10**
4.Foundation Designing and Analysis	Introduction, Type of foundation, Depth of foundation, Theory & design of axially loaded isolated square footing and detailing of its reinforcement. Pile foundation - Introduction, classification and its application.	**9**
5.Structural Frames and Load Transfer	How loads transfer in RCC and steel frames. - Understanding rigid frames and open-web frames (trusses). - Case studies of architectural buildings: pavilions, exhibition halls, and large-span roofs.	**10**

Course Outcomes

Upon successful completion of this course, students will be able to:

CO1: Identify and classify soil types and assess their bearing capacity for structural foundation design.

CO2: Analyze and design RCC staircases using appropriate loading conditions and reinforcement detailing.

CO3: Evaluate multi-span continuous beams using basic structural analysis methods

CO4: Design isolated footing foundations and understand applications of pile foundations.
CO5: Analyze structural frames and understand load transfer through real-life architectural examples.

Reference Books / Textbooks

1. **Punmia, B.C.**, *Soil Mechanics and Foundations* – Laxmi Publications
2. **Ramamrutham, S.**, *Design of Reinforced Concrete Structures* – Dhanpat Rai Publishing
3. **Junnarkar, S.B.**, *Mechanics of Structures Vol. II* – Charotar Publishing
4. **Hibbeler, R.C.**, *Structural Analysis* – Pearson Education
5. **Gambhir, M.L.**, *Fundamentals of Reinforced Concrete Design* – PHI Learning Pvt. Ltd.
6. **Subramanian, N.**, *Design of Reinforced Concrete Structures* – Oxford University Press
7. **IS:456 – 2000**, *Code of Practice for Plain and Reinforced Concrete* – Bureau of Indian Standards

Assessment method: (Continuous Internal Assessment = 50%, Final Examination = 50%)

School Name- School of Architecture , Planning & Design			
Program- B. Arch.			**Semester-III**
Course Name- History of Architecture-III			
A.Y 2025-26	**Course Code- B080125302**	**Batch- 2024-29**	**CIE Marks-50**
Total Teaching Hours: 45	**Total Credits-3**		**ESE Marks-50**
Type of Course- Theory			**Total Marks-100**

Course Objectives

1. To explore the evolution of early medieval and Islamic architectural styles, contextualized in social, religious, and political frameworks.
2. To analyze the structural and aesthetic principles of Byzantine, Romanesque, and Gothic architecture.
3. To investigate the development and spread of Islamic architecture across regions, focusing on key monuments and their typologies.
4. To understand the early medieval architecture of India through the regional variations in temple design.
5. To develop the ability to critically assess architectural forms and construction techniques that responded to cultural, geographic, and technological transformations

UNITS	Topics	No. of Teaching hours/ (Lecture)
1- Early Christian and Byzantine Architecture	Transition from Roman to Early Christian architecture; Evolution of the Basilica Plan with example of Old St. Peter's Basilica, Characteristics of Byzantine architecture — Hagia Sophia, Constantinople; San Vitale, Ravenna., Construction techniques: domes, pendentives, mosaics, and symbolic iconography.	**9**
2- Romanesque Architecture	Emergence of Romanesque style in Europe — political and religious influence. Building typology, Structural innovations: Barrel vault, Groin vault, and buttresses., Architectural examples: Pisa Cathedral Complex.	**9**
3- Gothic Architecture	Historical background and characteristics: pointed arch, ribbed vaults, flying buttress, stained glass, sculptures, and vertical emphasis in design., Evolution of cathedrals: Notre Dame de Paris & Reims Cathedral.	**9**
4- Islamic Architecture	Origin and spread of Islamic architectural principles from Arabia to Spain and Persia., Elements of mosque design: Minarets, Domes, Mihrab, Iwan, and Courtyards. Key examples: Dome of the Rock, Great Mosque of Damascus, Mosque of Sultan Hassan and Qutub Minar Complex.	**9**
5- Early Medieval Indian Temple Architecture	Evolution of temple design post-Guptas; Nagara, Dravidian, and Vesara styles., Major temple complexes:, Nagara: Khajuraho temples, & Sun Temple at Modhera., Dravidian: Shore Temple at Mahabalipuram, Brihadeeswara Temple at Thanjavur.,Vesara: Pattadakal group of temples., Symbolism, sculptural richness, and spatial organization.	**9**

Course Outcomes:
Upon completion of this course, students will be able to:

- **CO1:** Identify the principal architectural characteristics and construction techniques of Byzantine,

Romanesque, and Gothic styles.

- **CO2:** Analyze the socio-religious and political contexts influencing Islamic architecture in West Asia, North Africa, Spain, and India.
- **CO3:** Evaluate the structural systems, aesthetics, and symbolic meanings of early Indian temples across regional styles.
- **CO4:** Compare the synthesis of native traditions and foreign influences in Indo-Islamic architecture in India.
- **CO5:** Interpret architectural innovations from the early medieval period in both the East and West, and assess their relevance to contemporary design thinking.

Text/Reference books:

1. letcher, Sir Banister. A History of Architecture. Butterworth-Heinemann, 20th Edition.
2. Tadgell, Christopher. The History of Architecture in India. Phaidon Press.
3. Brown, Percy. Indian Architecture: Buddhist and Hindu Periods. D.B. Taraporevala Sons & Co.
4. Kostof, Spiro. A History of Architecture: Settings and Rituals. Oxford University Press.
5. Michell, George. The Hindu Temple: An Introduction to Its Meaning and Forms. University of Chicago Press.
6. Grabar, Oleg. The Formation of Islamic Art. Yale University Press.

Assessment method: (Continuous Internal Assessment = 50%, Final Examination = 50%)

School Name- School of Architecture , Planning & Design			
Program- B. Arch.			**Semester-III**
Course Name- Building Materials & Construction-III			
A.Y 2025-26	**Course Code- B080125353**	**Batch- 2024-29**	**CIE Marks-75**
Total Teaching Hours: 90	**Total Credits-3**		**ESE Marks-75**
Type of Course- Studio & Practical			**Total Marks-150**

Course Objectives

1. To understand advanced concepts of structural and non-structural building components.
2. To study various types of floors, staircases, and partitions along with their materials and construction methods.
3. To introduce students to doors and window types, materials, and fixing techniques.
4. To understand the construction techniques of cavity walls, partition walls, and cladding systems.
5. To equip students with the ability to create working drawings and site-level construction details.

UNITS	Topics	No. of Teaching hours/ (Lecture)
1- Foundation	Classification of foundations: Shallow and Deep, Strip, Spread, Raft, Pile, and Pier foundations — their applications and construction techniques.,	**18**
2- Staircases	Components of staircases: Tread, riser, nosing, flight, landing, handrail, baluster, stringer. Classification: Straight flight, Dog-legged, Open welL, Geometrical, Spiral, Helical, Bifurcated. Materials: Timber, Stone, Concrete, Steel, Composite.	**18**
3- Doors	Types of doors: Battened, Ledged, Braced, Framed, Panelled, Flush, Sliding, Folding, Revolving. Frames and joinery details: Timber , Aluminium, UPVC.	**18**
4- Walls: Cavity & Partitions	Cavity wall construction: Purpose, Types, Materials, and Detailing. Partition walls: Types — Brick, Glass, Timber, Gypsum, Metal stud partitions.	**18**
5- Building Component Details & Site Practice	Detailing practice: Floors, Staircases, Doors, Windows, Partitions, Cavity walls. Site visits for live observation of construction techniques and material usage. Material sample collection and hands-on documentation.	**18**

Course Outcomes:

Upon completion of this course, students will be able to:

- **CO1:** Understand and illustrate types of floors, floor finishes, and their construction techniques.
- **CO2:** Analyze staircases with various geometrical configurations and construction methods.
- **CO3:** Identify various types of doors and windows, their frames, shutters, materials, and joinery.
- **CO4:** Explain partition walls, cavity walls, and cladding systems for enhanced building performance.

- **CO5:** Prepare detailed working drawings for floors, staircases, doors, windows, and wall systems.

Text/Reference books:

1. Rangwala, S.C. — Building Construction, Charotar Publishing House.
2. McKay, W.B. — Building Construction Vol. I to IV, Longman.
3. Chudley, R. & Greeno, R. — Building Construction Handbook, Routledge.
4. Allen, E. & Iano, J. — Fundamentals of Building Construction: Materials and Methods, Wiley.
5. Kumar, S.K. — Building Construction, Standard Publishers.
6. Mehta, M., Scarborough, W., Armpriest, D. — Building Construction: Principles, Materials, and Systems, Pearson.

Assessment method: (Continuous Internal Assessment = 50%, Final Examination = 50%)

Practical Exam: 50 marks &Viva voce:25 Marks based on studio assignments.

School Name- School of Architecture , Planning & Design			
Program- B. Arch.			**Semester-III**
Course Name- Architectural Drawing-III			
A.Y 2025-26	**Course Code- B080125354**	**Batch- 2024-29**	**CIE Marks-75**
Total Teaching Hours: 90	**Total Credits-3**		**ESE Marks-75**
Type of Course- Studio & Practical			**Total Marks-150**

Course Objectives

1. To refine students' advanced skills in architectural representation techniques.
2. To develop precision in measured drawing and architectural documentation of existing structures.
3. To strengthen students' ability to observe, sketch, and communicate architectural ideas manually.
4. To foster proficiency in visual storytelling and presentation techniques for architecture.

UNITS	Topics	No. of Teaching hours/ (Lecture)
1- Freehand Architectural Sketching of Perspective	Developing on-site observational and representational skills through live sketching and perspective rendering. On-site live sketching techniques for architectural observation. Architectural visual note-making: Diagrams Exploded views Conceptual and observational sketches One-point perspective drawing of interior spaces rendered using various media. Two-point perspective drawing of interior spaces using different rendering techniques (e.g., pencil, ink, watercolor) Practice in freehand perspectives to build spatial understanding and expression.	**18**
2- Sociography and Shadow Construction	Understanding the behavior of light and shadow on architectural forms for realistic and conceptual visualization. Study of light behavior and its impact on built forms. Shadow construction in plan views: Point sources Linear elements Planar surfaces Shadow construction in elevations: Techniques for accurately projecting shadows from various elements. Introduction to shortcut methods for quick shadow generation. Shadow casting in: Plans Elevations Perspective views Practical exercises exploring different sun angles and architectural	**18**

	implications.	
3- Introduction to Advanced Drawing Technique	Enhancing architectural presentation through realistic material rendering and advanced shadow techniques. Drawing Technique Rendering techniques for architectural materials: Wood, glass, concrete, brick, metal Sociography in presentations: Application of value systems for accurate shading Shade and shadow construction in plans, elevations, and perspectives Developing an understanding of texture, tone, and material expression.	**12**
4- Graphical Representation techniques of Architectural Concepts drawing	Graphical representation of furniture, automobiles, trees, and human figures in plan, elevation, and perspective. Layouts of single units (e.g., kitchen, bedroom) with integrated furniture. Development of concept sketches into formal architectural drawings. Use of colour schemes and composition principles for effective layout sheets..	**18**
5- Architectural Illustration Practice	Creating professional architectural presentations using traditional rendering techniques. Preparation of presentation drawings for small-scale buildings: Residential units Studio apartments Representation through: Plans, Elevations, Sections, Site Plans Use diverse rendering media (watercolors, markers, ink, etc.). Integration of sociography for dimensional enhancement.	**18**

Course Outcomes:

Upon completion of this course, students will be able to:

- **CO1:** Express spatial ideas through freehand sketches, diagrams, and exploded views.
- **CO2**: Apply the principles of light, shadow, and sciography to architectural representations.
- **CO3:** Demonstrate proficiency in rendering materials and architectural surfaces by hand.
- **CO4:** Render architectural drawings using various media and sciography techniques.
- **CO5**: Students will learn to visually communicate architectural ideas with clarity, scale, and composition suited for presentations and design juries..

Text/Reference books:

1. Francis D. K. Ching – Architectural Graphics (Wiley)
2. Mo Zell – The Architectural Drawing Course: Understand the Principles & Master the Practices (Thames & Hudson)
3. John Montague – Basic Perspective Drawing: A Visual Approach (John Wiley & Sons)
4. Edward Robbins – Why Architects Draw (MIT Press)
5. Laseau, Paul – Freehand Sketching: An Introduction (W.W. Norton)

Assessment method: (Continuous Internal Assessment = 50%, Final Examination = 50%)
Practical Exam: 50 marks &Viva voce:25 Marks based on studio assignments.

School Name- School of Architecture , Planning & Design			
Program- B. Arch.			**Semester-III**
Course Name- Architectural Design-III			
A.Y 2025-26	**Course Code- B080125355**	**Batch- 2024-29**	**CIE Marks-100**
Total Teaching Hours: 90	**Total Credits-6**		**ESE Marks-100**
Type of Course- Studio & Practical			**Total Marks-200**

Course Objectives

1. To introduce design of small-scale public buildings with simple functions and site considerations.
2. To develop problem-solving skills using user-centric design approaches.
3. To integrate spatial organization, circulation, climatic factors, and context in the design process.
4. To enhance presentation techniques: conceptual, schematic, and detailed drawings.

UNITS	Topics	No. of Teaching hours/ (Lecture)
1- Introduction To Site And Contextual Design	Understanding site analysis: climatic, geographic, and cultural context. Land use, site zoning, and site development strategies. Site analysis -Role of orientation, sun path, and ventilation in design.	**15**
2- Concept development	Bubble diagrams, Adjacency Diagrams or Matrices & Functional Zoning. **Concept Sketches** -Building form exploration, and massing.	**15**
3- Design Projects	**(Any two projects may be assigned during the semester):** 1. **Design of a Residential Unit** o e.g., Residence, Tourist Bungalow, Artist Studio or Office Cum House. o Focus: functional relationships, anthropometrics, circulation, accessibility. 2. **Design of a Small Institutional/Commercial Building** o e.g., Panchayat Bhawan, Art Gallery, or Ashrams. o Focus: form and function integration, simple structural systems, site response. 3. **Design of a Small Recreational Facility** o e.g., Park Kiosk, Boating Club, or Bus Shelter with utilities. o Focus: open and built relationship, user behaviour, and climatic comfort.	**36**
4- Design Communication & Presentation	Drafting architectural design sheets using manual techniques. Architectural model-making techniques (conceptual and detailed). Introduction to diagramming, exploded views, and architectural narratives..	**15**
5- Evaluation & Critique	Class presentations and peer reviews. Introduction to design portfolio development. Exposure to exemplary case studies and design documentation.	**9**

Course Outcomes:
Upon successful completion of the course, students will be able to:

- CO1: Analyze user requirements, site conditions, and environmental aspects.
- CO2: Apply principles of spatial organization, circulation, and functional zoning.
- CO3: Develop small-scale architectural design projects with complete conceptual and schematic presentations.
- CO4: Integrate landscape, built form, and context into design solutions.
- CO5: Present architectural ideas using manual drawings, sketches, and models.

Text/Reference books:

1. Ching, F.D.K. — Architecture: Form, Space, and Order
2. Neufert, E. — Architects' Data
3. Juhani Pallasmaa — The Eyes of the Skin: Architecture and the Senses
4. Francis D.K. Ching — Design Drawing
5. Kevin Lynch — The Image of the City

Assessment method: (Continuous Internal Assessment = 50%, Final Examination = 50%)

Practical Exam: 75 marks &Viva voce:25 Marks based on studio assignments.

School Name- School of Architecture , Planning & Design			
Program- B. Arch.			**Semester-III**
Course Name- Architectural Graphics-III			
A.Y 2025-26	**Course Code- B080125356**	**Batch- 2024-29**	**CIE Marks-50**
Total Teaching Hours: 45	**Total Credits-2**		**ESE Marks-50**
Type of Course- Studio & Practical			**Total Marks-100**

Course Objectives

1. To develop an appreciation of Indian arts and crafts as part of cultural and architectural heritage.
2. To enhance students' skill in advanced architectural rendering techniques.
3. To build the ability to conceptualize and design small-scale architectural elements.
4. To enable students to integrate traditional visual elements into contemporary design expressions.

UNITS	Topics	No. of Teaching hours/ (Lecture)
1- History of Indian Art	Study of traditional Indian art forms and their relevance to architecture. Introduction to regional styles and influence on design elements.	**10**
2- Advanced Rendering Techniques	Use of rendering techniques in various mediums including oil pastels, dry crayons, water colours, charcoal, poster colours, pen and ink.	**10**
3- Design of motifs& objects	Designing small-scale elements such as gates, grills, railings, and jaalis. Enlargement and rendering of Indian decorative motifs using appropriate techniques.	**10**
4. Integration of Art in Architecture	Application of traditional and cultural art forms in architectural spaces—murals, reliefs, and installations. Visual storytelling in built environments.	**15**

Course Outcomes:

Upon successful completion of this course, students will be able to:

- **CO1**: Demonstrate an understanding of Indian traditional art and its cultural relevance to architecture.
- **CO2**: Apply advanced rendering skills using diverse mediums to represent architectural ideas.
- **CO3**: Design and render small-scale architectural elements inspired by Indian motifs and crafts.
- **CO4**: Integrate traditional art elements into contemporary architectural contexts to enrich spatial experience.

Reference Books

1. **Michell, George** – *The Hindu Temple: An Introduction to Its Meaning and Forms*
2. **Brown, Percy** – *Indian Architecture (Buddhist and Hindu Periods)* (Taraporevala Publications)
3. **Ching, Francis D.K.** – *Design Drawing* (Wiley)
4. **Leland, C.G.** – *Art of Decorative Design* (Dover Publications)
5. **Harris, Cyril M.** – *Illustrated Dictionary of Historic Architecture* (Dover Publications)

Assessment method: (Continuous Internal Assessment = 50%, Final Examination = 50%)
Practical Exam: 50 Marks based on studio assignments.

School Name- School of Architecture , Planning & Design			
Program- B. Arch.			**Semester-III**
Course Name- Building Services-I			
A.Y 2025-26	**Course Code- B080125307**	**Batch- 2024-29**	**CIE Marks-50**
Total Teaching Hours: 45	**Total Credits-2**		**ESE Marks-50**
Type of Course- Theory			**Total Marks-100**

Course Objectives

1. To introduce the fundamentals of essential building services and their integration into architectural design.
2. To develop an understanding of water supply, sanitation, and rainwater harvesting systems for various building types.
3. To equip students with the ability to design sustainable and efficient service systems complying with codes and standards.
4. To expose students to real-world applications of services through site studies and case examples.
5. To foster awareness about eco-friendly practices and water management strategies in contemporary architecture.

UNITS	Topics	No. of Teaching hours/ (Lecture)
1- Introduction to Building Services	Definition, necessity, and scope of building services in architectural design. • Overview of types of building services: water supply, sanitation, drainage, HVAC, lighting, electrical, fire safety, etc. • Inter relationship of services and architectural planning.	**8**
2- Water Supply Systems	Sources, quality, and treatment of water. • Water supply systems for residential and public buildings — direct and indirect systems. • Storage, pumping, distribution systems. • Pipes, fittings, fixtures — selection, standards, and layouts. • IS codes and design guidelines.	**8**
3- Sanitation and Drainage Systems	Introduction to sanitation, greywater, and blackwater concepts. • Sewage collection and disposal systems. • Design and layout of drainage systems: traps, vents, inspection chambers, manholes. • Septic tanks, soak pits, and municipal sewage systems.	**10**
4- Rainwater Harvesting & Stormwater Drainage	Need and benefits of rainwater harvesting. • Components and design of rainwater harvesting systems. • Groundwater recharge techniques. • Stormwater collection and disposal — sustainable urban drainage systems.	**10**
5- Standards and Sustainable Practices	National Building Code (NBC), IS Codes related to water supply, sanitation, and drainage. • Introduction to green building concepts and sustainable water management. • Case studies on services integration in built environments.	**9**

Course Outcomes:

Upon successful completion of this course, students will be able to:

- **CO1:** Identify and explain the essential building services and their importance in architectural design.
- **CO2:** Design appropriate water supply systems for various building types in compliance with IS Codes and NBC.
- **CO3:** Understand and develop efficient sanitation and drainage systems for residential and commercial buildings.
- **CO4:** Design rainwater harvesting and stormwater drainage systems in response to site conditions and sustainability goals.
- **CO5:** Apply codes, standards, and eco-friendly practices in service system planning for modern architectural projects.

Text/Reference books:

Birdie, G.S., & Birdie, J.S. — Water Supply and Sanitary Engineering, Dhanpat Rai Publishing.
Rangwala, S.C. — Water Supply and Sanitary Engineering, Charotar Publishing House.
Shah, M.G., Kale, C.M., Patki, S.Y. — Building Drawing, Tata McGraw-Hill.
National Building Code of India, Bureau of Indian Standards (BIS).
Hall, F., Greeno, R. — Building Services Handbook, Routledge.
Chadderton, D.V. — Building Services Engineering, Routledge.

Assessment method: (Continuous Internal Assessment = 50%, Final Examination = 50%)

School Name- School of Architecture , Planning & Design			
Program- B. Arch.			**Semester-III**
Course Name- Human Values and Professional Ethics			
A.Y 2025-26	**Course Code- BSGUVA2402**	**Batch- 2024-29**	**CIE Marks-50**
Total Teaching Hours: 45	**Total Credits-3**		**ESE Marks-50**
Type of Course- Theory			**Total Marks-100**

Course Objectives

1. To help students distinguish between values and skills, and understand the need, basic guidelines, and process of value education.
2. To help students initiate a process of dialog within themselves to know what they 'really want to be in their life.
3. To help students understand the meaning of happiness and prosperity for a human being Human living, and living accordingly.

UNITS	Topics	No. of Teaching hours/ (Lecture)
1- Course Introduction - Need, Basic Guidelines, Content and Process for Value Education	1. Understanding the need and basic guidelines for Value Education 2. Self-Exploration–what is it? - Its content and process; on the basis of Natural Acceptance 3. Right understanding, Relationship and Physical Facilities- the basic requirements for fulfilment of aspirations of every human being with their correct priority 4. Understanding Happiness and Prosperity correctly- A critical appraisal of the current scenario at various level	**9**
2- Understanding Harmony in the Human Being - Harmony in Myself!	1. Understanding human being as a co-existence of the sentient 'I' and the material 'Body' 2. Understanding the needs of Self ('I') and 'Body' - Sukh and Suvidha 3. Understanding the Body as an instrument of 'I' (I being the doer, seer and enjoyer) 4. Understanding the activities in the self and activities in the body. 5. Harmony with the Body: Sanyam and Swasthya (Correct appraisal of Physical needs)	**9**
3- Understanding Harmony in the Family and Society- Harmony in Human-Human Relationship.	1. Understanding Harmony in the family – the basic unit of human interaction 2. Four element of Justice; Ensure Mutual Happiness 3. Values in Human Relationship (Nine Values): Understanding the meaning of Values 4. Foundation Value (Trust): Difference between intention and competence 5. Undivided Society (Akhand Samaj) From Individual to world family.	**9**

4- Understanding Harmony in the Nature and Existence - Whole existence as Co- existence.	1. Understanding the harmony in the Nature: The Four Order in Nature 2. Interconnectedness and mutual fulfilment among the four orders of nature-recyclability and self-regulation in nature. 3. Understanding Existence as Co-existence *(Sah-astitva*) of mutually interacting 4. Holistic perception of harmony at all levels of existence.	**9**
5- Implication of the above Holistic Understanding of Harmony on Professional Ethics	1. Basis for Universal Human Values and Ethical Human Conduct 2. Professional Ethics in Light of Right Understanding. 3. Vision for Holistic Technologies, Production Systems and Management Models 4. Evolving Holistic Models of Living	**9**

Course Outcomes:

Upon successful completion of this course, students will be able to:

CO1: Understand the significance of value inputs in a classroom, distinguish between values and skills, understand the need, basic guidelines, content and process of value education, explore the meaning of happiness and prosperity and do a correct appraisal of the current scenario in the society.
CO2: Distinguish between the Self and the Body, understand the meaning of Harmony in the Self the Co-existence of Self and Body
CO3: Understand the value of harmonious relationship based on trust, respect and other naturally acceptable feelings in human-human relationships and explore their role in ensuring a harmonious society
CO4: Understand the harmony in nature and existence, and work out their mutually fulfilling participation in the nature.
CO5: To facilitate the students in applying the understanding of harmony in existence in their profession and lead an ethical life

Text/Reference books:

Ivan Illich, 1974, Energy & Equity, The Trinity Press, Worcester, and Harper Collins, USA
E.F. Schumacher, 1973, small is Beautiful: a study of economics as if people mattered, Blond & Briggs, Britain.
Sussan George, 1976, How the Other Half Dies, Penguin Press. Reprinted 1986, 1991
Donella H. Meadows, Dennis L. Meadows, Jorgen Randers, William W. Behrens III, 1972, Limits to Growth – Club of Rome's report, Universe Books.
A Nagraj, 1998, Jeevan Vidya Ek Parichay, Divya Path Sansthan, Amarkantak.

Assessment method: (Continuous Internal Assessment = 50%, Final Examination = 50%)

School Name- School of Architecture , Planning & Design			
Program- B. Arch.			**Semester-III**
Course Name- Auto Cad			
A.Y 2025-26	**Course Code- B080125358**	**Batch- 2024-29**	**CIE Marks-50**
Total Teaching Hours: 30	**Total Credits-1**		**ESE Marks-50**
Type of Course- Practical			**Total Marks-100**

Course Objectives

1. To provide hands-on experience in drafting and designing architectural drawings using AutoCAD.
2. To develop proficiency in producing detailed floor plans, elevations, sections, and site layouts.
3. To integrate AutoCAD techniques into professional architectural documentation and presentations.
4. To encourage the use of AutoCAD for visualization, rendering, and design detailing.

UNITS	Topics	No. of Teaching hours/ (Lecture)
1- Drafting Practice Using Basic Commands	1. Creating 2D geometric shapes and objects. 2. Setting up grids, snap modes, object snaps.	**6**
2- Architectural Drawing Generation	1. Drafting floor plans, elevations, and sections for a simple residential building. 2. Use of layers, line types, and annotation.	**6**
3- Detailing and Dimensioning Practice	1. Wall sections, window and door detailing. 2. Setting dimensions, tolerances, hatch patterns. 3. Block creation and insertion for symbols.	**6**
4- Layout Preparation and Plotting	1. Setting up sheet sizes, viewports, title blocks. 2. Plotting drawings to scale. 3. PDF export and submission file preparation.	**6**
5- 3D Modeling Basics	1. Creation of 3D models from 2D plans. 2. Simple extrusions and walkthrough preparation. 3. Basic rendering and exporting	**6**

Course Outcomes:

Upon successful completion of this course, students will be able to:

- **CO1:** Translate architectural design concepts into precise AutoCAD drawings.
- **CO2:** Generate detailed 2D architectural drawings such as floor plans, sections, and elevations.
- **CO3:** Apply dimensioning, annotations, and hatching standards in professional architectural drawings.
- **CO4:** Create presentation-ready layouts for printing and submission.
- **CO5:** Develop a foundational understanding of 3D modeling in AutoCAD for design visualization.

Text/Reference books:

1. Sham Tickoo, *AutoCAD for Engineers and Designers*, CADCIM Technologies.
2. Nighat Ameen, *AutoCAD 2024 for Beginners*, BPB Publications.
3. Omura, G., & Benton, B., *Mastering AutoCAD 2023 and AutoCAD LT 2023*, Wiley.
4. Autodesk Official Training Guide, *AutoCAD Practical Workbook*.

Assessment method: (Continuous Internal Assessment = 50%, Final Examination = 50%)

DETAILED SECOND YEAR CURRICULUM CONTENTS

PROGRAM: Bachelor in Architecture(B.Arch.)

IV SEMESTER

School Name- School of Architecture , Planning & Design			
Program- B. Arch.			**Semester-IV**
Course Name- Architectural Structures-IV			
A.Y 2025-26	**Course Code- B080125401**	**Batch- 2024-29**	**CIE Marks-50**
Total Teaching Hours: 45	**Total Credits-3**		**ESE Marks-50**
Type of Course- Theory			**Total Marks-100**

Course Objectives

1. To introduce students to fundamental RCC design philosophies including Working Stress and Limit State Methods.
2. To provide understanding of reinforcement detailing practices in RCC structures for effective structural behavior.
3. To train students in analyzing and designing different types of RCC beams under various loading conditions.
4. To enable students to analyze and design retaining walls with reinforcement detailing.
5. To develop awareness about earthquake-resistant design principles and architectural strategies for seismic safety.

UNITS	Topics	No. of Teaching hours/ (Lecture)
1.Design Methodologies for RCC Structures	Understanding of Working Stress and Limit state Method, Characteristic strength and characteristic load, Design values, Partial safety factors, Factored loads, Stress strain relationship for concrete and steel, Yield stress, Provisions of IS codes, Loads and Load combination	**6**
2.Reinforcement in RCC structures and its detailing	Introduction, Requirements of good detailing, Nominal cover to reinforcement, Spacing of reinforcement, Reinforcement requirements, Reinforcement splicing, Anchoring reinforcing bars in flexure, Curtailment of tension reinforcement in flexural members, Bar bending schedule.	**8**
3.RCC Beam Analysis and Designing	Introduction, Bending of beam assumption, Moment of resistance, Modes of failure, Maximum depth of neutral axis, Limiting values of tension steel & moment of resistance for Singly, Doubly and Flanged Beams	**12**
4.Retaining Walls Designing and Analysis	Introduction, Types of retaining walls, Analysis and Design of cantilever retaining walls and detailing of its reinforcement	**9**
5.Introduction to Earthquake-resistant Design	Basic concepts of lateral forces, seismic zones of India. - Simple understanding of ductility, base isolation, and structural safety. - Guidelines for architects to make earthquake-friendly designs.	**10**

Course Outcomes

Upon successful completion of this course, students will be able to:

- CO1: Apply knowledge of IS codes and safety factors to structural design using WSM and LSM approaches.
- CO2: Prepare effective reinforcement detailing including anchorage, splicing, and bar bending schedules.
- CO3: Analyze and design singly, doubly, and flanged RCC beams under limit state design philosophy.
- CO4: Design cantilever-type retaining walls considering stability, loadings, and reinforcement detailing.
- CO5: Incorporate earthquake-resistant design concepts such as ductility and base isolation into architectural planning.

Reference Books / Textbooks

1. **Punmia, B.C.**, *Reinforced Concrete Structures* – Laxmi Publications
2. **Ramamrutham, S.**, *Design of Reinforced Concrete Structures* – Dhanpat Rai Publishing
3. **Gambhir, M.L.**, *Fundamentals of Reinforced Concrete Design* – PHI Learning Pvt. Ltd.
4. **Subramanian, N.**, *Design of Reinforced Concrete Structures* – Oxford University Press
5. **IS 456:2000**, *Plain and Reinforced Concrete – Code of Practice* – Bureau of Indian Standards
6. **Krishna Raju, N.**, *Advanced Reinforced Concrete Design* – CBS Publishers
7. **S.K. Duggal**, *Earthquake-Resistant Design of Structures* – Oxford University Pres

Assessment method: (Continuous Internal Assessment = 50%, Final Examination = 50%)

School Name- School of Architecture , Planning & Design			
Program- B. Arch.			**Semester-IV**
Course Name- History of Architecture-IV			
A.Y 2025-26	**Course Code- B080125402**	**Batch- 2024-29**	**CIE Marks-50**
Total Teaching Hours: 45	**Total Credits-3**		**ESE Marks-50**
Type of Course- Theory			**Total Marks-100**

Course Objectives

1. To introduce the evolution and principles of **Renaissance, Baroque, and Rococo architecture** in Europe.
2. To understand **Indo-Islamic and Mughal architectural styles** and their influence on Indian monuments.
3. To examine **regional variations in later Hindu temple architecture** across India.
4. To study **colonial architecture in India** and its blend of Western and Indian traditions.
5. To develop the ability to link historical knowledge with modern architectural thinking and design.

UNITS	Topics	No. of Teaching hours/ (Lecture)
1- Renaissance Architecture	Transition from Medieval to Renaissance. - Key concepts: Humanism, Symmetry, Proportion, and Classical Orders. - Important architects: Filippo Brunelleschi, Leon Battista Alberti, Michelangelo, Palladio. - Notable works: Florence Cathedral Dome, St. Peter's Basilica (Rome), Villa Rotunda..	**8**
2- Baroque and Rococo Architecture	Origin and features of Baroque architecture: drama, movement, grandeur. - Rococo style: lightness, decoration, and asymmetry. - Examples: St. Peter's Colonnade (Bernini) & Palace of Versailles.	**8**
3- Indo-Islamic and Mughal Architecture	Characteristics of Indo-Islamic architecture: arches, domes, minarets, ornamental calligraphy. - Mughal architecture: Symmetry, Gardens, Pietra Dura. - Key monuments: Humayun's Tomb, Fatehpur Sikri, Taj Mahal, Red Fort, Jama Masjid.	**8**
4- Later Hindu Temple Architecture	Regional evolution of temple forms post-medieval period. - Detailed study of select examples: • Jagannath Temple (Puri), • Meenakshi Temple (Madurai), • Konark Sun Temple (Odisha). - Temple complexes and town planning around them	**9**
5- Colonial Architecture in India	Introduction to European influences: Indo-Saracenic, Gothic Revival, Neoclassical styles. - Notable colonial buildings: Victoria Memorial (Kolkata), Rashtrapati	**12**

	Bhavan, Bombay High Court, Gateway of India. - Role of British architects in shaping urban India.	

Course Outcomes:

Upon completion of this course, students will be able to:

- **CO1:** Recognize the major architectural movements from Renaissance to Colonial periods.
- **CO2:** Analyze the historical, social, and artistic forces behind Indo-Islamic and Mughal monuments.
- **CO3:** Identify key features of later Hindu temple styles and understand their cultural importance**.**
- **CO4:** Understand the influence of Western design ideas during colonial rule on Indian cities.
- **CO5:** Appreciate how historical styles influence modern architecture and design thinking.

Text/Reference books:

1. Fletcher, Banister — *A History of Architecture*
2. Tadgell, Christopher — *The History of Architecture in India*
3. Brown, Percy — *Indian Architecture: Islamic Period*
4. Kostof, Spiro — *A History of Architecture: Settings and Rituals*
5. Michell, George — *The Hindu Temple: An Introduction to Its Meaning and Forms*
6. Tillotson, G.H.R. — *The Tradition of Indian Architecture: Continuity, Controversy, and Change*

.

Assessment method: (Continuous Internal Assessment = 50%, Final Examination = 50%)

School Name- School of Architecture , Planning & Design			
Program- B. Arch.			**Semester-IV**
Course Name- Building Materials & Construction-IV			
A.Y 2025-26	**Course Code- B080125453**	**Batch- 2024-29**	**CIE Marks-50**
Total Teaching Hours: 90	**Total Credits-3**		**ESE Marks-50**
Type of Course- Studio & Practical			**Total Marks-100**

Course Objectives

1. To understand advanced concepts of structural and non-structural building components.
2. To study various types of floors, staircases, and partitions along with their materials and construction methods.
3. To introduce students to doors and window types, materials, and fixing techniques.
4. To understand the construction techniques of cavity walls, partition walls, and cladding systems.
5. To equip students with the ability to create working drawings and site-level construction details.

UNITS	Topics	No. of Teaching hours/ (Lecture)
1- Basement	Introduction to basement construction: retaining structures, waterproofing, drainage, and insulation techniques. Soil behavior and foundation systems: black cotton soil, sandy soil, rocky substrata.	**18**
2- Staircases	Staircase: Construction details and proportioning. Materials: Stone, Concrete, Steel, Composite.	**18**
3- Windows	Different types of windows, Frames and joinery details: Fixing methods and accessories..	**18**
4- Cladding systems	Cladding systems: Stone, Metal, Composite, and Glass claddings..	**18**
5- Building Component Details & Site Practice	Detailing practice: Floors, Staircases, , Windows, Cladding Site visits for live observation of construction techniques and material usage. Material sample collection and hands-on documentation.	**18**

Course Outcomes:

Upon completion of this course, students will be able to:

CO1: Understand and illustrate types of floors, floor finishes, and their construction techniques.
CO2: Analyze staircases with various geometrical configurations and construction methods.
CO3: Identify various types of doors and windows, their frames, shutters, materials, and joinery.
CO4: Explain partition walls, cavity walls, and cladding systems for enhanced building performance.
CO5: Prepare detailed working drawings for floors, staircases, doors, windows, and wall systems.

Text/Reference books:

1. Rangwala, S.C. — Building Construction, Charotar Publishing House.
2. McKay, W.B. — Building Construction Vol. I to IV, Longman.
3. Chudley, R. & Greeno, R. — Building Construction Handbook, Routledge.
4. Allen, E. & Iano, J. — Fundamentals of Building Construction: Materials and Methods, Wiley.
5. Kumar, S.K. — Building Construction, Standard Publishers..

Assessment method: (Continuous Internal Assessment = 50%, Final Examination = 50%

Practical Exam: 25 marks &Viva voce:25 Marks based on studio assignments.

School Name- School of Architecture , Planning & Design			
Program- B. Arch.			**Semester-IV**
Course Name- Architectural Research Writing-I			
A.Y 2025-26	**Course Code- B080125404**	**Batch- 2024-29**	**CIE Marks-50**
Total Teaching Hours: 45	**Total Credits-3**		**ESE Marks-50**
Type of Course- Theory			**Total Marks-100**

Course Objectives

1. To introduce the fundamental concepts of research in architecture.
2. To develop students' ability to frame research questions and objectives.
3. To cultivate skills in literature review, data collection, and basic analysis.
4. To help students express architectural ideas and investigations through academic writing.
5. To prepare students for future thesis or dissertation work with research methodology foundations.

UNITS	Topics	No. of Teaching hours/ (Lecture)
1- Introduction to Architectural Research	• What is research? Importance of research in architecture. • Types of research: qualitative, quantitative, case study, comparative, analytical. • Key components: topic, objective, hypothesis, methodology.	**8**
2. **Research Topic and Question Formation**	• Identifying a topic of interest. • Defining a research problem. • Writing research questions, aims, and objectives. • Scope and limitations.	**9**
3. **Literature Review Basics**	• Importance of literature review. • Identifying sources: books, journals, case studies, reports. • Reading strategies and note-making. • Citation and referencing (APA/MLA basics).	**9**
4. **Data Collection & Observation Techniques**	• Primary vs. secondary data. • Methods of data collection: interviews, surveys, site visits, case studies. • Observation and documentation techniques (sketches, photos, field notes).	**9**
5. **Report Writing and Presentation Skills**	• Structure of a research report: Introduction, Methodology, Findings, Conclusion. • Formatting, tables, diagrams, and charts. • Academic writing style: clarity, grammar, and coherence.	**10**

	• Preparing presentations/posters of research work.	

Course Outcomes:

Upon completion of this course, students will be able to:

- CO1: understand the role of research in architectural education and professional practice and distinguish between various research types.
- CO2: able to identify relevant research topics and formulate clear research questions and objectives.
- CO3: able to gather relevant references and prepare a basic literature review using standard referencing methods.
- CO4: become familiar with simple methods for gathering and documenting architectural research data..
- CO5: able to write and present a simple research report and communicate their ideas effectively through text and visuals.

Text/Reference books:

1. **Groat, L., & Wang, D.** (2013). *Architectural Research Methods*. Wiley.
2. **Sanoff, H.** (1992). *Methods of Architectural Programming*. Van Nostrand Reinhold.
3. **Creswell, J. W.** (2014). *Research Design: Qualitative, Quantitative, and Mixed Methods Approaches*. SAGE.
4. **Kumar, R.** (2011). *Research Methodology: A Step-by-Step Guide for Beginners*. SAGE.
5. **Zeisel, J.** (2006). *Inquiry by Design: Environment/Behavior/Neuroscience in Architecture, Interiors, Landscape, and Planning*. W. W. Norton.
6. **Ching, F.D.K.** (2003). *Design Drawing*. Wiley. (for visual documentation techniques)
7. University library databases and online journals like JAE (Journal of Architectural Education), Scopus, JSTOR

Assessment method: (Continuous Internal Assessment = 50%, Final Examination = 50%)

School Name- School of Architecture , Planning & Design			
Program- B. Arch.			**Semester-IV**
Course Name- Architectural Design-IV			
A.Y 2025-26	**Course Code- B080125455**	**Batch- 2024-29**	**CIE Marks-100**
Total Teaching Hours: 90	**Total Credits-6**		**ESE Marks-100**
Type of Course- Studio & Practical			**Total Marks-200**

Course Objectives

1. To develop the ability to design medium-scale public buildings with integrated site planning and built form.
2. To enhance understanding of architectural design as a response to human behavior, urban context, and sustainability.
3. To introduce advanced conceptual development, including circulation, structure, services, and environmental concerns.
4. To strengthen presentation skills, including visual storytelling through models, drawings, and digital graphics.
5. To enhance presentation techniques: conceptual, schematic, and detailed drawings.

UNITS	Topics	No. of Teaching hours/ (Lecture)
1- Urban and Semi-Urban Site Design	Introduction to urban and semi-urban contexts. - Site planning for connectivity, utilities, and climatic response. - Understanding zoning, setbacks, F.A.R., and bye-laws in design. -Concept of vernacular lessons should also be linked.	**18**
2- Design Process & Environmental Integration	Program analysis, advanced site study, and context-sensitive solutions. - Conceptual development using models and drawings. Incorporating passive design strategies (lighting, ventilation, shading).	**18**
3- Design Projects	**(Any two projects may be assigned during the semester):** 1. Design of a Neighbourhood Commercial Hub (e.g., market, shopping plaza). Focus: functional relationships, basic structure circulation, accessibility. - Design of a Small Institutional/Community Building (e.g., Angandwadi , Primary School, Health centre, clinic, cultural centre, Public Library). o Focus: Site response, circulation, form-function, basic structure, and climate integration.	**18**
4- Design Communication & Presentation	Advanced architectural graphics, rendering techniques (manual and digital). - Layout composition for presentations, diagrams, and architectural narratives. - Use of axonometric, exploded views, and sectional perspectives. - Model making for design validation and communication..	**18**
5- Critique, Portfolio Development &	Peer critiques and instructor feedback loops. - Introduction to architectural portfolio structure and organization. - Study and documentation of relevant built case studies.	**18**

Documentation		

Course Outcomes:
Upon successful completion of the course, students will be able to:
CO1: Analyze and design medium-scale built environments with sensitivity to site, climate, and context.
CO2: Formulate architectural concepts and develop them into spatially and structurally coherent design solutions.
CO3: Apply zoning regulations, services, and circulation principles effectively in design.
CO4: Produce clear and professional-quality drawings, models, and visual presentations.
CO5: Demonstrate an ability to present and critique design proposals through portfolio-ready formats.

Text/Reference books:

1. Ching, F.D.K. — Architecture: Form, Space, and Order
2. Neufert, Ernst — Architects' Data
3. Kevin Lynch — The Image of the City
4. Juhani Pallasmaa — The Thinking Hand
5. Francis D.K. Ching — Design Drawing
6. Simonds, John Ormsbee — Landscape Architecture: A Manual of Environmental Planning and Design

Assessment method: (Continuous Internal Assessment = 50%, Final Examination = 50%)

Practical Exam: 75 marks &Viva voce:25 Marks based on studio assignments.

School Name- School of Architecture , Planning & Design			
Program- B. Arch.			**Semester-IV**
Course Name- Vernacular Architecture			
A.Y 2025-26	**Course Code- B080125406**	**Batch- 2024-29**	**CIE Marks-50**
Total Teaching Hours: 30	**Total Credits-2**		**ESE Marks-50**
Type of Course- Theory			**Total Marks-100**

Course Objectives

1. To introduce students to the fundamental concepts of vernacular architecture and its significance in the cultural, environmental, and social contexts.
2. To study the traditional building methods, materials, and design principles of vernacular architecture from various geographical regions.
3. To understand the sustainability of vernacular architectural practices in contemporary design solutions.
4. To explore the adaptation of vernacular architecture in modern times, focusing on the relationship between tradition and innovation.
5. To equip students with the tools for analyzing and interpreting vernacular architecture in their own architectural practice.

UNITS	Topics	No. of Teaching hours/ (Lecture)
1- Introduction to Vernacular Architecture	Definition and Characteristics of Vernacular Architecture Role of Climate, Culture, and Geography in Vernacular Design Traditional Building Materials and Techniques Evolution of Vernacular Architecture: Historical Perspective Importance of Vernacular Architecture in Contemporary Architecture	**4**
2- Regional Vernacular Architecture	• **Western India**: Bhungas of Gujarat, Rajasthan's Havelis, and Maru-Gurjara Architecture • **Southern India**: Traditional Kerala Houses (Nalukettu), Chettinad Architecture, and Vernacular Forms in Tamil Nadu • **Eastern India**: Traditional Assamese Houses, Bengali Rural Vernacular, and Odisha's Temple Architecture • **Northern India**: Kumaoni and Garhwali Vernacular, Kashmiri Architecture, and Vernacular Forms in Himachal Pradesh • **Central India**: Tribal Architecture of Madhya Pradesh and Chhattisgarh • **Coastal India**: Vernacular Coastal Houses in Konkan and Goa Identify key architectural features and materials specific to different Indian states and regions. Analyze and compare vernacular designs from different parts of India, focusing on cultural, climatic, and geographical influences.	**14**
3- Building Materials and Techniques in Vernacular	Natural Building Materials: Mud, Stone, Wood, Bamboo, Thatch, etc. Sustainable Construction Methods: Earthquake-resistant techniques, Passive cooling, and Heating Systems Regional Adaptations of Building Materials	**4**

Architecture	Craftsmanship and Local Building Traditions	
4- Design Principles in Vernacular Architecture	Spatial Organization in Vernacular Buildings Cultural Influence on Space Usage (Residential, Public, Sacred Spaces) Form and Aesthetic Principles: Simple, Functional, and Adapted Designs Integration with the Environment and Landscape	**4**
5- Vernacular Architecture and Sustainability	Sustainable Design Principles in Vernacular Architecture Environmental Considerations: Climate-responsive design, energy efficiency, and natural ventilation Resilience in Vernacular Architecture: Adaptation to Natural Disasters Contemporary Application of Vernacular Design in Urban Contexts	**4**

Course Outcomes:

Upon successful completion of this course, students will be able to:

- **CO1:** Comprehend the key concepts and significance of vernacular architecture in different cultures and regions.
- **CO2:** dentify and analyze vernacular building materials, techniques, and design principles.
- **CO3:** Apply knowledge of vernacular architecture to contemporary design challenges, with a focus on sustainability and cultural sensitivity.
- **CO4:** Develop an appreciation for traditional and local building methods and their relevance to modern architectural practice.
- **CO5:** Undertake field studies and case analysis to deepen their understanding of vernacular architecture.

Text/Reference books:

1. Oliver, Paul. Encyclopedia of Vernacular Architecture of the World. Cambridge University Press, 1997.
2. Jain, Kulbhushan, and Minakshi Jain. Architecture: Time, Space and People — Indian Vernacular Architecture. Aayojan School of Architecture, Jaipur.
3. Pramar, V.S. A Study of Rural Architecture in Western India. Tata McGraw Hill, 1989.
4. Rudofsky, Bernard. Architecture Without Architects: A Short Introduction to Non-Pedigreed Architecture. University of New Mexico Press, 1987.
5. Noble, Allen G. Traditional Buildings: A Global Survey of Structural Forms and Cultural Functions. I.B. Tauris, 2007.
6. Rapoport, Amos. House Form and Culture. Prentice-Hall Inc., 1969.
7. Pearson, David. The New Natural House Book: Creating a Healthy, Harmonious, and Ecologically Sound Home. Fireside, 1998.
8. Singh, Gurcharan. Building Construction and Materials. Standard Publishers Distributors.

Assessment method: (Continuous Internal Assessment = 50%, External examination- 50%)

School Name- School of Architecture , Planning & Design			
Program- B. Arch.			**Semester-IV**
Course Name- Architectural Services-II			
A.Y 2025-26	**Course Code- B080125407**	**Batch- 2024-29**	**CIE Marks-50**
Total Teaching Hours:30	**Total Credits-2**		**ESE Marks-50**
Type of Course- Theory			**Total Marks-100**

Course Objectives

1. To introduce students to the fundamentals of lighting, electrical systems, and fire safety in buildings.
2. To develop awareness of safety standards, regulations, and good practices in architectural design.
3. To enable students to design basic electrical layouts and understand fire safety provisions.
4. To introduce energy-efficient lighting and safety systems.
5. To prepare students for advanced studies in building services in higher semesters.

UNITS	Topics	No. of Teaching hours/ (Lecture)
1- Introduction to Electrical Systems	Basic concepts: voltage, current, power, load, phases. - Understanding wiring systems, circuit protection devices (MCB, fuses, ELCB). - Role of electrical systems in buildings.	**6**
2- Electrical Distribution in Buildings	Distribution boards, cables, conduits, and fittings. - Design considerations for residential and small commercial buildings. - Introduction to energy-saving electrical practices.	**6**
3- Lighting Systems	Natural and artificial lighting principles. - Types of lighting: ambient, task, accent. - Light fixtures, lamps, and basic illumination design. - Introduction to energy-efficient lighting (LED, sensors).	**6**
4- Fire Safety Systems	Introduction to fire hazards and fire prevention. - Fire detection systems: alarms, smoke detectors, sprinklers. - Evacuation principles, emergency exits, and signage. - NBC guidelines for fire safety.	**6**
5- Sustainable Electrical and Safety Practices	Basic overview of sustainable and smart systems. - Role of green building certification standards (LEED, GRIHA). - Brief introduction to solar power integration. **Case Studies and Site Visits** - Observation and analysis of electrical and fire safety systems in real buildings. - Documentation and discussion.	**6**

Course Outcomes:

Upon successful completion of this course, students will be able to:

- **CO1:** Understand the basic principles of electrical distribution and lighting systems in buildings.
- **CO2:** Recognize the essential fire safety systems and apply NBC guidelines.
- **CO3:** Design simple electrical layouts for small-scale buildings.
- **CO4:** Evaluate energy-efficient and sustainable lighting and electrical solutions.
- **CO5:** Develop awareness of safety, code compliance, and environment-friendly practices in building services.

Text/Reference books:

1. Rangwala, S.C. — *Electrical Wiring, Estimating and Costing*, Charotar Publishing.
2. Birdie, G.S. & Birdie, J.S. — *Water Supply and Sanitary Engineering*, Dhanpat Rai Publishing.
3. Shah, M.G., Kale, C.M., Patki, S.Y. — *Building Drawing*, Tata McGraw-Hill.
4. National Building Code of India, Bureau of Indian Standards (BIS) — Fire & Electrical Sections.
5. Hall, F., Greeno, R. — *Building Services Handbook*, Routledge.
6. Chadderton, D.V. — *Building Services Engineering*, Routledge.

Assessment method: (Continuous Internal Assessment = 50%, Final Examination = 50%)

School Name- School of Architecture , Planning & Design			
Program- B. Arch.			**Semester-IV**
Course Name- Architectural Representation and Visualization Tools			
A.Y 2025-26	**Course Code- B080125458**	**Batch- 2024-29**	**CIE Marks-50**
Total Teaching Hours: 60	**Total Credits-2**		**ESE Marks-50**
Type of Course- Practical			**Total Marks-100**

Course Objectives

1. To introduce students to digital tools for architectural visualization and presentation.
2. To develop proficiency in using Photoshop for image editing and architectural graphics.
3. To enable students to create, modify, and present 3D models using SketchUp.
4. To integrate these tools into the architectural design workflow for effective communication.

UNITS	Topic	No. of Teaching hours/ (Lecture)
1- Basics of Photoshop for Architecture	• Photoshop interface and workspace overview • Resolution, canvas settings, and file formats • Selection tools and layers • Cropping, masking, and background removal • Color corrections and adjustment layers • Image cleanup and photo retouching (building facades, textures) • **Practice Tasks:** Editing building photos Removing unwanted elements from site images	**12**
2- Architectural Presentation Boards in Photoshop	• Creating layout grids and guides • Importing CAD renders, 3D views, and hand sketches • Typography, annotations, and label settings • Creating collages and mood boards • Rendering diagrams (sun-path, zoning, etc.) • Exporting boards for print and screen **Practice Tasks:** Create an A2 board with a conceptual site analysis Develop a design proposal board combining 2D and 3D elements	**10**
3- SketchUp Fundamentals	• Interface and navigation • Basic drawing tools: lines, rectangles, push/pull, offset • Groups and components • Using layers/tags and scenes • Importing CAD drawings and image files • Model organization and cleanup **Practice Tasks:** Model a basic house from a CAD plan	**8**
4- Architectural Modeling Techniques in	• Creating terrains using Sandbox tools • Using materials and textures • Modifying geometry with follow-me, intersect, and scale tools	**10**

SketchUp	• Working with sections and shadows • Introduction to SketchUp extensions (Curviloft, Solid Tools) **Practice Tasks:** • Design and model a small landscape or urban plaza	
5- SketchUp for Presentation	• Applying styles and shadows for conceptual views • Creating walkthroughs and fly-through animations • Exporting images and videos • Exporting to Photoshop for post-processing • Introduction to LayOut for documentation (optional) **Practice Tasks:** • Generate a presentation with 4 key views of a model • Create a short animation of the modeled space	**10**

Course Outcomes:

Upon successful completion of this course, students will be able to:

CO1: Enhance and manipulate architectural images using Adobe Photoshop.
CO2: Create professional architectural presentation boards with clear visual hierarchy.
CO3: Model architectural forms and spaces in SketchUp using various tools and plugins.
CO4: Apply basic rendering and shadow settings for conceptual presentations.
CO5: Export and integrate outputs from both tools into architectural documentation and portfolios.

Text/Reference books:

1. **Adobe Photoshop Classroom in a Book ,** *Author: Conrad Chavez & Andrew Faulkner*
2. Architectural Graphics by Francis D.K. Ching
3. Photoshop for Interior Designers: A Nonverbal Communication in a Digital World
4. **The SketchUp Workflow for Architecture: Modeling Buildings, Visualizing Design, and Creating Construction Documents with SketchUp Pro and LayOut**
   Author: Michael Brightman
5. **Architectural Design with SketchUp: Component-Based Modeling, Plugins, Rendering, and Scripting**
   Author: Alexander C. Schreyer

Assessment method: (Continuous Internal Assessment = 50%, Final practical Examination = 50%

School Name- School of Architecture , Planning & Design			
Program- B. Arch.			**Semester-IV**
Course Name- Surveying and Levelling			
A.Y 2025-26	**Course Code- B080125459**	**Batch- 2024-29**	**CIE Marks-50**
Total Teaching Hours: 60	**Total Credits-2**		**ESE Marks-50**
Type of Course- Practical			**Total Marks-100**

Course Objectives

1. Introduce students to fundamental surveying and levelling techniques.
2. Develop proficiency in using basic surveying instruments.
3. Enable accurate measurement and representation of land and built environments.
4. Apply surveying skills to architectural site analysis and design.

UNITS	Topics	No. of Teaching hours/ (Lecture)
1- Introduction to Surveying	1. Definition and importance in architecture 2. - Types of surveys: plane, geodetic, topographic	**6**
2-Chain and Compass Surveying	1. - Equipment handling 2. - Measuring distances and angles 3. - Recording field data	**6**
3- Levelling Techniques	1. - Dumpy level and auto level usage 2. - Differential and profile levelling 3. - Booking and reducing levels	**8**
4- Plane Table Surveying	1. - Equipment setup 2. - Methods: radiation, intersection	**8**
5- Theodolite Surveying	1. - Measuring horizontal and vertical angles 2. - Traversing and coordinate calculation	**8**
6- Total Station Surveying	1. - Introduction to electronic distance measurement 2. - Setting up and data collection 3. - Generating digital site plans	**8**
7- Contour Mapping	1. - Understanding contours and their significance 2. - Methods of contouring 3. - Drawing contour maps	**8**
8- Site Layout and Setting Out	1. - Transferring designs to the ground 2. - Marking foundations and building lines	**8**

Course Outcomes:

Upon successful completion of this course, students will be able to:

1. **CO1:** Understand the principles and purposes of surveying in architecture.
2. **CO2:** Operate surveying instruments like theodolite, dumpy level, and total station.
3. **CO3:** Conduct site surveys and accurately record measurements.
4. **CO4:** Interpret survey data to produce site plans and contour maps.
5. **CO5:** Integrate surveying data into architectural design processes

Text/Reference books:

- B.C. Punmia, "Surveying Vol. I & II"
- S.K. Duggal, "Surveying Vol. I & II"
- A.M. Chandra, "Surveying and Levelling"
- Kanetkar & Kulkarni, "Surveying and Levelling"

Assessment method: (Continuous Internal Assessment = 50%, Final practical Examination = 50%)