DAYANANDA SAGAR ACADEMY OF TECHNOLOGY & MANAGEMENT

CURRICULUM

Scheme and Syllabus VII to VIII Semester

Outcome Based Education

(Academic Year 2026-2027)

School of Architecture

7th & 8th Semester B.Arch

ABOUT THE INSTITUTE

Dayananda Sagar Academy of Technology and Management- DSATM was established in 2011 with 5 UG Programmes and 1 PG Program, the programmes are approved by All India Council for Technical Education (AICTE) New Delhi, Affiliated to Visvesvaraya Technological University (VTU), Belagavi and DSATM is an autonomous institute from 2023-2024.

The Dayananda Sagar Institutions is one of pioneer institutions in India and abroad with six decades of excellence in Academic and Research. The newer campuses were necessary to accommodate the growing need of the technology and innovation.

DSATM nurtures the students in academic, research, sports, cultural and extracurricular activities.

- Creating an academic environment to nurture and develop competent entrepreneurs, leaders and professionals who are socially sensitive and environmentally conscious.
- Integration of Outcome Based Education and cognitive teaching and learning strategies to enhance learning effectiveness.
- Developing necessary infrastructure to cater to the changing needs of Business and Society.
- Optimum utilization of the infrastructure and resources to achieve excellence in all areas of relevance.
- Adopting learning beyond curriculum through outbound activities and creative assignments.
- Imparting contemporary and emerging techno-managerial skills to keep pace with the changing global trends.
- Facilitating greater Industry-Institute Interaction for skill development and employability enhancement.
- Establishing systems and processes to facilitate research, innovation and entrepreneurship for holistic development of students.
- Implementation of Quality Assurance System in all Institutional processes.

VISION OF THE INSTITUTE

To strive at creating the institution a center of highest caliber of learning, so as to create an overall intellectual atmosphere with each deriving strength from the other to be the best of engineers, scientists with management & design skills.

MISSION OF THE INSTITUTE

- To serve its region, state, the nation and globally by preparing students to make meaningful contributions in an increasing complex global society challenge.
- To encourage, reflection on and evaluation of emerging needs and priorities with state-of-the-art infrastructure at institution.
- To support research and services establishing enhancements in technical, economic, human and cultural development.
- To establish interdisciplinary centre of excellence, supporting/ promoting student's implementation.
- To increase the number of Doctorate holders to promote research culture on campus.
- To establish IIPC, IPR, EDC, innovation cells with functional MOU's supporting student's quality growth.

QUALITY POLICY

Dayananda Sagar Academy of Technology and Management aims at achieving academic excellence through continuous improvement in all spheres of Technical and Management education. In pursuit of excellence cutting - edge and contemporary skills are imparted to the utmost satisfaction of the students and the concerned stakeholders.

ABOUT THE DEPARTMENT

The School of Architecture - DSATM, established in 2012 under the aegis of Dayananda Sagar Institutions, is committed to delivering high - quality architectural education that integrates technical competence with creative inquiry. The department focuses on nurturi ng thoughtful designers through a balance of studio culture, research engagement, and technological advancement.

The department actively engages in research, consultancy and interdisciplinary collaborations related to advanced building materials, sustainable construction technologies, digital fabrication, and performance-driven design.

The strength of the department lies in its experienced and supportive faculty, and well-equipped laboratories that facilitate material exploration, environmental analysis, and construction yard. A dedicated Model making Space provides a platform for students to experiment, fabricate, and translate conceptual ideas into tangible architectural outcomes.

The curriculum emphasizes design thinking, problem-solving skills, technological integration, and innovation through emerging tools such as advanced softwares and 3D printing. Through this integrated approach, the school fosters holistic development–cultivating architects who are technically proficient, research-oriented, and socially responsive

VISION OF THE DEPARTMENT

The vision of the school shall strive to build exemplary research and an educational Institution producing knowledge, innovations and services for sustainable architecture and built environment, in the context of urban and ruralhabitats.

MISSION OF THE DEPARTMENT

M1:	To inculcate and enhance ***'Critical Design Thinking' as*** part of the pedagogy.
M2:	To explore concepts 'Make n Meaning' and 'Build n Learn'
M3:	To create a ***knowledge base*** to meet all academic challenges faced by students, faculty and research scholars, in the world of ever evolving technological advancements
M4:	To create ***physical ambience*** that facilitates the *learning environment* among students and faculty.

PROGRAM EDUCATION OBJECTIVES (PEO'S):

PEO 1:	A graduate will apply the Architectural knowledge gained during the course towards solving broad range of Architectural & Construction related problems.
PEO 2:	A Graduate will have the perspective of lifelong learning for continuous improvement of knowledge in Architecture & Engineering, Advanced Studies & Research.
PEO 3:	A Graduate will be able to respond to local, national and international issues by imparting his/her knowledge of Architecture & Engineering (Construction, Services, Structures etc) in Educational, Government, Financial and Private sectors

PROGRAM OUTCOMES (PO's):

Architecture Graduates will be able to:

1. **PO1. Architectural knowledge:** A graduate will be able to apply their creativity, skill knowledge to meet the ever-changing needs of the society.
2. **PO2. Problem Analysis:** A graduate will demonstrate his/her knowledge in History of Architecture, Theory of Architecture & Professional Practice for architectural design problems for local as well as global community.
3. **PO3. Design & Development:** A graduate will be able to use his skill in freehand sketching, graphics, model making and services to develop design solutions.
4. **PO4. Conduct Investigation of Complex Problems:** A graduate will be able to investigate client & user needs of space, furniture & equipment's requirements and analyse site conditions, bye laws in relation to site, climate & design development.
5. **PO5. Modern Tool Usage:** A graduate will be able to apply the knowledge of digital techniques & other supporting tools for the architectural and other design projects.
6. **PO6. An Architect & Society:** A graduate will be able to apply reasoning informed by the contextual knowledge, to assess societal, health, safety, legal and cultural issues and the consequent responsibilities relevant to professional Architectural practices.
7. **PO7. Environment and Sustainability:** Understand the impact of the professional Architectural solution in societal and environmental contexts, and demonstrate the knowledge of and the need for sustainable development.
8. **PO8. Ethics:** Apply ethical principles and commit to professional ethics, responsibilities, and norms of the Architectural practice.
9. **PO9. Individual and Teamwork:** Function effectively as an individual and as a member or leader in diverse teams and in multidisciplinary settings.
10. **PO10. Communication:** The graduate will be able to identify and communicate effectively, the critical issues involved in the solutions of architectural design problems.
11. **PO11. Project Management and Finance:** A graduate will be able to demonstrate the understanding of HR, Finance and Contract Management for the profession individually or as a team member.
12. **PO12. Life-long Learning:** Recognize the need for, and have the preparation and ability to engage in independent and life-long learning in the broadest context of technological change.

PROGRAM SPECIFIC OUTCOMES (PSO's)

PSO1	A graduate shall be able to apply critical design thinking through hands on experience (Make 'n' Meaning, Build 'learn).
PSO2	A graduate shall have the knowledge of an array of creative choice of multi- disciplinary vocations that encourages excellence, diversity, and growth surpassing the traditional boundaries of different disciplines.
PSO3	A graduate shall have the knowledge base that meet all professional challenges in the world of ever evolving technological advancements using digital tools and innovative techniques.

PROPOSED UG CREDIT STRUCTURE IN ALIGNMENT WITH VTU

Sl.No	Semester	No. of Credits
1	1st Semester	26
2	2nd Semester	27
3	3rd Semester	28
4	4th Semester	29
5	5th Semester	30
6	6th Semester	30
7	7th Semester	30
8	8th Semester	30
9	9th Semester	18
10	10th Semester	13
	Total	**261**

PROPOSED UG SCHEME-7th Sem

Sl. No	Course Category	BOS	TD	Teaching Hours/Week					Credits
				Lecture	Tutorial	Practical	Studio	Total (Hrs/week)	
				L	T	P	S		
1	PCC	AT	AT	0	0	0	8	8	8
2	BSAE	AT	AT	1	0	0	3	4	4
3	PCC	AT	AT	3	0	0	0	3	3
4	PCC	AT	AT	3	0	0	0	3	3
5	BSAE	AT/Civil	AT/Civil	3	0	0	0	3	3
6	PCC	AT	AT	0	0	0	3	3	3
7	PCC	AT	AT	1	0	3	0	4	4
8	PEC	AT	AT	2	0	0	0	2	2
9	PAEC	Any dept.	Any dept	1	0	0	0	1	0
10	AICTE Activity Points								
								Total	**30**

Percentage of Mapping– Theory & Studio - Scheme & Syllabus- 7th Sem

Sl. No	Course Category	Component			
		Theory	Studio	Outreach	YOGA/SPORTS
1	PCC	-	100%	--	--
2	BSAE	25%	75%	--	--
3	PCC	100%	--	--	--
4	PCC	100%	--	--	--
5	BSAE	100%	--	--	--
6	PCC	-	100%	--	--
7	PCC	25%	75%	--	--
8	PEC	100%	--	--	--
9	PAEC/NCMC	--	--	--	100%

PROPOSED UG SCHEME-8th Sem

Sl. No	Course Category	BOS	TD	Teaching Hours/Week					Credits
				Lecture	Tutorial	Practical	Studio	Total (Hrs/week)	
				L	T	P	S		
1	PCC	AT	AT	0	0	0	8	8	8
2	BSAE	AT	AT	1	0	0	3	4	4
3	PCC	AT	AT	3	0	0	0	3	3
4	PCC	AT	AT	3	0	0	4	7	7
5	PAEC	AT/Civil	AT/Civil	3	0	0	0	3	3
6	BSAE	Civil	Civil	1	0	0	2	3	3
7	PEC	AT	AT	2	0	0	0	2	2
8	AICTE Activity Points								
								Total	**30**

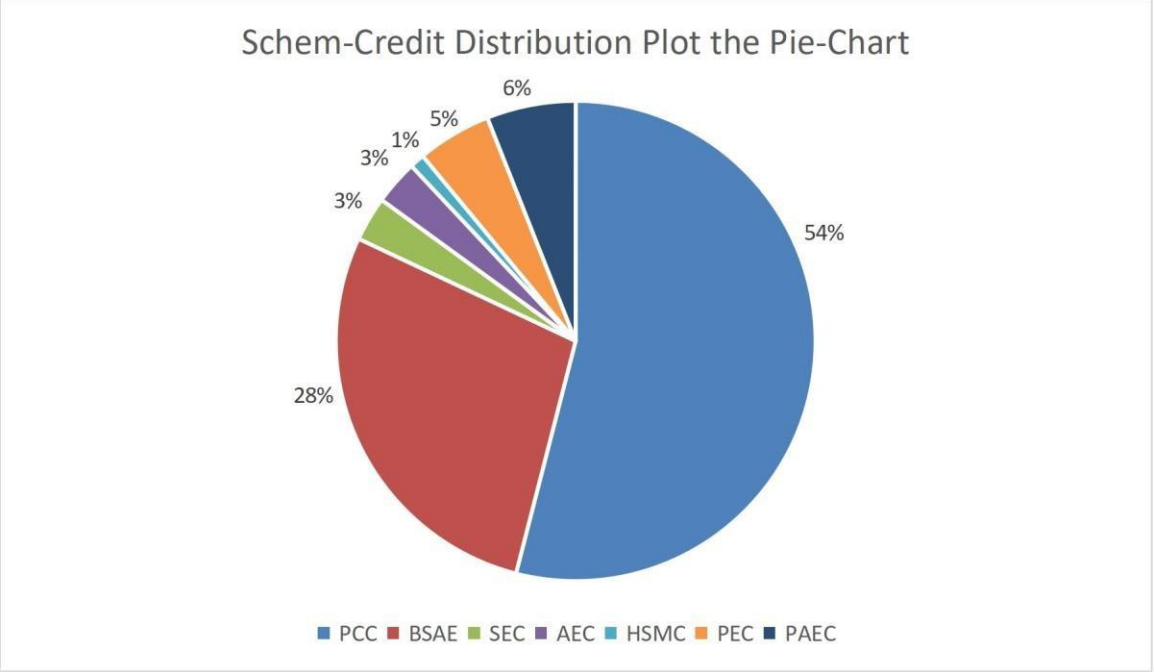
Percentage of Mapping– Theory & Studio - Scheme & Syllabus- 8th Sem

Sl. No	Course Category	Component			
		Theory	**Studio**	**Outreach**	**YOGA/SPORTS**
1	PCC	-	100%	--	--
2	BSAE	25%	75%	--	--
3	PCC	100%	--	--	--
4	PCC	40%	60%	--	--
5	PAEC	100%	--	--	--
6	BSAE	35%	65%	--	--
7	PEC	100%	--	--	--

Scheme Distribution

School of Architecture

Course Component	Credits	% of Credits
Program core course (PCC)	141	54
BuildingScience&AppliedEngineering (BSAE)	73	28
Skill Enhancement Course (SEC)	08	3
Humanity Sciences and Management Courses (HSMC)	08	3
Ability Enhancement Course (AEC)	03	1
Professional Elective course (PEC)	12	5
Professional Ability Enhancement course (PAEC)	16	6
No Credit mandatory Course (NCMC)	0	0
Total	**261**	**100**



SEMESTER WISE CREDIT BREAKDOWN FOR B.E. DEGREE CURRICULUM

BATCH 2023-2028

Course Category	Semester										Total Credits
	1st	2nd	3rd	4th	5th	6th	7th	8th	9th	10th	
Program core course (PCC)	17	16	11	11	11	18	21	18			
Building Science & Applied Engineering (BSAE)	7	9	13	10	10	10	7	7			
Skill Enhancement Course (SEC)	0	0	0	4	4	0	0	0			
Humanity Sciences and Management Courses (HSMC)	1	1	1	2	3	0	0	0			
Ability Enhancement Course (AEC)	1	1	1	0	0	0	0	0			
Professional Elective course (PEC)	0	0	2	2	2	2	2	2			
Professional Ability Enhancement course (PAEC)	0	0	0	0	0	0	0	3			
No Credit mandatory Course (NCMC)	0	0	0	0	0	0	0	0			
Total Credits	26	27	28	29	30	30	30	30			

Dayananda Sagar Academy of Technology & Management

(Autonomous Institute under VTU)

Affiliated to VTU
Approved by AICTE
Accredited by NAAC with A+ Grade
6 Programs Accredited by NBA
(CSE, ISE, ECE, EEE, MECH, CIVIL)

Scheme of Teaching and Examinations – 2026-27
Outcome Based Education (OBE) and Choice Based Credit System (CBCS) (Effective from 2026-27)

7th SEMESTER: School of Architecture (SOA)

Sl.No	Course Category	CourseCode	Course Title	BOS/ T D	Teaching Hours/Week					Credits	Examination				
					Lecture	Tutorial	Practical	Studio	Total		CIE Marks	SEE marks			Total Marks
					L	T	P	S				Duration (Hrs.)	Theory	Viva	
1	PCC	BAT701	Architectural Design-VII	Arch.	-	-	-	8	8	8	100	-	-	100	200
2	BSAE	BAT702	Materials & Methods in Building Construction VII	Arch.	1	-	-	3	4	4	50	-	-	50	100
3	PCC	BAT703	Urban Design	Arch.	3	-	-	-	3	3	50	3	50	-	100
4	PCC	BAT704	Professional Practice	Arch.	3	-	-	-	3	3	50	3	50	-	100
5	BSAE	BAT705	Estimation & Costing	Arch./Civil	3	-	-	-	3	3	50	3	50	-	100
6	PCC	BAT706	Interior Design	Arch.	-	-	-	3	3	3	50	-	-	50	100
7	PCC	BAT707	Working Drawing-II	Arch.	1	-	3	-	4	4	100	-	-	-	100
8	PEC	BAT708	Elective-V	Arch.	2	-	-	-	2	2	100	-	-	-	100
9	HSMC	BAT709	Traffic Awareness & Road Safety	Any dept.	1	-	-	-	1	0	50	-	-	-	50
10	PAEC	BAT7010	Physical Education(Sport & Atheltics0/NSS/YOGA	Any dept.	1	-	-	-	1	0	50	-	-	-	50
				Total	15	-	3	14	32	30	650	-	150	200	1000

PCC- Professional Core Courses
BSAE- Building Science & Applied Engineering Courses.
PEC- Professional Elective Courses
PAEC- Professional Ability Enhancement Course
HSMC - Humanity Sciences and Management Courses

Progressive Assessment (Continuous Internal Evaluation) (CIE) to be awarded by the subject teacher.
Semester End Examination (SEE) will be conducted by DSATM.
Viva Voce examination shall be conducted jointly by one internal & one external examiner appointed by BOE-DSATM.
Minimum Marks to be Secured for Passing: In CIE for passing: 50% marks minimum
In Theory (SEE) exam, Term work/Viva Voce: 40% marks minimum
In aggregate (CIE+SEE) 50% minimum marks

Professional Elective Course-V

Course Code	Title of Course
BAT718	Craft in Architecture
BAT728	Architectural writings & Journalism
BAT738	Biomimicry

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Scheme of Teaching and Examinations – 2026-27
Outcome Based Education (OBE) and Choice Based Credit System (CBCS) (Effective from 2026-27)

8th SEMESTER: School of Architecture (SOA)

Sl.No	Course Category	CourseCode	Course Title	BOS/ T D	Teaching Hours/Week					Credits	Examination				
					Lecture	Tutorial	Practical	Studio	Total		CIE Marks	SEE marks			Total Marks
					L	T	P	S				Duration (Hrs.)	Theory	Viva	
1	PCC	BAT801	Architectural Design-VIII	Arch.	-	-	-	8	8	8	100	-	-	100	200
2	BSAE	BAT802	Materials & Methods in Building Construction VIII	Arch.	1	-	-	3	4	4	50	-	-	50	100
3	PCC	BAT803	Urban Planning	Arch.	3	-	-	-	3	3	50	3	50	-	100
4	PCC	BAT804	Thesis Seminar	Arch.	3	-	-	4	7	7	100	-	-	-	100
5	PAEC	BAT805	Construction and Project Management	Arch./Civil	3	-	-	-	3	3	50	3	50	-	100
6	BSAE	BAT806	Earthquake Resistant Structures	Civil	1	-	-	2	3	3	50	-	-	50	100
7	PEC	BAT807	Elective-VI	Arch.	2	-	-	-	2	2	100	-	-	-	100
				Total	13	-	-	17	30	30	500	-	100	200	800

PCC- Professional Core Courses
BSAE- Building Science & Applied Engineering Courses.
PEC- Professional Elective Courses
PAEC- Professional Ability Enhancement Course

Progressive Assessment (Continuous Internal Evaluation) (CIE) to be awarded by the subject teacher.
Semester End Examination (SEE) will be conducted by DSATM.
Viva Voce examination shall be conducted jointly by one internal & one external examiner appointed by BOE-DSATM.
Minimum Marks to be Secured for Passing: In CIE for passing: 50% marks minimum
In Theory (SEE) exam, Term work/Viva Voce: 40% marks minimum
In aggregate (CIE+SEE) 50% minimum marks

Professional Elective Course-VI

Course Code	Title of Course
BAT817	Research Methodology
BAT827	Principles of Real Estate Development
BAT837	Adaptive Re-use of Built forms
BAT847	fundamentals of Entrepreneurship

Percentage of Change in the Syllabus

7th Semester						
Sl. No	**Course Code**	**Course Name**	**Topics Added**	**Topics removed**	**Revised in %**	**Justification**
1	**BAT701**	Architectural Design-VII	Campus Master planning, Transportation Hubs, Hospitals, High-Rise structures, BIM integration, Life Cycle Assessment (LCA), Post-Occupancy Metrics, Urban Mobility analysis	Office/commercial complexes, Community centre, Institutions, Public Library	25%	To elevate cognitive friction to Stage II B.Arch standards and align with 2026 AEC industry data-driven sustainability mandates.
2	**BAT702**	Materials & Methods in Building Construction VII	Study & analysis of other Environmentally Sustainable materials along with Bamboo are added; Using AI tool for pedagogical activities.	Prefabrication in India, Introduction to advanced methods of Building construction	20%	Other than Bamboo students need to study other such materials in building construction, Present trends
3	**BAT703**	Urban Design	Urban design introduction with behavioral, social, morphological, functional, temporal, environmental approaches.	NIL	10%	human-centric theories, inclusivity, bylaws, dynamic cities, sustainability, climate-responsive habitats.
4	**BAT704**	Professional Practice	Supervision: definition, characteristics, duties, site visits, meetings, coordination, records.	NIL	6%	Construction supervision and coordination ensure quality, workmanship, and project success.
5	**BAT705**	Estimation & Costing	Detailed estimates manually and through BIM for various building elements.	NIL	7%	Software estimates improve speed, accuracy, and reduce manual calculation errors.
6	**BAT706**	Interior Design	Major project with VR/AR, AI visualization, BOQs, estimation, budgeting.	Material Exploration & Detailing Study should be combined with MMBC	10%	VR/AR, AI, BOQs improve visualization, budgeting, industry relevance, readiness.
7	**BAT707**	Working Drawing-II	NIL	NIL	-	-
8	**BAT708**	Elective-V	NIL	NIL	-	-
9	**BAT709**	Traffic Awareness & Road Safety	NIL	NIL	-	-
10	**BAT7010**	Physical Education(Sport & Atheltics0/NSS/YOGA	NIL	NIL	-	-

8th Semester						
Sl. No	**Course Code**	**Course Name**	**Topics Added**	**Topics removed**	**Revised in %**	**Justification**
1	**BAT801**	Architectural Design-VIII	One major project, scaled to context, supported by research and documentation informing design. AI-integrated learning & PBL pedagogy	NIL	**5%**	Modified and expanded for clarity, context-responsiveness, and stronger academic framing.
2	**BAT802**	Materials & Methods in Building Construction VIII	Industry 4.0 & 5.0 in construction; Artificial Intelligence (AI) applications (risk prediction, scheduling, cost control); BIM, Digital Twins, IPD; Parametric modelling & simulation; DfMA principles; Robotics & automation (bricklaying robots, drones, autonomous equipment; AI-integrated learning & PBL pedagogy; Advance Construction & Foundation; Specialized construction.	Generalized introduction to innovations (made more specific now); Basic coverage of green buildings (replaced with LCA, NZEB, carbon metrics); Limited discussion on repairs (now expanded to diagnostics & monitoring); Basic smart/nano materials (now detailed and application-driven); Informal technology topics (now structured into BIM, AI, Digital Twins)	**45%**	The proposed syllabus is designed to align with contemporary industry demands, integrating digital technologies, industrialized construction, and advanced structural systems. It balances emerging trends (AI, automation, BIM, smart construction) with core engineering practices (foundations, high-rise systems, specialized construction). Further, the inclusion of repair, retrofit, and adaptive reuse addresses lifecycle thinking, sustainability, and resilience, ensuring graduates are equipped for both future-ready innovation and practical execution in the construction industry.
3	**BAT803**	Urban Planning	NIL	NIL	**-**	NIL
4	**BAT804**	Thesis Seminar	Research methods workshop, publishable abstract, external jury, AI ethics, VR/AR, parametric scripting, analytics, hypothesis in synopsis.	None (core structure retained)	**38%**	Aligns with top institutions, integrates 2026 industry demands, making course rigorous, data-driven, globally competitive.
5	**BAT805**	Construction and Project Management	Contract Management - Introduction to Contracts & Types, Contract Lifecycle Management (CLM)	Scope Management Project planning scheduling and controlling Role of the project manager in monitoring the specifications, Follow-up for quality control, the measurement book (MB), RA bills, interim and final checking and certification of works on site based on the BOQ and terms of contracts. Project updating, Progress Curves.	**20%**	Scope management – only one knowledge area. Project planning scheduling and controlling – already part of 1st Module "Life cycle stages of a project" and "brief understanding about study areas in Project Management." Bills and BOQ – Part of Professional Practice and Estimation Costing
6	**BAT806**	Earthquake Resistant Structures	Basic ETABS/STAAD modeling and AI-assisted concept and report development.	Seismic design per IS 1893: loads, base shear, force distribution.	**30%**	ETABS/STAAD, AI improve practicality; repeated seismic analysis removed for clarity.

7	**BAT817**	Elective-VI (Research Methodology)	Research-driven architectural case studies and AI tools for search, summaries, visualization.	Advanced statistics and generic engineering research methods without architectural context.	**10%**	Aligns better with B.Arch thesis and industry research expectations.
	BAT827	Principles of Real Estate Development	NIL	NIL	**-**	NIL
	BAT837	Adaptive Re-use of Built forms	NIL	NIL	**-**	NIL
	BAT847	fundamentals of Entrepreneurship	NIL	NIL	**-**	NIL

4th Year

Dayananda Sagar Academy of Technology & Management

(Autonomous Institute under VTU)

Semester	:	**VII**				
Course Title	:	**Architectural Design-VII**				
Course Code	:	**BAT701**				
Course Type (Theory/Practical/ Integrated/Studio)	:	**Studio**				
Category	:	**PCC (Professional Core Courses)**				
Stream	:	**Arch**		**CIE**	:	**100 Marks**
Teaching hours/ week (L: T:P:S)	:	**0:0:0:8**		**SEE**	:	**100 Marks**
Total Hours	:	**112 Hrs. (16 weeks)**		**SEE Duration**	:	**Viva-Voice**
Credits	:	**8**				

Course Learning Objectives: Students will be able to:

Sl. No	Course Objectives
1	Comprehend the principles of Meta and Performative architecture for sustainable design.
2	Apply active and passive energy-efficient methods using regional design principles.
3	Analyze design briefs focusing on low-energy and low-carbon performance.
4	Evaluate natural forces and thermal comfort as controlling parameters for buildings.
5	Design dynamic, climate-responsive buildings that resolve structural and aesthetic needs.

Teaching-Learning Process (General Instructions) Pedagogical Initiatives:

Some sample strategies to accelerate the attainment of various course outcomes are listed below:

1. **Case study practices:** David Adjaye architects, ke're' Architecture, Morphogenesis, CnT Architects, Small projects, Matharoo associates, Roger Anger houses, Popo Pingel architecture, Aga khan architecture
2. **Case study concepts:** Aqua ducts; Step wells; passive design elements like day lighting, natural ventilation, thermal mass, evaporation, nocturnal radiation, insulation; contemporary interpretation of vernacular elements like jaalis, jharokhas, shading, verandas; Wind towers, Solar chimneys, Water coolant systems, HVAC systems etc

3. Adopt different teaching methods to attain the course outcomes.
4. Include videos to demonstrate various concepts in C.
5. Encourage collaborative (Group) Learning to encourage team building.
6. Ask at least three **HOTS (Higher-order Thinking Skills)** module-wise questions to promote critical thinking.
7. Adopt **Problem-Based Learning (PBL),** which fosters students' analytical skills, and develops thinking skills such as evaluating, generalizing, and analyzing information rather than simply recalling it.
8. Show different ways to solve a problem and encourage the students to come up with creative and optimal solutions.
9. Discuss various case studies to map with real-world scenarios and improve the understanding.
10. Devise innovative pedagogy to improve **Teaching-Learning Process (TLP)**.

DSATM

Scheme of Teaching and Examinations for B.Arch. Programme -2026-27

Outcome Based Education and Choice Based Credit System (CBCS)

(Effective from the Academic Year 2026-27)

COURSE CURRICULUM

INTRODUCTION/OVERVIEW: Post six semesters of architectural training, from introduction to architecture: Design of public buildings, in concurrence with allied subjects, the student is expected to have developed a worldview with which he/she is able to analyze a given design brief. The objective of this semester is to activate that critical mind, with an underlying emphasis on performative/responsive (including low-energy and low-carbon performance attributes) architecture. The studio has two main themes, of which any one can be proposed for a studio.

OUTLINE: Each of the two themes approach sustenance in different ways, one which looks at traditional wisdoms of sustainability and the other which address the same through technology, digital media and evaluating efficacy in design.

META ARCHITECTURE: The work in question will strongly root for itself. It will search meaning, solutions, and best practices from principles of regional/vernacular architecture and reincarnate itself as embodiment of contemporary expression instilled with traditional wisdom. The identity of the building will be an outcome of the interplay between the older principles and newer materials. Articulation of the building character through details will remain a primary motive of the studio. Although drawn from the traditional principles, the nature of the buildings remains current. An architectural vocabulary could be built by extending the exercise to service design, furniture design and facade development. The Program will utilize both active and passive energy efficient methods in its climatic design.

Integration of Building Information Modeling (BIM) platforms, Digital Twins, and quantitative Life Cycle Carbon Footprint calculations.

PROPOSED PROGRAMS: Campus Master planning, Cultural/Museum Complexes, Eco-Resorts, Adaptive Re-use projects.

PEDAGOGY:

- Utilize **AI assistants like Gemini** to rapidly cross-reference and analyze large datasets of regional vernacular case studies against contemporary building codes.
- Employ **generative AI imaging tools** to quickly brainstorm and visualize modern aesthetic translations of traditional elements like Jaali's or wind towers.
- Task students with producing short, YouTube-style video essays to document and communicate the evolution of a traditional building technique into their contemporary design.
- Conduct **hands-on "Make 'n' Learn" workshops** focused on physically building and testing the thermal mass or passive cooling properties of local, traditional materials.
- **Activity 1:** Case study of Green Buildings in nearby place.

PERFORMATIVE ARCHITECTURE: It is the architecture, in which a building becomes a living, breathing, consuming, excreting organism. Its Facade i.e, skin of the building will simultaneously resolve the structural, aesthetic, climatic requirements of the building. Its architectural expression shall not be a static response to its context, but a dynamic one.

The engineering aspect of the building typically continues into its internal function. From foundation to form, performative architecture, rethinks the formulaic approach to building design. The program will ask the students to delve deeper into exploring diurnal patterns of solar geometry and thermal comfort conditions (daytime and night-time temperatures/humidity and wind flow patterns), and engineering vernacular materials into dynamic climate responsive skin of the building. The program will thus consider the forces of nature such as Sun, Wind, Water, and its absence as controlling parameters of its function. In order to extract maximum design mileage, the program shall be situated in regions with extreme weather conditions.

Integration of Building Information Modeling (BIM) platforms, Digital Twins, and quantitative Life Cycle Carbon Footprint calculations.

PROPOSED PROGRAMS: High-Rise structures, Transportation Hubs (Transit-Oriented Design), Mixed-use Urban Complexes, Hospitals.

PEDAGOGY:

- Integrate **environmental simulation plugins (like Ladybug or Honeybee)** to empirically validate how proposed dynamic facades respond to specific diurnal solar and wind patterns.
- Use **algorithmic and parametric modeling software** to optimize complex, kinetic building skins based on extreme weather data inputs.
- Implement **digital fabrication techniques (3D printing, laser cutting)** to create functioning, small-scale prototypes of responsive architectural elements.
- Adopt a **flipped studio model by providing technical climate-engineering concepts** via pre-recorded videos, reserving class time exclusively for Problem-Based Learning (PBL) and simulation troubleshooting.
- **Activity 2:** Study of Responsive facades, dynamic facades, vernacular materials and passive design strategies technological innovation, etc based on performative architecture.

Studio Framework:

Sl. No.	Experiments/Programs/Deliverables	Weeks & Hours	COs
1	STAGE 1: RESEARCH & CONTEXTUAL INQUIRY (Understanding Principles & Site): - Studio Orientation: Introduction to Meta & Performative Architecture - Literature Review & Global/Regional Case Studies - Detailed Site Analysis & Micro-climate Data Mapping - Analysis of Diurnal Patterns & Natural Forces	4 weeks 32 Hrs	CO1, CO3
2	STAGE 2: CONCEPTUALIZATION (Bridging Theory & Form): - Concept Generation & Spatial Zoning - Study Model & Preliminary Design Review - Major Project Brief Formulation & Space Programming - AI-Assisted Visualization & Traditional Element Translation	4 weeks 32 Hrs	CO1, CO2, CO4

3	**STAGE 3: DESIGN DEVELOPMENT & SYNTHESIS (Performance & Realization): -** **Form-Finding:** Active & Passive Strategies - Design & Articulation of Dynamic, Climate-Responsive Skins - Building Performance Evaluation (BIM & LCA Methodologies) - Final Architectural Drawings & Service Detailing - Comprehensive Portfolio & Final Physical Model Presentation	**6 weeks 48 Hrs**	**CO2, CO4, CO5**
	Value Added/ Open ended Programs		
1	AI-Assisted Visualization of Traditional Elements into Contemporary Expressions		CO1, CO2
2	Environmental Simulation of Diurnal Patterns using Parametric Plugins		CO3, CO4
3	Digital Fabrication (3D Printing/Laser Cutting) of Kinetic Facade Prototypes		CO4, CO5
4	Production of a Multimedia Video Essay Documenting the Design Evolution		CO1, CO5

Reference Books

Sl. No.	Title of the Book/Name of the author/Name of the publisher/Edition and Year
1	Elizabeth M. Golden, "Building from Tradition: Local Materials and Methods in Contemporary Architecture", 2018, Routledge.
2	Paola Sassi, "Strategies for sustainable Architecture", 2006, Taylor and Francis Group.
3	Lisa Iwamoto, "Digital Fabrications: Architectural and Material Techniques", 2009, Princeton Architectural Press.
4	Jesse Reiser, " Atlas of Novel Tectonics", 2006, Princeton Architectural Press.
5	Russell Fortmeyer, Charles F. Linn, " Kinetic Architecture: Designs for Active Envelopes", 2014, The Images Publishing Group.
6	Michael Fox, " Interactive Architecture: Adaptive World", 2016, Princeton Architectural Press.

Weblinks and Video Lectures (e-Resources)	
1	https://ndl.iitkgp.ac.in
2	https://www.youtube.com/watch?v=koMAXj9OpPM
3	https://www.youtube.com/watch?v=0fuE2_Qg8_w
4	https://www.youtube.com/watch?v=Lzn-7tcmiY4
5	https://www.youtube.com/watch?v=kdxPj3bV2XU
6	http://architectureinthemaking.se/projects/meta-urbanism
7	https://www.youtube.com/watch?v=LWiU06imMks

Course Outcomes: At the end of the course, the student will be able to:

CO	Course Outcomes	RBT Level	RBT Level Indicator
CO1	Explain the core principles of Meta and Performative architecture within regional and contemporary contexts.	Remember & understand	L1, L2
CO2	Apply active and passive energy-efficient methods and vernacular materials to architectural design briefs.	Apply	L3
CO3	Analyze diurnal patterns, natural forces, and climate data to inform responsive design strategies.	Analyse	L4
CO4	Evaluate the efficiency of building forms and skins in achieving low-energy and low-carbon performance by utilizing BIM and LCA computational methodologies.	Evaluate	L5
CO5	Design a dynamic, climate-responsive building that synthesizes aesthetic, structural, and functional requirements.	Create	L6

Mapping of Course Outcomes to Program Outcomes: (100%-75% =3 ; 74%-50% = 2 ; Below 50% = 1)

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1		3					2								
CO2			2				3								
CO3				3			2								
CO4				2	2		3								2
CO5			3				3						2		

Assessment Pattern (Both CIE and SEE)

8 Credit Course PCC

Assessment Method	Component	Assessment Type	Assessment Type used	Max Marks	Evaluation Details	Reduced Marks	Min. Marks	Total
CIE	Studio Assessment	AAT (Alternative Assessment Tool)	Group Work/Case Studies	20	Case study + Site analysis Presentation skill and coordination	10		10
			Site Visits/Site Analysis	20	Site analysis Presentation skill and coordination	10		10
			Progressive Stage wise works (Models/Sheets/Plates)	60	Regular on time discussion + Incorporation of changes in design + Presentation skills, Accuracy, Details, Architectural Drawings.	30		30
			Intermediate Reviews	20	Completion of work, Presentation skills, Communication of ideas, Design	10		10
						Total CIE Studio		**60**
	Internal Panel Review	Viva Voice	Review	50	Presentation skills, Communication of ideas, Design	25		25
			Final Portfolio + Models	30	Sheet Presentation, Accuracy, Details, Architectural Drawings. etc, presentation	15		15
						Total CIE Internal		**40**
						CIE	**50**	**100**
SEE	**EXTERNAL VIVA VOICE**			100	Portfolio + Model + Review		**40**	**100**
						CIE + SEE	**100**	**200**

The Minimum Marks to be secured in CIE to appear for SEE shall be 50 (50% of Maximum marks – 100) in the Studio Assessment and Internal Review. And 40 (40% of Maximum Marks -100) in the External Viva Voice to clear the SEE, and the total of CIE + SEE shall be a minimum of 100 (50% of Maximum Marks -200) to get passing marks for the course.

CIE Course Assessment Plan (100 marks)

CO's	STUDIO		TOTAL MARKS	WEIGHTAGE (%)
	Studio Assessment	Internal Panel Reviews		
CO1	15		15	15
CO2	10	10	20	20
CO3	10	10	20	20
CO4	10	10	20	20
CO5	15	10	25	25
Total	60	40	100	100

CIE- Continuous Internal Evaluation (100 Marks)

Revised Bloom's Category	STUDIO		TOTAL MARKS	WEIGHTAGE (%)
	Studio Assessment	Internal Panel Reviews		
Remember	7.5		7.5	7.5
Understand	7.5		7.5	7.5
Apply	10	10	20	20
Analyse	10	10	20	20
Evaluate	10	10	20	20
Design	15	10	25	25
Total	60	40	100	100

SEE Course Assessment Plan (100 marks)

CO's	EXTERNAL VIVA VOICE	TOTAL MARKS	WEIGHTAGE (%)
	Portfolio + Model + Review		
CO1	20	20	20
CO2	15	15	15
CO3	15	15	15
CO4	25	25	25
CO5	25	25	25
Total	100	100	100

SEE- Semester End Examination (100 Marks)

Bloom's Category	EXTERNAL VIVA VOICE Portfolio + Model + Review	TOTAL MARKS	WEIGHTAGE (%)
Remember	10	10	10
Understand	10	10	10
Apply	15	15	15
Analyse	15	15	15
Evaluate	25	25	25
Create	25	25	25
Total	100	100	100

Dayananda Sagar Academy of Technology & Management

(Autonomous Institute under VTU)

Semester	:	**VII**				
Course Title	:	**MATERIALS & METHODS IN BUILDING CONSTRUCTION VII**				
Course Code	:	**BAT702**				
Course Type (Theory/ Practical/ Integrated)	:	**STUDIO**				
Category	:	**BSAE**				
Stream	:	**ARCHITECTURE**		**CIE**	:	**50**
Teaching hours/ week (L:T:P:S)	:	**1:0:0:3**		**SEE Viva-Voce**	:	**100 Marks (reduced to 50)**
Total Hours	:	**56hrs. (16 weeks)**		**SEE Duration**	:	**-**
Credits	:	**4**				

Course Learning Objectives: Students will be able to:

Sl. No	Course Objectives
1	To familiarize students with construction techniques in interior spaces of both residential & Office Spaces.
2	To familiarize students with construction techniques & materials which are prevailing in the industry.
3	This course will also bring in the aspect of environmental impact, energy intensiveness, carbon emissions and circularity (recyclability) of green materials study.

Teaching-Learning Process

Pedagogical Initiatives:

These are sample Strategies; which teachers can use to accelerate the attainment of the various course outcomes.

1. Integration of Theory and Practice: Emphasize the practical application of theoretical knowledge by incorporating hands-on activities, case studies, and site visits to enhance understanding of building materials and construction methods.

2. Demonstration and Visual Aids: Utilize visual aids, such as diagrams, illustrations, and multimedia presentations, to enhance the understanding of different building materials, construction techniques, and structural elements.

3. Active Learning and Collaborative Discussions: Encourage active learning through group discussions, brainstorming sessions, and problem-solving activities to foster critical thinking and deeper understanding of the subject matter.

4. Real-life Examples and Case Studies: Incorporate real-life examples and case studies to demonstrate the relevance and practicality of the concepts covered in the modules. This can include highlighting, contemporary architectural projects, and sustainable construction practices.

5. Assessment through Projects and Presentations: Assign projects and presentations that require students to apply their knowledge and skills acquired during the modules.

6. Continuous Feedback and Assessment: Provide regular feedback and assessment to students throughout the learning process to monitor their progress and address any misconceptions or gaps in understanding.

7. Encouraging Research and Exploration: Encourage students to explore additional resources, conduct research, and stay updated with the latest advancements in building materials and construction methods, fostering a sense of curiosity and lifelong learning.

DSATM

Scheme of Teaching and Examinations for B-Arch Programme -2026-27

Outcome Based Education and Choice Based Credit System (CBCS)

(Effective from the Academic Year 2026-27)

COURSE CURRICULUM

Module No.	Topics	Hours
1	**Residential & Office Spaces interior construction:** 1. Introduction to interior products as building material: Plywood, block board, particleboard, Hardboard, laminates, MDF, HDF, HDPE, Gypsum board, etc. 2. Interior residential construction: Detail of wardrobes, TV cabinet in plywood and modular kitchens & cabinet shelves.	12
Pedagogy	• The subject teacher to link the studio work with onsite work by arranging site visits in the nearby areas. • The subject teacher to highlight the uses of various types of Manufactured Wood used in buildings. • Market survey of all materials. Study of material application in the form of portfolio & material board. • Minimum one plate on each construction topic.	
2	3. Office interior space construction: book shelves, file cabinets and workstations. 4. Partition systems: wall and ceiling using plywood, gypsum board, glass etc.	12
Pedagogy	• Case Study on each topic and its detail analysis to understand the construction & joinery details. • Minimum one plate on each construction topic • Student Presentation using AI tools like napkin,draw.io etc.,	
3	5. Introduction to False ceiling materials: Fiberboard, plaster of Paris, particleboard, wood wool and any other materials introduced in the market including acoustic ceiling. Study of recyclability of above mentioned false ceiling materials. 6. False ceiling systems construction in residential & office interior spaces.	12
Pedagogy	• Market survey of all materials. Study of material application in the form of portfolio & material board. • Minimum one plate on each construction topic. • Student Presentation using AI tools like napkin,draw.io etc.,	
4	**High Performance Materials:** 7. Smart Materials: Properties of Smart Materials, Applications in Building Industry. 8. Nano Materials: Introduction to Nanotechnology in building materials, Applications in Building Industry.	08
Pedagogy	• Case Study on each topic and its detail analysis • Minimum one plate on each topic. • New material invention using existing material with new technology.	
5	**Green Building Concepts:** 9. Green Building Concepts, Various Green rating agencies in India, Green Construction & materials & Net Zero Energy Building Concepts with case study. 10. Bamboo Construction: detailing of walls, wall panels, doors, windows and roof in Bamboo. Qualitatively and quantitatively study the material's contributions to/resistance to increased building solar heat gain in the tropics, increase or reduction in air conditioning load and hence artificial cooling energy needs, and ability/inability to promote natural unassisted night-time cooling through spontaneous release of accumulated heat Study the life cycle environmental impacts, carbon emissions and circularity (recyclability) of bamboo as a material used in building construction.	12

Pedagogy	• Case Study on each material and its detail analysis to understand the construction & joinery details. • Design solution using one of these materials.
	Pedagogical Initiatives (Not limited to): • **Think Pair and Share (Blended Learning):** provides an opportunity for students to learn from one another • **Problem Solving**: encourages cognitive thinking and enables creative problem solving • **Poster Presentation:** allows students to represent the concepts visually in order to understand the topics easily. • **Case studies:** maps different domains in real time applications • **Demonstration:** exhibits the implementation process

List of sheet work for portfolio:

Sl. No.	Sheet work with material portfolio and material board	COs
1	Students Presentation on Interior materials	**CO1**
2	Sheet#1 - Market survey of interior materials with material portfolio & material board	**CO1 & CO2**
3	Material board submission	**CO1**
4	Case Study presentation on Residential & Office interiors with detailed study on construction and joinery details	**CO2 & CO3**
5	Sheet#2 - Principles and methods of construction including detailing of joints of Wardrobe & TV cabinet.	**CO4 & CO5**
6	Sheet#3 - Principles and methods of construction including detailing of joints of modular kitchen & cabinets	**CO4 & CO5**
7	Sheet#4 - Principles and methods of construction including detailing of joints of bookshelves, file cabinets.	**CO4 & CO5**
8	Sheet#5 - Principles and methods of construction including detailing of joints of Workstations.	**CO4 & CO5**
9	Sheet#6 - Principles and methods of construction including detailing of joints of partitions.	**CO4 & CO5**
10	Sheet#7 - Principles and methods of construction including detailing of joints of false ceiling of residential interior space.	**CO4 & CO5**
11	Sheet#8 - Principles and methods of construction including detailing of joints of false ceiling of Office interior space.	**CO4 & CO5**
12	Sheet#9 – Introduction, types & case study sheet on Smart Materials.	**CO2 & CO3**
13	Sheet#10 – Introduction, types & case study sheet on Nano Materials.	**CO2 & CO3**
14	Sheet#11 – Brief on New Material invention.	**CO4 & CO5**
15	Sheet#12 – Theory sheet on exploring different types of Green rated agencies in India	**CO2 & CO3**
16	Sheet#13 – Case study and analysis on Green materials & Construction Techniques.	**CO2 & CO3**
17	Sheet#14 – Case study and analysis on Net Zero Energy Building Concepts.	**CO2 & CO3**
18	Sheet#15 – Application of Bamboo as alternate material in their seventh semester design	**CO4 & CO5**

Reference Books	
1	Chudley, "Construction Technology"
2	Barry, "Construction of Buildings

Web links & Video Lectures (e-resources)	
1	• https://ndl.iitkgp.ac.in • https://www.youtube.com/watch?v=SFomXXXYMXw • https://www.youtube.com/watch?v=YSV6YMqMO5k • https://www.youtube.com/watch?v=UZmE5bxXoLY • https://www.youtube.com/watch?v=ymMSz3qTfJU • https://www.youtube.com/watch?v=mNH0ZaoUf74 • https://www.youtube.com/watch?v=aHsTFooJfq4 • https://www.youtube.com/watch?v=VHOC0ZaZErE • https://www.youtube.com/watch?v=MIIoLYty_W0 • https://www.youtube.com/watch?v=vRjGVS1FIwk • https://www.youtube.com/watch?v=XHSYEH133HA

Course Outcomes: At the end of the course, the student will be able to:

CO	Course Outcomes	RBT Level	RBT Level Indicator
CO1	**Understand** the various interior construction materials, new technology materials (Smart & Nano materials) & Green Materials, which will be used for both interior & exterior spaces and their applications, properties and characteristics.	Remember & Understand	L1 & L2
CO2	**Apply** appropriate materials, highlighting practical application of construction techniques on various interior & exterior spaces.	Apply	L3
CO3	**Analyzing** through case studies these materials and construction techniques for both interior & exterior spaces	Analyze	L4
CO4	**Evaluate** and analyze on the performance of various new technology materials (Smart & Nano Materials), Green materials & their construction technology in both exterior and interior spaces in terms of their functional effectiveness.	Evaluate	L5
CO5	**Create** innovative solutions, for environmentally sustainable materials (green materials) in exterior and interiors designs.	Create	L6

Mapping of Course Outcomes to Program Outcomes: (*100%-75%=3; 74%-50% = 2; Below 50 = 1)*

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1															
CO2	2		3												
CO3															
CO4			3			2									
CO5					2	2				2					

CIE- Continuous Internal Evaluation (100 Marks)

Bloom's Category	STUDIO WITH PORTFOLIO SUBMISSION and VIVA QUESTIONS					
	Continuous Assessment Tests (IAT – Viva)		Continuous Comprehensive Assessment (CCA)		Total Mark	
	IAT-1	IAT-2	CCA-1	CCA-2	IAT-1+CCA-1	IAT-2+CCA-2
	60 Marks	60 Marks	40 Marks	40 Marks	(60+40) Marks	(60+40) Marks
Remember	20	20			20	20
Understand	20	20			20	20
Apply	20	20			20	20
Analyze			10	10	10	10
Evaluate			10	10	10	10
Create			20	20	20	20
Total Marks	60	60	40	40	**100**	**100**

CIE Course Assessment Plan

CO's	Marks Distribution for Viva and CCA							Total Marks Test-2	Weightage
	Test-1 & CCA-1			Total Marks Test-1	Test-2 & CCA-2				
	Module-1	Module-2	Module 2 to 2.5		Module-2.5 to 3	Module-4	Module-5		
CO1	8	8	4	**20**	4	8	8	**20**	20%
CO2	8	8	4	**20**	4	8	8	**20**	20%
CO3	8	8	4	**20**	4	8	8	**20**	20%
CO4	8	8	4	**20**	4	8	8	**20**	20%
CO5	8	8	4	**20**	4	8	8	**20**	20%
Total	**40**	**40**	**20**	**100**	**20**	**40**	**40**	**100**	**100%**

SEE- Semester End Examination (100 Marks)

Bloom's Category	SEE Marks (90% Studio work through Portfolio+10% Viva Questions)
Remember	**10**
Understand	**10**
Apply	**20**
Analyse	**20**
Evaluate	**20**
Create	**20**

SEE Course Plan

CO's	Marks Distribution						Total Marks	Weightage
	Module-1	Module-2	Module 2 to 2.5	Module-2.5 to 3	Module-4	Module-5		
CO1	4	4	2	2	4	4	**20**	20%
CO2	4	4	2	2	4	4	**20**	20%
CO3	4	4	2	2	4	4	**20**	20%
CO4	4	4	2	2	4	4	**20**	20%
CO5	4	4	2	2	4	4	**20**	20%
Total	**20**	**20**	**10**	**10**	**20**	**20**	**100**	**100%**

Dayananda Sagar Academy of Technology & Management

(Autonomous Institute under VTU)

Semester	:	**VII**				
Course Title	:	**Urban design**				
Course Code	:	**BAT703**				
Course Type (Theory/ Practical/ Integrated)	:	**Theory**				
Category	:	**PCC**				
Stream	:	**Architecture**		**CIE**	:	**50**
Teaching hours/ week (L:T:P:S)	:	**3:0:0:0**		**SEE**	:	**100 Marks (Reduce to 50 Marks)**
Total Hours	:	**42Hrs. (16 weeks)**		**SEE Duration**	:	**3 Hours**
Credits	:	**3**				

Course Learning Objectives: Students will be able to:

Sl. No	Course Objectives
1	Analyze foundational Urban Design theories (Lynch, Cullen, Rossi, etc.) and their application in perceiving the city as a visual and sensory experience.
2	Evaluate the relationship between socio-cultural layers and the built environment, specifically the transition between formal and informal urban spaces.
3	Examine urban morphology through the study of building-to-street ratios, density, and the "collective memory" of the city.
4	Compare and Contrast organic and planned urban developments within the Indian context (e.g., Old Delhi vs. New settlements).
5	Synthesize the principles of "Healthy Cities" and "Low-Carbon Urbanism" to propose design interventions that respond to modern environmental challenges.

Teaching-Learning Process

Pedagogical Initiatives:

These are sample Strategies; which teachers can use to accelerate the attainment of the various course outcomes.

1. **Conceptual - Constructivist Education Method**: The constructivist approach provides the students a new perspective focusing on their own understanding and therefore producing their own knowledge rather than conveying what is thought to be right. In the context of Urban Design, this encourages students to form independent critiques of the urban fabric based on personal observation and theoretical grounding.
2. **Applying the Theories and Techniques:** Students shall be able to recognize and read basic urban design theories (such as those by Kevin Lynch, Gordon Cullen, and Aldo Rossi) through various books and documents and apply the technicality into their design interventions. This ensures a seamless transition from theoretical literacy to practical application.
3. **Site Visits and Sensitization**: To sensitize students to be more observant of their surroundings and promote observation as a basic creative instinct. These visits aim to blend artistic parameters with social parameters in evolving the meaning of "place," allowing students to document the lived reality of formal and informal urban spaces.
4. **Experimentation and Iteration:** Practicing a number of new skills, such as visualization and representation. Architecture and Urban Design are treated as the art of composing spaces that are dimensionally accurate and built with different materials. Students will iterate through multiple design options to understand the impact of scale, density, and building-to-street ratios.
5. **Presentation & Communication**: Treating Architecture and Urban Design as technology to achieve better quality and performance, students are required to use digital modes of presentation to communicate their designs. This includes the use of 2D/3D software and visual storytelling to articulate complex urban issues to a professional audience.
6. **Critique and Revision** Students present their designs and analytical findings to studio mentors to receive feedback and suggestions for improvement. This iterative process requires revisions to be implemented based on expert feedback, simulating the professional consultative environment of urban planning and design.
7. **Walking Seminars (Serial Vision):** Utilizing Gordon Cullen's "Serial Vision" technique, students will conduct guided walks through organic and planned precincts to document the sensory and visual sequence of urban spaces.
8. **On-Site Mapping:** Students will perform primary documentation of "informal" urbanism–such as street vendors and accidental gathering spaces–to understand the socio-cultural layer of the city.

9. **Figure-Ground & Grain Studies:** Using 2D mapping (Solid vs. Void) to analyze the density and building-to-street ratios of contrasting urban fabrics (e.g., Old Delhi vs. Lutyens' Delhi).
10. **Mental Mapping Exercises:** Based on Kevin Lynch's "The Image of the City," students will create cognitive maps to identify the perceived Legibility, Nodes, and Landmarks of a specific neighborhood.
11. **Tactical Urbanism Workshops:** Students will identify a "failing" urban space (e.g., an unsafe junction or a neglected park) and propose small-scale, high-impact design interventions.
12. **HOTS (Higher-Order Thinking Skills):** Module-wise assessments will include evaluative questions such as: *"How do building bylaws in high-density areas impact the 'Collective Memory' and safety of a street?"*
13. **Case Study Synthesis:** Group-based critical analysis of Indian precedents (e.g., Charles Correa's work in Navi Mumbai or Ballard Estate) to compare formal planning vs. lived reality.
14. **Peer Review (Jury Culture):** Regular pin-up sessions and "Crits" to simulate professional urban design charrettes, encouraging students to defend their spatial logic and ethical stance on urban issues.
15. **Time-Lapse & Behavioral Documentation:** Using video documentation to study the "Temporal Approach"–how a single street changes its function and character from morning to night.

DSATM

Scheme of Teaching and Examinations for B.Arch. Programme -2026-27

Outcome Based Education and Choice Based Credit System (CBCS)

(Effective from the Academic Year 2026-27)

COURSE CURRICULUM

Module No.	Topics	Hours
1	**Introduction to Urban Design & Behavioural /Perceptual approach:** **Introduction to Urban Design:** Need, Scope, and Objectives: Understanding why urban design is essential for sustainable city growth and defining the boundaries of the professional field. The relationship between Architecture, Urban Design and City Planning. Brief history of urban design. **Behavioural /Perceptual approach:** City as visual experience- walking, observing, documenting/recording and interpreting city/ and its elements -such as neighbourhood, street, block, building, architectural elements, green spaces, heterogeneous spaces (inclusive of different parts of the city) etc Sub module: Theories works of Gordon Cullen (The Concise Townscape) - , Kevin Lynch - The Image of the City Examples: Organic and Planned development as highlighted through Old market roads (Chor Bazaar, Old Delhi, etc) and Newer settlements (Newer settlements, shopping streets, etc).	**10**
Pedagogy	**Experiential & Field-Based Learning** **Walking Seminars (Serial Vision):** Utilizing Gordon Cullen's "Serial Vision" technique, students will conduct guided walks through organic and planned precincts to document the sensory and visual sequence of urban spaces. **Mental Mapping Exercises:** Based on Kevin Lynch's "The Image of the City," students will create cognitive maps to identify the perceived Legibility, Nodes, and Landmarks of a specific neighborhood. **Poster Presentation:** Image of the city	
2	**Social cultural Approach:** study of social and cultural layer that influence urban design and architecture. Study of the transition and dependencies between formal and informal spaces. Sub Module: Theories / approach by Jane Jacob, Kevin Lynch **Examples:** Studying smaller built environment settings like a part of the market, market adjoining roads, informal vendors, etc.	**08**
Pedagogy	**On-Site Mapping:** Students will perform primary documentation of "informal" urbanism–such as street vendors and accidental gathering spaces–to understand the socio-cultural layer of the city. **Case studies:** Literature study of socio cultural spaces/ real time urban design projects **Tactical Urbanism Workshops:** Students will identify a "failing" urban space (e.g., an unsafe junction or a neglected park) and propose small-scale, high-impact design interventions.	
3	**Morphological approach:** built and un-built, relation with scale, size and influence of byelaws and regulation. Example showing sustainable transformation quality of space and form. Understanding the differences between organic and planned city-making through the concepts of density, building-street ratio, safety, communal significance, etc.	**08**

	Sub Module: Theory and works of Collin Rowe - Street, public square facade. Notion of Collective Memory by Aldo Rossi	
Pedagogy	**Figure-Ground & Grain Studies:** Using 2D mapping (Solid vs. Void) to analyze the density and building-to-street ratios of contrasting urban fabrics (e.g., Old Delhi vs. Lutyens' Delhi). **Problem-Based Learning (PBL) & Critical Thinking:** "How do building bylaws in high-density areas impact the 'Collective Memory' and safety of a street?" **Poster Presentation:** Collage city	
4	**Functional and Temporal approach:** contextual formal and informal urban environment and readability differences, **Sub Module:** Approach by Kevin lynch through good city form, critical study by Charles Correa & Indian example such as Connaught place, church gate, Ballard estate, Gate way of India, Chor Bazaar (Mumbai), Old Delhi, Bada Bazaar (Kolkata), etc.	**08**
Pedagogy	**Case Study Synthesis:** Group-based critical analysis of Indian precedents (e.g., Charles Correa's work in Navi Mumbai or Ballard Estate) to compare formal planning vs. lived reality. **Time-Lapse & Behavioral Documentation:** Using video documentation to study the "Temporal Approach"–how a single street changes its function and character from morning to night.	
5	**Environmental approach:** Relationship with physical activity and built environment, human activity and building as environment. Components of a healthy city and a city that enables healthy citizens. **Sub Module:** study by Charles Correa & Indian example	**08**
Pedagogy	**Digital Massing & Contextual 3D Modeling:** Utilizing digital tools to visualize how new architectural interventions sit within the historical or ecological "layers" of the existing city. **Case studies**: maps different domains in real time applications	

List of Programs:

Sl. No.	Experiments/Programs	COs
1	Sense of Place (The 'Image' of the City) - Students identify a familiar urban precinct and illustrate its unique "Imageability" (Built vs. Unbuilt character).	**CO3**
2	Mental Mapping & Legibility - Sketch a mental map of a daily commute (e.g., College to Home)	**CO4**
3	5 Elements - to identify Kevin Lynch's 5 elements (Paths, Edges, Districts, Nodes, Landmarks).	**CO3**
4	Serial Vision & Sequential Experience - Identify a complex or street and create a "Storyboard" of sketches or photos that capture the changing visual experience.	**CO2**
5	'Eyes on the Street' (Socio-Cultural Safety) - Observations of a public space to identify "Natural Surveillance" and the interaction between formal and informal actors (based on Jane Jacobs).	**CO4**
6	Morphological Evolution (Decadal Change) - Comparative analysis of a precinct using historical maps or satellite imagery (from 10-20 years ago vs. today) to track the transformation of the urban fabric.	**CO4**
7	Theoretical Synthesis & Hypothesis (The Capstone) - Formulate a research paper or design hypothesis for a self-selected urban area based on the theoretical lenses studied in class.	**CO5**
8	Collaborative Urban Review (Group Presentation) - A peer-review session where teams present their site analysis and critical findings to an expert panel or the class.	**CO4**

Open ended Programs		
1	Contextual Analysis in Urban Design a case of India	CO3
2	Designed Public Places of India	CO3
3	Smart City- Rapid progress	CO3

Text Books	
Sl. No.	Title of the Book/Name of the author/Name of the publisher/Edition and Year
1.	Aldo Rossi, "Architecture of the City", Oppositions Book, The MIT Press
2.	Kevin Lynch, "The Image of the City", MIT Press, 1960.
3.	Kevin Lynch, "Good City Form", MIT Press, 1981.
4.	Charles Correa, " Housing and Urbanisation: Building Ideas for People and Cities", Thames & Hudson Ltd, 2000.
5.	Gordon Cullen, "The Concise Townscape", Architectural Press, 1971.
Reference Books	
1.	Christopher Alexander, "A Pattern Language ", Oxford University Press, 1977.
2.	Carmona M, “Public Places - urban Spaces: A guide to Urban Design” , Architectural Press
3.	Rob krier, " Street, public square facade"
4.	Kamu Iyer, "Bo mbay: From Precincts to Sprawl", Popular Prakashan Ltd; 2014.
5.	Edmund Bacon, “Design of Cities”, Penguin, 1976.
6.	Broadbent, Geoffery: “Emerging Concepts in Urban Space Design”, Van Nostand Reinhold, 1990.
Weblinks and Video Lectures (e-Resources)	
1.	https://ndl.iitkgp.ac.in
2.	https://www.youtube.com/watch?v=q2SmO7pPIPg
3.	https://www.youtube.com/watch?v=IFjD3NMv6Kw
4.	https://www.youtube.com/watch?v=iuyc8_Eo7XQ
5.	https://www.youtube.com/watch?v=ZORzsubQA_M
6.	https://www.youtube.com/watch?v=BMPkmprdhTA
7.	https://www.youtube.com/watch?v=q2SmO7pPIPg&t=85s
8.	https://www.youtube.com/watch?v=LWepXTUb2W0

Course Outcomes: At the end of the course, the student will be able to:

CO	Course Outcomes	RBT Level	RBT Level Indicator
CO1	Identify and understand fundamental concepts and theoretical aspects of Urban Design and its dimensions	Remember & understand	L1, L2
CO2	Apply urban bylaws and zoning regulations to analyze the relationship between built-to-unbuilt ratios and urban scale.	Apply	L3
CO3	Analyze a selected urban site by documenting its physical, social, and functional interdependence with the surrounding urban fabric.	Analyse	L4
CO4	Evaluate the performance of urban spaces based on their readability, safety, and socio-cultural significance.	Evaluate	L5
CO5	Design urban interventions that respond to site-specific challenges like topography, ecology, and climate-responsive planning.	Design	L6

Mapping of Course Outcomes to Program Outcomes: :(100-75%=3, 74-50%=2, Below 50%=1)

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	3	2											2		
CO2	2	3	2	2		2							3		
CO3		3	2	3		2				2			3	2	
CO4		2		3		3	2	2		2				3	
CO5	2	2	3	2	2	3	3	2	2	2			2	3	3

CIE- Continuous Internal Evaluation (50 Marks)

Bloom's Category	Theory		
	Continuous Assessment Tests (IAT)		Alternative Assessment Tool (AAT)
	IAT-1	IAT-2	
	50 Marks	50 Marks	50 Marks
Remember	10	5	-
Understand	10	10	-
Apply	15	10	10
Analyse	15	15	10
Evaluate	-	10	10
Create	-	-	20

CIE Course Assessment Plan

CO's	Marks Distribution						Total Marks	Weightage
	Test-1			Test-2				
	Module-1	Module-2	Module 2 to 2.5	Module-2.5 to 3	Module-4	Module-5		
CO1	10	5	5		5	5	30	30%
CO2	5	5	5	5	10	5	35	35%
CO3	10	5	-	-	-	10	25	25%
CO4	-	-	-	-	10	-	10	10%
CO5	-	-	-	-	-	-	-	
Total	25	15	10	5	25	20	100	

SEE- Semester End Examination (100 Marks- Reduce to 50 Marks)

Bloom's Category	SEE Marks (90% Theory+10% Practical Questions)
Remember	20
Understand	20
Apply	10
Analyse	10
Evaluate	20
Create	20

SEE Course Plan (Reduce to 50 Marks)

CO's	Marks Distribution					Total Marks	Weightage
	Module-1	Module-2	Module 3	Module-4	Module-5		
CO1	5	5	5			15	15%
CO2	5	5	5	5		20	20%
CO3			10	10	10	30	30%
CO4			10	10	15	35	35%
CO5							
Total	10	10	30	25	25	100	100%

Dayananda Sagar Academy of Technology & Management

(Autonomous Institute under VTU)

Semester	:	**VII**				
Course Title	:	**Professional Practice**				
Course Code	:	**BAT704**				
Course Type (Theory/ Practical/ Integrated)	:	**Theory**				
Category	:	**PCC**				
Stream	:	**Architecture**		**CIE**	:	**50**
Teaching hours/ week (L:T:P:S)	:	**3:0:0:0**		**SEE**	:	**100 Marks (reduced to 50)**
Total Hours	:	**42 Hrs. (16 weeks)**		**SEE Duration**	:	**3 hrs**
Credits	:	**3**				

Course Learning Objectives: Students will be able to:

Sl. No	Course Objectives
1	Develop a clear understanding of the ethical principles, legal responsibilities, and professional conduct expected of architects in practice, including compliance with statutory bodies like the Council of Architecture (COA).
2	Learn the fundamentals of setting up and managing an architectural practice, including office organization, project management, client relations, and financial management.
3	Acquire the ability to understand and apply building laws, development regulations, contracts, tendering processes, and arbitration methods relevant to architectural projects.
4	Enhance skills in preparing professional documents such as drawings, specifications, estimates, reports, and effectively communicating with clients, consultants, and authorities.
5	Gain insight into construction processes, site supervision, coordination with various stakeholders, and the architect's role during project execution and post-construction stages.

Teaching-Learning Process

Pedagogical Initiatives:

Some sample strategies to accelerate the attainment of various course outcomes are listed below:

1. Adopt different teaching methods to attain the course outcomes.
2. Include videos to demonstrate various concepts in C.
3. Encourage collaborative (Group) Learning to encourage team building.
4. Ask at least three **HOTS (Higher-order Thinking Skills)** module-wise questions to promote critical thinking.
5. Adopt **Problem-Based Learning (PBL),** which fosters students' analytical skills, and develops thinking skills such as evaluating, generalizing, and analyzing information rather than simply recalling it.
6. Show different ways to solve a problem and encourage the students to come up with creative and optimal solutions.
7. Discuss various case studies to map with real-world scenarios and improve the understanding.
8. Devise innovative pedagogy to improve **Teaching-Learning Process (TLP)**.

DSATM

Scheme of Teaching and Examinations for B. ARCH Programme -2026-27

Outcome Based Education and Choice Based Credit System (CBCS)

(Effective from the Academic Year 2026-27)

COURSE CURRICULUM

Module No.	Topics	Hours
1	**Module 1** 1. Profession: Idea of profession; differences between profession, trade and business. 2. Moral and Ethical Orientation of Architects: Non-negotiable values of architects practicing their profession in the era of climate crisis and breach of planetary limits. Understanding architecture as a profession for healthy coexistence between the natural and built environment. 3. Profession of architecture: Types and extent of services offered by architects, scale of fees, stages of payment, and contract between client and architect. 4. Practice: Types of Architectural firms, proprietorship, partnership, associate ship and private limited firms; advantages and disadvantages of each type of firm; building clientele and projects. 5. Office Management: Administration of Architectural firms; basic accounting procedures, financial literacy related to personal and office matters.	**08**
Pedagogy	**1. Industry oriented Learning** **2. Ethical Challenges in practice** **3. Preparing an organizational chart of an architecture firm** **3.Incorporate real-life examples to make concepts relatable** **4. Role-play (architect–client interaction)** **5. Presentation: Role of architect in practice-AI integrated learning (Students shall use AI tools)**	
2	**Module 2** 6. Code of Professional Conduct: Architects Act of 1972, role of Council of Architecture, Indian Institute of Architects in functioning of the Profession. 7. Architectural competitions: guidelines of COA, procedure of conduct of competitions.	**08**
Pedagogy	**1. Prepare a Chart for Code of Professional conduct- AI integrated learning (Students shall use AI tools)** **2. Highlight real examples of professional misconduct** **3. Prepare a mock competition brief for an Architectural competition**	
3	**Module 3** 8. Tender: Tender document and its content. Types of tenders, advantages and disadvantages of each type; suitability to various projects. Tender notices, opening, scrutiny, process of selection and award. Architect's role in tender process. Earnest Money Deposit, Security Deposit, Retention Amount, Mobilization Amount and Bonus & Penalty Clauses. Issues arising out of tendering process and the role of an architect. 9. Contract: General Principles, types of contract; Contract document. Contract Management: Architect's role in Contract Management.	**10**

	Conditions and Scope of Contract; role of an architect in ensuring completion of contract. 10. Supervision: Definition, it's characteristics, duties of an architect, engineer in charge, site visits, site meeting, co-ordination with various agencies, site book and site office.	
Pedagogy	**1. Talk on Real-world professional experiences** **2. Flowcharts and diagrams to explain: Step by step Tendering process (Students shall use AI tools)** **3. Collect & Interpret Sample Tender documents & Contract agreements for better clarity to gain practical knowledge.** **4. Analysing causes for Contract failures or delays and suggesting solution for the same.**	
4	**Module 4** 11. Byelaws: Building byelaws, National Building Code, floor area ratio, floor space index, floating FAR, zoning regulations. Overview of Master Plan/CDP of relevant cities. 12. Arbitration: Arbitration and conciliation; arbitrator, umpire, order of reference, selection of arbitrators, powers and duties of arbitrators, arbitration award and implementation of award. 13. Valuation and Dilapidation: Definitions and architect's role in preparation of valuation and dilapidation reports and certifications; Physical and Economic life of buildings. Introduction to Valuation, essential characteristics, classifications and purpose of classifications. Methods of valuation, standard rent and cost of construction	**08**
Pedagogy	**1. Study real examples of zoning regulations, byelaws, FAR. Etc., from cities like Bengaluru (BBMP byelaws/CDP)** **2. Disputes in contract and architect's role in resolving disputes Presentation on Property disputes and resolving the same -AI integrated learning (Students shall use AI tools).** **3. Preparation of valuation report for a small project. (Refer sample report by professional valuators)**	
5	**Module 5** 14. Building Industry: General overview of the industry; various participants and dimensions of building industry. Role of architect, employer, and contractor in sustainable buildings and developments. Types of insurance necessary during contract; fire insurance 15. Easements: easement rights, architect's role in protecting easement rights. Laws related to Property and Land: Land tenure, types of land holdings, land registration, easement rights, covenants, trespass and nuisance etc. 16. General Law: Overview & definition of common law, statute law, equity, criminal law, civil law etc., Role of courts in dispensing various types of cases. Overview of recent Bills and Acts: Real Estate (Regulation and Development) Act 2016; Land Acquisition Act, Rehabilitation Act and Resettlement Act 2013; Consumer Protection Act. (Group Activity). FDI in real estate, Goods & Service Taxes and other taxes applicable in architecture practice and construction industry	**08**

Pedagogy	**1. Flowchart showing communication and coordination among stakeholders (presentation using AI tools)** **2. Role of Architect regarding insurances during contract.** **3. Analyze legal implications and solutions to property disputes.** **4. Relate laws to real-life architectural practice.** **5. Activity based learning:- Group Activity :** Decode and read one Act, rule, law: Divide the class into 3-groups and each group can pick up one law, rule, act, program and study in detail. Interpret its meaning and identify and understand the inclusivity and loopholes. Reflect on the policies that impact holistic architecture design.

List of Programs:

Sl. No.	Activities/Programs	COs
1	Role-play (architect-client interaction)	**CO1**
2	Preparation of a Chart for Code of Professional conduct	**CO1**
3	Presentation on step by step Tendering Process	**CO3**
4	Site Supervision and Coordination Exercise Understand the architect's role during construction, focusing on site supervision, stakeholder coordination, and practical problem-solving by preparing detailed site supervision report with sketches, photos, and corrective action notes.	**CO3**
5	Presentation on Case studies of Dispute resolution	**CO3**
6	Group Activity on laws related to property.	**CO2**
7	Preparation of Professional valuation report	**CO4**
	Open ended Programs	
1	Report Writing: Choose a real or hypothetical scenario involving professional misconduct, conflict of interest, or client disagreement.	**CO1,CO3,CO4**
2	Prepare complete tender and contract documents for a small architectural project.	**CO5**

Text Books	
Sl. No.	**Title of the Book/Name of the author/Name of the publisher/Edition and Year**
1	Namavathi, Roshan, Professional Practice for Architects and Engineers, Lakhani Book, New Delhi, 2001.
2	Krishnamurthy K G and Ravindra S V, Professional Practice, S V Ravindra, 2009, Bangalore
Reference Books	
1	V.S. Apte - Architectural Practice and Procedure

Weblinks and Video Lectures (e-Resources)	
1	• https://ndl.iitkgp.ac.in
2	• https://www.youtube.com/watch?v=nLUU6wcA3qE
3	• https://www.youtube.com/watch?v=tDhcuESzzpU
4	• https://www.youtube.com/watch?v=_zw1CFfe64E&list=RDCMUCtbDLHGwjicfYiH0UYU6dfw&index=19
5	• https://www.youtube.com/watch?v=rMGIVCgzF58
6	• https://www.youtube.com/watch?v=aGdPq2IATKM
7	• https://www.youtube.com/watch?v=KYw5p5MkImg
8	• https://www.youtube.com/watch?v=ppchaXYwSxw
9	• https://www.youtube.com/watch?v=LH9cXw6rVgs
10	• https://www.youtube.com/watch?v=0S2T6crurEE

Course Outcomes: At the end of the course, the student will be able to:

CO	Course Outcomes	RBT Level	RBT Level Indicator
CO1	**Understand** the role, responsibilities, and professional ethics of an architect, including regulations by the Council of Architecture and related statutory bodies.	**Remember & Understand**	**L1,L2**
CO2	**Apply** knowledge of building bye-laws, codes, and legal frameworks such as the Architects Act and National Building Code in architectural practice.	**Apply**	**L3**
CO3	**Analyze** various types of contracts, tendering procedures, and arbitration methods used in construction projects.	**Analyse**	**L4**
CO4	**Evaluate** project management techniques, office management practices, and coordination among stakeholders in architectural projects.	**Evaluate**	**L5**
CO5	**Prepare** professional documents such as estimates, specifications, reports, and contract documents for architectural practice.	**Create**	**L6**

Mapping of Course Outcomes to Program Outcomes: *(75%-100%=3 ; 50%-74% = 2 ; Below 50 = 1)*

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	-	1	-	-	-	3	-	1	2	1	1	2	1	2	2
CO2	3	2	1	-	-	2	2	1	1	1	2	2	3	2	1
CO3	2	3	1	1	-	2	-	3	1	1	3	2	2	3	1
CO4	1	2	2	1	1	2	1	3	2	1	3	2	2	3	2
CO5	2	2	3	1	1	1	-	2	3	1	3	2	2	2	3

Assessment Pattern (Both CIE and SEE)

3 Credit Course - PCC								
Assessment Method	**Component**	**Type of Assessment**	**Assessment type used**	**Max Marks**	**Evaluation Details**	**Reduced Marks**	**Min Marks**	**Total**
CIE	Studio Assessment	AAT	Activities	50	Presentations, Report, Exercises, Group Activities	25		25
	Internal Assessment Test	IAT	IAT 1	50	Internals paper	25		25
			IAT 2	50	Internals paper			
						Total CIE Review	**25**	**50**
SEE			**Exam**	**100**	Question paper	**50**	**20**	**50**
						CIE +SEE	**50**	**100**

NOTE: The Minimum Marks to be secured in CIE to appear for SEE shall be 25 (50% of Maximum marks – 50). The Minimum Marks to be secured in SEE shall be 20 (40% of Maximum marks – 50). The activities/experiments/assignments/portfolio will be assessed through only CIE. The passing percentage shall not be less than the 50% in aggregate for a course (i.e.CIE and SEE (put together). Based on the marks scored in CIE+SEE grading will be awarded for this course.

CIE- Continuous Internal Evaluation (50 Marks)

Bloom's Category	Theory			
	Continuous Assessment Tests (IAT)		Continuous Comprehensive Assessment (CCA)	
	IAT-1	IAT-2	CCA-1	CCA-2
	50 Marks	50 Marks	50 Marks	50 Marks
Remember Understand	30	30	-	-
Apply	20	20	-	-
Analyse	-	-	20	20
Evaluate	-	-	20	20
Create	-	-	10	10

CIE Course Assessment Plan

CO's	Marks Distribution						Total Marks	Weightage
	Test-1			Test-2				
	Module-1	Module-2	Module 2 to 2.5	Module-2.5 to 3	Module-4	Module-5		
CO1	10	10	05	05	10	10	50	50 %
CO2	-	-	10	10	-	-	20	50 %
CO3	05	-	-	-	-	05	10	
CO4	-	-	-	-	10	-	10	
CO5	-	10	-	-	-	-	10	
Total	15	20	15	15	20	15	100	

SEE- Semester End Examination (100 Marks-reduced to 50 in exam)

Bloom's Category	SEE Marks (Theory)
Remember	60%
Understand	
Apply	20%
Analyse	20%
Evaluate	-
Create	-

SEE Course Plan

CO's	Marks Distribution						Total Marks	Weightage
	Module-1	Module-2	Module 2 to 2.5	Module-2.5 to 3	Module-4	Module-5		
CO1	10	10	10	10	10	10	60	60%
CO2								
CO3	10	10	-	-	-	-	20	20%
CO4	-	-	-	10	-	10	20	20%
CO5	-	-	-	-	-	-	-	-
Total	20	20	10	20	10	20	100	100%

Dayananda Sagar Academy of Technology & Management

(Autonomous Institute under VTU)

Semester	:	**VII**				
Course Title	:	**Estimation and Costing**				
Course Code	:	**BAT705**				
Course Type (Theory/ Practical/ Integrated)	:	**Theory**				
Category	:	**BSAE**				
Stream	:	**Arch/ Civil**		**CIE**	:	**50**
Teaching hours/ week (L:T:P:S)	:	**3:0:0:0**		**SEE**	:	**100 marks (reduced to 50 Marks)**
Total Hours	:	**42 Hrs. (16 weeks)**		**SEE Duration**	:	**3 hrs**
Credits	:	**03**				

Course Learning Objectives: Students will be able to:

Sl. No	Course Objectives
1	Aids to estimate material quantities and costs accurately.
2	Prepare complete BOQs and project cost documents.
3	Apply standard codes and specifications to construction projects.
4	Understand contract management and construction management.
5	Use digital tools to enhance efficiency and reduce errors in estimation.

Teaching-Learning Process

Pedagogical Initiatives:

Some sample strategies to accelerate the attainment of various course outcomes are listed below:

1. Adopt different teaching methods to attain the course outcomes.
2. Include videos to demonstrate various concepts in C.
3. Encourage collaborative (Group) Learning to encourage team building.
4. Ask at least three **HOTS (Higher-order Thinking Skills)** module-wise questions to promote critical thinking.
5. Adopt **Problem-Based Learning (PBL),** which fosters students' analytical skills, and develops thinking skills such as evaluating, generalizing, and analyzing information rather than simply recalling it.
6. Show different ways to solve a problem and encourage the students to come up with creative and optimal solutions.
7. Discuss various case studies to map with real-world scenarios and improve the understanding.
8. Devise innovative pedagogy to improve **Teaching-Learning Process (TLP)**.

DSATM

Scheme of Teaching and Examinations for B. ARCH Programme -2026-27

Outcome Based Education and Choice Based Credit System (CBCS)

(Effective from the Academic Year 2026-27)

COURSE CURRICULUM

Module No.	Topics	Hours
1	**Module 1** Introduction to Estimation: 1) Need for estimation, relationship between choice of materials, their specifications, Bill of Quantities (BOQ), project costing, project quality/cost/ time management. 2) Specifications: How to arrive at abstract and detailed specifications for various materials leading to 'items of work' used in construction?. Including influence and impact of local and national building codes on specifications.	**06**
Pedagogy	**1. Industry oriented Learning** **2. Demonstration / Visuals to show sample BOQs, material specifications, and cost sheets.**	
2	**Module 2** 3) Bill of Quantities (BOQ): Why and how to build flexibility, resilience and redundancy in BOQ. 4) Mandatory tests & Safety Measures in Specifications: Procedures, frequency and submission of results as part of specifications and their inclusion in the BOQ for different materials document. Integrating workers' safety and material security into specifications.	**06**
Pedagogy	**1. Discuss the concepts of flexibility (adjustable quantities), resilience (handling unforeseen changes), and redundancy (contingency allowances) in BOQs** **2. Short quizzes on Specifications.**	
3	**Module 3:** 5) Introduction to Costing: Why do rates vary? - Study of government rates (CPWD/ Karnataka PWD Schedule of Rates) and market rates. Concept of inflation and its effect on costing.eg. escalation clause, extra items, variations 6) Introduction to Life Cycle Costing (Environmental and Financial) of a building: This section will train students how to assess the emissions and cost tradeoffs of increased material use and/or integration of passive design/low-carbon systems features (e.g. increased embodied carbon emissions of concrete in thick-walls vs. conventional walls, increased capital cost of double-glazing versus single-glazing, increased capital cost of radiant cooling vs. conventional air conditioning etc.) to determine the overarching long-term financial and environmental cost benefits of sustainable designs relative to business-as-usual architecture (Activity - Calculate the environmental valuation of any of your studio's design) 7) Detailed rate analysis of building: Basic knowledge of items as per current schedule of rates (CSR) of local PWD. Percentages (based on thumb rule calculations) of various bulk materials used in construction like cement, steel, rubble, metal, sand, brick, tiles etc.	**10**
Pedagogy	**1. Lecture on life cycle costing (LCC): definition, purpose, and relevance to sustainable architecture.** **2. Discussion on Concept of inflation and its effect on costing.**	

	3. Calculate the environmental impact of various building materials.	
4	**Module 4** 8) Introduction to sequence of construction activity: Project time/ labour /materials costing and impact of delay in project on costing. 9) Term project 1: Detailed specifications writing and estimation of Bill of Quantities (BOQ) for an RCC framed house with an attached temporary shed. 10) Term project 2: Detailed specifications writing and estimation of Bill of Quantities (BOQ) for an office interior work. **Preparation of detailed estimates manually and through BIM software for different types of building elements.**	**10**
Pedagogy	**1. Group Activity: Comparing two materials (e.g., concrete vs RCC blocks) and discuss cost, durability, and construction time impact on a particular project.** **2. Discuss trade-offs between quality, cost, and time, Presentation to be done using AI tools**	
5	**Module 5** 11) Term project 3: Detailed specifications writing and estimation of Bill of Quantities (BOQ) for Water supply and sanitary works including overhead tanks and Sump tanks. 12) Term project 4: Detailed specifications writing and estimation of Bill of Quantities (BOQ) for a typical residential layout plan with roads, culverts, pavements, etc. 13) Term project 5: Detailed specifications writing and estimation of Bill of Quantities (BOQ) for a typical low cost housing layout plan (a rehabilitated slum) with roads, culverts, pavements, water distribution, power distribution, all basic amenities included etc. Preparation of detailed estimates manually and through BIM software for different types of building elements. 14) Billing requirements: Role of the architect in monitoring the specifications follow-up for quality control, the measurement book (MB), RA bills, interim and final checking and certification of works on site based on the BOQ and terms of contracts.	**10**
Pedagogy	**1. Detailed specifications writing for each component along with Bill of quantities to be addressed. Case study of a project to be discussed.** **2. Discussion on Architect's role in Issuing bills and certificates at various stages of progress of site works.**	

List of Programs:

Sl. No.	Activities/Programs	COs
1	Project Report : Detailed specifications writing and estimation of Bill of Quantities (BOQ) for an RCC framed house with an attached temporary shed.	**CO5**
2	Project Report : Detailed specifications writing and estimation of Bill of Quantities (BOQ) for an office interior work.	**CO5**
3	Project Report :Detailed specifications writing and estimation of Bill of Quantities (BOQ) for Water supply and sanitary works including overhead tanks and Sump tanks.	**CO5**
4	Project Report: Detailed specifications writing and estimation of Bill of Quantities (BOQ) for a typical residential layout plan with roads, culverts, pavements, etc.	**CO3**
Open ended Programs		
1	Quiz on Specifications	**CO1, CO2, CO3,CO4**
2	Calculate the environmental impact of various building materials.	**CO2**
3	Group Activity: Comparing two materials (e.g., concrete vs RCC blocks) and discuss cost, durability, and construction time impact on a particular project.	**CO3**

Reference Books	
Sl. No.	**Title of the Book/Name of the author/Name of the publisher/Edition and Year**
1	Dutta B.N ,Estimating and Costing in Civil Engineering- Theory and Practice, UBS Publishers, 1993.
2	Rangwala, Estimating, Costing and Valuation, Charotar Publishing House.

Weblinks and Video Lectures (e-Resources)	
1	https://ndl.iitkgp.ac.in
2	https://www.youtube.com/watch?v=7rc-pG3f0DM&list=PLWbmeZJ9qIMae-i-sx9MiIRIHuY0svIsO&index=3
3	https://www.youtube.com/watch?v=K8swOXombek
4	https://www.youtube.com/watch?v=Cm4VgLLXtss&list=RDCMUCfk6bln_Pp8dYgDk1f5FWCQ&index=10

Course Outcomes: At the end of the course, the student will be able to:

CO	Course Outcomes	RBT Level	RBT Level Indicator
CO1	**Remember and Understand** the principles, methods, and purpose of estimation in construction projects.	Remember & Understand	L1,L2
CO2	**Apply** standard methods of measurement and quantity take-off techniques for building components like walls, slabs, columns, and foundations.	Apply	L3
CO3	**Analyze** and calculate detailed cost estimates, including material, labor, and overheads, for various building and civil engineering works.	Analyse	L4
CO4	**Evaluate** specifications, schedules of rates (SOR), and contract documents to prepare accurate bills of quantities (BOQs) for construction projects.	Evaluate	L5
CO5	**Create** comprehensive project estimates manually or using modern tools, including BIM.	Create	L6

Mapping of Course Outcomes to Program Outcomes: *(75%-100%=3 ; 50%-74% = 2 ; Below 50 = 1)*

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1		1													
CO2	3	3	1	2	3										
CO3	2	2									2	3			
CO4	1	1	1		3		2				2	3			
CO5	3	3	1	2	3	1	2				3	3			

Assessment Pattern (both CIE and SEE)

3 Credit Course - PCC								
Assessment Method	**Component**	**Type of Assessment**	**Assessment type used**	**Max Marks**	**Evaluation Details**	**Reduced Marks**	**Min Marks**	**Total**
CIE	Studio Assessment	AAT	Activities	50	Presentations, Report, Exercises, Group Activities	25		25
	Internal Assessment Test	IAT	IAT 1	50	Internals paper	25		25
			IAT 2	50	Internals paper			
						Total CIE Review	**25**	**50**
SEE		**Exam**		**100**	Question paper	**50**	**20**	**50**
						CIE +SEE	**50**	**100**

NOTE: The Minimum Marks to be secured in CIE to appear for SEE shall be 25 (50% of Maximum marks – 50). The Minimum Marks to be secured in SEE shall be 20 (40% of Maximum marks – 50). The activities/experiments/assignments/portfolio will be assessed through only CIE. The passing percentage shall not be less than the 50% in aggregate for a course (i.e.CIE and SEE (put together). Based on the marks scored in CIE+SEE grading will be awarded for this course.

CIE- Continuous Internal Evaluation (50 Marks)

Bloom's Category	**Theory**			
	Continuous Assessment Tests (IAT)		**Continuous Comprehensive Assessment (CCA)**	
	IAT-1	**IAT-2**	**CCA-1**	**CCA-2**
	50 Marks	**50 Marks**	**50 Marks**	**50 Marks**
Remember Understand	**30**	**30**	**-**	**-**
Apply	**20**	**20**	**-**	**-**
Analyse	**-**	**-**	**10**	**10**
Evaluate	**-**	**-**	**20**	**20**
Create	**-**	**-**	**20**	**20**

CIE Course Assessment Plan

CO's	Marks Distribution						Total Marks	Weightage
	Test-1			Test-2				
	Module-1	Module-2	Module 2 to 2.5	Module-2.5 to 3	Module-4	Module-5		
CO1	10	10	05	05	10	10	50	50%
CO2	-	-	10	10	-	-	20	50%
CO3	05	-	-	-	-	05	10	
CO4	-	-	-	-	10	-	10	
CO5	-	10	-	-	-	-	10	
Total	15	20	15	15	20	15	100	100%

SEE- Semester End Examination (50 Marks)

Bloom's Category	SEE Marks (Theory)
Remember	60%
Understand	
Apply	10%
Analyse	10%
Evaluate	10%
Create	10%

SEE Course Plan

CO's	Marks Distribution						Total Marks	Weightage
	Module-1	Module-2	Module 2 to 2.5	Module-2.5 to 3	Module-4	Module-5		
CO1	10	10	10	10	10	10	60	60%
CO2								
CO3	10	10	-	-	-	-	20	20%
CO4	-	-	-	10	-	10	20	20%
CO5	-	-	-	-	-	-	-	-
Total	20	20	10	20	10	20	100	100%

Dayananda Sagar Academy of Technology & Management

(Autonomous Institute under VTU)

Semester	:	**VII**				
Course Title	:	**INTERIOR DESIGN**				
Course Code	:	**BAT706**				
Course Type (Theory/ Practical/ Integrated)	:	**Practical**				
Category	:	**PCC**				
Stream	:	**Architecture**		**CIE**	:	**50**
Teaching hours/ week (L:T:P:S)	:	**0:0:0:3**		**SEE**	:	**50**
Total Hours	:	**42Hrs. (16 weeks)**		**SEE Duration**	:	**(VIVA)**
Credits	:	**3**				

Course Learning Objectives: Students will be able to:

Sl. No	Course Objectives
1	This course aims to introduce the students to the discipline of Interior Design and to develop skills required for handling interior design projects.
2	The course shall equip the students with theoretical,conceptual, practical and creative aspects of Interior Design along with its allied fields with particular emphasis on **commercial**, **habitat [residential & hospitality], educational** and **public space interiors.**

Teaching-Learning Process

Pedagogical Initiatives:

Some sample strategies to accelerate the attainment of various course outcomes are listed below:

1. Adopt different teaching methods to attain the course outcomes.
2. Include videos to demonstrate various concepts in C.
3. Encourage collaborative (Group) Learning to encourage team building.
4. Ask at least three **HOTS (Higher-order Thinking Skills)** module-wise questions to promote critical thinking.
5. Adopt **Problem-Based Learning (PBL),** which fosters students' analytical skills, and develops thinking skills such as evaluating, generalizing, and analyzing information rather than simply recalling it.
6. Show different ways to solve a problem and encourage the students to come up with creative and optimal solutions.
7. Discuss various case studies to map with real-world scenarios and improve the understanding.
8. Devise innovative pedagogy to improve **Teaching-Learning Process (TLP)**.

DSATM

Scheme of Teaching and Examinations for B-Arch Programme -2026-27

Outcome Based Education and Choice Based Credit System (CBCS)

(Effective from the Academic Year 2026-27)

COURSE CURRICULUM

Module No.	Topics	Hours
1	.**INTRODUCTION:** Definition and process of interior design; difference between interior design and decoration; vocabulary of interior design through elements in interior design like colour, materials, furniture, lighting; aspects of interior design related specifically to typology and function, difference between themes and concepts in interior design. ● **OVERVIEW:** Overview of history of Interior Design in the Western, Asian and Indian context through the ages relating to contemporary design; theories and design movements in Interior Design; evolution of space planning concepts and design ideas; influence of the vernacular, folk arts and crafts of a region on its Interior Design; role of activity and anthropometrics in Interior Design; design psychology and perception through color, light, scale, proportion, enclosure and fenestration	**9**
Pedagogy	• The teacher can use **PPTs, videos, and visual case studies** to explain fundamental concepts of interior design, including elements, principles, history, and design psychology. • Students should be encouraged to **sketch spatial ideas, concept diagrams, and mood boards** to understand design elements, themes, and user-centric space planning. • **Drawings, analytical exercises, and student seminars** on historical styles, vernacular influences, and spatial perception can be used to strengthen conceptual and critical understanding.	
2	**COMPONENTS OF INTERIOR DESIGN:** Functional, aesthetic and psychological aspects of interior space components; design,material choice, method of construction, treatment and finishes of components such asfloors, ceilings, walls, partitions, fenestrations; fixtures in relation to space design and construction technology.	**6**
Pedagogy	• The teacher can use **material samples, detail drawings, case studies, and AI-based visualization tools** to explain functional, aesthetic, and psychological aspects of interior components. • Students should be encouraged to **prepare detailed drawings, material boards, and AI-assisted renderings** for floors, walls, ceilings, and partitions to understand construction methods and finishes. • **Hands-on exercises such as model making, component detailing, site visits, and use of AI tools for material selection and detailing exploration** can be incorporated to connect design decisions with real construction practices.	

3	**INTEGRATION OF INTERIOR SPACE WITH SERVICES:** Addressing user specific needs and scope of design of services as fundamental aspects of interior design; enhancement of space experience with integration of supporting services like climatic comfort, air conditioning, plumbing and sanitation, electrical, lighting, air conditioning and acoustics.	**9**
Pedagogy	• The teacher can use **PPTs, service layout drawings, case studies, and simulation tools** to explain the integration of HVAC, lighting, plumbing, electrical, and acoustics in interior spaces. • Students should be encouraged to **prepare coordinated service drawings and layouts**, supported by **AI-based tools and basic simulation software** to understand performance and efficiency. • **Hands-on exercises such as model studies, service coordination tasks, site visits, and VR-based walkthroughs** can be used to visualize and analyze the integration of services within interior spaces.	
4	**ALLIED FIELDS – FURNITURE DESIGN & PLANTSCAPE:** Role of furniture, ergonomic factors of furniture design and materials used; Design and types of furniture based on its style, characteristics and functional application, barrier free and inclusive design; design for the specially abled; materials and methods of construction of furniture, design trends, the concept of reuse and repurpose, innovations and ideas of furniture for specific types of interiors; integration of interior landscaping elements like plants, water, paving, artifacts, etc. and their physical properties and effects on spaces.	**9**
Pedagogy	• The teacher can use **case studies, ergonomic analysis charts, material samples, and AI-based design tools** to explain furniture design principles, inclusive design, and interior landscaping concepts. • Students should be encouraged to **design furniture layouts, ergonomic studies, and plantscape proposals**, supported by **AI-assisted ideation and AR tools to visualize furniture and landscape elements in interior spaces**. • **Hands-on activities such as furniture model making, material exploration, site/market visits, and design exercises on reuse and repurpose**, along with **digital simulations**, can help connect design ideas with real-world applications.	
5	**ALLIED FIELDS – LIGHTING DESIGN:** Concepts and perceptions in interior lighting design; day lighting natural over artificial, its modulation of lighting [artificial and natural lighting] to develop strategies for interior space and element relationship; quantitative vs. qualitative aspects of lighting design; emphasis of design features like focal points in interior design using lighting; different types of interior lighting fixtures - their effects and suitability in different contexts.	**9**
	• The teacher can use **PPTs, lighting case studies, videos, and simulation software** to explain concepts of daylighting, artificial lighting, and their impact on interior spaces. • Students should be encouraged to **develop lighting layouts, fixture selection studies, and concept diagrams**, supported by **AI-assisted lighting simulations and analysis tools** to understand qualitative and quantitative aspects. • **Hands-on exercises such as light model studies, mock-ups, and VR/AR-based walkthroughs** can be used to explore lighting effects, focal points, and spatial perception in different interior contexts.	

	DESIGN PROJECT – MINOR AND MAJOR:
	Interior design is a user centric approach where both the function and aesthetics get their due consideration. The understanding of all the above listed aspects related to interior design will be explored, designed and detailed through two design projects [Minor and Major].
	The project will delve into interior design through function, user and aesthetic based space planning and visualizations, material specification and detailing, colours, textures, furniture design and lighting design along with interior landscaping if needed. Design will be explored as a holistic approach of plan, section, details, materials, technology, services integration and views.
	The minor project can look at Adaptive re-use of a space intended for completely different uses.
	Application of basic structural knowledge, ideas and concepts of materials, lighting, services, etc. to be applied in the project.
	
	• **VR walkthroughs and AR-based presentations**
	• **AI tools for**:
	  ○ Image generation
	  ○ Concept visualization
	• BOQs, estimation, and budgeting basics

	ASSESSMENT: The design projects will be evaluated as assignments done individually. The assessment will be through presentations, concept / story board, all relevant drawings like plans, sectional elevations, reflected ceiling plans, flooring plans, wall sections, services layout, construction details, views, models, material samples and specification boards.
Pedagogy	• The teacher can guide students through a **studio-based learning approach** using critiques, case studies, and iterative discussions to develop user-centric and concept-driven interior design proposals. • Students should be encouraged to **develop complete design projects through drawings, models, and presentations**, supported by **AI tools for concept generation, visualization, and material exploration**. • **Review sessions, jury presentations, VR walkthroughs, and AR-based visualization techniques** can be incorporated to evaluate spatial quality, detailing, and overall design integration in a holistic manner.
	Pedagogical Initiatives : • **Think Pair and Share (Blended Learning):** provides an opportunity for students to learn from one another • **Problem Solving**: encourages cognitive thinking and enables creative problem solving • **Poster Presentation:** allows students to represent the concepts visually in order to understand the topics easily. • **Case studies:** maps different domains in real time applications • **Demonstration:** exhibits the implementation process

List of Programs:

Sl. No.	Experiments/Programs	COs
1	**Presentation and group discussions** on interior design concepts, elements, principles, and design psychology using case studies and visual references.	**CO1**
2	**Student seminars** on historical styles, vernacular influences, and design movements with comparative analysis	**CO1**
3	**Material exploration exercise** involving collection, analysis, and preparation of material boards with specifications and vendor inputs. (Combine with MMBC 7)	**CO2**
4	**Component detailing workshop** focusing on drawings of floors, walls, ceilings, and partitions with construction techniques (Combine with MMBC 7)	**CO2**
5	**Service layout exercises** integrating HVAC, lighting, plumbing, and electrical systems within given interior layouts.	**CO3**
6	**Site visits to interior construction projects / building services installations** to understand real-time coordination and execution	**CO3**
7	**Furniture and lighting design exercise** including ergonomic studies, fixture selection, and spatial impact analysis.	**CO4**
8	**Industry expert interactions** (interior designers, lighting designers, service consultants) to evaluate real-world design approaches and decision-making.	**CO4**
9	**Design ideation workshops and AI-assisted concept development**, including mood boards, space planning, and visualization.	**CO5**
10	**Final portfolio development and jury presentations** including drawings, models, VR walkthroughs, material boards, and comprehensive project documentation	**CO5**
	Project Suggestions	
1	**Adaptive Reuse Interior Project** • Reimagine an existing space (old house, warehouse, or institutional space) for a new function • Focus on **context, sustainability, material reuse, and user-centric design**	
2	**Boutique Retail / Experience Space** • Design a **brand-driven retail or exhibition space** • Emphasis on **spatial experience, lighting, display systems, and storytelling**	
3	**Wellness / Biophilic Interior Space** • Create interiors for a **wellness center, yoga studio, or healing space** • Focus on **user well-being, plantscape integration, lighting, and sensory design**	
4	**Interior for Special User Groups** • Design for **children, elderly, or differently-abled users**	

	• Focus on **inclusive design, safety, and ergonomics**
5	**Smart Home / Tech-Integrated Interior** • Design interiors with **automation, IoT, and smart systems** • Explore **future-ready living environments**

Reference Books	
Sl. No.	**Title of the Book/Name of the author/Name of the publisher/Edition and Year**
1	Pile, John.F, "Interior Design", Pearson; 4 edition (2007)
2	Ching, Francis D.K., "Interior Design Illustrated", John Wiley & Sons; 3 edition (2012)
3	Panero, Julius and Zelnik, Martin, "Human Dimension and Interior Space: A Source Book of Design Reference Standards", Watson-Guptill; New edition (1979)
4	DeChiara, Joseph, Panero, Julius and Zelnik, Martin "Time Saver's Standards for Interior Design", McGraw-Hill Professional (2001)
5	Rengel, Roberto J, "The Interior Plan: Concepts and Exercises", Bloomsbury Academic USA; 2nd Revised edition (2016)
6	Mitton, Maureen, "Interior Design Visual Presentation: A Guide to Graphics, Models and Presentation Techniques", John Wiley & Sons; 4 edition (2012)
7	Pile, John.F, "A History of Interior Design Hardcover", John Wiley & Sons Inc (2000)
8	. Kurtich, John &Eakin, Garret, "Interior Architecture", John Wiley & Sons(1995)

Weblinks and Video Lectures (e-Resources)	
1	https://ndl.iitkgp.ac.in
2	https://www.youtube.com/watch?v=MCFhn7szorA
3	https://www.youtube.com/watch?v=3lYNWsyZ720
4	https://www.youtube.com/watch?v=DVPp2iEYgf0
5	https://www.youtube.com/watch?v=YJQPlS4uCHc
6	https://www.youtube.com/watch?v=cTP5hdwdF_M
7	https://www.youtube.com/watch?v=WFXieuIcPdU
8	https://www.youtube.com/watch?v=6cHGEgW3urw
9	https://www.youtube.com/watch?v=hlo2_rth8NQ

Course Outcomes: At the end of the course, the student will be able to:

CO	Course Outcomes	RBT Level	RBT Level Indicator
CO1	To ***remember and understand*** the fundamental terminology, elements, principles, various styles and theories of interior design, including spatial perception and design psychology.	Remember and Understand	L1&L2
CO2	To ***apply*** knowledge of materials, finishes, and interior components to develop functional and aesthetic interior design solutions.	Apply	L3
CO3	To ***analyze*** and *differentiate* the integration of building services such as lighting, HVAC, plumbing, and acoustics within interior spaces.	Analyse	L4
CO4	To ***evaluate*** interior design solutions involving furniture, lighting, and interior landscape elements based on ergonomics, user comfort, and aesthetics.	Evaluate	L5
CO5	To ***design*** and *develop* comprehensive interior design projects incorporating space planning, materials, services, furniture, and digital tools including AI and AR/VR.	Create /Design	L6

Mapping of Course Outcomes to Program Outcomes: (75-100%=3,50-74%=2,Below 50%=1)

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CO2	3	2	3	2	3	1	2	-	1	2	1	1	3	2	3
CO3	2	3	2	3	3	2	2	-	1	2	1	1	2	2	3
CO4	2	2	2	2	2	2	2	1	2	2	1	1	2	3	2
CO5	3	2	3	3	3	2	3	1	2	3	2	2	3	3	3

CIE- Continuous Internal Evaluation (50 Marks)

Bloom's Category	Studio					
	Continuous Comprehensive Assessment (CCA)					Grand Total
	Activity 1	Activity 1	Assignment 1	Assignment 2	Portfolio	
	5 Marks	5 Marks	10 Marks	10 Marks	20 Marks	50 Marks
Remember/ Understand	5	-	-	-	-	5
Apply	-	5	5	5	-	15
Analyse	-	-	5	5	-	10
Evaluate	-	-	-	-	5	5
Create	-	-	-	-	15	15

CIE Course Assessment Plan

CO's	Studio					Total Marks	Weightage
	Continuous Comprehensive Assessment (CCA)						
	Activity 1	Activity 1	Assignment 1	Assignment 2	Portfolio		
	5 Marks	5 Marks	10 Marks	10 Marks	20 Marks		%
CO1	5	-	-	-	-	5	10%
CO2	-	5	5	5	-	15	30%
CO3	-	-	5	5	-	10	20%
CO4	-	-	-	-	5	5	10%
CO5	-	-	-	-	15	15	30%
Total	5	5	10	10	20	50	100%

SEE- VIVA (50 Marks)

Bloom's Category	VIVA Marks
Remember /Understand	10%
Apply	30%
Analyse	20%
Evaluate	10%
Create	30%

SEE Course Plan

CO's	Studio					Total Marks	Weightage
	Continuous Comprehensive Assessment (CCA)						
	Activity 1	Activity 1	Assignment 1	Assignment 2	Portfolio		
	5 Marks	5 Marks	10 Marks	10 Marks	20 Marks		%
CO1	5					5	10%
CO2		5	5	5		15	30%
CO3			5	5		10	20%
CO4					5	5	10%
CO5					15	15	30%
Total	5	5	10	10	20	50	100%

Dayananda Sagar Academy of Technology & Management

(Autonomous Institute under VTU)

Semester	:	**VII**				
Course Title	:	**Working drawing-II**				
Course Code	:	**BAT707**				
Course Type (Theory/ Practical/ Integrated)	:	**PRACTICAL**				
Category	:	**PCC**				
Stream	:	**Architecture**		**CIE**	:	**100**
Teaching hours/ week (L:T:P:S)	:	**1:0:3:0**		**SEE**	:	**-**
Total Hours	:	**56 Hrs. (16 weeks)**		**SEE Duration**	:	**-**
Credits	:	**4**				

Course Learning Objectives: Students will be able to:

Sl. No	Course Objectives
1	To introduce students to the standards and protocols of 'Good for Construction' (GFC) drawings, ensuring they can translate a design concept into a precise technical manual for site execution.
2	To enable students to prepare detailed Structural Drawings, including foundations, columns, beams, and slabs, while understanding the conventions and symbols used by structural engineers.
3	To train students in the integration of Architectural, Structural, and MEP (Mechanical, Electrical, and Plumbing) drawings,
4	To simulate a professional office environment where students learn to work in groups and coordinate with various consultants (Structural, MEP, Fire, and Networking) to produce a cohesive project portfolio.
5	Demonstrate the ability to lead and coordinate with multi-disciplinary engineering teams.

Teaching-Learning Process

Pedagogical Initiatives:

These are sample Strategies; which teachers can use to accelerate the attainment of the various course outcomes.

1. Use of theory, activities, sketches, drawings, assignment and tutorial for teaching.
2. Site visits as per the topic for better understanding the distribution systems.
3. Making physical models and doing role play of the topics helps in good visualization.
4. Evaluation by quiz, tests, classroom activities.
5. Devise innovative pedagogy to improve Teaching-Learning Process (TLP).
6. Case Study Portfolios: Use high-quality, professional GFC (Good for Construction) sets from reputed architectural firms to demonstrate the hierarchy of line weights, annotation standards, and sheet sequencing.
7. Consultancy Simulation: Treat the studio as a professional firm. Students should be assigned "Consultant" roles (Structural, Electrical, Plumbing) in rotation to review each other's drawings for "clash detection"– ensuring pipes don't hit beams and electrical boards aren't placed behind doors.
8. Symbolic Literacy: Conduct intensive workshops on industry-standard conventions (BIS/NBC codes). Students must master the "shorthand" of architecture, such as symbols for trap types, circuit loops, and reinforcement bars.
9. **The "Wet Block" Challenge:** A focused exercise on detailing high-complexity areas like toilets and kitchens. This includes "blow-up" plans at 1:20 or 1:10 scale, showing tile layouts, waterproofing offsets, and internal plumbing chases.
10. **Vertical Circulation Detailing:** Dedicated sessions for the lift well and staircase, focusing on the mechanical clearances required for lift machinery and the structural connections of the mid-landing slabs.
11. **Guest Juries:** Invite practicing structural engineers or MEP consultants for mid-semester reviews to provide feedback from a non-architectural, purely technical perspective.
12. Portfolio Synthesis**:** The final initiative is the compilation of a **"Tender-Ready" booklet**. This isn't just a collection of drawings but a coordinated document where every sheet cross-references the other (e.g., a floor plan referencing a specific section detail).

DSATM

Scheme of Teaching and Examinations for B.Arch. Programme -2026-27

Outcome Based Education and Choice Based Credit System (CBCS)

(Effective from the Academic Year 2026-27)

COURSE CURRICULUM

Module No.	Topics	Hours
1	Project Work: Project continued from previous semester; Structural drawings: Conventions & symbols; Foundations, Columns, Beams, Slab.	08
Pedagogy	• The teacher can use PPTs, Videos, and a working drawing portfolio to demonstrate the preparation of working drawing for a building. • The students need to observe and practice the preparation of working drawing for a simple building.	
2	Electrical drawings: Conventions & symbols; Plans at all levels.	12
Pedagogy	• The teacher can use PPTs, Videos, and a working drawing portfolio to demonstrate the preparation of working drawing for a building. • The students need to observe and practice the preparation of working drawing for a simple building.	
3	Water Supply drawings: Conventions & symbols; Plans at all levels.	12
Pedagogy	• The teacher can use PPTs, Videos, and a working drawing portfolio to demonstrate the preparation of working drawing for a building. • The students need to observe and practice the preparation of working drawing for a simple building.	
4	Sanitary drawings: Conventions & symbols; Plans at all levels; Site Plan, Terrace Plan	12
Pedagogy	• The teacher can use PPTs, Videos, and a working drawing portfolio to demonstrate the preparation of working drawing for a building. • The students need to observe and practice the preparation of working drawing for a simple building.	
5	Mechanical drawings: Conventions & symbols; Plans at all levels; Details of Lift.	12
Pedagogy	• The teacher can use PPTs, Videos, and a working drawing portfolio to demonstrate the preparation of working drawing for a building. • The students need to observe and practice the preparation of working drawing for a simple building.	
	Pedagogical Initiatives (Not limited to): Think Pair and Share (Blended Learning): provides an opportunity for students to learn from one another. • Problem Solving: encourages cognitive thinking and enables creative problem solving.	

	• Poster Presentation: allows students to represent the concepts visually in order to understand the topics easily. • Case studies: maps different domains in real time applications. **Demonstration:** exhibits the implementation process.

List of Sheet work for portfolio:

Sl. No.	Experiments/Programs	COs
1.	**Comprehensive Architectural Set** All detailed floor plans (Furniture/Civil) at 1:50 scale.	**CO5**
2.	**Structural Series (Foundation to Roof)** • Center line drawing with column positions & numbering. • Excavation and Footing drawings with scheduling. • Plinth Beam & Grade Slab layout. • Typical Floor Structural Plan (Beams/Slabs/Reinforcement details).	**CO2 & CO3**
3.	**Exterior & Vertical Core** • All 4 Side Elevations with material annotations and levels. • Full Building Sections (mandatory through Toilet and Staircase). • Enlarged Staircase Sections with tread/riser/handrail details.	**CO3 & CO5**
4.	**Wet Block & Special Details** • Toilet details: Blow-up plans, internal elevations, and sunken slab details. • Balcony and Terrace waterproofing/drainage details. • Sky-light or Courtyard structural details.	**CO3**
5.	**Building Services: Electrical (NEW)** • Electrical Layouts for all levels: Points, conduits, and DB locations. • Legend of symbols (Switches, sockets, fixtures).	**CO2 & CO3**
6.	**Building Services: Plumbing & Sanitary (NEW)** • Water Supply Layout: Internal and external ring mains. • Sanitary Layout: Soil and waste pipe routing, traps, and inspection chambers. • Site Plan & Terrace Plan showing rain water harvesting/drainage.	**CO2 & CO3**
7.	**Mechanical & Integration (NEW)** • Lift Well Details: Pit, machine room, and sectional clearances.	**CO3 & CO4**

	• **Integration Sheet:** A coordinated layout showing structure vs. services.	

Text Books	
Sl. No.	**Title of the Book/Name of the author/Name of the publisher/Edition and Year**
6.	Time saver standards by Callender.
7.	Time saver standards by E & OE
8.	Time saver standards by Nuferts.
Weblinks and Video Lectures (e-Resources)	
7.	https://ndl.iitkgp.ac.in
8.	https://www.youtube.com/watch?v=YDQqMFqjChY
9.	https://www.youtube.com/watch?v=FZiFAAvsJqc
10.	https://www.youtube.com/watch?v=Pyaw8ivOz6Q
11.	Web links and Video Lectures (e-Resources):
12.	https://ndl.iitkgp.ac.in

Course Outcomes: At the end of the course, the student will be able to:

CO	Course Outcomes	RBT Level Indicator	RBT Level
CO1	Identify and Interpret standard conventions, symbols, and abbreviations used in structural and building service drawings (Electrical, Plumbing, and Mechanical)	Remember & understand	L1, L2
CO2	Apply building codes, material properties, and construction standards to prepare "Good for Construction" (GFC) drawings for a complex architectural project.	Apply	L3
CO3	Analyze and Integrate structural components (Foundations, Beams, and Columns) and MEP services into architectural plans to identify and resolve spatial conflicts.	Analyse	L4
CO4	Coordinate and Evaluate the technical requirements of various consultants (Structural, MEP, Fire, and Lift) to ensure seamless system integration in a project.	Evaluate	L5
CO5	Develop and Construct a comprehensive, professional-grade portfolio of integrated working drawings and details suitable for site execution.	Design	L6

Mapping of Course Outcomes to Program Outcomes :(100-75%=3, 74-50%=2, Below 50%=1)

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1															
CO2	2														
CO3		2													
CO4				3											
CO5			3		1										

Assessment Details of CIE

The weightage of Continuous Internal Evaluation (CIE) is 100%.

The CIE Marks for the **Sheets component** of the IC shall be minimum of 75 Marks, **Internal VIVA VOCE**, for which the weightage could be minimum of 25 MarksThe minimum passing mark for the CIE is 50% of the maximum Marks (50 Marks out of 100).

4 Credits Course – Practical

Assessment Method	Component	Type of Assessments	Syllabus Coverage	Maximum Marks	Minimum Passing Marks	Evaluation Details
Total CIE Integrated				**100**	**50**	
CIE	**Continuous Assessment through sheets**	All the sheets mentioned in the list of activities.	Considering all the Modules	Weightage would be distributed to all the sheets as per the subject teacher. (Min of 75 marks)	37.5	Drafting details and self-explanation of the drawings need to be given emphasis.
		Internal VIVA VOCE		VIVA VOCE conducted at 15th Week of the semester (Min. of 25 marks)	12.5	
	Total CIE marks			**100**	50	

Note: The Minimum Marks to be secured in CIE shall be 50 (50% of Maximum marks - 100). The design activities will be assessed through only CIE. The passing percentage shall not be less than the 50% in aggregate for a course.

CIE- Continuous Internal Evaluation (100 Marks)

CO	Portfolio (A)	VIVA VOCE (B)	Grand Total (A+B)
MaxMarks	**75**	**25**	**100**
CO1	10	10	20
CO2	15	-	15
CO3	20	15	35
CO4	10	-	10
CO5	20	-	20
Total	**75**	**25**	**100**

Dayananda Sagar Academy of Technology & Management

(Autonomous Institute under VTU)

Semester	:	**VII**				
Course Title	:	**Elective-5:Craft in Architecture**				
Course Code	:	**BAT718**				
Course Type (Theory/ Practical/ Integrated)	:	**Integrated**				
Category	:	**PEC** (Professional Elective Courses)				
Stream	:	**Architecture**		**CIE**	:	**100**
Teaching hours/ week (L:T:P:S)	:	**2:0:0:0**		**SEE**	:	**-**
Total Hours	:	**28Hrs. (16 weeks)**		**SEE Duration**	:	**-**
Credits	:	**2**				

Course Learning Objectives: Students will be able to:

Sl. No	Course Objectives
1	Develop awareness of traditional architectural crafts and practices.
2	Understand materials, techniques, and functions used in craft-based architecture.
3	Explore innovative and sustainable approaches in architectural crafting.
4	Analyze case studies and real-world applications of craft in architecture.
5	Apply craft-based thinking in design exercises and model making.

Teaching-Learning Process

Pedagogical Initiatives:

Some sample strategies to accelerate the attainment of various course outcomes are listed below:

1. Lecture method (L) does not mean only the traditional lecture method, but a different type of teaching method may be adopted to develop the outcomes.
2. Show Video/animation films to explain the infrastructures and the mechanism involved in the principle.
3. Encourage collaborative (Group) Learning in the class.
4. Ask at least three HOT (Higher-order Thinking) questions in the class, which promotes critical thinking.
5. Adopt Problem Based Learning (PBL), which fosters students' Analytical skills, develop thinking skills such as the ability to evaluate, generalize, and analyze information rather than simply recall it.
6. Topics will be introduced in multiple representations.
7. Show the different ways to solve the same problem and encourage the students to come up with their own creative ways to solve them.
8. Discuss how every concept can be applied to the real world - and when that's possible, it helps improve the students' understanding.
9. Individual teachers can device innovative pedagogy to improve teaching-learning.
10. Field visits to be arranged by teachers. Group work could be encouraged.

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Scheme of Teaching and Examinations for B.Arch Programme -2026-27

Outcome Based Education and Choice Based Credit System (CBCS)

(Effective from the Academic Year 2026-27)

COURSE CURRICULUM

Module No.	Topics	Hours
1	**Introduction to Craft in Architecture** 1. Definition and scope of craft in architecture 2. Role of craftsmanship in built environment 3. Traditional vs contemporary craft practices 4. Craft as cultural expression in architecture	5
Pedagogy	Lectures, visual presentations, AI tool for documenting, analyzing, and reinterpreting craft, discussions	
2	**Case Studies of Craft-Based Architecture** 1. Study of traditional Indian crafts in architecture 2. Regional craft techniques (stone, wood, terracotta, bamboo) 3. Contemporary architects integrating craft 4. Analysis of material, technique, and construction	5
Pedagogy	Case studies, group discussions, AI tool for presentations	
3	**Field Study & Craftsmen Interaction** 1. Field visit to craft clusters / workshops 2. Interaction with artisans 3. Documentation of techniques, materials, tools 4. Identifying potential areas of exploration	5
Pedagogy	Field trips, interviews, documentation exercises	
4	**Design Exploration through Craft** 1. Craft-based design thinking 2. Exploration of building components (walls, facades, screens, joinery) 3. Translating craft into architectural elements 4. Small-scale design exercises	5
Pedagogy	Studio exercises, problem-based learning	

5	**Sustainable Craft & Model Making** 1. Use of recyclable and natural materials 2. Paper mache, bamboo, clay, etc. 3. Craft-based model making techniques 4. Sustainable practices in architecture	**8**
Pedagogy	Hands-on workshops, model making	

Text Books	
Sl. No.	**Title of the Book/Name of the author/Name of the publisher/Edition and Year**
1	Peter Davey - Arts & Crafts Architecture, Phaidon Press, 1997
2	Maureen Meister - Arts & Crafts Architecture, University Press of New England, 2014
Reference Books	
1	Miriam Delaney - Studio Craft & Technique for Architects, Laurence King Publishing, 2015
2	Brian Mackay-Lyons - *Local Architecture: Building Place, Craft and Community*, Princeton Architectural Press, 2014

Weblinks and Video Lectures (e-Resources)	
1	International Studies in Vernacular Architecture (NPTEL Course)
2	Architecture & Society: Buildings Based in Nature (YouTube Lecture) https://www.youtube.com/watch?v=sRJ-ns1ZGCI
3	Building Blocks of Bharat (Architecture Documentary Series) https://indiascience.dst.gov.in/videos/sounding-it-out-building-blocks-of-bharat-series-e-1
4	Bamboo Architecture and Design Course (Bamboo U)

Activity-Based Learning

Activity 1: Comparative case study of traditional and contemporary craft in architecture, using AI tools for visual analysis, documentation, and reinterpretation of craft-based elements.

Activity 2: Field visit to craft clusters/workshops with artisan interaction, followed by AI-assisted documentation and presentation of materials, techniques, and architectural applications.

Activity 3: Craft-based design and model-making exercise using sustainable materials, supported by AI tools for concept generation, form exploration, and visualization.

Course Outcomes: At the end of the course, the student will be able to:

CO	Course Outcomes	RBT Level Indicator	RBT Level
CO1	Appreciate and understand the finer nuances involved in transforming architectural ideas into built reality	Understand	L2
CO2	Apply craft-based techniques and existing systems in the design and development of architectural elements.	Apply	L3
CO3	Analyze traditional and existing architectural craft practices and their relevance in contemporary design.	Analyse	L4
CO4	Evaluate the evolving directions of architectural making, including cross-disciplinary systems and approaches	Evaulate	L5
CO5	Create architectural components using craft skills with an emphasis on sustainable and eco-friendly materials.	Create	L6

Mapping of Course Outcomes to Program Outcomes:(100 To 75% =3, 74 To 50% = 2, Below 50% = 1)

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	3														
CO2		3												3	
CO3		2			2	3		2				2		3	
CO4	3		3							2			3		
CO5	3		3	2			3					2	3		3

Assessment CIE Pattern

2 Credit Course – PEC							
Assessment Method	**Component**	**Type of Assessment**	**Assessment Type used**	**Max. Marks**	**Evaluation Details**	**Min. Marks**	**Total**
Continuous Internal Evaluation	Continuous Comprehensive Assessment (CCA)	CCA1	Case study analysis (traditional vs contemporary craft)	20	Concepts of craft, traditional practices, case study analysis	10	20
		CCA2	Field visit documentation	30	Documentation of craft cluster visit, artisan interaction, material & technique analysis	20	30
		CCA3	Craft-based design exercises	50	Craft-based design exploration, model making using sustainable materials	20	50
					Total CIE Practical/Activities	**50**	**100**

CIE- Continuous Internal Evaluation (100 Marks)

Bloom's Category	**Theory**			
	Continuous Comprehensive Assessment (CCA)			
	CCA-1	**CCA-2**	**CCA-3**	**Total**
	20 Marks	**30 Marks**	**50 Marks**	**100 Marks**
Remember	10			**10**
Understand	10	10		**20**
Apply		10	10	**20**
Analyse		10		**10**
Evaluate			20	**20**
Create			20	**20**
Total	**20**	**30**	**50**	**100 Marks**

CIE Course Assessment Plan

CO's	Marks Distribution			Total Marks	Weightage
	CCA-1	CCA-2	CCA-3		
	Module 1 to 2	Module-3 to 4.5	Module-4.5 to 5		
CO1	10	5	5	20	20
CO2	5	10	15	30	30
CO3	5	10	5	20	20
CO4		5	15	20	20
CO5			10	10	10
Total	**20**	**30**	**50**	**100**	**100%**

Dayananda Sagar Academy of Technology & Management

(Autonomous Institute under VTU)

Semester	:	**VII**				
Course Title	:	**Elective-5: Architectural writings & Journalism**				
Course Code	:	**BAT728**				
Course Type (Theory/ Practical/ Integrated)	:	**Integrated**				
Category	:	**PEC (**Professional Elective Courses**)**				
Stream	:	**Architecture**		**CIE**	:	**100**
Teaching hours/ week (L:T:P:S)	:	**2:0:0:0**		**SEE**	:	**-**
Total Hours	:	**28 Hrs. (16 weeks)**		**SEE Duration**	:	**-**
Credits	:	**02**				

Course Learning Objectives: Students will be able to:

Sl. No	Course Objectives
1	Understand the role of writing and journalism in interpreting architecture and built environments.
2	Develop creative and analytical writing skills related to architecture.
3	Learn techniques of documentation and technical writing for architectural practice.
4	Critically analyze media narratives and socio-ecological issues in architecture.
5	Apply ethical practices, citation standards, and journalistic approaches in architectural writing.

Teaching-Learning Process

Pedagogical Initiatives:

Some sample strategies to accelerate the attainment of various course outcomes are listed below:

1. Lecture method (L) does not mean only the traditional lecture method, but a different type of teaching method may be adopted to develop the outcomes.
2. Show Video/animation films to explain the infrastructures and the mechanism involved in the principle.
3. Encourage collaborative (Group) Learning in the class.
4. Ask at least three HOT (Higher-order Thinking) questions in the class, which promotes critical thinking.
5. Adopt Problem Based Learning (PBL), which fosters students' Analytical skills, develop thinking skills such as the ability to evaluate, generalize, and analyze information rather than simply recall it.
6. Topics will be introduced in multiple representations.
7. Show the different ways to solve the same problem and encourage the students to come up with their own creative ways to solve them.
8. Discuss how every concept can be applied to the real world - and when that's possible, it helps improve the students' understanding.
9. Individual teachers can device innovative pedagogy to improve teaching-learning.
10. Field visits to be arranged by teachers. Group work could be encouraged.

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Scheme of Teaching and Examinations for B.Arch Programme -2026-27

Outcome Based Education and Choice Based Credit System (CBCS)

(Effective from the Academic Year 2026-27)

COURSE CURRICULUM

Module No.	Topics	Hours
1	**Introduction to Architectural Writing and Journalism** 1. Role and objectives of architectural writing in understanding built environment 2. Scope of architectural journalism in print and digital media 3. Fundamentals of writing: research methods, structuring, editing, and criticism 4. Writing as a tool for communication between architects and society	5
Pedagogy	Lectures, discussion of sample writings, AI-assisted summarization tools, short writing exercises	
2	**Creative Writing in Architecture** 1. Architecture as narrative and experiential storytelling 2. Techniques of creative writing: imagery, metaphor, sensory description 3. Forms of creative writing: fiction, poetry, travel writing, blogging 4. Expressing spatial experiences and human interactions with built form	5
Pedagogy	Creative workshops, blogging exercises, AI-assisted idea generation, peer reviews	
3	**Analytical Writing and Criticism** 1. Introduction to architectural criticism and theory 2. Methods of research and analytical writing 3. Forms: research papers, journal writing, critical essays 4. Analysis of formal and informal architecture 5. Evaluating social, cultural, and environmental impacts	6
Pedagogy	Case studies, critique sessions, research writing using AI tools, structured essay assignments	
4	**Documentation and Technical Writing** 1. Importance and methods of architectural documentation 2. Techniques: measured drawings, photography, field notes, interviews 3. Technical writing: reports, descriptive writing, and data representation 4. Recording and analyzing built environments 5. Field-based study and observation methods	6

Pedagogy	Field documentation exercises, site visit, AI-based transcription tools, report writing	
5	**Architectural Journalism & Contemporary Issues** 1. Introduction to architectural journalism: print, digital, audio-visual media 2. Roles: reporter, critic, feature writer, interviewer, cartoonist 3. Media representation of architecture and public perception 4. Contemporary issues: sustainability, housing, urbanization, marginal spaces 5. Ethics: copyright, plagiarism, citation, publishing rights 6. Role of architects in shaping narratives through journalism	**6**
Pedagogy	Media analysis , guest lectures, podcast/video creation, AI-supported editing & publishing	

Text Books	
Sl. No.	**Title of the Book/Name of the author/Name of the publisher/Edition and Year**
1	Writing Architecture: A Practical Guide to Clear Communication about the Built Environment - Carter Wiseman, Trinity University Press, 2014
2	Writing About Architecture: Mastering the Language of Buildings and Cities - Alexandra Lange, Princeton Architectural Press, 2012
Reference Books	
1	Wiseman, Carter (2014), "Writing Architecture: A Practical Guide to Clear Communication about the Built Environment", Trinity University Press
2	Lange, Alexandra (2012), "Writing About Architecture: Mastering the Language of Buildings and Cities", Princeton Architectural Press
3	Schmalz, Bill 92014), "The Architect's Guide to Writing: For Design and Construction Professionals", Images Publishing Dist Ac
4	Sykes, A. Krista (2007), "The Architecture Reader: Essential Writings from Vitruvius to the Present", George Braziller Inc.
5	Musa, Majd, Al-Asad, Mohammad (2007), "Architectural Criticism and Journalism", Umberto Allemandi& Co
6	Edward Jay Friedlander and John Lee (2000), "Feature Writing for Newspapers and Magazines", 4th edition, Longman.

Weblinks and Video Lectures (e-Resources)	
1	https://www.archdaily.com
2	https://www.dezeen.com
3	https://www.ted.com/topics/architecture
4	https://www.architecture.com

Activity-Based Learning

Activity 1: Critical analysis of architectural media narratives in marginalized contexts.
Activity 2: Site visit to slum redevelopment project.

Course Outcomes: At the end of the course, the student will be able to:

CO	Course Outcomes	RBT Level	RBT Level Indicator
CO1	To understanding of the role of writing and journalism in architecture, while honing skills in research, writing, editing, and criticism to effectively communicate architectural concepts and insights.	**Remember & understand**	**L1,L2**
CO2	To Apply the techniques and methods of conveying architectural narratives and descriptions through creative writing forms like fiction, poetry, travel writing, and blogging, using architecture as both subject matter and contextual inspiration.	**Apply**	**L3**
CO3	To analyze, and critiquing formal and informal architecture through the utilization of analytical writing formats such as research papers, journal writings, and critical essays.	**Analyse**	**L4**
CO4	To evaluate the techniques and methods for recording, authenticating, and examining architecture through meticulous documentation and precise technical writings.	**Evaluate**	**L5**
CO5	To create informed, ethical, and engaging narratives on diverse architectural topics, critically analyze current architectural issues, and leverage new media and technology to engage the public while navigating complex ethical and legal considerations.	**Create**	**L6**

Mapping of Course Outcomes to Program Outcomes: (100 To 75% =3, 74 To 50% = 2, Below 50% = 1)

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1															
CO2										3					
CO3			3							3					
CO4															
CO5						3				3					

Assessment CIE Pattern

2 Credit Course – PEC							
Assessment Method	**Component**	**Type of Assessment**	**Assessment Type used**	**Max. Marks**	**Evaluation Details**	**Min. Marks**	**Total**
Continuous Internal Evaluation	Continuous Comprehensive Assessment (CCA)	CCA1	Foundational Writing & Creative Expression	30	Short essays, creative writing, blog writing	15	30
		CCA2	Analytical, Critical & Documentation	30	Case study analysis, critique writing, documentation report	15	30
		CCA3	Journalistic Production & Media Communication	40	Article writing, podcast/video/blog submission, ethics evaluation	20	40
Total CIE Practical/Activities						**50**	**100**

CIE- Continuous Internal Evaluation (100 Marks)

Bloom's Category	Theory			
	Continuous Comprehensive Assessment (CCA)			
	CCA-1	CCA-2	CCA-3	Total
	30 Marks	30 Marks	40 Marks	100 Marks
Remember	10			**10**
Understand	10			**10**
Apply	10	10	10	**30**
Analyse		10	10	**20**
Evaluate		10	10	**20**
Create			10	**10**
Total	**30**	**30**	**40**	**100 Marks**

CIE Course Assessment Plan

CO's	Marks Distribution			Total Marks	Weightage
	CCA-1	CCA-2	CCA-3		
	Module 1 to 2	Module-3 to 4.5	Module-4.5 to 5		
CO1	15	5	5	25	25%
CO2	10	5	5	20	20%
CO3	5	10	5	20	20%
CO4		10	5	15	15%
CO5			20	20	20%
Total	**30**	**30**	**40**	**100**	**100%**

Dayananda Sagar Academy of Technology & Management

(Autonomous Institute under VTU)

Semester	:	**VII**				
Course Title	:	**Elective-5: Biomimicry**				
Course Code	:	**BAT738**				
Course Type (Theory/ Practical/ Integrated)	:	**Integrated**				
Category	:	**PEC (**Professional Elective Courses**)**				
Stream	:	**Architecture**		**CIE**	:	**100**
Teaching hours/ week (L:T:P:S)	:	**2:0:0:0**		**SEE**	:	**-**
Total Hours	:	**28 Hrs. (16 weeks)**		**SEE Duration**	:	**-**
Credits	:	**02**				

Course Learning Objectives: Students will be able to:

Sl. No	Course Objectives
1	Understand the concepts of biomimicry and biophilia and their relevance in architecture.
2	Develop the ability to observe, analyze, and interpret natural systems for design inspiration.
3	Explore the integration of biological principles into architectural design processes.
4	Examine life's principles and sustainability frameworks derived from nature.
5	Apply biomimicry approaches to design innovative and sustainable built environments.

Teaching-Learning Process

Pedagogical Initiatives:

Some sample strategies to accelerate the attainment of various course outcomes are listed below:

1. Lecture method (L) does not mean only the traditional lecture method, but a different type of teaching method may be adopted to develop the outcomes.
2. Show Video/animation films to explain the infrastructures and the mechanism involved in the principle.
3. Encourage collaborative (Group) Learning in the class.
4. Ask at least three HOT (Higher-order Thinking) questions in the class, which promotes critical thinking.
5. Adopt Problem Based Learning (PBL), which fosters students' Analytical skills, develop thinking skills such as the ability to evaluate, generalize, and analyze information rather than simply recall it.
6. Topics will be introduced in multiple representations.
7. Show the different ways to solve the same problem and encourage the students to come up with their own creative ways to solve them.
8. Discuss how every concept can be applied to the real world - and when that's possible, it helps improve the students' understanding.
9. Individual teachers can device innovative pedagogy to improve teaching-learning.
10. Field visits to be arranged by teachers. Group work could be encouraged.

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Scheme of Teaching and Examinations for B.Arch Programme -2026-27

Outcome Based Education and Choice Based Credit System (CBCS)

(Effective from the Academic Year 2026-27)

COURSE CURRICULUM

Module No.	Topics	Hours
1	**Understanding Biomimicry** 1. Introduction to biomimicry: definitions, scope, and history 2. Levels of biomimicry: organism, behavior, ecosystem 3. Case studies in architecture and product design 4. Difference between biomimicry, bio-utilization, and bio-inspiration	6
Pedagogy	Lectures, videos, case study discussions, AI-assisted visual analysis (image-based learning tools)	
2	**Reconnecting with Nature** 1. Observing nature through function and systems 2. Field visit (rural/informal settlement/natural landscape) 3. Documentation: sketches, diagrams, photography 4. Identifying patterns and survival strategies in nature	6
Pedagogy	Field trip, outdoor exercises, reflective journaling, sketching, AI-based pattern recognition tools	
3	**Patterns of Biophilia** 1. Introduction to biophilia and human-nature connection 2. Biophilic design patterns (visual, non-visual, spatial) 3. Psychological and environmental benefits 4. Case studies of biophilic architecture	4
Pedagogy	Lectures, presentations, group discussions, AI-generated environmental simulations.	
4	**Life's Principles** 1. Nature's universal sustainability principles 2. Adaptation 3. Resource efficiency 4. Closed-loop systems 5. Resilience and diversity 6. Application in built environment design 7. Analysis of sustainable case studies	6
Pedagogy	Problem-based learning, analytical exercises, AI-supported case analysis	

5	**Integrating Biology in Design** 1. Biomimicry design spiral/process 2. Translating biological strategies into design solutions 3. Design exercise (community space: anganwadi/community hall/toilets) 4. Application in real-life contexts	**6**
Pedagogy	Studio work, design exercises, reviews, AI-assisted generative design exploration	

Text Books	
Sl. No.	**Title of the Book/Name of the author/Name of the publisher/Edition and Year**
1	Form Follows Nature: A History of Nature-Inspired Design / Routledge / 2018
2	Building with Nature: Inspiration for the Arts & Crafts Home / Gibbs Smith / 2019
3	Adaptive Architecture: Changing Parameters and Practice / Routledge / 2014
Reference Books	
1	Biomimicry in Architecture - Michael Pawlyn
2	Biomimicry: Inventions Inspired by Nature - Dora Lee
3	Biophilic Design - Stephen R. Kellert
4	Nature by Design - Stephen R. Kellert
5	Biomimicry: Nature as Designer - Benjamin R. Krueger

Weblinks and Video Lectures (e-Resources)	
1	https://ndl.iitkgp.ac.in
2	https://biomimicry.org
3	https://www.archdaily.com

Activity-Based Learning

Activity 1: Analyze a built project inspired by nature.

Activity 2: Nature Observation (Field visit to natural/rural context).

Activity 3: Design Exercise (Design a small community space (anganwadi/toilet/community hall)

Course Outcomes: At the end of the course, the student will be able to:

CO	Course Outcomes	RBT Level Indicator	RBT Level
CO1	Understand biomimicry and biophilia concepts.	Understand	L2
CO2	Apply life's principles in sustainable design.	Apply	L3
CO3	Analyze natural systems for design inspiration	Analyse	L4
CO4	Evaluate biomimetic approaches in architecture	Evaulate	L5
CO5	Design solutions integrating biology and architecture.	Create	L6

Mapping of Course Outcomes to Program Outcomes: (100 To 75% =3, 74 To 50% = 2, Below 50% = 1)

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	2														
CO2	2	3					3					2			
CO3	2		3				3					2	3		2
CO4	2	3		3			3					2		3	
CO5	3		3	3			3					2	3	3	3

Assessment CIE Pattern

2 Credit Course – PEC							
Assessment Method	**Component**	**Type of Assessment**	**Assessment Type used**	**Max. Marks**	**Evaluation Details**	**Min. Marks**	**Total**
Continuous Internal Evaluation	Continuous Comprehensive Assessment (CCA)	CCA1	Conceptual Understanding & Critical Analysis	30	Case study analysis, short assignments, concept understanding	15	30
		CCA2	Analytical Investigation & Technical Documentation	30	Field visit report, pattern analysis, biophilia study	15	30
		CCA3	Creative Synthesis & Applied Design Development	40	Biomimetic design project, drawings, report	20	40
					Total CIE Practical/Activities	**50**	**100**

CIE- Continuous Internal Evaluation (100 Marks)

Bloom's Category	**Theory**			
	Continuous Comprehensive Assessment (CCA)			
	CCA-1	**CCA-2**	**CCA-3**	**Total**
	30 Marks	**30 Marks**	**40 Marks**	**100 Marks**
Remember	10			**10**
Understand	10	5		**15**
Apply	10	10	10	**30**
Analyse		10	10	**20**
Evaluate		5	10	**15**
Create			10	**10**
Total	**30**	**30**	**40**	**100 Marks**

CIE Course Assessment Plan

CO's	Marks Distribution			Total Marks	Weightage
	CCA-1	CCA-2	CCA-3		
	Module 1 to 2	Module-3 to 4.5	Module-4.5 to 5		
CO1	15	5		20	20%
CO2	5	10	5	20	20%
CO3	5	10	5	20	20%
CO4	5	5	10	20	20%
CO5			20	20	20%
Total	**30**	**30**	**40**	**100**	**100%**

Dayananda Sagar Academy of Technology & Management

(Autonomous Institute under VTU)

Semester	:	**VII**				
Course Title	:	**TRAFFIC AWARENESS**				
Course Code	:	**BAT709**				
Course Type (Theory/ Practical/ Integrated)	:	**Theory**				
Category	:	**HSMC**				
Stream	:	**Architecture**		**CIE**	:	**50 Marks**
Teaching hours/ week (L:T:P:S)	:	**1:0:0:0**		**SEE**	:	**--**
Total Hours	:	**14 Hrs. (16 weeks)**		**SEE Duration**	:	**--**
Credits	:	**0**				

Course Learning Objectives: Students will be able to:

Sl. No	Course Objectives
1	To introduce concepts, principles, tools and aids of Road Safety and Civic Sense
2	To understand the design and safety standards for roads
3	Inculcate practice of safe road behavior and civic sense among them.

Teaching-Learning Process

Pedagogical Initiatives:

Some sample strategies to accelerate the attainment of various course outcomes are listed below:

1. Adopt different teaching methods to attain the course outcomes.
2. Include videos to demonstrate various concepts in C.
3. Encourage collaborative (Group) Learning to encourage team building.
4. Ask at least three **HOTS (Higher-order Thinking Skills)** module-wise questions to promote critical thinking.
5. Adopt **Problem-Based Learning (PBL),** which fosters students' analytical skills, and develops thinking skills such as evaluating, generalizing, and analyzing information rather than simply recalling it.
6. Show different ways to solve a problem and encourage the students to come up with creative and optimal solutions.
7. Discuss various case studies to map with real-world scenarios and improve the understanding.
8. Devise innovative pedagogy to improve **Teaching-Learning Process (TLP)**.

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Scheme of Teaching and Examinations for B.Arch. Programme -2026-27

Outcome Based Education and Choice Based Credit System (CBCS)

(Effective from the Academic Year 2026-27)

COURSE CURRICULUM

Module No.	Topics	Hours
1	Introduction to Road Safety. Road as an active space, Types of users, User behaviour, Sensory Factors like Vision and Hearing in User Behaviour. Types of Vehicles: Heavy Vehicles, Light Motor Vehicle, Two Wheelers, Auto- Rickshaw, Bicycles and Cycle Rickshaws, Non-Motorised Vehicles. Vehicle Characteristics: Dimensions, Weight, Turning Radii, Braking Distance, Lighting System, Tyres, etc. Types of Hazards: Conflicts and Accidents.	3
Pedagogy	**Concept-Based Lectures:** Introduce road safety fundamentals, user types, and vehicle characteristics using diagrams and real-world examples. **Interactive Discussions:** Engage students in discussions on user behaviour and sensory factors (vision, hearing).	
2	Typology of Roads: Components and Design Road Classification: National Highways, State Highways, District Roads (MDR and ODR), Village Roads. Urban Road Classification: Expressways, Arterial, Sub-Arterial, Collector, Local, Service Roads, One-Way, Two-Way etc. Mountainous Roads. Speed Limits of Road types. Design of Roads: Cross Sectional Elements- Right of Way, Carriageway, Median, Shoulders, Side Walks, Lanes, Cycling Track, Green Strip, Curbs, Camber, etc. Spatial Standards for the Cross-Section Design. Relationship between Road design and Road Safety	2
Pedagogy	**Visual Learning (Drawings & Charts):** Use road cross-sections and classification diagrams for better understanding. **Demonstration Method:** Illustrate road components like carriageway, median, and sidewalks through sketches/models.	
3	Pedestrian Circulation and Barrier Free Design Requirement of Pedestrian Infrastructure: Sidewalks and footpaths, Recommended Sidewalk widths, Pedestrian Crossing, Pedestrian Bridges, Subways, Cycle Tracks, etc. Barrier free design: Location and Design Standards for Ramps for wheel Chair Access, Other Provisions like Tactile for Visually Challenged etc. Safety Provisions: Pedestrian Railings, Anti-skid Flooring, Pedestrian Signal, Walk Button, etc.	4
Pedagogy	**Inclusive Design Workshops:** Teach barrier-free concepts through practical design exercises. **Demonstration:** Show standards for ramps, tactile paths, and pedestrian infrastructure.	

4	5) Traffic Signs and Road Markings Types of Traffic Signs: Principles and Types of Traffic Signs, Danger Signs, Prohibitory Signs, Mandatory Signs, Informatory Signs, Induction Signs, Direction Signs, Place Identification Signs, Route Marker Signs, etc. Reflective Signs, LED Signs, Static and Dynamic signs. Standards for Traffic Signs: Location, Height and Maintenance of Traffic Signs. Types of Road Markings: Centre Lines, Traffic Lane Lines, Pavement Edge Lines, No Overtaking Zone Markings, Speed Markings, Hazard Markings, Stop Lines, Pedestrian Crossings, Cyclist Crossings, Route Direction Arrows, Word Messages, Marking at Intersections, etc. Material, Colour, and Typography of the Markings.	**2**
Pedagogy	**Visual Identification Exercises:** Use flashcards/images to identify and classify traffic signs. **Demonstration:** Show real examples of markings, colours, and materials. **Field Study:** Observe and document traffic signs and road markings in the city.	
5	Road Accidents Nature and Types of Road Accidents (Grievously Injured, Slightly Injured, Minor Injury, Non injury, etc) The Situation of Road Accidents in India (yearly), Fatality Rates, etc Factors (and Violations) that cause accidents. Prevention and First Aid to Victims. Collision Diagrams and Condition Diagram exercises. Traffic Management Measures and their influence in Accident Prevention. Road Safety and Civic Sense Need for Road Category of Road Users and Road Safety Suggestions. Precautions for Driving in Difficult Conditions (Night, Rain, Fog, Skidding Conditions, Non Functional Traffic lights, etc.)	**3**
	Pedagogical Initiatives (Not limited to): • **Think Pair and Share (Blended Learning):** provides an opportunity for students to learn from one another • **Problem Solving**: encourages cognitive thinking and enables creative problem solving • **Poster Presentation:** allows students to represent the concepts visually in order to understand the topics easily. • **Case studies:** maps different domains in real time applications • **Demonstration:** exhibits the implementation process	

Text Books	
Sl. No.	**Title of the Book/Name of the author/Name of the publisher/Edition and Year**
1	Khanna, S.K., Justo, C.E.G. & Veeraragavan, A., *Highway Engineering*, Nem Chand & Bros., New Delhi.
2	Kadiyali, L.R., *Principles and Practice of Highway Engineering*, Khanna Publishers, New Delhi.
Reference Books	
1	Traffic Engineering and Transport Planning, L R Kadiyali
2	Street Design Standards as provided in Timesavers, Neuferts etc.

Course Outcomes: At the end of the course, the student will be able to:

CO	Course Outcomes	RBT Level	RBT Level Indicator
CO1	Students will be able to understand the purpose of various traffic rules and how they contribute to safety.	Remember And Understand	L1
CO2	Students will be able to apply defensive strategies to road accidents.	Apply	L2
CO3	Students will be able to analyses traffic incidents to identify root cause and contributing factors.	Analyse	L3
CO4	Students will be able to evaluate and justify the need for specific traffic regulations and safe driving practices	Evaluate	L4
CO5	Students will be able to design a road safety plan for daily commuting	Design	L5

Mapping of Course Outcomes to Program Outcomes: (100 To 75% =3, 74 To 50% = 2, Below 50% = 1)

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	3	2					1						2	2	
CO2	3												2		
CO3						1	2		1				1	2	2
CO4		2	3				3								
CO5								2							3

Weblinks and Video Lectures (e-Resources)	
1	https://www.youtube.com/watch?v=y_px2caS6JU
2	https://www.youtube.com/watch?v=i8FeYc8u-Uc
3	https://www.youtube.com/watch?v=IK3oqU2WNY0

CIE- Continuous Internal Evaluation (50 Marks)

Bloom's Category	Theory					
	Poster Presentation (A)	Group Presentation (B)	Models (C)	Quiz (D)	Mock review (E)	Grand Total (A+B+C+D+E)
	15 Marks	5 Marks	5 Marks	5 Marks	10 Marks	50 Marks
Remember & understand	4	2	-	2	2	**10**
Apply	3	3	-	4	2	**10**
Analyse	3	5	-	-	2	**10**
Evaluate	4	-	2	2	2	**10**
Create	1	-	3	2	2	**10**
Total	**15**	**10**	**5**	**10**	**10**	50 Marks

Assessment Pattern (both CIE and SEE)

0 Credit Course – BSAE								
Assessment Method	**Component**	**Type of Assessment**	**Assessment Type used**	**Max. Marks**	**Evaluation Details**	**Reduced Marks**	**Min. Marks**	**Total**
CIE	Continuous Comprehensive Assessment (CCA)	CCA 1	CCA-1- **(site visits, market surveys, seminars, group presentations)**	50	(50+50)	25	12.5	25
		CCA 2	CCA-2- Hands on activity	50		25	12.5	25
						Total CIE Practical / Activities	**25**	**50**

NOTE: The Minimum Marks to be secured in CIE to appear for SEE shall be 25 (50% of Maximum marks – 50). The Minimum Marks to be secured in SEE shall be 20 (40% of Maximum marks – 50). The design activities will be assessed through only CIE. The passing percentage shall not be less than the 50% in aggregate for a course (i.e. CIE and SEE (put together). Based on the marks scored in CIE+SEE grading will be awarded for this course.

Dayananda Sagar Academy of Technology & Management

(Autonomous Institute under VTU)

Semester	:	**VIII**				
Course Title	:	**Architectural Design-VIII (Architecture in Urban Context)**				
Course Code	:	**BAT801**				
Course Type (Theory/ Practical/ Integrated)	:	**Practical**				
Category	:	**PCC**				
Stream	:	**Architecture**		**CIE**	:	**100 Marks**
Teaching hours/ week (L:T:P:S)	:	**0:0:0:8**		**SEE (Viva)**	:	**100 Marks**
Total Hours	:	**12Hrs (16 weeks))**		**SEE Duration**	:	**-**
Credits	:	**8**				

Course Learning Objectives: Students will be able to:

Sl. No	Course Objectives
1	To introduce the key components & terminology with respect to processes and aspects of urban environment and their inter-relationships; to explore specific themes/issues in the public realm such as public spaces, physical infrastructure, socio-cultural aspects (heritage, gender, urban growth, informality, place identity, collective memory, walkability, livability, zoning regulations) and the role of architecture in shaping the urban fabric.
2	To learn basic methods/techniques to read, analyse and interpret (mapping, diagramming and theoretical premise) the dynamics and various dimensions of the urban environment.
3	To create /design Architecture that is linked seamlessly with Urban Planning and Urban design strategies and guidelines

Teaching-Learning Process

Pedagogical Initiatives:

These are sample Strategies, which teacher can use to accelerate the attainment of the various course outcomes.

1. Use of theory, activities, sketches, drawings, assignment and studio works for teaching.

2. Evaluation by studio discussions, internal and external juries, students' seminars, etc.

DSATM

Scheme of Teaching and Examinations for B.Arch Programme -2026-27

Outcome Based Education and Choice Based Credit System (CBCS)

(Effective from the Academic Year 2026-27)

COURSE CURRICULUM

Si No.	CONTENT
1	**INTRODUCTION:** In an increasingly urbanized world, architecture plays a vital role in shaping and influencing a complex urban environment (the design of cities) and creating meaningful places that enrich the lives of people. It is important to understand the many scales at which architecture can engage with the urban context, from building on the unique local character/form to enhance public spaces to urban development projects (infrastructure/transport interchanges/terminals) that impact larger geographic regions beyond the city. The Studio intent is to introduce the discipline of urban design (interdisciplinary premise, scope, techniques and best practices) and understand architecture as a part of implementing urban design projects, from gathering insights into urban fabric (and critically examining its metabolic relationship with ecological cycles), understanding how communities use spaces, to understanding how policies influence and guide urban design. The studio intends to develop a sense of orientation and a grounding of how to respond and fit in the immediate urban context and how the intervention modifies the quality and character of the urban environment. **OUTLINE:** The studio will be divided into two components (a) Rigorous, directed and brief study of an urban context (techniques mapping, diagramming) that will lead to clear understanding of dynamic networks, issues affecting the area and design strategies that build on the strength and opportunities to create meaningful spaces for communities. Various case studies (literature/site visits) will be analyzed at various stages. Developing an understanding of the urban development in India and its role in accelerating ecological imbalance and intensifying the concentration of population in urban areas. Critically reviewing and analyzing current infrastructure projects and the idea of Smart City, AMRUT and HRIDAY cities (Activity1 and 2). (b) Suitable design intervention addressing concerns such as the need to create public realm as extension of the private domain of buildings; the impact and relationship of buildings to the larger context. The key ideas informing the selection of the design projects are multi- functional spaces, public access to the majority of spaces, large gathering and event spaces which can be extended to immediate urban context. The probable architectural design projects include urban infill, revitalization and renewal of urban fragments, adaptive reuse, urban waterfront development, transportation nodes/interchanges, multi-use urban complexes including museums, performing arts centres.
Design Project requirements	(a) The design shall be sensitive to the needs of differently abled, aged people and children. **(b) One major project will be undertaken during the semester, with its scale determined by the density and characteristics of the context, supported by parallel documentation and research components that inform urban design thinking.**

	(c) Design shall address Place making/Sense of Place/ Visual identity/ Character/Socio cultural values etc.
Pedagogy	• **Think Pair and Share (Blended Learning):** provides an opportunity for students to learn from one another • **Problem Solving**: encourages cognitive thinking and enables creative problem solving • **Case studies:** maps different domains in real time applications • **Demonstration:** exhibits the implementation process
Presentation & Analysis Tools	**Study & Documentation:** - **Perplexity AI:** For Summarizing policies and quick research with references. - **Google Earth Pro:** Site understanding, temporal growth - **QGIS:** Base maps (land use, road networks) **Study area Analysis:** - **ArcGIS:** Advanced mapping + spatial patterns - **Mapbox:** Movement and network visualization - **Figma / Adobe Illustrator:** Diagramming and layer representation - **Miro:** Activity mapping, system diagrams **Architectural Inserts:** - **Midjourney / DALL·E:** Concept visualization, mood, spatial ideas - **SketchUp / Rhino:** 3D massing + spatial development - **Autodesk Forma:** Environmental simulations (sun, wind, density) **Note: above mentioned are few examples.**

Studio Framework:

Sl. No.	Stage-wise Studio Plan	Weeks & Hours	CO's
1	**STAGE 1: STUDY & DOCUMENTATION** (Understanding the Urban Context): - Studio Orientation + Urban Design Introduction - Urban Development in India + Policy Review - Case Studies (Indian + International) - Site Selection + Reconnaissance - Base Mapping & Documentation	**6 Weeks, 48 Hrs.**	**CO1, CO2**
2	**STAGE 2: ANALYSIS & PRESENTATION OF LAYERS** (Reading and Interpreting the City): - Physical & Spatial Analysis - Movement & Connectivity Analysis - Socio-Cultural & Activity Mapping - Environmental & Ecological Analysis - Synthesis & Issue Identification	**4 Weeks, 32Hrs.**	**CO3 & CO4**
3	**STAGE 3: ARCHITECTURAL INSERTS / DESIGN INTERVENTION** (From Analysis to Design): - Concept Development - Master Planning - Detailed Urban Design Development - Specialized Interventions - Final Drawings & Documentation	**4 Weeks, 32Hrs**	**CO5**

Text Books	
Sl. No.	**Title of the Book/Name of the author/Name of the publisher/Edition and Year**
1	Donald Watson, "Time Savers Standard for Urban Design", 2005, McGraw Hill.
2	Jon Lang , "Urban Design: A Typology of Procedures and Product", 2005, Routledge.
3	Edmund Bacon , "Design of Cities", 1976, Penguin Books.
4	Gosling and Maitland , "Urban Design", 1984, St. Martin's Press.
5	Kevin Lynch , "Site Planning", 1967, MIT Press, Cambridge.
6	Ephemeral Urbanism - by Rahul Mehrotra (Author), Felipe Vera (Author), Jose Antonio Mayoral.
7	Bombay : The Cities Within - by Rahul Mehrotra, SharadaDwivedi (Author).
8	The Kinetic City and Other Essays - by Rahul Mehrotra (Author), Rajesh Vora (Photographer), RanjitHoskote (Foreword), Kaiwan Mehta (Afterword).

Weblinks and Video Lectures (e-Resources)	
1	https://ndl.iitkgp.ac.in
2	https://www.youtube.com/watch?v=IFjD3NMv6Kw&t=45s
3	https://www.youtube.com/watch?v=06dV9txztKY
4	https://www.youtube.com/watch?v=zOnvfLr5GaE
5	https://www.youtube.com/watch?v=dtEhGtq8ycE
6	https://www.youtube.com/watch?v=_40yzE74oKM
7	https://www.youtube.com/watch?v=YoB_uA7z-jk

Course Outcomes: At the end of the course, the student will be able to:

CO	Course Outcomes	RBT Level	RBT Level Indicator
CO1	**Understand** the fundamentals of urban design, including its interdisciplinary scope, scales, and the role of architecture in shaping urban environments.	Remember & understand	L1&L2
CO2	**Apply** urban design principles and strategies to propose context-responsive interventions that enhance public realm and urban quality.	Apply	L3
CO3	**Analyze** the urban context through mapping and diagramming techniques to interpret spatial, social, environmental, and infrastructural systems.	Analyze	L4
CO4	**Evaluate** urban development policies, case studies, and infrastructure projects in terms of their impact on communities, ecology, and urban form.	Evaluate	L5
CO5	**Design** an architectural and urban intervention integrating public spaces, built form, and environmental considerations within a defined urban context.	Create	L6

Mapping of Course Outcomes to Program Outcomes: (100%-75%=3, 74%-50%=2, Below 50%=1)

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	-	3	-	-	-	-	2	-	1	2	-	-	2	-	-
CO2	-	-	1	3	-	2	-	-	-	-	-	-	-	1	-
CO3	2	3	-	-	-	-	-	-	1	-	-	2	-	-	-
CO4	-	-	-	-	-	-	3	1	2	-	-	-	-	3	2
CO5	-	2	-	3	-	-	-	-	2	3	1	-	3	-	3

CIE- Continuous Internal Evaluation (100 Marks)

8 Credit Course

Assessment Method	Component	Type of Assessment	Assessment Type used	Max. Marks	Evaluation Details	Reduced Marks	Min. Marks	Total
CIE	Studio Assessment	AAT	Review 1-Study & Documentation Sheets (Group Work)	50	- Data Collection - Understanding the urban context - Presentation quality & clarity	25	12.5	25
			Review 2-Analysis and presentation of layers	50	- Depth of Analysis - - Relevance of Layers - - Interpretation & Synthesis - - Presentation quality & clarity	25	12.5	25
			Site Model (Group Work)	20	- Material Use & Craftsmanship - Context and scale	5	2.5	5
			Review 3-Archcitectural Inserts Proposal	30	- analysis into design intervention - urban + architectural scales - conceptual thinking and execution	5	2.5	5
			Review 4-Detail design of Architectural Inserts	50	- Concept & design intent - Response to urban context - Architectural Expression and detailing - Drawings Models & Presentation	40	20	40
					Total CIE Studio		**50**	**100**
SEE	**External Viva Voce**			**100**	Portfolio + Model + Review		**40**	**100**
						CIE+SEE	**100**	**200**

The Minimum Marks to be secured in CIE to appear for SEE shall be 50 (50% of Maximum marks – 100) in the Studio Assessment and Internal Review. And 40 (40% of Maximum Marks -100) in the External Viva Voice to clear the SEE, and the total of CIE + SEE shall be a minimum of 100 (50% of Maximum Marks -200) to get passing marks for the course.

CIE Course Assessment Plan (100 marks)

CO's	STUDIO		TOTAL MARKS	WEIGHTAGE (%)
	Studio Assessment	Internal Panel Reviews		
CO1	10		10	10
CO2	10	10	20	20
CO3	20	15	35	35
CO4	5	-	5	5
CO5	15	15	30	30
Total	60	40	100	100

CIE- Continuous Internal Evaluation (100 Marks)

Revised Bloom's Category	STUDIO		TOTAL MARKS	WEIGHTAGE (%)
	Studio Assessment	Internal Panel Reviews		
Remember	5		5	5
Understand	5		5	5
Apply	10	10	20	20
Analyse	20	15	35	35
Evaluate	5	-	5	5
Design	15	15	30	30
Total	60	40	100	100

SEE Course Assessment Plan (100 marks)

CO's	EXTERNAL VIVA VOICE	TOTAL MARKS	WEIGHTAGE (%)
	Portfolio + Model + Review		
CO1	15	15	15
CO2	15	15	15
CO3	30	30	30
CO4	10	10	10
CO5	30	30	30
Total	100	100	100

SEE- Semester End Examination (100 Marks)

Bloom's Category	EXTERNAL VIVA VOICE Portfolio + Model + Review	TOTAL MARKS	WEIGHTAGE (%)
Remember	7.5	7.5	7.5
Understand	7.5	7.5	7.5
Apply	15	15	15
Analyse	30	30	30
Evaluate	10	10	10
Create	30	30	30
Total	100	100	100

Dayananda Sagar Academy of Technology & Management

(Autonomous Institute under VTU)

Semester	:	**VIII**				
Course Title	:	**Materials and Methods of Building Constructions-VIII**				
Course Code	:	**BAT802**				
Course Type (Theory/ Practical/ Integrated)	:	**Practical**				
Category	:	**BASE**				
Stream	:	**Architecture**		**CIE**	:	**50**
Teaching hours/ week (L:T:P:S)	:	**1:0:0:3**		**SEE**	:	**100 (Reduced to 50 Marks)**
Total Hours	:	**56 hrs. (16 weeks)**		**SEE Duration**	:	**Viva**
Credits	:	**4**				

Course Learning Objectives: Students will be able to:

Sl. No	Course Objectives
1	To understand emerging trends in construction driven by Industry 4.0 and 5.0, including AI, BIM, and digital integration.
2	To explore industrialized and high-rise construction systems, materials, and enclosure technologies.
3	To analyze specialized construction techniques including underground, underwater, and adaptive architectural systems.
4	To develop knowledge of advanced construction methods such as prestressing, post-tensioning, and foundation systems.
5	To evaluate building repair, retrofitting strategies, and adaptive reuse approaches in sustainable architecture.

Teaching-Learning Process Pedagogical Initiatives:

Some sample strategies to accelerate the attainment of various course outcomes are listed below:

- Adopt different teaching methods to attain the course outcomes.
- Include videos to demonstrate various concepts in C.
- Encourage collaborative (Group) Learning to encourage team building.
- Ask at least three **HOTS (Higher-order Thinking Skills)** module-wise questions to promote critical thinking.
- Adopt **Problem-Based Learning (PBL),** which fosters students' analytical skills, and develops thinking skills such as evaluating, generalizing, and analyzing information rather than simply recalling it.
- Show different ways to solve a problem and encourage the students to come up with creative and optimal solutions.
- Discuss various case studies to map with real-world scenarios and improve the understanding.
- Devise innovative pedagogy to improve **Teaching-Learning Process (TLP)**.

DSATM

Scheme of Teaching and Examinations for B.Arch Programme -2026-27

Outcome Based Education and Choice Based Credit System (CBCS)

(Effective from the Academic Year 2026-27)

COURSE CURRICULUM

Module No.	Topics	Hours
1	. **Module 1: Emerging Directions, Industrialized & Automated Construction Technology integration** • Evolution of the construction industry with reference to Industry 4.0 and Industry 5.0 • Role of Artificial Intelligence (AI) in construction: risk prediction, scheduling, cost estimation and control. • Influence of Informatics in construction Industry: Big Data- Cloud Collaboration, construction informatics, Building Information Modelling (BIM), Digital Twins and Integrated Project Delivery (IPD). • Design for Manufacturing and Assembly (DfMA) principles in building construction	12
Pedagogy	**The module is delivered through visual lectures, case studies, and basic digital demonstrations to introduce emerging construction technologies. Students engage in comparative and process-based exercises to understand AI, BIM, and DfMA, supported by short research tasks to explore current industry trends.**	
2	**Module 2: High-Rise & Specialized Construction Systems** • Form work in High-rise buildings: Issues and Constraints. Materials used; some examples like Maivan, Doka. PERI • **High Rise Building Enclosure Systems:** Types, properties and materials • Special and Light Weight materials, eg. Concretes, plastics, recycled or materials out of waste, wood. • **Industrialized construction systems:** prefabrication, modular construction and off-site manufacturing.	12
Pedagogy	**Teaching includes lectures supported by construction sequence diagrams and case studies of high-rise and specialized projects. Comparative study of advanced formwork systems such as Doka, PERI and MAIVAN, simulation of construction sequencing, audio-visual demonstrations, industry interaction, and technical drawing and documentation exercises to enhance system-based understanding.**	

3	**Module 3: Specialized construction** 1. Underground (metro, basements, tunneling) 2. Underwater structures 3. Kinetic & adaptive architecture o 3D printing technologies in buildings: applications in housing, infrastructure and disaster relief structures. o Advanced and smart construction equipment: autonomous machinery, drones, sensor-based site monitoring and smart site management systems. o Automation and robotics in construction: bricklaying robots, automated formwork and robotic assembly.	**12**
Pedagogy	**Module emphasizes visual, analytical, and technology-driven learning approaches to understand specialized construction systems. Concepts related to underground, underwater, and kinetic architecture are introduced through diagrams and supported by relevant case studies. Emerging technologies such as 3D printing, automation, and robotics are explored through process-based learning, demonstrations, and digital simulations. Students engage in problem-based and research-oriented assignments to analyze construction challenges in complex environments. Model-making and digital exercises further enhance understanding of adaptive systems, while site visits or virtual case documentation help bridge theoretical knowledge with practical implementation.**	
4	**Module 4: Advance Construction & Foundation** • **Pre stressing and post tensioning:** Introduction to pre-stressing and post tensioning of building components especially floor slabs and beams. • **Introduction to Advanced foundation:** Mat foundations, Pile foundations; different types of piles, precast piles, cast-in-situ piles in wood concrete and steel. • **Pile foundation construction:** method of driving piles, Sheet piling, pile caps, etc. • **Earth retaining structure:** Selection, Design, Construction of retaining structures including gravity, cantilever, sheet pile, and anchored earth and mechanically stabilized earth (reinforced earth) walls.	**10**
Pedagogy	**The pedagogy for this module focuses on a combination of visual learning, case-based analysis, and application-oriented exercises. Concepts such as prestressing, post-tensioning, and advanced foundation systems are introduced through diagrams and supported by real-world case studies. Students engage in drawing and detailing exercises to strengthen technical understanding, complemented by simulations and BIM-based visualization for better comprehension of structural behaviour. Problem-based learning approaches are adopted to develop analytical and decision-making skills in selecting appropriate systems for given site conditions. Site visits or virtual construction studies further bridge the gap between theory and practice, while mini design tasks encourage integration of knowledge into practical architectural solutions.**	
5	**MODULE 5: Repair, Retrofit & Adaptive Reuse (Advanced)** • Building pathology (advanced diagnostics) • Structural health monitoring systems • Seismic retrofitting techniques • Adaptive reuse strategies (industrial → cultural, etc.) • Smart retrofit for energy efficiency	**10**

Pedagogy	**Teaching includes lectures supported by case studies and diagnostic illustrations to understand building pathology and structural health monitoring. Seismic retrofitting and smart retrofit strategies are taught through method studies and simulations. Adaptive reuse is addressed through project-based learning, analytical documentation and comparative evaluation of reuse strategies for improved performance and sustainability.**

List of Programs:

Sl. No.	Experiments/Programs	COs
1	**Sheet 1: Diagrammatic representation of Industry 4.0 → 5.0 evolution in construction**.	**CO1, CO2**
2	**Case Study 2: Analysis of a digitally integrated construction project (Smart building / AI-driven project)**	**CO1, CO2**
3	**Sheet 3:** Detailed drawings of **formwork systems (Mivan, Doka, PERI)**	**CO1, CO2**
4	**Sheet 4: High-rise construction sequencing sheet** showing core, shell, floor cycle and façade installation.	**CO2, CO3**
5	**Sheet 5:** Construction method sheet for **underground / underwater / kinetic structures** (any one system).	**CO2, CO3**
6	**Sheet 6: High-performance façade system detail (double-skin or unitized curtain wall).**	**CO3, CO4**
7	**Sheet 7: Process diagram of 3D printing in construction**	**CO3, CO4**
8	Sheet 8: Drawings showing **prestressing & post-tensioning systems**	**CO4, CO5**
9	Sheet 9: Drawings of **retaining walls (gravity, cantilever, reinforced earth)**	**CO4, CO5**
10	Sheet 10: Foundation system used in a **complex or high-rise structure**.	**CO4, CO5**
11	Sheet 11: **Building pathology and damage mapping sheet** (cracks, distress, material failure).	**CO4, CO5**
12	Sheet 12: **Retrofit strategy sheet** (seismic / energy-efficient retrofit).	**CO4, CO5**
	Open ended Programs	
1	*Industrialized, Automated and Sustainable Construction Strategy for an Urban Building*	**CO1, CO2, CO3, CO5**
2	Adaptive Reuse and Retrofit of an Existing Building Using Advanced Construction Technologies	**CO3, CO4, CO5**

Text Books	
Sl. No.	**Title of the Book/Name of the author/Name of the publisher/Edition and Year**
1	Building Construction Illustrated: Francis D.K. Ching - John Wiley & Sons, 5th Edition, 2014
2	Building Construction: S.P. Arora & S.P. Bindra - Dhanpat Rai Publications, Latest Edition, 2020

3	Modern Construction Handbook: Andrew Watts – Springer, 4th Edition, 2018
4	Construction Technology: Roy Chudley & Roger Greeno – Pearson Education, 5th Edition, 2016
5	Materials for Architects and Builders: Arthur Lyons – Routledge, 5th Edition, 2014
Reference Books	
1	Offsite Architecture: Constructing the Future: Ryan E. Smith – Routledge, 1st Edition, 2010
2	Prefabrication and Modularization: Jerry Yudelson – McGraw-Hill, 1st Edition, 2010
3	Building Information Modeling Handbook: Chuck Eastman et al. – Wiley, 2nd Edition, 2011
4	Tall Building Structures: Bryan Stafford Smith & Alex Coull – Wiley, 1st Edition, 1991
5	High-Rise Buildings: Structures and Construction: Wolfgang Schueller – Wiley, 2nd Edition, 1997
6	Foundation Engineering – by Brajja M. Das, Essential for piles, mat foundations, and retaining systems.
7	Prestressed Concrete – by N. Krishna Raju, Covers pre-stressing and post-tensioning clearly.
8	Building Adaptation: Douglas – Butterworth-Heinemann, 2nd Edition, 2006
9	Structural Renovation of Buildings: Huerta & Schlaich – Springer, 1st Edition, 1998

Course Outcomes: At the end of the course, the student will be able to:

CO	Course Outcomes	RBT Level	RBT Level Indicator
CO1	Recalling and demonstrating the evolution of the construction industry in the context of Industry 4.0 and 5.0, including the role of AI, BIM, digital twins, and construction informatics.	Remember, Understand	L1, L2
CO2	Apply principles of industrialized construction, prefabrication, modular systems, and high-rise enclosure technologies in architectural and construction scenarios.	Apply	L3
CO3	Analyze specialized construction systems such as underground, underwater, kinetic architecture, and 3D printing with respect to feasibility and performance.	Analyse	L4
CO4	Evaluate and select appropriate advanced construction techniques including prestressing, post-tensioning, and foundation systems based on structural and site conditions.	Evaluate	L5
CO5	Develop innovative strategies for building repair, retrofitting, and adaptive reuse integrating sustainability and smart technologies.	Create / Design	L6

Mapping of Course Outcomes to Program Outcomes: (100%-75%=3, 74%-50%=2, below 50%=1)

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1		2	-	2	_	_	_	_	_	_	_	_	2	-	_
CO2	2	2	2	_	3	-	-	-	-	-	-	-	_	2	
		2	_	3	_	-	-	-	-	-	-	-	2	2	1

CO3															
CO4	-	-	3	2	3	-	3	-	-	-	-	-	_	3	_
CO5	-	2	3	2	3	-	2	-	-	-	-	-	3	3	3

Weblinks and Video Lectures (e-Resources)	
1	Building Materials & Construction - NPTEL video lectures by IIT faculty (building materials, concrete, masonry, steel, polymers, etc.) https://www.youtube.com/playlist?list=PLLy_2iUCG87CfjAcR9lGNrJ16Fe6pR3hrm
2	Advanced Building Materials & Smart Construction Technologies - NPTEL quick lecture (smart/innovative materials) https://www.youtube.com/watch?v= (search "Advanced Building Materials and Smart Construction Technologies NPTEL")
3	Sustainable Materials & Green Buildings (IIT Delhi NPTEL archive - videos on eco-materials, embodied energy, modular construction, green systems) https://archive.nptel.ac.in/courses/105/102/105102195/
4	Sustainable Building Materials and Technologies (self-study modules) https://wizape.com/English/Sustainable-Building-Materials-and-Technologies
5	A comprehensive online repository for building design and construction guidance, detailing systems, performance criteria and sustainability practices. https://wbdg.org
6	Introduction to Green Building & Sustainable Construction - YouTube playlist (green façades, energy efficiency, certifications)https://www.youtube.com/watch?v=oRt0zRuFKC4&list=PLLy_2iUCG87CfjAcR9lGNrJ16Fe6pR3hrm
7	Energy Efficiency in Green Buildings - YouTube video (insulation, passive design, HVAC, NZEB principles) https://youtu.be/VE2tpwGCN0U?si=DOvG8rJFDc7_FDC0
8	Innovative Eco-Friendly Construction Materials (modules on modular prefab systems, smart/nano materials, green construction) https://wizape.com/English/Innovative-Eco-Friendly-Construction-Materials

CIE- Continuous Internal Evaluation (50 Marks)

Bloom's Category	Practical				
	Continuous Assessment Tests (IAT)		Continuous Comprehensive Assessment (CCA)		Practical Test
	IAT-1 (viva)	IAT-2(viva)	CCA-1	CCA-2	
	50 Marks	50 Marks	50 Marks	50 Marks	
Remember	20	10	-	-	
Understand	30	20	10	-	
Apply	-	20	20	-	
Analyse	-	-	20	20	
Evaluate	-	-	-	20	
Create	-	-	-	10	

CIE Course Assessment Plan (50 Marks)

CO's	Marks Distribution for Viva							Total Marks	Weightage
	IA-1 (Viva)			Total Marks	IA-2 (Viva)				
	Module-1	Module-2	Module 2 to 2.5		Module-2.5 to 3	Module-4	Module-5		
CO1	2	4	4	10	4	4	2	10	10%
CO2	2	4	4	10	4	4	2	10	15%
CO3	2	4	4	10	4	4	2	10	20%
CO4	2	4	4	10	4	4	2	10	20%
CO5	2	4	4	10	4	4	2	10	20%
Total	10	20	20	50	20	20	10	50	15%

SEE- Semester End Examination (100 Marks)

Bloom's Category	SEE Marks (100% Practical + Portfolio)
Remember	10
Understand	15
Apply	20
Analyse	20
Evaluate	20
Create	15

SEE Course Plan (100 Marks)

CO's	Marks Distribution					Total Marks	Weightage
	Module-1	Module-2	Module 3	Module-4	Module-5		
CO1	5	5	5	5	5	25	25%
CO2	3	3	3	3	3	15	15%
CO3	4	4	4	4	4	20	20%
CO4	4	4	4	4	4	20	20%
CO5	4	4	4	4	4	20	20%
Total	20	20	20	20	20	100	100%

Dayananda Sagar Academy of Technology & Management

(Autonomous Institute under VTU)

Semester	:	**VIII**				
Course Title	:	**Urban Planning**				
Course Code	:	**BAT803**				
Course Type (Theory/ Practical/ Integrated)	:	**Theory**				
Category	:	**PCC**				
Stream	:	**Architecture**		**CIE**	:	**50 Marks**
Teaching hours/ week (L:T:P:S)	:	**3:0:0:0**		**SEE**	:	**100 Marks (Reduced to 50 Marks)**
Total Hours	:	**42 Hrs. (16 weeks)**		**SEE Duration**	:	**-**
Credits	:	**3**				

Course Learning Objectives: Students will be able to:

Sl. No	Course Objectives
1	To familiarize students with the **origins and basic concepts** of urban planning.
2	**To relate** knowledge and action through critical study of **urban planning theories** and **various planned cities** in different **time period.**
3	To perceive the **concept of urbanization** and urban **housing typologies** and to formulate solve and analyse **urban planning problems**.
4	To study norms & aspects of **land use planning**, various **urban structure** and different area planning.

Teaching-Learning Process

Pedagogical Initiatives:

These are sample Strategies, which teacher can use to accelerate the attainment of the various course outcomes.

1. Use of theory, activities, sketches, drawings, assignment and studio works for teaching.
2. Evaluation by studio discussions, internal and external juries, students' seminars, etc.
3. Think Pair and Share (Blended Learning): provides an opportunity for students to learn from one another
4. Poster Presentation: allows students to represent the concepts visually in order to understand the topics easily.
5. Case studies: maps different domains in real time applications

DSATM

Scheme of Teaching and Examinations for B.Arch. Programme -2026-27

Outcome Based Education and Choice Based Credit System (CBCS)

(Effective from the Academic Year 2026-27)

COURSE CURRICULUM

Si No.	CONTENT	Hours
1	1. Evolution, origins and growth of settlements: - Characteristics of Rural and Urban settlements; Urban form based on different determinants – Natural (climate, topography, resources, geography) and Man-made (cultural, economic, religious, administrative, political). 2. Planning efforts and impacts on historical cities - ancient civilizations (Mesopotamia, China, Egypt, Indus Valley, Mayan); Classical cities (Greek, Roman, Medieval, Neoclassical, Renaissance, Baroque, City Beautiful); Indian cities – (Vedic/Indo-Aryan, Colonial, Dravidian, Mughal). Study how an old town grew and built itself organically in the nearby area.	9
Pedagogy	1) The teacher can use PPTs, Videos to discuss the topics. 2) The students need to sketch and note the discussions. 3) Quizzes, models, seminars from students can be encouraged	
2	3. City Planning in Post-Industrial Revolution Era: - Responses to impacts of industrialization in cities: Legislative reforms to public health, work and living conditions; Spatial responses to Poor Living Conditions (Railroad tenements, Dumbbell plan); Utopian visions - Model Towns (Robert Owen, J.S. Buckingham, George Cadbury), Tony Garnier (Cité Industrielle). 4. Pioneers in planning theories - Ebenezer Howard (Garden City), SoriaY.Mata (The Linear City), Patrick Geddes (Outlook Tower, Valley Section, Folk-Work-Place, Civic Survey), Frank Lloyd Wright (Broadacre City), Ludwig Hilberseimer (Decentralized City), Constantinos A Doxiadis (Ekistics), Clarence Arthur Perry (Neighbourhood Unit); Clarence Stein (American Garden Cities). 5. Planned and Built Cities: - Brasilia (Oscar Niemeyer), Chandigarh (Le Corbusier), Islamabad (Constantinos A Doxiadis), Tel Aviv (Patrick Geddes). 6. Alternate visions for cities: – Arcosanti (Paolo Soleri), New Urbanism (Peter Calthorpe, Andres Duany, ElizabethPlater-Zyberk).	12
Pedagogy	1) The teacher can use PPTs, Videos to discuss the topics. 2) The students need to sketch and note the discussions. 3) Quizzes, models, seminars from students can be encouraged	
3	7. Urbanization in India: - Trends in urbanization in post-independence India; Planned cities in Post-Independence India (Bhubaneswar, Gandhinagar, Jamshedpur); Census classification of Indian cities (based on population size); Growth, issues and management of Metropolitan cities; Slums (official definitions and slum statistics); quality of infrastructure, environment and life in the Urban areas. 8. Urban housing typologies – City Development authority & public sector housing, Affordable housing, Affordable housing, Slum Rehabilitation Projects.	6
Pedagogy	1) The teacher can use PPTs, Videos to discuss the topics. 2) The students need to sketch and note the discussions. 3) Quizzes, models, seminars from students can be encouraged	

4	9. Urban Structure: - Internal spatial structure of the city: Concentric Zone theory; Sector theory; Multiple Nuclei Theory; Characteristics of Central business district, Urban nodes (Origin and/or destination of trips, location of major transport nodes, interfaces of local/regional transport), Suburbs, Peri-urban areas. 10. Land use and Zoning: - Land use categories and representation; Relationship between Land use and Zoning; Zoning Types: Euclidian Zoning, Performance Zoning, Form-based Codes, Incentive Zoning, Height Zoning, Open Space Zoning.	**6**
Pedagogy	1) The teacher can use PPTs, Videos to discuss the topics. 2) The students need to sketch and note the discussions. 3) Quizzes, models, seminars from students can be encouraged	
5	11. Planning Processes and Tools: - Urban Redevelopment: Renewal, Rehabilitation, Conservation; Scales of Planning: Master plan/Comprehensive Development Plan, Area Plan, Regional Plan, Perspective Plan, URDPFI Guidelines; Steps of urban planning.	**9**
Pedagogy	1) The teacher can use PPTs, Videos to discuss the topics. 2) The students need to sketch and note the discussions. 3) Quizzes, models, seminars from students can be encouraged	

List of Activities:

Sl. No.	Activities	COs
1	**"**Decoding the Anatomy of a City": Tracing its Natural and Human-Made determinants	**3**
2	Uncovering Planning Principles of Ancient Cities	**1**
3	City Analysis through Pioneer Planning Principles	**3**
4	"Reimagining the City: A Vision for its Future"	**3**
5	My city structure	**1**
6	From Grids to Chaos: The Debate on Controlled Planning or Natural Growth?	**3**
7	Area development plan: Role play	**2**
8	Exploring the Spatial Composition of My City: An Analysis of its Physical and Geographical Structure"	**3**
9	Demographic survey/Preparing a questionnaire	**3**
10	Individual presentation on given topics	**3**

Text Books	
Sl. No.	**Title of the Book/Name of the author/Name of the publisher/Edition and Year**
1	Kostof, S., Castillo, G., & Tobias, R. 1992. The city assembled: The elements of urban form through history. London: Thames and Hudson
2	Eisner, Simon; Gallion, Arthur; Eisner, Stanley. 1993. The Urban Pattern. Wiley.
3	Greed, Clara. 1993. Introducing Town Planning. Longman

4	Kostof, Spiro. 1993. The City Shaped: Urban Patterns and Meanings through History. Bulfinch.
5	Morris, A.E.J. 1994. History of Urban Form Before the Industrial Revolution. Longman Scientific & Technical
6	Hall, Peter. 1996. Cities of tomorrow: An intellectual history of urban planning and design in the twentieth century. Oxford, UK: Blackwell Publishers.
7	Sivaramakrishnan, K. C.; Amitabh Kundu; and B. N. Singh. 2005. A Handbook of Urbanization in India: An Analysis of Trends and Processes, Oxford University Press, New Delhi.
8	Rathbone, Dominic. 2009. Civilizations of the Ancient World. Thomas & Hudson.
9	Ministry of Urban Development, GoI. 2014. Urban and Regional Development Plans Formulation and Implementation Guidelines. MoUD Government of India.

Weblinks and Video Lectures (e-Resources)	
1	https://nptel.ac.in/courses/124107158
2	https://www.youtube.com/watch?v=YRtkGUxbZqM
3	https://www.youtube.com/watch?v=z0WL-eeds9M
4	https://www.youtube.com/watch?v=6bDrYTXQLu8

Course Outcomes: At the end of the course, the student will be able to:

CO	Course Outcomes	RBT Level	RBT Level Indicator
CO1	Students will be able to **understand** fundamentals of urban planning.	Remember & understand	L1 & L2
CO2	Students will be able to **apply** the knowledge and action through critical study of urban planning theories and various planned cities in different time period.	Apply	L3
CO3	Students will be able to formulate and **analyze** urban planning issues & problems.	Analyse	L4
CO4	Students will be able to **evaluate** urban planning projects produced in different, cultures, time periods, or geographic regions.	Evaluate	L5

Mapping of Course Outcomes to Program Outcomes: (100%-75%=3, 74%-50%=2, Below 50%=1)

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	-	-	-	1	-	-	2	-	-	1	-	1	-	2	-
CO2	-	3	-	-	-	-	-	-	1	-	-	-	-	-	-
CO3	-	-	-	3	1	-	2	-	1	-	1	1	2	-	-
CO4	2	-	1	-	-	3	-	1	-	2	-	2	-	3	1

CIE- Continuous Internal Evaluation (100 Marks) (reduced to 50 marks)

Bloom's Category	Theory				Grand Total
	Continuous Assessment Tests (IAT)		Continuous Comprehensive Assessment (CCA)		Total Marks
	IAT-1	IAT-2	CCA-1	CCA-2	
	25 Marks	25 Marks	25 Marks	25Marks	100 Marks
Remember & understand	5	5	**10**	**10**	30
Apply	5	5	-	-	10
Analyse	15	15	10	10	50
Evaluate			10	-	10

CIE Course Assessment Plan (50 Marks each Test)

CO's	Marks Distribution						Total Marks	Weightage
	Test-1			Test-2				
	Module-1	Module-2	Module 2 to 2.5	Module-2.5 to 3	Module-4	Module-5		
CO1	10	5	5	5	10	5	40	40%
CO2	5	5	-	10	5	-	25	25%
CO3	5	5	5	-	-	5	20	20%
CO4	-	-	5	-	5	5	15	15%
Total	20	15	15	15	20	15	100	100%

SEE- Semester End Examination (100 Marks-Reduced to 50 Marks)

Bloom's Category	SEE Marks (90% Theory+10% Practical Questions)
Remember	20%
Understand	20%
Apply	25%
Analyse	20%
Evaluate	15%

SEE Course Plan (100 Marks-Reduced to 50 Marks)

CO's	Marks Distribution					Total Marks	Weightage
	Module-1	Module-2	Module 3	Module-4	Module-5		
CO1	10	5	10	10	5	40	40%
CO2	5	5	10	5	-	25	25%
CO3	5	5	5	-	5	20	20%
CO4	-	-	5	5	5	15	15%
Total	20	15	30	20	15	100	100%

Dayananda Sagar Academy of Technology & Management

(Autonomous Institute under VTU)

Semester	:	**VIII**				
Course Title	:	**Thesis Seminar**				
Course Code	:	**BAT804**				
Course Type (Theory/Practical/ Integrated/Studio)	:	**Integrated**				
Category	:	**PCC (Professional Core Courses)**				
Stream	:	**Arch**		**CIE**	:	**100 Marks**
Teaching hours/ week (L:T:P:S)	:	**3:0:0:4**		**SEE**	:	**-**
Total Hours	:	**98 Hrs. (16 weeks)**		**SEE Duration**	:	**-**
Credits	:	**7**				

Course Learning Objectives: Students will be able to:

Sl. No	Course Objectives
1	Outline the focus, relevance, and implications of the chosen thesis topic.
2	Formulate an architectural proposition through systematic research.
3	Evaluate the feasibility and contextual significance of the thesis proposal.
4	Conduct rigorous, self-directed study to demonstrate depth of inquiry.
5	Apply innovation and experimentation building on prior undergraduate coursework.
6	Demonstrate proficiency in research methodologies (qualitative & quantitative).

Teaching-Learning Process (General Instructions)

Pedagogical Initiatives:

- Ask at least three **HOTS (Higher-order Thinking Skills)** module-wise questions to promote critical thinking.
- Adopt **Problem-Based Learning (PBL),** which fosters students' analytical skills, and develops thinking skills such as evaluating, generalizing, and analyzing information rather than simply recalling it.
- Show different ways to solve a problem and encourage the students to come up with creative and optimal solutions.
- Discuss various case studies to map with real-world scenarios and improve the understanding.
- Devise innovative pedagogy to improve **Teaching-Learning Process (TLP)**.

DSATM

Scheme of Teaching and Examinations for B.Arch. Programme -2026-27

Outcome Based Education and Choice Based Credit System (CBCS)

(Effective from the Academic Year 2026-27)

COURSE CURRICULUM

INTRODUCTION/OVERVIEW:

The Thesis Seminar course is designed to discover, frame and develop a Proposal for 21ARC94 Architectural Design Project (attempted in the X Semester). The objective of the Thesis Seminar is to expand the scope and focus of the student by introducing diverse topics in architecture (allied disciplines) and to nurture design/research projects that can make creative and technically competent contributions to the field of architecture. Every undergraduate student is required to undertake Thesis Seminar during their penultimate year.

The intent of the Thesis Seminar is to encourage new ideas/ research avenues/ design experimentation in architecture (allied disciplines); to provide a larger framework (structure) within which systematic research on a chosen topic can be undertaken; to develop a proposition, narrative and methodology for the chosen topic which can be tested through design in X Semester.

The Thesis Proposals can be developed from important issues on architecture (inter-disciplinary), hypothetical scenarios connected with architecture (theoretical premise) or live/ current projects proposed by government or other organizations.

PEDAGOGY:

Advanced & AI-Integrated Teaching Methodology

1. Flipped Studio & Active Learning (Design Thinking)

- Shift from traditional lectures to a "flipped studio" model where students review foundational research methodologies independently and use studio hours for active brainstorming, peer critique, and faculty mentoring.
- Implement Design Thinking frameworks (Empathize, Define, Ideate, Prototype, Test) to help students navigate the ambiguity of topic selection and formulation.

2. Collaborative Digital Workspaces (HOTS & PBL)

- Utilize digital whiteboarding tools (e.g., Miro, Mural, Concept board) for collective mind-mapping, literature organization, and spatial diagramming.

- Encourage Problem-Based Learning (PBL) by having students map their chosen thesis topics against real-world urban, environmental, or socio-economic challenges.

3. Advanced AI Integration for Architectural Research

- **Ideation & Conceptualization (CO1):** Integrate Generative AI text models (like Gemini) to act as collaborative brainstorming partners, helping students explore niche architectural premises, expand their initial ideas, and generate alternative viewpoints for their thesis statements.
- **Literature Review & Data Synthesis (CO2):** Introduce AI-powered research assistants (e.g., Elicit, Consensus, or Perplexity) to rapidly scan, summarize, and extract key findings from academic papers, case studies, and dense architectural literature.
- **Site & Contextual Analysis (CO3):** Leverage AI-driven mapping and urban analysis tools to gather complex data on climate, topography, and urban fabric, allowing for deeper, data-backed site evaluation.
- **Visual Prototyping (CO5):** Incorporate ethical use of AI image generators (e.g., Midjourney, Adobe Firefly) strictly for early-stage conceptual mood-boarding and visualizing abstract theoretical premises before moving into formal CAD/BIM environments.
- **Document Structuring (CO4, CO5):** Utilize AI writing assistants to refine the academic tone, structure arguments logically, and ensure grammatical precision in the final Thesis Proposal Document.
- **Ethical AI use –** students must document AI prompts/tools used and verify outputs for originality (AI Post-Plagiarism guidelines 2026)

4. Continuous Peer Review & Industry Mentorship

- Conduct milestone-based "Pin-ups" and internal panel reviews mirroring industry workflows.
- Encourage students to validate their thesis propositions by reaching out to industry professionals or researchers via digital networking platforms as part of their feasibility study.

5. Dedicated Research Methodology Workshops (quantitative/qualitative):

- Weekly 2-hour sessions using Groat & Wang methods + statistical tools (SPSS/R/Python basics) + primary data collection (surveys, field measurements).
- Include mandatory training on research ethics, plagiarism detection (Turnitin + AI ethics guidelines), and hypothesis formulation.

6. Staged External Jury & Publication Preparation:

- Mid-term and pre-final reviews to include one external jury member (practicing architect/academic from IIT/NIT/SPA network).
- Final proposal must include a 3000-word “publishable abstract” ready for journals/conferences.

Studio Framework:

Sl. No.	Stage-wise Studio Plan	Weeks & Hours	COs
1	**STAGE 1: DISCOVERY & THEORETICAL FRAMEWORK (Ideation & Logic):** - Introductory Assignment: Topic Ideation Pitch & Core Premise - Synopsis Draft & Research Questions formulation - Hypothesis Statement & Literature-backed framework - Research Methodology & Ethics Workshop	**2 Weeks, 14 Hrs.**	**CO1, CO2**
2	**STAGE 2: INVESTIGATION & PRELIMINARY PROTOTYPING (Evidence-Based Research):** - Minor Project (Literature): Annotated Bibliography & Theme Reviews - Minor Project (Case Studies): Documentation & Spatial Analysis - Formal Studio Presentation & Peer-Review of findings - Study Model: Conceptual Prototyping to test theoretical premises	**5 Weeks, 35 Hrs**	**CO2, CO3, CO5**
3	**STAGE 3: SYNTHESIS & PROPOSAL FORMULATION (Analysis to Design Brief):** - Major Project (Site Analysis): Contextual mapping & Environmental data - Major Project (Programming): Architectural program & Feasibility - Compilation of Draft Thesis Proposal (Comprehensive Booklet) - Formulation of Publishable Proposal Abstract (3000-word summary) - Final Internal Portfolio & Detailed Model Review	**6 Weeks, 42 Hrs**	**CO3, CO4, CO5**
	Value Added/ Open ended Programs		
1	AI-Assisted Ideation Workshop: Ethical AI & Generative Design Workshop (Midjourney + parametric scripting in Grasshopper/Rhino for feasibility testing + AI output verification).		**CO1, CO5**
2	Advanced Digital Mapping Studio: GIS + Quantitative Data Analytics (Python/R for site feasibility metrics - ESG, carbon footprint, user surveys).		**CO3**
3	Industry Expert Interaction: Guest seminars from practicing architects focusing on emerging global challenges and untraditional thesis niches.		**CO1, CO4**
4	Peer-Critique "Speed-Dating": Rapid, time-bound internal reviews where students critique each other's methodologies to build analytical skills.		**CO2, CO4**
5	VR/AR Prototyping Lab + Industry Live Project Integration		

Reference Books

Sl. No.	Title of the Book/Name of the author/Name of the publisher/Edition and Year
1	Architectural Research Methods / Linda Groat and David Wang / John Wiley & Sons / 2nd Edition, 2013
2	The Dissertation: An Architecture Student's Handbook / Iain Borden and Katerina Rüedi Ray / Routledge / 3rd Edition, 2014
3	Problem Seeking: An Architectural Programming Primer / William M. Peña and Steven A. Parshall / John Wiley & Sons / 5th Edition, 2012
4	A Manual for Writers of Research Papers, Theses, and Dissertations / Kate L. Turabian / University of Chicago Press / 9th Edition, 2018
5	Demystifying Architectural Research: Adding Value to Your Practice / Anne Dye and Flora Samuel / RIBA Publishing / 1st Edition, 2015

6	Doing a Literature Review: Releasing the Research Imagination / Chris Hart / SAGE Publications / 2nd Edition, 2018
7	"Architectural Research Methods" - Linda Groat & David Wang (already there, but note 2nd ed. 2013 is used in SPA/NITs).
8	"The Craft of Research" - Wayne C. Booth et al. (University of Chicago Press, 4th ed. 2016) - standard in SPA Delhi & IITs.

Weblinks and Video Lectures (e-Resources)	
1	https://ndl.iitkgp.ac.in/
2	https://ocw.mit.edu/search/?d=Architecture
3	https://www.google.com/search?q=https://www.gsd.harvard.edu/student-work/
4	https://www.google.com/search?q=https://www.gsd.harvard.edu/student-work/
5	https://www.google.com/search?q=https://www.archdaily.com/search/projects/categories/architecture-thesis
6	https://www.google.com/search?q=https://www.architecture.com/knowledge-and-resources/resources-for-
7	https://elicit.com/
8	https://www.youtube.com/c/ShowItBetter
9	https://www.google.com/search?q=https://www.youtube.com/c/30x40DesignWorkshop

Course Outcomes: At the end of the course, the student will be able to:

CO	Course Outcomes	RBT Level	RBT Level Indicator
CO1	Identify and explain the core premise of a chosen architectural thesis topic.	**L1, L2**	**R,U**
CO2	Apply research methodologies to gather relevant literature and contextual data.	**L3**	**Ap**
CO3	Analyze case studies and site conditions to structure the architectural proposition.	**L4**	**An**
CO4	Evaluate the feasibility, scope, and limitations of the proposed design project.	**L5**	**E**
CO5	Formulate a comprehensive thesis proposal document and presentation portfolio.	**L6**	**C**

Mapping of Course Outcomes to Program Outcomes: *(100%-75% =3 ; 74%-50% = 2 ; Below 50% = 1)*

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1		3												3	
CO2	3														
CO3				3											
CO4						3									
CO5										3					3

Assessment Pattern (Both CIE)

7 Credit Course PCC								
Assessment Method	**Component**	**Assessment Type**	**Assessment Type used**	**Max Marks**	**Evaluation Details**	**Reduced Marks**	**Min. Marks**	**Total**
CIE	Studio	Formative	Introductory Assignment	20	Weekly studio faculty tracking	10		10
			Minor Project & Study Model	40	Literature & contextual research	20		20
			Major Project	60	Case studies & programming	30		30
						Total CIE Studio		**60**
	Internal Review	Summative	Minor Project Review	100	Mid-term internal panel jury	15		15
			Final Draft Portfolio Review	100	Pre-final internal panel jury	25		25
						Total CIE Internal		**40**
						CIE	**50**	**100**
The Minimum Marks to be secured in CIE to clear the course shall be 50 (50% of Maximum marks – 100) in the Studio Assessment and Internal Review.								

CIE Course Assessment Plan (100 marks)

CO's	STUDIO		TOTAL MARKS	WEIGHTAGE (%)
	Studio Assessment	Internal Panel Reviews		
CO1	10	0	**10**	**10**
CO2	10	5	**15**	**15**
CO3	15	10	**25**	**25**
CO4	10	10	**20**	**20**
CO5	15	15	**30**	**30**
Total	**60**	**40**	**100**	**100**

CIE- Continuous Internal Evaluation (100 Marks)

Revised Bloom's Category	STUDIO		TOTAL MARKS	WEIGHTAGE (%)
	Studio Assessment	Internal Panel Reviews		
Remember	5	0	**5**	**5**
Understand	5	0	**5**	**5**
Apply	10	5	**15**	**15**
Analyse	15	10	**25**	**25**
Evaluate	10	10	**20**	**20**
Design	15	15	**30**	**30**
Total	**60**	**40**	**100**	**100**

Dayananda Sagar Academy of Technology & Management

(Autonomous Institute under VTU)

Semester	:	**VIII**				
Course Title	:	**Construction and Project Management**				
Course Code	:	**BAT805**				
Course Type (Theory/ Practical/ Integrated)	:	**Theory**				
Category	:	**PAEC**				
Stream	:	**Architecture**		**CIE**	:	**50 Marks**
Teaching hours/ week (L:T:P:S)	:	3:0:0:0		**SEE**	:	**100 Marks (Reduced to 50 Marks)**
Total Hours	:	**42 Hrs. (16 weeks)**		**SEE Duration**	:	**3 Hrs**
Credits	:	**3**				

Course Learning Objectives: Students will be able to:

Sl. No	Course Objectives
1	**Develop foundational knowledge of construction project management** by understanding project life cycles, organizational structures, roles of stakeholders, and ethical responsibilities within the construction industry.
2	**Apply systematic management principles** to plan, schedule, and control construction projects, integrating time, cost, and resource considerations across all project stages.
3	. **Analyze real-world construction scenarios** using feasibility studies, value engineering, and decision-making tools to identify risks, constraints, and appropriate control measures.
4	**Evaluate construction equipment and site management practices** with respect to productivity, safety, economic feasibility, and sustainability in diverse construction contexts.
5	**Design and communicate effective project plans and schedules** using industry-standard construction management techniques and digital tools such as WBS, CPM, PERT, and project management software.

Teaching-Learning Process

Pedagogical Initiatives:

Some sample strategies to accelerate the attainment of various course outcomes are listed below:

- Write the project details, explain the roles and influence of stakeholders, prepare a construction organization chart, and show the company's role in different stages of the project life cycle.
- Study project feasibility using SWOT analysis, cost-benefit analysis, feasibility report, and decision tree.
- Take part in a role play based on a real construction situation, use decision-making tools, and justify the solution.
- Prepare planning and scheduling documents such as WBS, bar chart, sample measurement book, and identify and reduce construction management failures.
- Visit a construction site to understand project management methods, observe the equipment used in large projects, and note the safety standards followed at the site.

DSATM

Scheme of Teaching and Examinations for B.Arch. Programme -2026-27

Outcome Based Education and Choice Based Credit System (CBCS)

(Effective from the Academic Year 2026-27)

COURSE CURRICULUM

Module No.	Topics	Hours
1	**Introduction to Project, its Stages and Construction Project management**: Project, Organization, need for management of building/construction projects, Principles and Objectives of Project Management, brief understanding about study areas in Project Management. Types of Construction Projects, Life Cycle Stages of a Project (Construction Project). **Construction Organization:** Types of construction firms/ companies. Types of organization, study of organizational structures suitable for building and construction projects, the roles of the various members of a typical construction organization, qualities of an ideal construction organization, ethics in construction industry.	5
Pedagogy	Research and Apply based on Case based/Project based scenario.	
2	**Decision making and Feasibility Study:** Involvement and Roles of Consultants and Contractor in decision making at various stages. Basic understanding of decision-making principles and tools (e.g. Decision Tree, SWOT Analysis, Cost-Benefit Analysis), Value Engineering, Investment Criteria, Project Feasibility Study. **Computer applications in Project Management:** Introduction to use of computers for solving inventory, scheduling and other issues related to construction and management **Roles of Project Manager:** Roles & Responsibilities of Project/ Construction Managers	8
Pedagogy	Real construction scenario - use various decision-making techniques and tools to devise solutions and justify the solutions given.	
3	**Time, Cost and Resource Management in Construction:** Activity definition, Activity Sequencing, Estimation of Resource Requirements, Time & Cost for an Activity, Schedule Development, Budgeting, Schedule control, Cost Control. **Construction Management Techniques**: Project Planning - Work Breakdown Structure; **Construction Management Techniques:** Project Scheduling - Bar Chart, Milestone Chart, Network Theories (CPM and PERT analysis) - Event, activity, dummy, network rules, graphical guidelines for network, numbering of events; **Project Cost analysis (**Indirect project cost, direct project cost, slope of the direct cost curve, total project cost) & brief understanding of about time, cost and resource optimization; Project Crashing (using CPM).	12
Pedagogy	Construct a WBS for any task mapped with activities. Project the details of any project status using charts. Use of Primavera/ MSP for Grantt Chart	
4	**Quality Management in Construction:** Quality Planning and Quality Control. Technical Specifications and Procedures. Codes and Standards. **Construction Health and safety and management:** Safety Measures and management: Integrating workers' Health and Safety into management. **Contract Management** - Introduction to Contracts & Types, Contract Lifecycle Management (CLM)	5

Pedagogy	Compare OSHA standards with actual site use. Make a deviation report.	
5	**Construction Equipment:** The role of equipment/machinery in construction industry, factors affecting selection of construction machinery, standard versus special equipment, and understanding of the various issues involved in owning, operating and maintaining of construction equipment, economic life of equipment. **Types of Construction Equipment:** earth moving (JVB, tractors, excavators, dragline, trenching equipment, etc.,) transporting (various types of trucks), spreading and compacting (motor graders and various types of rollers) and concreting equipment (including concrete mixers, transporting and pumping equipment), hoisting machines, form work, shoring material etc. Best practices - Dealing with uncertainty, complexity, timelines, in a mindful way.	**10**
Pedagogy	Collect information on various construction equipments such manufactires, life span, cost to buy and rent, feasibility of buying Vs renting for each of the equipement. Site visit to see how these equipemts are used and how labour is managed.	

List of Programs:

Sl. No.	Experiments/Programs	COs
1	Project Genesis - Enter the details of the project, stakeholders' roles and influence, suggest a construction organization chart for their company, and map the role of the company during various life cycle stages of the project.	**CO1, CO2**
2	FEASIBILITY SITUATION - SWOT Matrix, Cost Benefit Analysis, Feasibility report, Decision Tree	**CO3**
3	ROLE PLAY - Each group will be assigned one real construction scenario. Students shall use various decision-making techniques and tools to devise solutions and justify the solutions given.	**CO3**
4	PLANNING AND SCHEDULING - Construct a WBS, a Bar Chart, an example copy of Measurement Book, and identification and mitigation of failures in construction management.	**CO5**
5	Visit a construction site to understand the procedures adopted to manage the project and observe the scale and kind of construction equipment used in large scale construction projects.	**CO4**
6	Use of Primavera/ MSP for Grantt Chart	**CO5**
7	Visit a construction site to understand the procedures and note the Safety standards followed in the site.	**CO4**
	Open ended Programs	
1	**Integrated Construction Project Planning and Management Study:** students shall identify a real or hypothetical construction project and develop a comprehensive project management proposal addressing project objectives, organizational structure, planning, scheduling, resource allocation, decision-making, and equipment selection. Multiple solution strategies should be explored and justified, considering constraints of time, cost, safety, and uncertainty.	**CO2, CO3, CO4, CO5**

Text Books	
Sl. No.	**Title of the Book/Name of the author/Name of the publisher/Edition and Year**
1	Dr.B.C.Punmia et al. "*Project planning and control with PERT and CPM", Laxmi Publications*, New Delhi
2	S.P.Mukhopadyay, "*Project management for Architects' and civil Engineers*", IIT, Kharagpur, 1974

3	Jerome D.Wiest and Ferdinand K.Levy, *"A Management Guide to PERT/ CPM"*, prentice Hall of India Pub, Ltd.,New Delhi, 1982
4	R.A. Burgess and G.White, *"Building production and project Management"*, The construction press, London,1979.
5	A Guide to Project Management Body of Knowledge; 5th ed. - An American national standard - ANSI/PMI 99 - 001-2004
6	Krishnamurthy K. G., Ravindra S. V., *"Construction and Project management for Engineers, architects, planners and Builders",* CBS Publishers
Reference Books	
1	Codes and standards - NBC 2016 - Part 7 IS 3696 Safety code for scaffolds and ladders: (Part 2) : 1991 Ladders IS 3764 : 1992 Code of practice for excavation work (first revision) IS 4082 : 1996 Recommendations on stacking and storage of construction materials and components atsite (second revision) IS 4130 : 1991 Safety code for demolition of buildings (second revision) IS 4912 : 1978 Safety requirements for floor and wall openings, railing and toe boards (first revision) IS 5121 : 2013 Code of safety for piling and other deep foundations (first revision) IS 5916 : 2013 Safety code for construction involving use of hot bituminous materials (first revision) IS 7205 : 1974 Safety code for erection of structural steel work IS 7969 : 1975 Safety code for handling and storage of building materials IS 8989 : 1978 Safety code for erection of concrete framed structures IS 13415 : 1992 Safety code for protective barrier in and around buildings IS 13416 Recommendations for preventive measures against hazards at work places: (Part 1) : 1992 Falling material hazards prevention (Part 2) : 1992 Fall prevention (Part 3) : 1994 Disposal of debris (Part 4) : 1994 Timber structures (Part 5) : 1994 Fire protection IS 13430 : 1992 Code of practice for safety during additional construction and alteration to existing buildings IS 15883 (Part 1) : Guidelines for construction project management: Part 1 General2009 (Part 1) : 1987 Scaffolds IS 16601 : 2016 Guidelines for habitat and welfare requirements for construction workers.

Weblinks and Video Lectures (e-Resources)	
1	https://ndl.iitkgp.ac.in
2	https://www.youtube.com/watch?v=pwv1Nu3TO4A&list=PLWnoy5z_3BObBvFtBlowxM05D-q0VAWEs
3	https://www.youtube.com/watch?v=4yzPzVCgRH4&list=PLWnoy5z_3BObBvFtBlowxM05D-q0VAWEs&index=2

4	https://www.youtube.com/watch?v=GAGoqqZSPh4&list=PLWnoy5z_3BObBvFtBlowxM05D-q0VAWEs&index=3
5	https://www.youtube.com/watch?v=kuCHsNXeNMc&list=PLWnoy5z_3BObBvFtBlowxM05D-q0VAWEs&index=5
6	https://www.youtube.com/watch?v=Nto1VbJSQWs&list=PLWnoy5z_3BObBvFtBlowxM05D-q0VAWEs&index=14
7	https://www.youtube.com/watch?v=ki0ld-KXfic&list=PLWnoy5z_3BObBvFtBlowxM05D-q0VAWEs&index=15
8	https://www.youtube.com/watch?v=ypTiYyh7YT0&list=PLWnoy5z_3BObBvFtBlowxM05D-q0VAWEs&index=27
9	https://www.youtube.com/watch?v=pwv1Nu3TO4A&list=RDCMUCwEBggd6uleGIwY5B0GVFng&index=4

Course Outcomes: At the end of the course, the student will be able to:

CO	Course Outcomes	RBT Level	RBT Level Indicator
CO1	**Remember** the ten knowledge areas associated with project management and **understand** the scope of project management in construction industry.	Remember, Understand	L1, L2
CO2	**Apply** appropriate management principles through the five life cycles stages of a project.	Apply	L3
CO3	**Analyze** and monitor construction projects, identifying and implementing necessary control measures through various decision-making techniques and studies	Analyze	L4
CO4	**Evaluate** the use of various construction equipment and their role in construction projects.	Evaluate	L5
CO5	**Design** project plans and schedules using construction management techniques such as Work Breakdown Structure (WBS), Critical Path Method (CPM), and Program Evaluation and Review Technique (PERT).	Design	L6

Mapping of Course Outcomes to Program Outcomes: (100%-75%=3, 74%-50%=2, Below 50%=1)

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1											2		3	2	
CO2	3								3		3	3	3		
CO3		3													3
CO4			2				2				2				2
CO5			3	2						3				3	3

CIE- Continuous Internal Evaluation (50 Marks)

Bloom's Category	Theory			
	Continuous Assessment Tests (IAT)		Continuous Comprehensive Assessment (CCA)	
	IAT-1	IAT-2	CCA-1	CCA-2
	50 Marks	50 Marks	50 Marks	50 Marks
Remember	10	10	_	_
Understand	10	10	10	_
Apply	20	10	20	_
Analyse	10	10	20	20
Evaluate		10	_	15
Create				15

CIE Course Assessment Plan (50 Marks)

CO's	Marks Distribution							Total Marks	Weightage
	Test-1			Total Marks	Test-2				
	Module-1	Module-2	Module 2 to 2.5		Module-2.5 to 3	Module-4	Module-5		
CO1	10	5	5	20	5	10	5	20	40%
CO2	10	5	5	20	5	5		10	20%
CO3		5	5	10		5	5	10	20%
CO4						5	5	10	20%
CO5									
Total	20	15	15	50	10	25	15	50	100%

SEE- Semester End Examination (50 Marks)

Bloom's Category	SEE Marks
Remember	10%
Understand	10%
Apply	20%
Analyse	30%
Evaluate	20%
Create	10%

SEE Course Plan

CO's	Marks Distribution							Total Marks	Weightage
	Module-1	Module-2	Module 2 to 2.5	Total Marks	Module-2.5 to 3	Module-4	Module-5		
CO1	10	5	5	20	5	10	5	20	40%
CO2	10	5	5	20	5	5		10	20%
CO3		5	5	10		5	5	10	20%
CO4						5	5	10	20%
CO5									
Total	10	25	15	50	10	25	15	50	100%

Dayananda Sagar Academy of Technology & Management

(Autonomous Institute under VTU)

Semester	:	**VIII**				
Course Title	:	**Earthquake Resistant Structures**				
Course Code	:	**BAT806**				
Course Type (Theory/ Practical/ Integrated)	:	**Studio**				
Category	:	**BSAE**				
Stream	:	**CIVIL**		**CIE**	:	**50**
Teaching hours/ week (L:T:P:S)	:	**1:0:0:2**		**SEE**	:	**100(Reduced to 50M)**
Total Hours	:	**42 Hrs. (16 weeks)**		**SEE Duration**	:	**VIVA**
Credits	:	**3**				

Course Learning Objectives: Students will be able to:

Sl. No	Course Objectives
1	To integrate structural principles with architectural design by developing an informed intuition of building behavior under seismic conditions.
2	To understand the influence of gravity and lateral (seismic) loads on architectural planning, form, and structural configuration.
3	To promote awareness of earthquake-resistant design strategies, structural systems, and detailing practices for safe and efficient buildings.
4	To encourage the use of digital tools and AI-assisted methods for visualization, conceptual development, and effective communication of design ideas.

Teaching-Learning Process

Pedagogical Initiatives:

Some sample strategies to accelerate the attainment of various course outcomes are listed below:

- Adopt different teaching methods to attain the course outcomes.
- Include videos to demonstrate various concepts in C.
- Encourage collaborative (Group) Learning to encourage team building.
- Ask at least three **HOTS (Higher-order Thinking Skills)** module-wise questions to promote critical thinking.
- Adopt **Problem-Based Learning (PBL),** which fosters students' analytical skills, and develops thinking skills such as evaluating, generalizing, and analyzing information rather than simply recalling it.
- Show different ways to solve a problem and encourage the students to come up with creative and optimal solutions.
- Discuss various case studies to map with real-world scenarios and improve the understanding.
- Devise innovative pedagogy to improve **Teaching-Learning Process (TLP)**.

DSATM

Scheme of Teaching and Examinations for B.Arch Programme -2026-27

Outcome Based Education and Choice Based Credit System (CBCS)

(Effective from the Academic Year 2026-27)

COURSE CURRICULUM

Module No.	Topics	Hours
1	**1. Term project Introduction:** High Rise Building (Plan and elevation with general framing arrangement). **2. National Building Code load calculation:** Gravity loading: Dead and live load calculation. **3. Seismic loading**: Seismic loading calculation based on IS 1893 Code; Static Analysis Procedure. Basic modeling using **ETABS/STAAD**.AI-assisted concept development and report preparation.	**12**
Pedagogy	1. Studio-based development of high-rise building (plan, elevation, and framing) with continuous faculty mentoring and iterative feedback. 2. Step-by-step calculation of gravity and seismic loads as per NBC and IS 1893, emphasizing conceptual understanding and code application. 3. Hands-on structural modeling and analysis using ETABS/STAAD, including interpretation of results for design decision-making.	
2	**4.Understanding earthquakes and Seismology:** Earthquake- Origin and Propagation; Complexity of Ground Motion; Earthquake occurrence in the world, plate tectonics, faults, earthquake hazard maps of India & and the States. Causes of earthquake, seismic waves; magnitude, intensity, epicentre and energy release, characteristics of strong earthquake ground motions, Seismological Instruments: Seismograph, Accelerograph and Seismoscope.	**6**
Pedagogy	1. Concept-based teaching using visual aids and case studies to explain earthquake origin, seismic waves, ground motion, and global tectonic behavior. 2. Analysis of earthquake hazard maps of India and states to understand seismic zones, risks, and regional vulnerability. 3. Demonstration and discussion of seismological instruments (seismograph, accelerograph, seismoscope) to relate theory with real-world measurement of earthquakes.	
3	**5.Earthquake Effects on Buildings:** How buildings respond to earthquakes; Building forms and Seismic effects related to building configuration. Materials, Plan & vertical irregularities, redundancy. Horizontal & vertical eccentricities in mass and stiffness distribution, soft storey etc. **6.Earthquake Resistant Design Strategies**: Concept of seismic design, stiffness, strength, period, ductility, damping, hysteric energy dissipation, centre of mass, centre of rigidity, torsion, design eccentricities. a. Seismic Resistance System b. Seismic Isolation System c. Seismic Damping System	**8**
Pedagogy	1.Conceptual teaching using diagrams and case studies to explain building response to earthquakes, configuration effects, irregularities, and failure mechanisms (soft storey, torsion, etc.).	

	2.Analytical discussion on seismic design principles such as stiffness, strength, ductility, damping, and load path with simplified examples and comparisons. 3.Case-based learning of seismic-resistant systems, base isolation, and damping techniques through real building examples and performance evaluation.	
4	**7.Structural Detailing in Earthquake Resistant Construction:** Seismic Detailing of Masonry buildings (IS: 4326), Seismic Designs & Detailing of RC & Steel Buildings: IS: 1893 - 2002; IS: 13920 - 1993; IS: 456 - 2000; IS: 800 - 2004.	**8**
Pedagogy	1. Code-based instruction on seismic detailing provisions as per IS 4326, IS 13920, IS 456, IS 800, and IS 1893 with emphasis on practical interpretation. 2. Preparation of detailed structural drawings for masonry, RC, and steel members incorporating ductile detailing requirements. 3. Comparative study of good vs poor detailing practices through real examples to understand their impact on seismic performance.	
5	**8.Recent techniques:** Recent techniques like dampers, base isolation and other energy absorbing devises used in Earthquake resistant design. A case study highlighting the above concepts. **Note: Studio work is involved in topics 1, 2, 3, 5, 6, 7 and 8.**	**8**
Pedagogy	1. Introduction to recent seismic protection techniques such as dampers, base isolation, and energy-absorbing devices through conceptual explanations and visual demonstrations. 2. Case-based learning of real-world buildings incorporating advanced seismic systems to understand their performance and design approach. 3. Student-led case study presentation analyzing the application of modern earthquake-resistant techniques in a selected structure.	
	Pedagogical Initiatives (Not limited to): • **Think Pair and Share (Blended Learning):** provides an opportunity for students to learn from one another • **Problem Solving**: encourages cognitive thinking and enables creative problem solving • **Poster Presentation:** allows students to represent the concepts visually in order to understand the topics easily. • **Case studies:** maps different domains in real time applications • **Demonstration:** exhibits the implementation process	

Text Books	
Sl. No.	**Title of the Book/Name of the author/Name of the publisher/Edition and Year**
1	Martin Bechthold, Daniel L Schodek , "Sructures", PHI Learning Private limited.
2	Pankaj Agrawal and Manesh Shrikande ,"Earthquake resistant design of structures", PHI learning Pvt. Ltd.
3	Dr Vinod Hosur , "Earthquake resistant design of building structures", Wiley Precise.
4	"Learning earthquake design and construction- earthquake tips", IIT Kanpur- NICEE.
Reference Books	
1	IS: 4326- Seismic detailing of Masonry buildings.
2	IS: 1893-2002, IS: 13920-1993 , IS: 456-2000, IS: 800-2007 – Seismic design and detailing of RC and steel structures.

Weblinks and Video Lectures (e-Resources)	
1	https://ndl.iitkgp.ac.in https://www.youtube.com/watch?v=JG54nYputwQ
2	https://www.youtube.com/watch?v=qht_3ONz80s
3	https://www.youtube.com/watch?v=9N8iQ9Ch8nw
4	https://www.youtube.com/watch?v=f2tw4FA3gPA

Course Outcomes: At the end of the course, the student will be able to:

CO	Course Outcomes	RBT Level	RBT Level Indicator
CO1	Understand the fundamentals of earthquakes, seismology, and seismic effects on buildings.	Understand	L2
CO2	Apply basic concepts of gravity and seismic loading (as per IS 1893) using static analysis approach.	Apply	L3
CO3	Analyze the behavior of buildings considering configuration, irregularities, and structural response during earthquakes.	Analyze	L4
CO4	Illustrate earthquake-resistant design principles and identify appropriate structural systems and detailing practices.	Illustrate	L5
CO5	Develop conceptual building models and case study reports using basic software tools and AI-assisted methods.	Develop	L6

Mapping of Course Outcomes to Program Outcomes :(100%-75%=3, 74%-50%=2, Below 50%=1)

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CO2	3	3	2	2	2	-	-	-	-	-	-	2	3	2	-
CO3	3	3	3	2	1	-	1	-	-	-	-	2	3	2	-
CO4	3	2	3	2	-	1	1	-	-	-	-	2	3	2	1
CO5	2	2	2	1	3	-	-	-	2	3	-	2	2	3	2

CIE- Continuous Internal Evaluation (50 Marks)

Bloom's Category	Studio					
	Portfolio (A)	Assignment-1 (B)	Assignment-2 (C)	Activity-1 (D)	Activity-2 (E)	Grand Total (A+B+C+D+E)
	25 Marks	5 Marks	5 Marks	5 Marks	10 Marks	50 Marks
Remember & Understand	7	-	-	2	2	11

Apply	4	-	-	3	2	**9**
Analyse	4	5	-	-	2	**11**
Evaluate	5	-	2	-	2	**9**
Create	5	-	3	-	2	**10**
Total	**25**	**5**	**5**	**5**	**10**	**50 Marks**

CIE Course Assessment Plan

CO's	Marks Distribution						Total Marks	Weightage
	Test-1			Test-2				
	Module-1	Module-2	Module 2 to 2.5	Module-2.5 to 3	Module-4	Module-5		
CO1	**5**	**5**					**10M**	**20%**
CO2	**5**		**5**				**10M**	**20%**
CO3		**5**		**5**			**10M**	**20%**
CO4					**5**	**5**	**10M**	**20%**
CO5					**5**	**5**	**10M**	**20%**
Total	**10**	**10**	**5**	**5**	**10**	**10**	**50M**	**100%**

SEE- Semester End Examination (100 Marks)

Bloom's Category	SEE Marks (100 Marks - Reduced to 50 Marks)
Remember	**10%**
Understand	**10%**
Apply	**20%**
Analyse	**20%**
Evaluate	**20%**
Create	**20%**

SEE Course Plan

CO's	Marks Distribution						Total Marks	Weightage
	Module-1	Module-2	Module 2 to 2.5	Module-2.5 to 3	Module-4	Module-5		
CO1	**5**	**5**					**10M**	**20%**
CO2	**5**		**5**				**10M**	**20%**
CO3		**5**		**5**			**10M**	**20%**
CO4					**5**	**5**	**10M**	**20%**
CO5					**5**	**5**	**10M**	**20%**
Total	**10**	**10**	**5**	**5**	**10**	**10**	**50M**	**100%**

Dayananda Sagar Academy of Technology & Management

(Autonomous Institute under VTU)

Semester	:	**VIII**				
Course Title	:	**ELECTIVE VI: Research Methodology**				
Course Code	:	**BAT817**				
Course Type (Theory/Practical/Integrated)	:	**Integrated**				
Category	:	**PEC** (Professional Elective Courses)				
Stream	:	**Architecture**		**CIE**	:	**100 marks**
Teaching hours/ week (L: T:P:S)	:	**2:0:0:0**		**SEE**	:	**-**
Total Hours	:	**28Hrs. (16 weeks)**		**SEE Duration**	:	**-**
Credits	:	**2**				

Course Learning Objectives: Students will be able to:

Sl. No	Course Objectives
1	To gain experience in aspects of Architecture not offered in the regular curriculum.
2	To study particular areas of the curriculum in greater depth.
3	To explore career opportunities in the allied fields.

Teaching-Learning Process

Pedagogical Initiatives:

Some sample strategies to accelerate the attainment of various course outcomes are listed below:

1. Lecture method (L) does not mean only the traditional lecture method, but a different type of teaching method may be adopted to develop the outcomes.
2. Show Video/animation films to explain the infrastructures and the mechanism involved in the principle.
3. Encourage collaborative (Group) Learning in the class.
4. Ask at least three HOT (Higher-order Thinking) questions in the class, which promotes critical thinking.
5. Adopt Problem Based Learning (PBL), which fosters students' Analytical skills, develop thinking skills such as the ability to evaluate, generalize, and analyze information rather than simply recall it.
6. Topics will be introduced in multiple representations.
7. Show the different ways to solve the same problem and encourage the students to come up with their own creative ways to solve them.
8. Discuss how every concept can be applied to the real world - and when that's possible, it helps improve the students' understanding.
9. Individual teachers can device innovative pedagogy to improve teaching-learning.
10. Field visits to be arranged by teachers. Group work could be encouraged.

DSATM

Scheme of Teaching and Examinations for B.Arch. Programme -2026-27

Outcome Based Education and Choice Based Credit System (CBCS)

(Effective from the Academic Year 2026-27)

COURSE CURRICULUM

Module No.	Topics	Hours
1	**Introduction to Research**: Meaning and significance of research in architecture, Relationship between design and research, Types and areas of research in architecture, Qualitative and quantitative research paradigms.	6
Pedagogy	**Concept-Based Lectures with Visual Diagrams** → Use flowcharts and diagrams to explain the research process and the relationship between research and architectural design. **Case Study Discussions** → Present examples of architectural projects where research informed design decisions (sustainability, user behavior, climate-responsive design). **Problem-Based Learning** → Students identify a real architectural issue and formulate simple research questions.	
2	**Research Design and Literature Study:** Components of research design, Research questions, hypothesis formulation, Sampling methods and data collection methods, Dependent and independent variables, Scope and limitations of research, Literature study and sources of information such as books, journals, newspapers, internet, magazines, audio recordings, Referencing and bibliography documentation	6
Pedagogy	**Step-by-Step Research Design Workshops** → Guide students to develop research questions, hypothesis, and scope for a small research topic. **Literature Review Exercises** → Students analyze academic papers and identify research gaps. **Collaborative Learning Activities** → Group discussions on identifying reliable sources and evaluating research materials. Use **AI-based academic search tools** to locate relevant literature. Demonstrate **AI summarization tools** to review research papers quickly**.**	
3	**Research Methods in Architecture:** Interview techniques: questionnaires, face-to-face interviews, online surveys, designing questionnaires and interview schedules, Visual research techniques: observations, activity mapping, cognitive maps, Content analysis and secondary data analysis selecting appropriate research methods.	6
Pedagogy	**Field-Based Learning** → Students conduct site observations and activity mapping on campus spaces. **Practical Workshops** → Design and test questionnaires and interview formats. **Comparative Method Analysis** → Evaluate advantages and limitations of different research methods. Use **AI writing assistants** to improve clarity, grammar, and academic tone in research reports. Demonstrate **AI-based visualization tools** for creating charts and infographics.	
4	**Data Documentation, Analysis and Statistics:** Nature of research data and documentation methods, converting qualitative observations into numerical data, Statistical methods: frequencies, percentages, mean, median, mode, Data interpretation and inference	6

	, Use of MS Excel for statistical analysis.	
Pedagogy	**Hands-on Data Analysis Sessions** → Students analyze collected data using Excel spreadsheets. **Visual Data Representation Exercises** → Create tables and numerical summaries from raw data. **Interpretation Workshops** → Students interpret statistical results and connect findings to architectural problems. Introduce **AI-assisted presentation tools** to help students communicate research findings effectively.	
5	**Data Presentation and Research Reporting:** Techniques of presenting numerical data (pie charts, bar charts, line graphs), Tabulation and qualitative data presentation, Architectural drawings and maps as research outputs, Structure of a research report, technical writing, formatting, and language conventions.	**4**
	Pedagogical Initiatives (Not limited to): **1. Interactive Lectures** Use presentations, diagrams, and architectural examples to explain research concepts. **2. Problem-Based Learning** Students identify architectural issues and frame simple research questions. **3. Field-Based Activities** Conduct site observations, surveys, and activity mapping for practical learning. **4. AI and Digital Tool Integration** Use AI tools for literature review, data analysis, and visualization. **5. Research Presentation Practice** Train students in report writing, data presentation, and research documentation.	

Text Books	
Sl. No.	**Title of the Book/Name of the author/Name of the publisher/Edition and Year**
1	Groat, Linda N. and Wang, David C. 2002. **Architectural Research Methods.** New York: John Wiley.
Reference Book	
1	Norman K Denzin and Yvonna S Lincoln (Eds.) **Handbook of Qualitative Research**, Thousand Oaks : Sage Publications, pp. 377392. 1994.
Weblinks and Video Lectures (e-Resources)	
1	Research Methodology for Planning and Architectural Studies https://youtu.be/SX1-ddAzRGE
2	Understanding Research Methods https://www.coursera.org/learn/research-methods

Course Outcomes: At the end of the course, the student will be able to:

CO	Course Outcomes	RBT Level	RBT Level Indicator
CO1	Understand the **fundamentals of research in architecture**, including its meaning, significance, types, and the relationship between design and research.	**Remember & understand**	**L1 & L2**

CO2	Apply principles of **research design** to formulate research questions, hypotheses, identify variables, and define the scope and limitations of a study.	**Apply**	**L3**
CO3	Analyze and synthesize **literature sources and referencing techniques** to identify research gaps and support architectural research.	**Analyse**	**L4**
CO4	Evaluate and select **appropriate research methods** (qualitative and quantitative) for effective data collection in architectural studies.	**Evaluate**	**L5**
CO5	Develop and present a **comprehensive research report** using data analysis, statistical tools, and appropriate graphical and architectural representations.	**Create**	**L6**

Mapping of Course Outcomes to Program Outcomes :(100%-75%=3, 74%-50%=2, Below 50%=1)

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1			**1**												
CO2							**2**								
CO3		**3**		**3**									**3**		
CO4		**3**		**3**											
CO5					**3**					**3**			**3**		**3**

Assessment CIE Pattern

2 Credit Course – PEC							
Assessment Method	**Component**	**Type of Assessment**	**Assessment Type used**	**Max. Marks**	**Evaluation Details**	**Min. Marks**	**Total**
Continuous Internal Evaluation	Continuous Comprehensive Assessment (CCA)	CCA1	Research Proposal	30	Topic selection, research questions, scope definition	15	30
		CCA2	Field Study & Data Collection	30	Survey, observation, data documentation	15	30
		CCA3	Final Research Report and Presentation	40	Analysis, report writing, conclusions	20	40
					Total CIE Practical/Activities	**50**	**100**

CIE- Continuous Internal Evaluation (100 Marks)

Bloom's Category	Integrated Continuous Comprehensive Assessment (CCA)			
	CCA-1	CCA-2	CCA-3	Total
	30 Marks	30 Marks	40 Marks	100 Marks
Remember	10			**10**
Understand	10	5		**15**
Apply	10	10	10	**30**
Analyse		15	10	**25**
Evaluate			10	**10**
Create			10	**10**
Total	**30**	**30**	**40**	**100 Marks**

CIE Course Assessment Plan

CO's	Marks Distribution			Total Marks	Weightage
	CCA-1	CCA-2	CCA-3		
	Module 1 to 2	Module-3 to 4.5	Module-4.5 to 5		
CO1	20	5		25	25%
CO2	10	10	10	30	30%
CO3		15	10	25	25%
CO4			10	10	10%
CO5			10	10	10%
Total	**30**	**30**	**40**	**100**	**100%**

Dayananda Sagar Academy of Technology & Management

(Autonomous Institute under VTU)

Semester	**:**	**VIII**				
Course Title	**:**	**ELECTIVE VI: Principles of Real Estate Development**				
Course Code	**:**	**BAT827**				
Course Type (Theory/Practical/Integrated)	**:**	**Theory**				
Category	**:**	**PEC** (Professional Elective Courses)				
Stream	**:**	**Architecture**		**CIE**	**:**	**100 marks**
Teaching hours/ week (L:T:P:S)	**:**	**2:0:0:0**		**SEE**	**:**	**-**
Total Hours	**:**	**28Hrs. (16 weeks)**		**SEE Duration**	**:**	**-**
Credits	**:**	**2**				

Course Learning Objectives: Students will be able to:

Sl. No	Course Objectives
1	To gain experience in aspects of Architecture not offered in the regular curriculum.
2	To study particular areas of the curriculum in greater depth.
3	To explore career opportunities in the allied fields.

Teaching-Learning Process

Pedagogical Initiatives:

Some sample strategies to accelerate the attainment of various course outcomes are listed below:

1. Lecture method (L) does not mean only the traditional lecture method, but a different type of teaching method may be adopted to develop the outcomes.
2. Show Video/animation films to explain the infrastructures and the mechanism involved in the principle.
3. Encourage collaborative (Group) Learning in the class.
4. Ask at least three HOT (Higher-order Thinking) questions in the class, which promotes critical thinking.
5. Adopt Problem Based Learning (PBL), which fosters students' Analytical skills, develop thinking skills such as the ability to evaluate, generalize, and analyze information rather than simply recall it.
6. Topics will be introduced in multiple representations.
7. Show the different ways to solve the same problem and encourage the students to come up with their own creative ways to solve them.
8. Discuss how every concept can be applied to the real world - and when that's possible, it helps improve the students' understanding.
9. Individual teachers can device innovative pedagogy to improve teaching-learning.
10. Field visits to be arranged by teachers. Group work could be encouraged.

DSATM

Scheme of Teaching and Examinations for B.Arch. Programme -2026-27

Outcome Based Education and Choice Based Credit System (CBCS)

(Effective from the Academic Year 2026-27)

COURSE CURRICULUM

Module No.	Topics	Hours
1	. **Introduction:** Definition of real estate, economic importance of real estate, overview of real estate industry**.** **Characteristics of land / real estate:** Economic and physical characteristics, personal property; Tangible and intangible personal property.	6
Pedagogy	**Concept-Based Lectures** → Explain key terms and fundamentals using real-world examples. **Case Discussions** → Analyze local real estate developments to understand economic relevance. **Visual Aids** → Use diagrams to explain land characteristics and property types.	
2	**Concepts of Ownership:** Forms of ownership, physical rights of ownership of land, land tenure insecurity of Informal settlements and underlined reasons for that. **Transfer of Title:** Voluntary and involuntary transfer of property, types of deeds and legal conveyance.	6
Pedagogy	**Case Study Approach** → Study ownership patterns and land tenure issues in informal settlements**.** **Discussion-Based Learning** → Analyze legal aspects of land ownership and transfer**.** **Scenario-Based Exercises** → Students interpret real-life property transfer cases.	
3	**Real Estate Finance:** Sources and techniques, financing large scale constructions.	6
Pedagogy	**Application-Based Learning** → Analyze case examples of real estate financing models. **Problem-Solving Exercises** → Students calculate and compare financing options. **Guest Lectures / Industry Exposure** → Invite professionals to discuss real financing practices.	
4	**Land use and Control:** Public control of private property, zonal laws, enforcement of zonal laws, urban development, emerging patterns of urban land use, urban infrastructure development activities leading to forced evictions of people inhabiting marginalized settlements. (Research based Activity: Studying and critically analysing eviction laws and their impact. Case Studies of urban development projects that have lead to evictions of marginalized settlements)	6
Pedagogy	**Research-Based Learning** → Students study eviction laws and analyze real case studies. **Field Study / Mapping** → Observe urban land use and zoning in local areas**.** **Critical Discussions** → Debate socio-ecological impacts of development projects. Use **AI-based mapping and GIS tools** for analyzing land use patterns.	
5	**Role players in real estate development:** Stages in real estate development, real estate development process.	4
	Pedagogical Initiatives (Not limited to): 1. **Interactive & Case-Based Learning** Use real-world case studies to connect theoretical concepts with practical real estate scenarios. 2. **Field-Based and Experiential Learning**	

	Engage students in site visits and observations to understand real-world land use and development. **3. Problem-Solving and Research-Oriented Approach** Encourage analysis of real issues like land tenure and eviction through research activities. **4. Integration of AI and Digital Tools** Use AI for legal research, market analysis, mapping, and data visualization. 5. **Collaborative Learning and Presentation Skills** Promote teamwork and presentations to enhance understanding and communication.

Text Books	
Sl. No.	**Title of the Book/Name of the author/Name of the publisher/Edition and Year**
1	Mike E. Miles, Laurence M. Netherton, and Adrienne Schmitz, "*Real Estate Development*
2	*Principles and Process"* (5th Edition, 2015) by Urban Land Institute (ULI): Washington, D.C. Richard B Peiser& Anne B. Frej, *"Professional Real Estate Development"* - The ULI guide to the business - (2003), Urban Land Institute U.S.A.
3	Tanya Davis, "*Real Estate Developer's Handbook*", (2007), Atlantic pub company, Ocala, USA.
4	Gerald R Cortesi, "*Mastering Real Estate Principles*" (2001), Dearborn Trade Publishing, NewYork, U.S.A.
Reference Books	
1	Donald A. Corb& Richard A. Giovangelo, "*Real Estate Principles*", 2014 , Lee Institute, Inc., Brookline, Massachusetts, USA.
2	https://hlrn.org.in/documents/Forced_Evictions_2018.pdf
3	https://thewire.in/urban/housing-rights-covid-19-city-space-delhi-mumbai
Weblinks and Video Lectures (e-Resources)	
1	Real Estate Development Introduction - Process & Principles https://www.udemy.com/course/real-estate-development-introduction-process-principles/
2	NPTEL: Housing & Real Estate Development http://digimat.in/nptel/courses/video/124107001/L15.html
3	MIT Open Course Ware - Sustainable Real Estate (Full Series) https://www.classcentral.com/course/youtube-mit-11-350-sustainable-real-estate-spring-2023-512402
4	NPTEL: Real Estate Regulation & Development http://digimat.in/nptel/courses/video/124107007/L33.html

Course Outcomes: At the end of the course, the student will be able to:

CO	Course Outcomes	RBT Level	RBT Level Indicator
CO1	Remember and understand the **fundamental concepts of real estate**, including its economic importance, characteristics of land, and basic principles of ownership and property.	**Remember & understand**	**L1 & L2**
CO2	Apply knowledge of **ownership systems, legal frameworks, and real estate finance** to interpret property transactions and development processes.	**Apply**	**L3**

CO3	Analyze **land tenure systems, urban land use patterns, and real estate market dynamics**, including issues related to informal settlements and development impacts.	**Analyse**	**L4**
CO4	Evaluate the **impact of zoning laws, development policies, and real estate practices** on society, environment, and marginalized communities.	**Evaluate**	**L5**
CO5	Develop and present a **comprehensive real estate development proposal or analysis**, integrating financial, legal, and planning aspects using appropriate tools and techniques.	**Create**	**L6**

Mapping of Course Outcomes to Program Outcomes: (100%-75%=3, 74%-50%=2, Below 50%=1)

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	**2**	**2**													**1**
CO2											**3**				
CO3		**3**													
CO4		**3**				**3**							**3**		**3**
CO5					**3**					**3**			**3**	**3**	**2**

Assessment CIE Pattern

2 Credit Course – PEC							
Assessment Method	**Component**	**Type of Assessment**	**Assessment Type used**	**Max. Marks**	**Evaluation Details**	**Min. Marks**	**Total**
Continuous Internal Evaluation	Continuous Comprehensive Assessment (CCA)	CCA1	Case Study Analysis	30	Understanding of real estate basics, ownership, legal aspects, case interpretation	15	30
		CCA2	Field Study & Land Use Analysis	30	Site observation, zoning analysis, mapping, socio-economic understanding	15	30
		CCA3	Policy Analysis & Research Presentation	40	Analysis of zoning laws, eviction policies, stakeholder roles, report	20	40

					writing & presentation		
					Total CIE Practical/Activities	**50**	**100**

CIE- Continuous Internal Evaluation (100 Marks)

Bloom's Category	**Theory**			
	Continuous Comprehensive Assessment (CCA)			
	CCA-1	**CCA-2**	**CCA-3**	**Total**
	30 Marks	**30 Marks**	**40 Marks**	**100 Marks**
Remember	5			**5**
Understand	10	5		**15**
Apply	15	10	5	**30**
Analyse		15	10	**25**
Evaluate			15	**15**
Create			10	**10**
Total	**30**	**30**	**40**	**100**

CIE Course Assessment Plan

	Marks Distribution				
	CCA-1	**CCA-2**	**CCA-3**	**Total Marks**	**Weightage**
CO's	**Module 1 to 2**	**Module-3 to 4.5**	**Module-4.5 to 5**		
CO1	15	5		20	20%
CO2	15	10	5	30	30%
CO3		15	10	25	25%
CO4			15	15	15%
CO5			10	10	10%
Total	**30**	**30**	**40**	**100**	**100%**

Dayananda Sagar Academy of Technology & Management

(Autonomous Institute under VTU)

Semester	**:**	**VIII**				
Course Title	**:**	**ELECTIVE VI : Adaptive Re-use of Built forms**				
Course Code	**:**	**BAT837**				
Course Type (Theory/Practical/Integrated)	**:**	**Theory**				
Category	**:**	**PEC (Professional Elective Courses)**				
Stream	**:**	**Architecture**		**CIE**	**:**	**100 marks**
Teaching hours/ week (L:T:P:S)	**:**	**2:0:0:0**		**SEE**	**:**	**-**
Total Hours	**:**	**28Hrs. (16 weeks)**		**SEE Duration**	**:**	**-**
Credits	**:**	**2**				

Course Learning Objectives: Students will be able to:

Sl. No	Course Objectives
1	To gain experience in aspects of Architecture not offered in the regular curriculum.
2	To study particular areas of the curriculum in greater depth.
3	To explore career opportunities in the allied fields.

Teaching-Learning Process

Pedagogical Initiatives:

Some sample strategies to accelerate the attainment of various course outcomes are listed below:

1. Lecture method (L) does not mean only the traditional lecture method, but a different type of teaching method may be adopted to develop the outcomes.
2. Show Video/animation films to explain the infrastructures and the mechanism involved in the principle.
3. Encourage collaborative (Group) Learning in the class.
4. Ask at least three HOT (Higher-order Thinking) questions in the class, which promotes critical thinking.
5. Adopt Problem Based Learning (PBL), which fosters students' Analytical skills, develop thinking skills such as the ability to evaluate, generalize, and analyze information rather than simply recall it.
6. Topics will be introduced in multiple representations.
7. Show the different ways to solve the same problem and encourage the students to come up with their own creative ways to solve them.
8. Discuss how every concept can be applied to the real world - and when that's possible, it helps improve the students' understanding.
9. Individual teachers can device innovative pedagogy to improve teaching-learning.
10. Field visits to be arranged by teachers. Group work could be encouraged.

DSATM

Scheme of Teaching and Examinations for B.Arch. Programme -2026-27

Outcome Based Education and Choice Based Credit System (CBCS)

(Effective from the Academic Year 2026-27)

COURSE CURRICULUM

Module No.	Topics	Hours
1	**Introduction:** Introduction to the concept of adaptive reuse - history and various theories of adaptive reuse. Understanding adaptive re-use of buildings as a key to sustainable development. To explore the relationship between financial, environmental and social parameters associated with the adaptive re-use of buildings.	6
Pedagogy	**Concept-Based Lectures** → Explain theories, history, and sustainability aspects using examples. **Visual Learning** → Use diagrams and comparative charts to show relationships between environmental, social, and financial factors. **Discussion Sessions** → Engage students in debates on sustainability and reuse vs demolition. Use AI brainstorming tools to generate ideas on adaptive reuse concepts.	
2	**Case studies:** Understanding the application of the concept of adaptive-reuse through various case studies (within the country and abroad). Critical appraisal of the design approach of the case studies. Case studies should include examples of domestic, commercial, industrial, ecclesiastical and public building types. Analysis of the case studies should be based on the spatial attributes, structural knowledge and materiality of the existing structures and the strategies and tactics of adaptive reuse in architecture.	6
Pedagogy	**Case Study Analysis** → Study national and international projects across different building types. **Comparative Learning** → Analyze differences in design approaches and reuse strategies. **Student Presentations** → Encourage students to critically appraise selected case studies. Demonstrate AI-assisted image and plan analysis tools for spatial understanding.	
3	**Analysis of Existing Structures:** It emphasizes the importance of conducting a **building assessment report**, which includes detailed documentation and condition mapping of the structure. Students learn to analyse the **spatial configuration, structural systems, and material characteristics** of buildings to identify their strengths, limitations, and potential for reuse.	6
Pedagogy	**Field-Based Learning** → Conduct site visits for documentation and condition mapping. **Hands-on Workshops** → Practice building assessment and documentation techniques. **Analytical Exercises** → Study spatial, structural, and material conditions of existing buildings. Use **AI-based mapping and documentation tools** (image recognition, scanning).	
4	**Adaptive re-use of heritage buildings :** • Understanding Adaptive re-use as an important strategy towards conservation of built heritage.	6

	Appreciation of the various values (architectural, cultural, historical, associational, social, etc.) that is associated with heritage buildings. Developing an ethical approach for adaptive re-use	
Pedagogy	**Studio-Based Learning** → Develop design concepts based on analyzed data. **Concept Development Exercises** → Explore design logic and intervention strategies. **Crit Sessions** → Evaluate student design proposals through discussions and feedback. Demonstrate **AI tools for design iteration and visualization**.	
5	**Design Generation in Adaptive Reuse** • It focuses on understanding the **design logic and concept generation** in adaptive reuse projects, considering various parameters such as function, context, structure, and sustainability. Students are introduced to different **strategies and techniques for re-modelling and intervention**, including minimal intervention, addition, and transformation.	**4**
	Pedagogical Initiatives (Not limited to): **1. Interactive & Case-Based Learning** → Use adaptive reuse case studies to connect theoretical concepts with real design practices. **2. Field-Based and Experiential Learning** → Engage students in site visits, documentation, and condition mapping of existing and heritage structures. **3. Studio-Based and Design-Oriented Approach** → Encourage concept generation and design interventions through studio exercises and critiques. **4. Integration of AI and Digital Tools** → Utilize AI for documentation, analysis, visualization. **5. Collaborative Learning and Research Approach** → Promote group discussions, research activities, and presentations to develop critical thinking and communication skills.	

Text Books	
Sl. No.	**Title of the Book/Name of the author/Name of the publisher/Edition and Year**
1	Liliane Wong, " Adaptive Reuse: Extending the Lives of Buildings", 2016, Birkhauser Architecture, Switzerland.
2	J. Stanley Rabun, "Building Evaluation for Adaptive Reuse and Preservation", 2009, John Wiley & Sons.
3	Robert W. Burchell, "The Adaptive Reuse Handbook", Transaction Publishing , New Jersey.
Reference Books	
1	Chris Van Uffelen, "Re-use Architecture", 2010, Braun Publishing, Switzerland. Robert T. Ratay, "Structural Condition Assessment" 2005, Wiley.
Weblinks and Video Lectures (e-Resources)	
1	Architectural Conservation and Historic Preservation https://www.youtube.com/playlist?list=PLAJ3fBmKHRY-cq673Zyk0rU8kRF26jC0G
2	Culturally Responsive Built Environments https://onlinecourses.nptel.ac.in/noc21_ar07/preview

Course Outcomes: At the end of the course, the student will be able to:

CO	Course Outcomes	RBT Level	RBT Level Indicator
CO1	Understand the **concept, history, and theories of adaptive reuse**, including its role in sustainable development and the relationship between social, environmental, and economic factors.	Remember & understand	L1 & L2
CO2	Apply knowledge of **adaptive reuse strategies and case study insights** to interpret different building types and reuse approaches.	Apply	L3
CO3	Analyze **existing buildings through documentation, condition mapping, and assessment** of spatial, structural, and material characteristics for reuse potential.	Analyse	L4
CO4	Evaluate **design strategies, interventions, and heritage values** to determine appropriate adaptive reuse approaches for different contexts.	Evaluate	L5
CO5	Develop a **design proposal for adaptive reuse** by integrating analysis, design logic, sustainability principles, and heritage considerations.	Create	L6

Mapping of Course Outcomes to Program Outcomes: (100%-75%=3, 74%-50%=2, Below 50%=1)

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	1			2			3								
CO2	3		3										3		
CO3		3		3											
CO4						3	3								
CO5	3		3		3					3					

Assessment CIE Pattern

2 Credit Course – PEC							
Assessment Method	**Component**	**Type of Assessment**	**Assessment Type used**	**Max. Marks**	**Evaluation Details**	**Min. Marks**	**Total**
		CCA1	Concept & Case Study	30	Understanding of adaptive reuse concepts, theories, sustainability & case study analysis	15	30

Continuous Internal Evaluation	Continuous Comprehensive Assessment (CCA)	CCA2	Building Analysis Report	30	Documentation, condition mapping, spatial, structural & material analysis of existing building	15	30
		CCA3	Critical Evaluation & Concept	40	Critical evaluation of adaptive reuse strategies, heritage values, and conceptual proposal	20	40
Total CIE Practical/Activities						**50**	**100**

CIE- Continuous Internal Evaluation (100 Marks)

Bloom's Category	**Theory**			
	Continuous Comprehensive Assessment (CCA)			
	CCA-1	**CCA-2**	**CCA-3**	**Total**
	30 Marks	**30 Marks**	**40 Marks**	**100 Marks**
Remember	5			**5**
Understand	10	5	5	**20**
Apply	10	10	5	**25**
Analyse	5	10	10	**25**
Evaluate		5	10	**15**
Create			10	**10**
Total	**30**	**30**	**40**	**100**

CIE Course Assessment Plan

	Marks Distribution			**Total Marks**	**Weightage**
	CCA-1	**CCA-2**	**CCA-3**		
CO's	**Module 1 to 2**	**Module-3 to 4.5**	**Module-4.5 to 5**		
CO1	15	5	5	25	25%
CO2	10	10	5	25	25%
CO3	5	10	10	25	25%
CO4		5	10	15	15%
CO5			10	10	10%
Total	**30**	**30**	**40**	**100**	**100%**

Dayananda Sagar Academy of Technology & Management

(Autonomous Institute under VTU)

Semester	**:**	**VIII**				
Course Title	**:**	**ELECTIVE VI: Fundamentals Of Entrepreneurship**				
Course Code	**:**	**BAT847**				
Course Type (Theory/Practical/Integrated)	**:**	**Theory**				
Category	**:**	**PEC** (Professional Elective Courses)				
Stream	**:**	**Architecture**		**CIE**	**:**	**100 marks**
Teaching hours/ week (L:T:P:S)	**:**	**2:0:0:0**		**SEE**	**:**	**-**
Total Hours	**:**	**28Hrs. (16 weeks)**		**SEE Duration**	**:**	**-**
Credits	**:**	**2**				

Course Learning Objectives: Students will be able to:

Sl. No	Course Objectives
1	To gain experience in aspects of Architecture not offered in the regular curriculum.
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1. Lecture method (L) does not mean only the traditional lecture method, but a different type of teaching method may be adopted to develop the outcomes.
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4. Ask at least three HOT (Higher-order Thinking) questions in the class, which promotes critical thinking.
5. Adopt Problem Based Learning (PBL), which fosters students' Analytical skills, develop thinking skills such as the ability to evaluate, generalize, and analyze information rather than simply recall it.
6. Topics will be introduced in multiple representations.
7. Show the different ways to solve the same problem and encourage the students to come up with their own creative ways to solve them.
8. Discuss how every concept can be applied to the real world - and when that's possible, it helps improve the students' understanding.
9. Individual teachers can device innovative pedagogy to improve teaching-learning.
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DSATM

Scheme of Teaching and Examinations for B.Arch. Programme -2026-27

Outcome Based Education and Choice Based Credit System (CBCS)

(Effective from the Academic Year 2026-27)

COURSE CURRICULUM

Module No.	Topics	Hours
1	**INTRODUCTION**: Need of entrepreneurship, Innovation and entrepreneurship, Entrepreneur's vocabulary, Entrepreneurs V/S Wealth, Concepts of Entrepreneurship,	6
Pedagogy	Visual learning (charts showing innovation cycles, value creation) Group discussions: "Entrepreneur vs Job Seeker mindset" AI brainstorming tools (e.g., idea generation prompts for startup concepts) Short video-based learning (startup journeys	
2	**ENTREPRENEURIAL TRAITS & RESOURCE MANAGEMENT:** Entrepreneurial traits, Resource organization and value creation, Types of resources, Entrepreneurial support system,	6
Pedagogy	**Self-assessment activities (entrepreneurial trait analysis)** **Case-based learning on successful entrepreneurs** **Role-play exercises (resource allocation scenarios)** **AI tools for:** • **SWOT analysis** • **Resource planning simulations** **Guest lectures / startup ecosystem exposure**	
3	**ENTREPRENEURIAL MIND-SET & BUSINESS MODEL**: Entrepreneurial mindset, Myths and misconceptions about entrepreneurship, Business models (types and components), Big companies vs startups	6
Pedagogy	Comparative analysis (startups vs corporates) Case discussions on startup failures & pivots AI-assisted business model generation (using prompts) Interactive exercises:Identify business models (e.g., platform, subscription, etc.) Debate: "Is entrepreneurship for everyone?"	
4	**ENTREPRENEURIAL SUCCESS STORIES:** Case studies of successful entrepreneurs (India & global),Lessons learned from startup journeys, Failures and recovery strategies	6
Pedagogy	Case study presentations by students Storytelling sessions (startup journeys) AI tools to: • Summarize case studies • Extract key business insights Group discussions: "What would you do differently?"	
5	**BUSINESS PITCH FOR A START UP:** Developing Lean Canvas model, Business Plan development & startup Growth Strategies, pitching techniques	4

	Pedagogical Initiatives (Not limited to): 1. Interactive Learning: Discussions, debates, and peer learning 2. Case-Based Approach: Real startup examples 3. Experiential Learning: Simulations, role-play, and pitch exercises 4. AI Integration: • Idea generation • Market analysis • Business model creation • Presentation enhancement 5. Collaborative Learning: Group activities and presentation.

Text Books	
Sl. No.	**Title of the Book/Name of the author/Name of the publisher/Edition and Year**
1	Arya Kumar (2012), "Entrepreneurship -Creating and Leading an Entrepreneurial Organization"
2	Ries, E. (2011). *The lean startup: How today's entrepreneurs use continuous innovation to create radically successful businesses*. Crown Business.
3	Osterwalder, A., & Pigneur, Y. (2010). *Business model generation: A handbook for visionaries, game changers, and challengers*. Wiley.
4	Bansal, R. (2008). *Stay hungry stay foolish*. CIIE, IIM Ahmedabad.
Reference Books	
1	Garg, P. (2015). *Superwomen: Inspiring stories of Indian women entrepreneurs*. Random House India.
2	Bansal, R. (2012). *Poor little rich slum*. Westland Ltd. *(Optional alternative to Dreamers)*
Weblinks and Video Lectures (e-Resources)	
1	Entrepreneurship (IIT Madras) https://elearn.nptel.ac.in/shop/nptel/entrepreneurship/
2	Entrepreneurship Essentials (IIT Kharagpur) https://nptel.ac.in/courses/127105007
3	Innovation, Business Models & Entrepreneurship (IIT Roorkee) https://elearn.nptel.ac.in/shop/nptel/innovation-business-models-and-entrepreneurship/
4	Entrepreneurship and IP strategy https://onlinecourses.nptel.ac.in/noc20_hs66/preview

Course Outcomes: At the end of the course, the student will be able to:

CO	Course Outcomes	RBT Level	RBT Level Indicator
CO1	Understand the **fundamental concepts of entrepreneurship**, including the need, innovation, entrepreneurial vocabulary, and the role of entrepreneurs in wealth creation.	Remember & understand	L1 & L2
CO2	Apply **entrepreneurial traits, resource management principles,** and support systems to identify opportunities and organize resources for value creation.	Apply	L3
CO3	Analyze **entrepreneurial mindsets, business models,** and differences between startups and large organizations, including identifying myths and real-world challenges.	Analyse	L4
CO4	Evaluate **entrepreneurial success stories and case studies** to assess key factors influencing success, failure, and decision-making in entrepreneurial ventures.	Evaluate	L5
CO5	Develop a **basic business idea using Lean Canvas** and prepare a structured business plan with appropriate growth strategies and pitching approach.	Create	L6

Mapping of Course Outcomes to Program Outcomes :(100%-75%=3, 74%-50%=2, Below 50%=1)

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	2	2										3			
CO2					3						3		2	2	2
CO3		3		2											
CO4						3		2					1	2	
CO5			2		1					5				3	

Assessment CIE Pattern

2 Credit Course – PEC							
Assessment Method	**Component**	**Type of Assessment**	**Assessment Type used**	**Max. Marks**	**Evaluation Details**	**Min. Marks**	**Total**
		CCA1	Conceptual + Case Study	30	Understanding of entrepreneurship concepts, traits, and analysis of a startup case study	15	30

Continuous Internal Evaluation	Continuous Comprehensive Assessment (CCA)	CCA2	Analytical report / comparative study	30	Analysis of entrepreneurial mindset, business models, and resource planning using a selected business idea	15	30
		CCA3	Lean Canvas + Business Plan + Pitch Presentation	40	Development of Lean Canvas, business plan, and startup pitch with growth strategy	20	40
					Total CIE Practical/Activities	**50**	**100**

CIE- Continuous Internal Evaluation (100 Marks)

Bloom's Category	**Theory**			
	Continuous Comprehensive Assessment (CCA)			
	CCA-1	**CCA-2**	**CCA-3**	**Total**
	30 Marks	**30 Marks**	**40 Marks**	**100 Marks**
Remember	5			**5**
Understand	10	5	5	**20**
Apply	10	10	10	**30**
Analyse	5	10	10	**25**
Evaluate		5	5	**10**
Create			10	**10**
Total	**30**	**30**	**40**	**100**

CIE Course Assessment Plan

	Marks Distribution			**Total Marks**	**Weightage**
	CCA-1	**CCA-2**	**CCA-3**		
CO's	**Module 1 to 2**	**Module-3 to 4.5**	**Module-4.5 to 5**		
CO1	15	5	5	25	25%
CO2	10	10	10	30	30%
CO3	5	10	10	25	25%
CO4		5	5	10	10%
CO5			10	10	10%
Total	**30**	**30**	**40**	**100**	**100%**