

DAYANANDA SAGAR ACADEMY OF TECHNOLOGY & MANAGEMENT



CURRICULUM

Scheme and Syllabus I to II Semester

Outcome Based Education

(Academic Year 2023-2024)

School of Architecture

1st & 2nd 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 nurturing 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 rural habitats.

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.



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6 Programs Accredited by **NBA**
(CSE, ISE, ECE, EEE, MECH, CV)

PROPOSED UG CREDIT STRUCTURE IN ALIGNMENT WITH VTU

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

PROPOSED UG SCHEME - 1st Sem

Sl. No	Course Category	BOS	TD	Teaching Hours/Week					Credits
				Lecture	Tutorial	Practical	Studio	Total	
				L	T	P	S	(Hrs/week)	
1	PCC	ARCH	ARCH	-	1	-	6	7	6
2	BSAE	ARCH	ARCH	1	-	-	3	4	4
3	PCC	ARCH	ARCH	-	1	-	3	4	3
4	PCC	ARCH	ARCH	3	-	-	-	3	3
5	PCC	ARCH	ARCH	1	1	-	3	5	5
6	BSAE	ARCH	ARCH	-	1	-	3	4	3
7	HSMC	ARCH	ARCH	1	1	-	-	2	1
8	AEC	HUM	HUM	1	1	-	-	2	1
9		Total		7	6	-	18	31	26
10	AICTE Activity Points								
								Total	26

Percentage of Mapping– Theory & Practical - Scheme & Syllabus- 1st Sem

Sl. No	Course Category	Component			
		Theory	Studio	Outreach	YOGA/SPORTS
1	PCC	15%	85%	--	--
2	BSAE	25%	75%	--	--
3	PCC	25%	75%	--	--
4	PCC	100%	--	--	--
5	PCC	40%	60%	--	--
6	BSAE	25%	75%	--	--
7	HSMC	100%	--	--	--
8	AEC	100%	--	--	--

PROPOSED UG SCHEME - 2ND Sem

Sl. No	Course Category	BOS	TD	Teaching Hours/Week					Credits
				Lecture	Tutorial	Practical	Studio	Total	
				L	T	P	S	(Hrs/week)	
1	PCC	Arch	Arch	-	1	-	6	7	6
2	BSAE	Arch	Arch	1	-	-	3	4	4
3	PCC	Arch	Arch	-	1	-	3	4	3
4	PCC	Arch	Arch	3	-	-	-	3	3
5	PCC	Arch	Arch	1	-	-	3	4	4
6	BSAE	Arch/ Civil	Arch/ Civil	3	-	-	-	3	3
7	BSAE	Arch/ Civil	Arch/ Civil	-	1	2	-	3	2
8	HSMC	Hum.	Hum.	1	1	-	-	2	1
9	AEC	Any dept		1	1	-	-	2	1
10	AICTE Activity Points								
								Total	27

Percentage of Mapping– Theory & Practical - Scheme & Syllabus- 2ND Sem

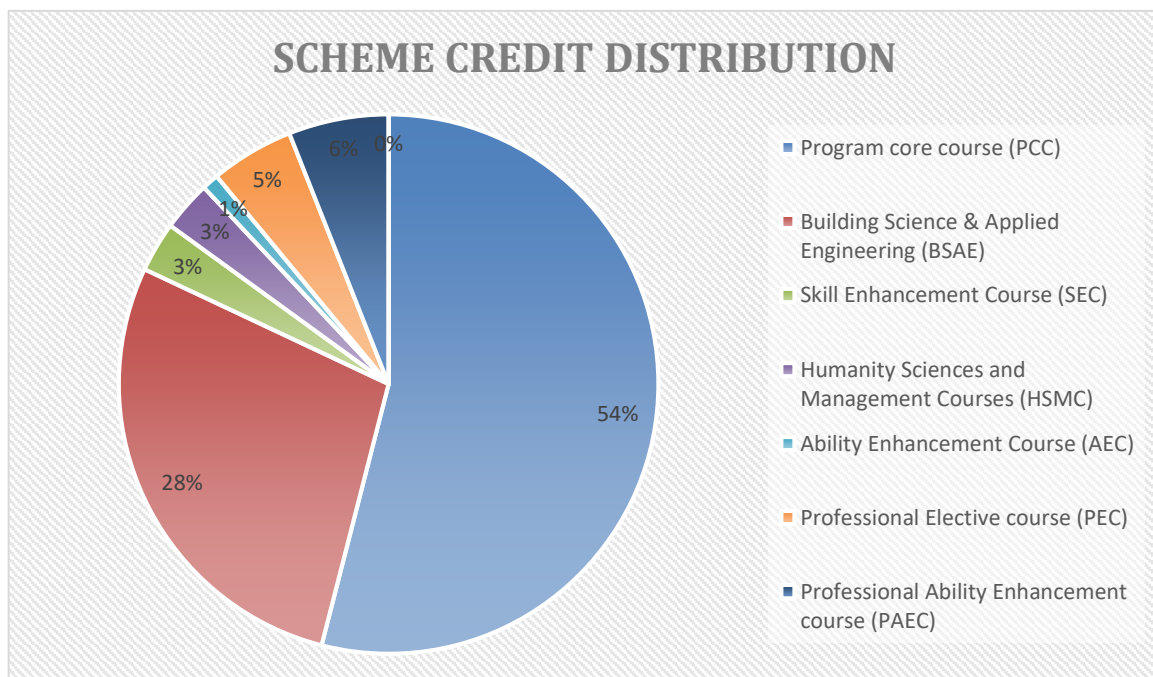
Sl. No	Course Category	Component			
		Theory	Studio	Outreach	YOGA/SPORTS
1	PCC	15%	85%	--	--
2	BSAE	25%	75%	--	--
3	PCC	25%	75%	--	--
4	PCC	100%	--	--	--
5	PCC	25%	75%	--	--
6	BSAE	100%	--	--	--
7	HSMC	25%	75%	--	--
8	AEC	100%	--	--	--

Scheme Distribution

School of Architecture

Course Component	Credits	% of Credits
Program core course (PCC)	141	54
Building Science & Applied Engineering (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

Scheme-Credit Distribution Plot the pie-chart



SEMESTER WISE CREDIT BREAKDOWN FOR B.E. DEGREE CURRICULUM

BATCH 2023-2027

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



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Scheme of Teaching and Examinations – 2023 Outcome Based Education (OBE) and Choice Based Credit System (CBCS) (Effective from 2023-24)

1st SEMESTER: School of Architecture

Sl. No	Course Code	Course Title	Course Category	BOS/T D	Teaching Hours/Week					Credits	SEE Duration (Hrs)	CIE Marks	Examination			Total Marks
					Lecture	Tutorial	Practical	Studio	Total				Theory	Viva	Term work	
					L	T	P	S								
1	BAT101	Architectural Design-I	PCC	Arch	-	1	-	6	7	6	-	100	-	100	-	200
2	BAT102	Materials & Methods in Building Construction I	BSAE	Arch	1	-	-	3	4	4	4	50	100	-	-	150
3	BAT103	Architectural Graphics-I	PCC	Arch	-	1	-	3	4	3	-	50	-	50	-	100
4	BAT104	History of Architecture-1	PCC	Arch	3	-	-	-	3	3	3	50	100	-	-	150
5	BAT105	Basic Design & Visual Arts	PCC	Arch	1	-	-	4	5	5	-	50	-	100	-	150
6	BAT106	Model Making Workshop	BSAE	Arch	-	1	-	3	4	3	-	50	-	50	-	100
7	BAT107	Innovation and Design Thinking	HSMC	Arch	1	1	-	-	2	1	2	50	50	-	-	100
8	BAT108	Professional English I	AEC	Hum	1	1	-	-	2	1	2	50	50	-	-	100
Total					7	6	-	18	31	26		450	300	300		1050



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**Scheme of Teaching and Examinations – 2023 Outcome
Based Education (OBE) and Choice Based Credit System
(CBCS) (Effective from 2023-24)**

2nd SEMESTER: SCHOOL OF ARCHITECTURE

Sl.No	Course Code	Course Title	Course Category	BOS/ T D	Teaching Hours/Week					Credits	SEE Duration(Hrs)	CIE Marks	SEE marks			Total Marks
					Lecture	Tutorial	Practical	Studio	Total				Theory	Viva	Term work	
					L	T	P	S								
1	BAT201	Architectural Design-II	PCC	Arch	-	1	-	6	7	6	-	100	-	100	-	200
2	BAT202	Materials & Methods in Building Construction II	BSAE	Arch	1	-	-	3	4	4	4	50	100	-	-	150
3	BAT203	Architectural Graphics-II	PCC	Arch	-	1	-	3	4	3	-	50	-	50	-	100
4	BAT204	History of Architecture-II	PCC	Arch	3	-	-	-	3	3	3	50	100	-	-	150
5	BAT205	Basic Design & Theory of Design	PCC	Arch	1	-	-	3	4	4	-	50	-	100	-	150
6	BAT206	Building Structures- I	BSAE	Arch/ Civil	3	-	-	-	3	3	3	50	100	-	-	150
7	BAT207	Site Surveying and Analysis	BSAE	Arch/Civil	-	1	2	-	3	2	-	50	-	50	-	100
8	BAT208	Professional English II	HSMC	Hum.	1	1	-	-	2	1	2	50	50	-	-	100
9	BAT209	Scientific Foundation of Health	AEC	Any dept	1	1	-	-	2	1	2	50	50	-	-	100
Total					10	5	2	15	32	27		525	400	275		1200

IPCC: Integrated Professional Core Course,

PCC: Professional Core Course

PBL: Project Based Learning

AEC: Ability Enhancement Course,

NCMC: Non-Credit Mandatory Course

L: Lecture,

T: Tutorial,

P: Practical

S= SDA: Skill Development Activity,

CIE: Continuous Internal Evaluation,

SEE: Semester End Evaluation.

Newly introduced Courses in the syllabus

	List of Courses	1st Semester	2nd Semester
1.	List of Existing Elective Courses	-	-
2.	List of New Existing Elective Courses		
3.	List of New Industry Aligned Courses		
4.	Others		

Percentage of Change in the Syllabus

1 st Semester						
Sl.No	Course Code	Course Name	Topics Added	Topics removed	Revised in %	Justification
1	BAT101	Architectural Design-I	Anthropometry study of disabled/special needs; "Time Problems" (quick 1-day design sessions).	Generic abstract sketching is replaced by scale-based human centric studies.	20%	Shifts from abstract art to human-centric design and "Time Problems" to build functional spatial reasoning and professional decision-making speed.
2	BAT102	Materials & Methods in Building Construction I	Physical curation of stone/brick samples. Study of specialized chemical properties.	Historical evolution of masonry is reduced to focus on modern application.	20%	Replaces theoretical masonry study with physical Material Palette curation to bridge the gap between classroom drawing and site-aware material selection.
3	BAT103	Architectural Graphics-I	Free-hand drawings exercises of rendering techniques of plants, trees, water, landscape, human figures, vehicles, furniture.	Typical arch shapes and their construction methods.	10%	- Free hand is moved to AGI from AG II Arches topic is mentioned in MMBC I also.
4	BAT104	History of Architecture-1	Focus on Climatology within ancient architecture (Vedic/Indus Valley) specifically.	General timelines; shift toward analytical architectural "elements."	15%	Analyzes ancient civilizations through the lens of Climatology, teaching history as a toolkit for sustainable design rather than a mere list of dates.

5	BAT105	Basic Design & Visual Arts	Integration of Color Theory specifically applied to building facades and interior mood boards.	Traditional fine-arts sketching (Still life).	20%	Professionalizes the "Arts" component by applying color theory and composition directly to architectural mood boards and building facades.
6	BAT106	Model Making Workshop	Use of Laser cutting and precision tools orientation.	Simple paper folding; shift toward structural joinery models.	20%	Upgrades from basic craft to precision tool and laser-cutting orientation to reflect modern professional model-making standards.
7	BAT107	Innovation and Design Thinking	-	-	-	NIL
8	BAT108	Professional English I	-	-	-	NIL

Percentage of Change in the Syllabus

2nd Semester

Sl.No	Course Code	Course Name	Topics Added	Topics removed	Revised in %	Justification
1	BAT201	Architectural Design-II	Focus on Institutional/Rural contexts and formal/informal housing typologies.	Simple single-room residential exercises	20-25%	Expands the design scope to institutional and rural contexts to foster an understanding of architecture's role in social equity and community building.
2	BAT202	Materials & Methods in Building Construction II	Timber Joinery for Partitions: Detailed study of seasoned vs. unseasoned wood properties.	Basic carpentry joints are now integrated into large-scale component drawings.	20%	Prioritizes Structural Joinery and timber seasoning to teach wood as a load-bearing engineering material rather than just a decorative finish.
3	BAT203	Architectural Graphics-II	2D CAD Drafting, Time Problem Presentation, Detailed Sociography Applications & Expanded Rendering Elements	Development of Surfaces, Conceptual Perspectives	20-25%	The revision shifts focus from manual exercises, like surface development, toward industry-relevant CAD skills and integrated "Time Problems". This aligns the course with modern architectural studio requirements
4	BAT204	History of Architecture-II	Analytical study of Islamic Geometry and its mathematical principles in architecture.	Rote memorization of dynasties; shift to "Spatial Analysis."	15%	Uses Spatial Analysis of Islamic and Medieval structures to teach the mathematical and geometric logic behind historical architectural form.

5	BAT205	Basic Design & Theory of Design	Introduction to Design Philosophies of modern masters integrated into visual exercises.	Purely abstract geometry is replaced by "Architectural Form" theory.	20%	Links visual exercises to the Design Philosophies of modern masters to help students develop a personal theoretical framework for their studio projects.
6	BAT206	Building Structures- I	Focus on Vector Mechanics specifically for trusses and beam load analysis.	Purely mathematical physics; shift toward "Applied Mechanics."	15%	Transitions to Applied Mechanics and vector analysis so students can visualize how physical forces move through the beams and columns they design.
7	BAT207	Site Surveying and Analysis	Digital Surveying Tools: Introduction to Total Station and GPS mapping concepts.	Manual chain surveying is deprioritized.	40%	Modernizes the course by introducing Total Station and GPS tools, reflecting the digital accuracy required for contemporary urban site mapping.
8	BAT208	Professional English II	-	-	-	NIL
9	BAT209	Scientific Foundation of Health	-	-	-	NIL

1ST Year



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Semester	:	1st		
Course Title	:	ARCHITECTURAL DESIGN - I		
Course Code	:	BAT101		
Course Type (Theory/ Practical/ Integrated)	:	Studio		
Category	:	PCC		
Stream	:	Arch	CIE	: 100 Marks
Total Hours (L: T:P:S)	:	0:1:0:6 Hrs/Week	SEE	: 100 Marks
Credits	:	6	SEE Duration	: Viva-Voce

Course Learning Objectives: Students will be able to

Sr. No	Course Objectives
1	Understand the holistic role of an Architect and Architecture in society.
2	Apply concepts and principles of design in architectural spaces.
3	Analyze anthropometric requirements, principles, and elements of design.
4	Evaluate famous architect's work or local architecture with respect to spatial analysis, area Requirement and program.
5	To design mono-functional spaces.

Teaching-Learning Process

Pedagogy (General Instructions):

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

- 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.
- Show Video/animation films to explain the infrastructures and the mechanism involved in the principle.
- Encourage collaborative (Group) Learning in the class.
- Ask at least three HOT (Higher-order Thinking) questions in the class, which promotes critical thinking.
- 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.
- Topics will be introduced in multiple representations.
- Show the different ways to solve the same problem and encourage the students to come up with their own creative ways to solve them.
- Discuss how every concept can be applied to the real world - and when that's possible, it helps improve the students' understanding.
- Individual teachers can device innovative pedagogy to improve teaching-learning.



**Scheme of Teaching and Examinations for B.Arch Programme -
2023-24 Outcome Based Education and Choice Based Credit
System (CBCS)(Effective from the Academic Year 2023-24)**

COURSE SYLLABUS

Module No.	Contents of the Module	Hours
1	<p><u>Introduction to Architecture and Design:</u></p> <ul style="list-style-type: none"> • Architecture's connection with other disciplines of knowledge: science and technology, mathematics, philosophy, religion, sociology, psychology, ecology, climate change etc. • Importance of Architectural design and its relation between different fields in Design such as Basic design, Graphic design, Automobile design, Interior design, Fashion design, Product design, sustainable design, and so on. 	14
Pedagogy	<ul style="list-style-type: none"> • Collaborative Projects to encourage students to explore the connections between architecture and various disciplines through research and project development. • Exercises/field trips to study/experience works of famous architects who made substantial contributions to society through their designs. (Architect's responsibilities, impact, and potential to shape the built environment). • Multidisciplinary approach - Hands-on Projects: Hands-on project to apply design principles to different fields. 	
2	<p><u>Qualitative design process</u></p> <ul style="list-style-type: none"> • What is an idea or Concept in Design? The relationship between idea, context, space (form & structure), and functional requirements. • Various methods of idea / concept generation - use of form, patterns in nature and in geometry, music, text, and other allied fields. • The ambience of space using - Form, Colour, Texture, Light, Space and Scale 	21
Pedagogy	<ul style="list-style-type: none"> • Exercises to introduce concepts of architecture (space, form, structure, material, geometry, pattern, proportion, mass, transparency etc). • Exercises to introduce architectural space (enclosure, partition, stacking, interconnection, separation, accumulation, connection, floating, climbing). • Understanding the difference and similarity while design of a non-enclosed space, a semi-enclosed space, an enclosed space. • Visual exploration of well-designed spaces and analyse how different elements like form, colour, texture, light, ventilation, space and scale contribute to the overall ambience. 	
3	<p><u>Quantitative design process</u></p> <ul style="list-style-type: none"> • Anthropometry - Understanding the functional and spatial requirements with respect to the human body and its postures along with furniture. • Study of Standard measurements, minimum and optimum areas for mono functions. • User's data, movement and circulation diagrams. • spatial analysis, area requirement and program development 	21

Pedagogy	<ul style="list-style-type: none"> Hands on measurements to take anthropometric measurements and analyze how they inform furniture design and spatial requirements. Exercise to design spaces that meet the functional and spatial requirements of specific user groups with furniture layout, circulation, lighting and ventilation for a specific function. 	
4	<p><u>Introduction to Abstraction:</u></p> <ul style="list-style-type: none"> Elements of form from abstract concepts like (point, line, plane, mass and / or volume, 2D forms - circle, square and triangle, 3D forms - cube, sphere and pyramid) Development of more complex forms by the method of addition and / or subtraction. Concepts of volume and scale, width to height ratio. 	21
Pedagogy	<ul style="list-style-type: none"> Exercises to introduce 2D concepts to 3D forms without functional constraints and Human scale. Conceptualization through illustrations and models to abstract concepts of form inclusive of volume and scale. 	
5	<p><u>Form Development with function</u></p> <ul style="list-style-type: none"> Design of mono function spaces such as a pavilion, gazebo, kiosk, bus stop, stage, (outdoor spaces) living/dining, bedrooms, (indoor spaces) Architect's office, Doctor's clinic, etc. (Utilitarian Spaces) (anyone in each category) Design of functional furniture layout with requisite circulation, lighting, and ventilation for a specific function. Understanding the difference and similarities while the design of a non-enclosed space, a semi-enclosed space, an enclosed space. 	35
Pedagogy	<ul style="list-style-type: none"> Field visit famous Architects' works related to the design problem and case studies of the same. Development of area an program requirement Exercises to design spaces that meet the functional and spatial requirement. 	

List of Exercises

Sr. No	Exercises	COs
1	Abstraction	CO2
2	Anthropometry	CO2, CO3
3	Comic Strip	CO1
4	Architectural Drawing	CO3
5	Measured drawings	CO4
6	Minor Project - Mono function space	CO3, CO4, CO5
7	Site visit - museum of Art and Photography	CO4
8	Major Project - Art Gallery	CO3, CO4, CO5

Reference Books	
Books (Title of the Book/Name of the author/Name of the publisher/Edition and Year)	
1	Alain de Botton, "How Proust Can Change your life", Picador, 1997.
2	Alan Fletcher, " The art of looking sideways", Phaidon Press, 2001 and Partis", Van Nostrand Reinhold, 1985
3	Anthony Di Mari and Nora Yoo, " Operative Design: A Catalogue of Spatial Verbs", 2012, BIS Publishers.
4	Anthony Di Mari, " Conditional Design: An Introduction to Elemental Architecture", 2014, 1st Edition, Thames & Hudson.
5	Bruno Munari, "Design as Art", Penguin UK, 25-Sep-2008
6	Charles George Ramsey and Harold Sleeper, " Architectural Graphic Standards", 1992, Wiley
7	Christopher Alexander, "Notes on the Synthesis of Form", 1964, Harvard University Press.
8	Debkumar Chakrabarti, "Indian Anthropometric Dimensions for Ergonomic Design Practice", 1997.
9	François Blanciak, " Siteless: 1001 Building Forms", 2008, MIT Press
10	Frank Ching, James F. Eckler, "Introduction to Architecture", 2012, John Wiley & Sons, US
11	Frank D.K. Ching, " Architecture: Form, Space, and Order", 4th Edition, Sep. 2014, John Wiley & Sons
12	Herman Hertzberger, "Lessons for Students in Architecture", 2005, 010 Publishers
13	Italo Calvino, " Invisible Cities", Harcourt Brace Jovanovich (May 3, 1978)
14	John Berger, " Way of Seeing", 1972, Penguin, UK
15	John Hancock Callender, " Time-Saver Standards for Architectural Design Data", 1982, McGraw-Hill
16	Michael Pause and Roger H. Clark, " Precedents in Architecture: Analytic Diagrams, Formative Ideas, National Institute of Design.
17	Paul Jacques Grillo, " Form, Function and Design", 1975 , Dover Publications, New York
18	Paul Jacques Grillo, " What is Design?", 1960, P. Theobald
19	Paul Lewis, Marc Tsurumaki, David J. Lewis, "Manual of Section", Princeton Architectural Press, 2016
20	Peter H. Reynolds, " The Dot", 2013, Candlewick Press
21	Philip Jodidio, "Tree houses. Fairy tale castles in the air", 2012, Taschen
22	Robert W. Gill, "Rendering with Pen and Ink", Van Nostrand Reinhold (1 June 1984)
23	Tom Alphin, "The LEGO Architect", 2015, No Starch Press

Web links and Video Lectures (e-Resources)

1	https://ndl.iitkgp.ac.in
2	https://www.youtube.com/watch?v=crNegyiPx8Q
3	https://www.youtube.com/watch?v=U2W5Wmp15YA

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

CO	Course Outcomes	RBT Level	Level Indicator
CO1	Understand the holistic role of an Architect and Architecture in society.	L1, L2	
CO2	Apply concepts and principles of design in architectural spaces.	L3	
CO3	Analyze anthropometric requirements, principles, and elements of design.	L4	
CO4	Evaluate famous architect's work or local architecture with respect to spatial analysis, area Requirement and program.	L5	
CO5	To design mono-functional spaces.	L6	

Mapping of Course Outcomes to Program Outcomes:

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

Assessment Pattern (both CIE and SEE)

6 Credit Course									
Assessment Method	Component	Type of Assessment	Assessment Type used	Max. Marks	Evaluation Details	Reduced Marks	Min. Marks	Total	
CIE	Studio Assessment	AAT	Individual Discussion	50	Regular on time discussion + Incorporation of changes in design + Presentation skills.	25	12.5	25	
			Group Work	20	Observations at site + Group Co-ordination + Analysis	15	7.5	15	
			Site Visits	10					
			Models	20	Pre-session, Materials and Scale.	10	5	10	
			Sheets	20	Presentation, Accuracy, Details, Architectural Drawings.	10	5	10	
	Total CIE Studio						30		60
	Panel Review	Viva Voca	Review	50	Presentation skills, Communication of ideas, Design	25	12.5	40	
Portfolio + Models			30	She Presentation, Accuracy, Details, Architectural Drawings. etc, presentation	15	7.5			
Total CIE Review						20		40	
SEE	External Viva Voca			100	Portfolio + Model + Review	100	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 Voca. The total of CIE + SEE shall be a minimum of 100 (50% of Maximum Marks -200).

Course Contents and Lecture Schedule

Module No.	Topics	No. of Lectures
2,4	Abstraction	14 Hrs
3	Anthropometry	7 Hrs
1, 2	Comic Strip	7 Hrs
3,	Architectural Drawing	7 Hrs
1	Measured drawings	7 Hrs
Review - 1		3 Hrs
3,5	Minor Project - Mono function space	21 Hrs
Review - 2		4 Hrs
1,2,3,5	Site visit - museum of Art and Photography	7 Hrs
3,5	Major Project - Art Gallery	28 Hrs
Final Internal Review		7 Hrs
Total		112 Hrs



Dayananda Sagar Academy of Technology & Management

(Autonomous Institute under VTU)

Semester	:	1 st		
Course Title	:	MATERIALS AND METHODS IN BUILDING CONSTRUCTION-I		
Course Code	:	BAT102		
Course Type (Studio/Theory/ Practical/ Integrated)	:	Studio		
Category	:	Building Science and Applied Engineering		
Stream	:	Architecture	CIE	: 50 Marks
Total Hours (L:T:P:S)	:	1:0:0:3 Hrs/Week	SEE (Viva)	: 100 Marks
Credits	:	4	SEE Duration	: 4 hrs

4Course Learning Objectives: Students will be taught

Sl.No	Course Objectives
1	Historical development of building materials and construction techniques. (CLO 1)
2	How to choose suitable materials and construction methods for different architectural and structural components. (CLO 2)
3	How to Analyse the structural and aesthetic qualities of diverse building materials and techniques, considering bonds, arches, lintels, sustainability, and preservation. (CLO 3)
4	To evaluate performance, cost, and environmental implications of building materials and techniques, determining their suitability and effectiveness. (CLO 4)
5	To design construction systems and elements using appropriate building materials, considering manufacturing, properties, methods, and sustainability. (CLO 5)

Teaching-Learning Process

Pedagogy (General Instructions):

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 showcasing historical

buildings, contemporary architectural projects, and sustainable construction practices.

5. Practical Exercises and Simulations: Provide opportunities for students to engage in practical exercises and simulations related to bricklaying, stonemasonry, concrete block construction, and other relevant activities to develop practical skills and reinforce theoretical knowledge.

6. Assessment through Projects and Presentations: Assign projects and presentations that require students to apply their knowledge and skills acquired during the modules. This can include designing a brick or stone wall, developing a sustainable construction plan, or analysing the structural integrity of different building materials.

7. 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.

8. 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.



**Scheme of Teaching and Examinations for BE Programme -2023-24
Outcome Based Education and Choice Based Credit System (CBCS)
(Effective from the Academic Year 2023-24)**

DSATM

COURSE SYLLABUS

Module No.	Contents of the Module	Hours
1	<ol style="list-style-type: none"> 1. Historical evolution of building materials and construction methods. 2. Elements of Buildings. Terminologies used in Building Construction 	
Pedagogy	<ol style="list-style-type: none"> a. Engage students in practical workshops where they interact with various materials, fostering a direct understanding of their properties and construction techniques. b. Organize site visits and invite industry experts to share insights, connecting classroom learning with real-world construction scenarios. 	
2	<ol style="list-style-type: none"> 3. Brick: Types, properties, uses and manufacturing methods. 4. Brick Walls: Types of brick walls and bonds, mortar types, plasters and lintels. Load bearing brick masonry foundation. 	
Pedagogy	<ol style="list-style-type: none"> a. Arrange practical sessions for students to construct various types of brick walls, emphasizing different bonds and mortar types. This practical experience will deepen their understanding of the structural and aesthetic aspects of brick masonry. b. Present case studies of famous brick buildings, highlighting their architectural significance and structural considerations c. Assign design projects where students plan load-bearing brick masonry foundations. 	
3	<ol style="list-style-type: none"> 5. Stone: Types, properties, quarrying and finishing. 6. Stone Walls: Bonds, arches and lintels, Load bearing stone masonry foundation 	
	<ol style="list-style-type: none"> a. Provide insights into stone quarrying techniques, using videos and demonstrations to illustrate 	

Pedagogy	<p>how stones are extracted from quarries and prepared for construction.</p> <p>b. Organize hands-on sessions where students learn stone finishing techniques such as chiseling, polishing, and carving.</p> <p>c. Explore historical and contemporary stone buildings, focusing on arches and lintels.</p>
4	<p>7. Concrete Masonry Unit: Hollow and solid concrete Blocks: Manufacture, uses and properties, CMU Wall construction and detailing.</p> <p>8. Alternative materials for Wall construction: Clay Hollow Blocks, Fly Ash Blocks, Aerated Concrete Blocks, Autoclaved Cellular Concrete (Aerocon) walls.</p> <p>9. Stabilized Mud Blocks and Glass Blocks: Manufacture, uses and properties.</p>
Pedagogy	<p>a. Facilitate discussions comparing different materials' strengths, weaknesses, and sustainability aspects. Encourage critical thinking about material selection in different contexts.</p> <p>b. Organize practical sessions where students work with these materials. Let them experience the process of construction, from laying concrete blocks to assembling alternative materials.</p> <p>c. Assign students to design and build structures using a combination of these materials, emphasizing creativity, durability, and cost-effectiveness.</p>
5	<p>10. Bamboo; quality, properties; joints in bamboo and potential uses of bamboo in construction</p> <p>11. Glass: as a contemporary building material and sustainability</p> <p>12. Wood: Natural, hard and soft wood; quality, properties; joints in wood. Timber: Quality of Timber used in buildings External and Internal, defects, seasoning and preservation</p>
Pedagogy	<p>a. Highlight the sustainability aspects of each material. Discuss the eco-friendliness of bamboo, glass as a recyclable material, and responsible wood sourcing.</p> <p>b. Teach students about the structural considerations when using these materials.</p> <p>c. Organize hands-on sessions where students can touch, feel, and work with these materials.</p> <p>d. Assign design projects that challenge students to incorporate these materials into their architectural concepts.</p>

List of Sheet work for portfolio:

Sl.No	Sheet Work with miniature models	COs
1	Sheet: Timeline of key milestones in building materials and construction methods.	CO1
2	Sheet: Classification of brick types and their properties. Model: Miniature model displaying different brick patterns or bonds.	CO1, CO2
3	Sheet: Explanation of different types of brick walls and their structural elements. Model: Miniature model representing a brick wall with various architectural features.	CO1, CO2
4	Sheet: Overview of different types of stones and their characteristics. Model: Miniature model showcasing a carved stone element or structure.	CO1, CO2
5	Sheet: Description of stone wall construction techniques and bonding methods.	CO2
6	Sheet: Analysis of materials such as mud, sand, lime, cement, mortar, PCC/DPC, and their applications.	CO2, CO3
7	Sheet: Explanation of concrete masonry unit manufacturing process and its applications. Model: Miniature model representing a concrete block wall with appropriate detailing.	CO2, CO3
8	Sheet: Comparison of different alternative wall construction materials and their properties.	CO2, CO3
9	Sheet: Analysing different types of masonry foundations, create new bond patterns for foundations	CO3, CO4,

	Model: Miniature model representing a load-bearing foundation made of brick or stone.	CO5
10	Sheet: Analysis of bamboo's properties, and its applications in construction.	CO3, CO4, CO5
11	Sheet: Overview of glass as a building material and its sustainable features. Model: Miniature model showcasing a glass structure or architectural element.	CO1, CO2, CO3
12	Sheet: Analysis of different wood types, their properties, and timber quality in construction. Model: Miniature model featuring a wooden structure or component.	CO3, CO4, CO5

Reference Books	
Books (Title of the Book/Name of the author/Name of the publisher/Edition and Year)	
1	Francis K. Ching, „Buildingconstruction“,Wiley;5edition(February17,2014)
2	R. Barry,“ConstructionofBuildings”Vol1.,1999byWiley-Blackwell
3	RoyChudley,“ConstructionTechnology”,3rdEdition, Longman,1999
4	W.B.Mckay,“BuildingConstruction”,Donhead,2005
5	Building Construction by Rangwala ,33rd Edition 2019
6	Building Construction by Sushil Kumar

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

CO	Course Outcomes	RBT Level	Level Indicator
CO1	Recall and describe the historical evolution of building materials and construction methods.	L1,L2	Remember, understand
CO2	Apply knowledge and skills in selecting appropriate materials and construction techniques for various architectural and structural elements, including walls, foundations, and joints.	L3	Apply
CO3	Analyse the structural and aesthetic characteristics of different building materials and techniques, considering factors such as bonds, arches, lintels, sustainability, and preservation.	L4	Analyse
CO4	Evaluate the suitability and effectiveness of building materials and techniques in terms of their performance, cost, environmental impact, and long-term maintenance.	L5	Evaluate
CO5	Design by Synthesising construction systems and elements using appropriate building materials, considering factors like manufacturing, properties, construction methods, and sustainability practices.	L6	Create

Mapping of Course Outcomes to Program Outcomes:

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

CO3		3		3			2					2		
CO4				3			2							3
CO5			3						2	2				

Weblinks and Video Lectures (e-Resources)

1	All types of brick bonds and junction : https://www.youtube.com/playlist?list=PLX50j2HV43tdPQyOir7SNTZfr0-MlikEJ
2	Building Construction and materials : https://www.youtube.com/playlist?list=PLX50j2HV43tf2Y-eXyZlIbvFcf-D_Hvlmy

Assessment Pattern (both CIE and SEE)

5 Credit Course								
Assessment Method	Component	Type of Assessment	Assessment Type used	Max. Marks	Evaluation Details	Reduced Marks	Min. Marks	Total
CIE	Studio	Continuous Assessment Tool	Sheet work/ Portfolio and Models	40	Accuracy and Completeness of Construction Drawing Sheets (20 marks)	40	20	40
					Documentation and Portfolio (10 marks)			
	Theory	AAT	Seminar/ Case Study Presentations	10	Quality and Presentation of Construction Models (10 marks)	15	7.5	15
					Content and Research (10 marks)			
		AAT	MCQ/Quiz	10	Organization and Structure (3 marks)			
					Writing Style and Language (2 marks)			
					Knowledge and understanding (6 marks)	10	5	10
					Presentation Skills (3 marks)			
					Engagement and Interaction (1 mark)			
Total CIE Marks							37.5	75
SEE				75	SEE Exam is Theory exam, conducted for 75 marks.	75	30	75
CIE+SEE							75 + 75	150
<p>The Marks of Continuous Internal Evaluation (CIE) is 75 and for Semester End Exam (SEE) (viva) is 75marks. The student has to obtain a minimum of 50% of the maximum marks of CIE and 40 % of maximum marks of SEE (viva) to pass. The passing percentage shall not be less than the 50% in aggregate for a course (i.e. CIE and SEE (viva) put</p>								

together). Based on the marks scored in CIE+SEE (viva) grading will be awarded for this course.

CIE- Continuous Internal Evaluation (75 Marks)

Bloom's Category	Studio			Theory	
	Continuous Assessment Tool		Alternative Assessment Tool (AAT)	Alternative Assessment Tool (AAT)	
	Sheet Work and portfolio	Models	Material palette	Seminar/ Case Study Presentations	MCQ/Quiz
	30 Marks	10 Marks	15 Marks	10 Marks	10 Marks
Remember	2	-	-	2	2
Understand	2	-	-	2	2
Apply	5	-	3	3	2
Analyse	5	-	3	3	-
Evaluate	6	4	4	-	-
Create	10	6	5	-	-

CIE Course Assessment Plan

CO's	Marks Distribution					Total Marks	Weightage
	STUDIO						
	Module-1	Module-2	Module-3	Module-4	Module-5		
CO1	1	1	2	2	2	8	11%
CO2	2	3	3	3	3	14	18%
CO3	3	3	3	3	3	15	20%
CO4	3	3	4	4	4	18	24%
CO5	3	4	4	4	5	20	27%
Total	12	14	16	16	17	75	100 %

SEE- Semester End Examination (75 Marks)

Bloom's Category	SEE Marks (Viva)
Remember	4
Understand	4
Apply	14
Analyse	15
Evaluate	18
Create	20

SEE Course Plan

CO's	Marks Distribution	Total Marks	Weightage
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	Module-1	Module-2	Module-3	Module-4	Module-5		
CO1	1	1	2	2	2	8	11%
CO2	2	3	3	3	3	14	18%
CO3	3	3	3	3	3	15	20%
CO4	3	3	4	4	4	18	24%
CO5	3	4	4	4	5	20	27%
Total	12	14	16	16	17	75	100 %

Course Contents and Lecture Schedule

Module No.	Topics	No. of Lectures
1	<ul style="list-style-type: none"> a. Introduction to the course, syllabus review, and course objectives. Overview of the historical evolution of building materials and construction methods. b. Familiarising with different elements of buildings and terminology's used in construction methods. 	10
2	<ul style="list-style-type: none"> a. Introduction to bricks, their types, properties, and manufacturing methods. b. Understanding the uses of bricks in construction, load-bearing foundations in brick. Practical demonstration of bricklaying techniques. 	10
3	<ul style="list-style-type: none"> a. Study of hollow and solid concrete blocks, their manufacture, properties, and uses. Introduction to CMU wall construction and detailing. b. Exploring alternative materials for wall construction, such as clay hollow blocks, fly ash blocks, and aerated concrete blocks. Understanding their manufacture, properties, and wall construction methods. 	10
4	<ul style="list-style-type: none"> a. Introduction to stone. Study of load bearing stone masonry foundation, construction techniques. b. Examination of bamboo as a construction material, including its quality, properties, joints, and potential uses in building structures. 	10
5	<ul style="list-style-type: none"> a. Overview of glass as a building material, focusing on its contemporary applications, transparency, strength, and thermal properties. b. Discussion of the sustainability aspects of using glass in construction. Case studies of sustainable glass structures. c. Introduction to natural, hard, and softwood types, their qualities, and properties. d. Detailed exploration of wood joinery techniques, emphasizing proper joints and connections in wood construction. 	20
	Recapitulation of key concepts and topics covered in the previous modules. Practice exercises and discussions to reinforce learning.	10
	<ul style="list-style-type: none"> a. Assessment of students' understanding through quizzes, assignments, or presentations. b. Project work and presentations related to the topics covered throughout the course. Evaluation and feedback. 	10
Total		80 Hrs



Dayananda Sagar Academy of Technology & Management
(Autonomous Institute under VTU)

Semester	:	1st			
Course Title	:	ARCHITECTURAL GRAPHICS I			
Course Code	:	BAT103			
Course Type (Theory/ Practical/ Integrated)	:	Integrated			
Category	:	PCC			
Stream	:	Architecture	CIE	:	50 Marks
Total Hours (L:T:P:S)	:	1:0:0:3 Hrs/Week	SEE (Viva Voce)	:	50 Marks
Credits	:	3	SEE Duration	:	-

Course Learning Objectives: Students will be taught

Sl.No	Course Objectives
1	The course exposes students to a range of graphic tools, techniques and conventions that designers use to communicate architectural ideas
2	To train the students to work on drawing methods both in freehand and with instruments.
3	Use graphic tools to record visual observations
4	Analysing and 3D visualisation of the built forms

Teaching-Learning Process

Pedagogy (General Instructions):

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

1. The students need to draft the sheets in the studios.
2. Use of models for explanation and better visualization
3. Use of models in explanation of object drafting
4. Use of Video animation for easy understanding of various drawings.



DSATM

Scheme of Teaching and Examinations for B.Arch. Programme -2023-24
Outcome Based Education and Choice Based Credit System (CBCS)
(Effective from the Academic Year 2023-24)

COURSE SYLLABUS

Module No.	Contents of the Module	Hours
1	<ul style="list-style-type: none">- Introduction to Graphic Fundamentals: Basic methods of drawings, dimensioning, sign conventions for representing materials and architectural elements, line-weightages and its applications, architectural lettering styles.	8
Pedagogy	<ul style="list-style-type: none">• Chalk & Talk, discussions in Studio and students need to draft in class.• Use of ICT for better explanation. <p>A consolidated portfolio containing exercises related to each of the above topics are to be submitted for progressive assessment & Viva voce examination.</p>	
2	<ul style="list-style-type: none">- Introduction to Geometry: Basic construction methods of geometrical forms and curves such as triangles, quadrilaterals, regular polygons.- Development of simple architectural elevational surfaces, roof forms, built enclosures and envelopes such as tents and exercises of application to develop through paper and cardboard models.	12
Pedagogy	<ul style="list-style-type: none">• Chalk & Talk, discussions in Studio and students need to draft in class.• Explore videos in various websites using animation of geometrical drawings.• Use of models for explanation and better visualization <p>A consolidated portfolio containing exercises related to each of the above topics are to be submitted for progressive assessment & Viva voce examination.</p>	
3	<ul style="list-style-type: none">- Introduction to scales: plane, diagonal, reduced & enlarged scales and its application to architectural drawings.- Free-hand drawings exercises of rendering techniques of plants, trees, water, landscape, human figures, vehicles, furniture.	12
Pedagogy	<ul style="list-style-type: none">• Chalk & Talk, discussions in Studio and students need to draft in class.• Use of ICT for better explanation.• Reference books as suggested for renders. <p>A consolidated portfolio containing exercises related to each of the above topics are to be submitted for progressive assessment & Viva voce examination.</p>	
4	<ul style="list-style-type: none">- Introduction to orthographic projection (First angle projection): Principles of orthographic projection, projections of points, lines and planes in different positions.- Orthographic Projection of Solids, architectural elements and built forms.	16
Pedagogy	<ul style="list-style-type: none">• Chalk & Talk, discussions in Studio and students need to draft in class.• Use of ICT for better explanation. <p>A consolidated portfolio containing exercises related to each of the above topics are to be submitted for progressive assessment & Viva voce examination.</p>	

5	<ul style="list-style-type: none"> - 3D Projections: Exercises on Isometric and Axonometric views of Architectural elements and built forms. - Exercises on exploded isometric and axonometric views of architectural built forms. 	16
Pedagogy	<ul style="list-style-type: none"> • Chalk & Talk, discussions in Studio and students need to draft in class. • Use of ICT for better explanation. <p>A consolidated portfolio containing exercises related to each of the above topics are to be submitted for progressive assessment & Viva voce examination.</p>	

List of Exercises

Module.No	Experiments/Programs	COs
1	Sign conventions, Line weights and types 1 & 2	CO1
	Lettering & Composition 1	CO1&2
2	Geometrical forms construction 1 & 2	CO3
	Development of surfaces 1 & 2	CO3
3	Scales 1& 2	CO2&3
	Rendering Techniques 1, 2 & 3	CO1&2
4	Orthographic projections 1 & 2	CO3
5	Isometric views - Architectural elements and built forms 1 & 2	CO3&5
	Axonometric views - Architectural elements and built forms 1 & 2	CO3&5
	Exploded Isometric views - Architectural built forms 1	CO4&5
	Exploded Axonometric views - Architectural built forms 1	CO4&5

Reference Books

Books (Title of the Book/Name of the author/Name of the publisher/Edition and Year)

1	Francis D.K.Ching,"ArchitecturalGraphics",VanNostrandReinholdCo.,1985
2	I.H. Morris, "Geometrical Drawing for Art Students", Longmans(1902)
3	Robert.W.Gill, "Rendering with pen and ink".
4	ShankarMalik,"Perspective&Sciography",1994, Allied Publisher

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

CO	Course Outcomes	RBT Level	Level Indicator
CO1	Be able to identify and understand the basic principles, methods of drawing, using instruments, lettering fonts and sign conventions which are graphically used to read architectural drawings.	Remember & understand	R & U
CO2	Be able to apply different elements, models and scales to make professional 2D & 3D architectural drawings.	Apply	A
CO3	Be able to analyse the effectiveness of different drawing methods, techniques, and scale systems and the differences between different types of 3D projections.	Analyse	An
CO4	Be able to evaluate which to use and how to achieve the accuracy, integrity and realism in architectural drawings through the learnt graphical techniques and tools.	Evaluate	E
CO5	Be able to create professional quality architectural drawings/designs using a variety of methods, techniques and visual aids.	Create	C

Mapping of Course Outcomes to Program Outcomes:

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
C01	✓													
C02			✓											
C03					✓									
C04				✓										
C05										✓				

Weblinks and Video Lectures (e-Resources)

1	https://ndl.iitkgp.ac.in
2	https://www.youtube.com/watch?v=VrU73lwRyc4
3	https://www.youtube.com/watch?v=q8R1618khj4
4	https://www.youtube.com/watch?v=-mWqb3DUvgM
5	https://www.youtube.com/watch?v=_HUDWZ7pkmc

Assessment Pattern (both CIE and SEE)

3 Credit Course –								
Assessment Method	Component	Type of Assessment	Assessment Type used	Max. Marks	Evaluation Details	Reduced Marks	Min. Marks	Total
CIE	Studio	20 Drafted sheets	Evaluation on visualisation & quality of drawings	200	Each sheet is evaluated on the basis of creativity & visualisation skills, quality of line weights/drafting skills, on time submission.	50	25	50
Total CIE Studio							25	50
SEE	Viva voce on 20 Drafted sheets			100	SEE Exam is Viva voce, conducted for 50 Marks.	50	20	50
CIE+SEE							50	100
<p>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 to pass the Viva voce is 20 (40% of Maximum marks – 50). The average score of CIE + SEE shall be not less than 50% maximum marks of the course, based on this grading will be awarded.</p>								

3 Credit Course

Assessment Method	Component	Type of Assessment	Assessment Type used	Max. Marks	Evaluation Details	Reduced Marks	Min. Marks	Total
CIE	Studio		Pedagogical Initiatives	200	Each sheet is evaluated on the basis of creativity & visualisation skills, quality of line weights/drafting skills, on time submission.	25	10	25
SEE				100	SEE Exam is Viva Voce, conducted for 100 Marks, scored marks are scaled down to 50 marks	50	20	50
CIE+SEE							50	100
Note:								

CIE- Continuous Internal Evaluation (50 Marks)

Bloom's Category	Studio
	Progressive Assessment
	Total 20 Sheets from all the topics of the Modules
	50 Marks
Remember	5
Understand	5
Apply	7.5
Analyse	22.5
Evaluate	2.5
Create	7.5

CIE Course Assessment Plan

CO's	Marks Distribution					Total Marks	Weightage
	Progressive Marking of sheets submitted on each topic in the syllabus						
	Module-1	Module-2	Module-3	Module-4	Module-5		
CO1	25		15			40	20
CO2	5		25			30	15
CO3		40	10	20	20	90	45
CO4					10	10	5
CO5					30	30	15
Total	30	40	50	20	60	200	100

SEE- Semester End Examination (50 Marks)

Bloom's Category	SEE Marks (Viva Voce on the sheets done on each topic in the syllabus during the semester)
Remember	5
Understand	5
Apply	7.5
Analyse	22.5
Evaluate	2.5
Create	7.5

SEE Course Plan

CO's	Marks Distribution					Total Marks	Weightage
	Module-1	Module-2	Module-3	Module-4	Module-5		
CO1	12.5		7.5			20	20
CO2	2.5		12.5			15	15
CO3		20	5	10	10	45	45
CO4					5	5	5
CO5					15	15	15
Total	15	20	25	10	30	100	100

Course Contents and Lecture Schedule

Module No.	Topics	No. of Hours
1	Introduction to Graphic Fundamentals: Basic methods of drawings, dimensioning, sign conventions for representing materials and architectural elements.	4
1	Exercises on line-weightages and its applications, architectural lettering styles.	4
2	Introduction to Geometry: Basic construction methods of geometrical forms and curves such as triangles, quadrilaterals, regular polygons.	4
2	Development of simple architectural elevational surfaces, roof forms and exercises of application to develop through paper and cardboard models.	4
2	Development of roof forms, built enclosures and envelopes such as tents and exercises of application to develop through paper and cardboard models.	4
3	Introduction to scales: plane, diagonal and its application to architectural drawings.	4
3	Introduction to reduced & enlarged scales and its application to architectural drawings.	4
3	Free-hand drawings exercises of rendering techniques of plants, trees, water, landscape,	4

	human figures, vehicles, furniture.	
4	Introduction to orthographic projection (First angle projection): Principles of orthographic projection, projections of points, lines and planes in different positions.	4
4	Orthographic projection: projections of points, lines and planes in different positions.	4
4	Orthographic Projection of Solids, architectural elements and built forms.	4
4	Orthographic Projection of Solids, architectural elements and built forms.	4
5	3D Projections: Exercises on Isometric views of Architectural elements and built forms.	4
5	3D Projections: Exercises on Axonometric views of Architectural elements and built forms.	4
5	3D Projections: Exercises on exploded isometric views of architectural built forms	4
5	3D Projections: Exercises on exploded axonometric views of architectural built forms	4
	Total	64 Hrs



Dayananda Sagar Academy of Technology & Management

(Autonomous Institute under VTU)

Semester	:	1st		
Course Title	:	History of Architecture I		
Course Code	:	BAT104		
Course Type (Theory/ Practical/ Integrated)	:	Theory		
Category	:	PCC		
Stream	:	Arch	CIE	50 Marks
Total Hours (L: T:P:S)	:	3:0:0:0 Hrs/Week	SEE	100 Marks
Credits	:	03	SEE Duration	3 Hours

Course Learning Objectives: Students will be taught

Sl.No	Course Objectives
1	To enable students to understand the evolution of architecture and different architecture solutions were evolve within the prevalent socio-economic and culture environment, demographic, political, regional influences from Prehistory, Stone Age to civilizations across continents, early Iron Age.

Teaching-Learning Process

Pedagogy (General Instructions):

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

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.



DSATM

Scheme of Teaching and Examinations for BE Programme -2023-24
Outcome Based Education and Choice Based Credit System (CBCS)
(Effective from the Academic Year 2023-24)

COURSE SYLLABUS

Module No.	Contents of the Module	Hours
1	<p>1. Introduction meaning, methods and significance of History and Architecture's connection with History.</p> <p>2. Introduction to Pre-Historic Civilization (early cultures): Primitive man - shelters, settlements, ritual centers (religious and burial systems) E.g.: Oval hut, Nice; settlement at Çatalhöyük; Megalithic architecture (Dolmen tomb, gallery grave, passage grave); Henge Monuments, Stonehenge.</p>	10
Pedagogy	<p>1) The teacher can use PPTs, Videos to discuss the buildings, style of architecture.</p> <p>2) The students need to sketch the buildings for its unique qualities.</p> <p>3) Quizzes, models, seminars from students can be encouraged.</p>	
2	<p>3. Indus Valley Civilization (Indus and Ghaggar Hakra): Forces shaping settlements and habitats, E.g.: Mehrgarh, Layout of Mohenjo-Daro, dwellings and monumental architecture.</p> <p>4. Mesopotamia (Tigris and Euphrates): Forces shaping settlements and habitats E.g.: Ziggurats at Warka, Ur and Palace of Sargon.</p>	9
Pedagogy	<p>1) The teacher can use PPTs, Videos to discuss the buildings, style of architecture.</p> <p>2) The students need to sketch the buildings for its unique qualities.</p> <p>3) Quizzes, models, seminars from students can be encouraged.</p>	
3	<p>3. Egyptian Civilization (Nile): Forces shaping settlements and habitats (funerary and sacred spaces), E.g.: Mastabas, Pyramid complex, Temple of Khons, Karnak.</p> <p>4. Chinese Civilization (Yellow and Yangtze): Forces shaping settlements and habitats. Shang dynasty (Layout of Zhengzhou, Palace and Tomb at Yin), Zhou dynasty (ritual complex and Wangcheng Plan).</p>	10
Pedagogy	<p>1) The teacher can use PPTs, Videos to discuss the buildings, style of architecture.</p> <p>2) The students need to sketch the buildings for its unique qualities.</p> <p>3) Quizzes, models, seminars from students can be encouraged.</p>	

4	<p>3. Japanese Civilization: Forces shaping settlements and habitats. E.g.: Kofun Period (burial mounds/ tumulus)</p> <p>4. Introduction to Desert and Mountainous Cultures: Forces shaping settlements and habitats (environmental and cultural influences) E.g.: include First civilization of Americas, Mayans, early societies/ cultures in the Sahara, Thar, North America.</p>	9
Pedagogy	<p>1) The teacher can use PPTs, Videos to discuss the buildings, style of architecture. 2) The students need to sketch the buildings for its unique qualities. 3) Quizzes, models, seminars from students can be encouraged.</p>	
5	<p>10. Introduction to Indian Tribal Cultures: Forces shaping settlements and habitats E.g.: include Indigenous Peoples across the globe (environmental, cultural influences on settlements).</p> <p>11. Introduction to Pre-Classical Architecture (Indian sub-continent): Aryan and early Mauryan E.g.: Vedic village, Vedic Town and city planning principles (mandalas), Palace at Pataliputra.</p>	10
Pedagogy	<p>1) The teacher can use PPTs, Videos to discuss the buildings, style of architecture. 2) The students need to sketch the buildings for its unique qualities. 3) Quizzes, models, seminars from students can be encouraged.</p>	

Reference Books	
Books (Title of the Book/Name of the author/Name of the publisher/Edition and Year)	
1	Francis D K Ching, Mark M. Jarzombek, Vikramaditya Prakash, "A Global History of Architecture" by Wiley and Sons, 2011.
2	Percy Brown , "Indian Architecture Buddhist and Hindu", Read Books, 2010.
3	Sir Banister Fletcher; edited by Dan Cruickshank , "History of Architecture", CBS Publishers and Distributors, 2003.
4	Satish Grover, "Buddhist and Hindu Architecture in India", CBS Publishers and Distributors, 2003.
5	History of Architecture by James Fergusson.

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

CO	Course Outcomes	RBT Level	Level Indicator
CO1	To understand the importance of historical, geographical, socio-economic, culture environment, demographic, political and regional climate influences in building materials and construction techniques for the early civilization architecture development.	L1	R & U
CO2	To apply the knowledge of early civilization architecture to recognize, classify and evaluate different architecture monuments.	L2	A
CO3	To analyse the early civilization structures in terms of their planning, form, type of	L3	An

	functions, architecture styles, materials and method of construction.		
CO4	To evaluate the various early civilization architecture development were influences with their socio-economic and climatic conditions plays role in the selection of different types of materials.	L4	E
CO5	To design/create the comprehensive study methodology for the river valley or other early resources and invention helps the evaluation of early civilization.	L5	C

Mapping of Course Outcomes to Program Outcomes:

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

Weblinks and Video Lectures (e-Resources)

1	https://ndl.iitkgp.ac.in
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Assessment Pattern (both CIE and SEE)

3 Credit Course								
Assessment Method	Component	Type of Assessment	Assessment Type used	Max. Marks	Evaluation Details	Reduced Marks	Min. Marks	Total
CIE	Theory	AAT	Pedagogical Initiatives	40	Any two assessment Methods as per VTU Clause 22OB4.2 of regulations (If assessment is Project Based Learning, then one assessment method may be adopted). Average of three Internal Assessment Tests each of 25 Marks	20	10	20
		Test-1	Theory	20		30	15	30
		Test-2	Theory	20				
		Test-3	Theory	20				
Total CIE Theory						25	15	50
SEE				100	SEE Exam is Theory Exam, conducted for 100 Marks, scored marks are scaled down to 50 marks	100	40	100
CIE+SEE							65	150

CIE- Continuous Internal Evaluation (50 Marks)

Bloom's Category	Continuous Assessment Tests			Theory
	Test-1	Test-2	Test-3	Alternative Assessment Tool (AAT) (Activity+Assignment)
	20 Marks	20 Marks	20 Marks	
	Remember			
Understand	10	10	10	
Apply	10	10	10	
Analyse	20	20	20	
Evaluate	-	-	-	20
Create	-	-	-	20

CIE Course Assessment Plan

CO's	Marks Distribution					Total Marks	Weightage
	Test-1		Test-2		Test-3		
	Module-1	Module-2	Module-3	Module-4	Module-5		
CO1	10	10	10	10	5	45	45%
CO2							
CO3		10	10	10	10	30	30%
CO4	5				10	15	15%
CO5							
CO6							
Total	15	20	20	20	25	100	100%

SEE- Semester End Examination (50 Marks)

Bloom's Category	SEE Marks (100% Theory)
Remember	40%
Understand	
Apply	30%
Analyse	30%
Evaluate	-
Create	-

SEE Course Plan

CO's	Marks Distribution					Total Marks	Weightage
	Module-1	Module-2	Module-3	Module-4	Module-5		
CO1	5	10	10	10	5	40	40%
CO2							
CO3		10	10	10		30	30%
CO4	10	5	5	10		30	30%
CO5							
CO6							
Total							

Course Contents and Lecture Schedule

Module No.	Topics	No. of Lectures
1	Introduction meaning, methods and significance of History and Architecture's connection with History.	2
1	Introduction to Pre-Historic Civilization (early cultures): Primitive man - shelters, settlements, ritual centers (religious and burial systems)	2
1	Examples 1 : Oval hut, Nice; settlement at Çatalhöyük	2
1	Examples 2 : Megalithic architecture (Dolmen tomb, gallery grave, passage grave)	2
1	Examples 3 : Henge Monuments, Stonehenge	2
2	Indus Valley Civilization (Indus and Ghaggar Hakra): Forces shaping settlements & habitats.	1
2	Examples 4 : Mehrgarh, Layout of Mohenjo-Daro, dwellings and monumental architecture.	3
2	Mesopotamia (Tigris and Euphrates): Forces shaping settlements and habitats.	1
2	Examples 5 : Ziggurats at Warka, Ur and Palace of Sargon.	3
3	Egyptian Civilization (Nile): Forces shaping settlements and habitats (funerary and sacred spaces),	1
3	Examples 6 : Mastabas, Pyramid complex, Temple of Khons, Karnak.	3
3	Chinese Civilization (Yellow and Yangtze): Forces shaping settlements and habitats.	1
3	Examples 7 : Shang dynasty (Layout of Zhengzhou, Palace and Tomb at Yin)	3
3	Examples 8 : Zhou dynasty (ritual complex and Wangcheng Plan).	2
4	Japanese Civilization: Forces shaping settlements and habitats.	1
4	Examples 9 : Kofun Period (burial mounds/ tumulus)	2
4	Introduction to Desert and Mountainous Cultures: Forces shaping settlements and habitats (environmental and cultural influences)	2
4	Examples 10 : First civilization of Americas, Mayans, early societies / cultures in the Sahara, Thar, North America.	4
5	Introduction to Indian Tribal Cultures: Forces shaping settlements and habitats	2
5	Examples 11 : Indigenous Peoples across the globe (environmental, cultural influences on settlements).	2
5	Introduction to Pre-Classical Architecture (Indian sub-continent): Aryan and early Mauryan	2
5	Examples 12 : Vedic village, Vedic Town and city planning principles (mandalas), Palace at Pataliputra.	4
Total		48 Hrs



Dayananda Sagar Academy of Technology & Management
(Autonomous Institute under VTU)

Semester	:	1st			
Course Title	:	Basic Design and Visual Arts			
Course Code	:	BAT105			
Course Type (Theory/ Practical/ Integrated)	:	Practical			
Category	:	PCC			
Stream	:	Arch	CIE	:	50 Marks
Total Hours/Week (L:T:P:S)	:	1:0:0:4Hours/Week	SEE	:	100 Marks
Credits	:	5	SEE Duration	:	-

Course Learning Objectives: Students will be taught

Sl.No	Course Objectives
1	To encourage a critical orientation to design thinking and action.
2	Understanding Design Principles
3	Spatial Awareness; students will develop an understanding of spatial relationships and the ability to visualize and manipulate three-dimensional forms.
4	Students will be encouraged to think critically and creatively to solve design problems.
5	Students will develop skills in representing their design ideas through various visual media.

Teaching-Learning Process Pedagogy

(General Instructions):

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

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 devise innovative pedagogy to improve teaching-learning.



DSATM

Scheme of Teaching and Examinations for BE Programme -2023-24 Outcome Based Education and Choice Based Credit System (CBCS)(Effective from the Academic Year 2023-24)

COURSE SYLLABUS

Module No.	Contents of the Module	Hours
1	<p>Principles of Composition: Visual elements of Design (Such as points, lines, planes, shapes, forms, space, color and texture). Principles of Design (Such as Unity, Balance, contrast, scale, proportion, pattern, rhythm, Harmony and emphasis etc.). Gestalt Principles: principles/laws of human perception that describe how humans" group similar elements, recognize patterns and simplify complex images when we perceive objects.</p> <p>Study Tools- Any three can be explored</p> <ul style="list-style-type: none"> • Observation & Study to develop hand & cognitive skill. • Colours, Pattern & textures, and function • Additive and Subtractive of Forms Freehand sketching • Exercises of rendering techniques. 	
Pedagogy	<p>Develop an understanding of design elements and principles to create visually balanced and harmonious compositions. Apply composition principles to effectively communicate ideas and emotions through visual arrangements.</p>	
2	<p>Application and Implementation Application of Elements of Design / visual grammar & gestalt principles in 2D composition.</p> <p>Study Tools- Any three can be explored</p> <ul style="list-style-type: none"> • Colors, Pattern & textures, and function • Additive and Subtractive of Forms • Freehand sketching • Exercises of rendering techniques • Material Study 	
Pedagogy	<p>Apply architectural design principles and concepts to develop innovative and functional designs that respond to user needs and site conditions. Demonstrate proficiency in utilizing architectural software tools and techniques for the visualization and presentation of design ideas and solutions.</p>	
3	<p><u>Patterns</u></p> <ol style="list-style-type: none"> 1. Study of pattern: Natural, Manmade and Geometric patterns <ul style="list-style-type: none"> • Observation: Observing patterns in world around, Documentation: document patterns, Classification: Categorize the patterns you observe into natural, man made, or geometric patterns, Research: Understand the underlying principles, historical context, and cultural significance associated with these patterns, Analysis: Analyse the visual impact, emotional response, or functional aspects of the patterns as well. • Appreciation of use of patterns in design 2. Space making through patterns <p>Study tools - Any three can be explored</p> <ul style="list-style-type: none"> • Deconstruction of natural, manmade pattern to grid and abstract patterns • Point, line, Plane, Form using Grid Pattern. 	

	<ul style="list-style-type: none"> • Volumetric Exercises- Solid & Void. • Freehand sketching <p>Study of Material & structure in nature, and expressing through design.</p>	
Pedagogy	Explore and analyze patterns in architecture to understand their cultural, historical, and aesthetic significance. Apply pattern principles in design projects to create visually engaging and cohesive architectural compositions.	
4	<p>Multi- Sensory aspect of Art Exploration of various type of Art of India: fine arts, performing arts, commercial arts, industrial arts, folk arts, abstract art, visual arts, spatial arts, temporal arts, pop art, etc Study of Art Forms & Crafts of India and Asia. Art Styles of India- folk, popular and modern art, Arttrends, periods and Isms. Study tools-</p> <ul style="list-style-type: none"> • Explore and learn any one Indian art and form. <p>Structural/Material translation from concept mind mapping.</p>	
Pedagogy	Investigate and understand the multi-sensory aspects of various Indian art forms to inform architectural design and create immersive spatial experiences. Apply the principles of multi-sensory art exploration in architecture, incorporating elements such as color, texture, sound, and fragrance to enhance the user's sensory engagement and emotional connection with the built environment.	
5	<p>Techniques to improve Creativity by Indian CraftStudy tools-</p> <ul style="list-style-type: none"> • Exploring Performing arts of India, • Regional Folk Dance and Crafts like, Leather puppets etc. <p>To understand the oriental & Indian styles. Use them in product design.</p>	
Pedagogy	Explore traditional Indian craft techniques as a source of inspiration to foster creative thinking and innovative design approaches in architecture. Integrate Indian craft techniques into architectural projects to enhance material exploration, detailing, and craftsmanship, resulting in unique and culturally significant architectural expressions.	

List of Experiments or Programs

SI.No	Experiments/Programs	COs
1	Material Exploration: Conduct experiments with various materials to understand their properties, textures, and how they can be manipulated to create different visual effects in architectural design.	
2	Color Studies: Engage in color experiments and programs to explore the psychological and emotional impact of different color palettes, and learn how to effectively use color in architectural compositions.	
3	Light and Shadow Studies: Conduct experiments with light and shadow to understand their role in creating spatial qualities, visual depth, and ambiance in architectural spaces.	
4	Proportion and Scale Exercises: Conduct exercises and programs to explore the principles of proportion and scale, understanding their impact on the perception of space and architectural compositions.	
5	Visual Perception and Illusion: Conduct experiments and programs to study visual perception and illusions, exploring how optical phenomena can be employed in architectural design to create unique visual experiences.	
6	Spatial Configuration: Experiment with spatial arrangements and configurations to understand how different spatial layouts can influence user experiences and interactions	

	within architectural environments.	
7	Composition and Visual Organization: Conduct experiments and programs focused on composition and visual organization, exploring how the arrangement of architectural elements can create visually appealing and harmonious designs.	
8	Gesture and Expressive Drawing: Engage in gesture drawing exercises and programs to explore the expressive potential of line and form, learning how to communicate architectural ideas through dynamic and intuitive sketches.	
9	Collage and Mixed Media: Experiment with collage and mixed media techniques to explore the integration of different visual elements and materials in architectural design, fostering creativity and interdisciplinary thinking.	
10	Site-specific Installations: Design and create site-specific installations that respond to the unique characteristics of a given location, allowing for experimentation with materials, spatial relationships, and the interaction between art and architecture.	

Reference Books	
Books (Title of the Book/Name of the author/Name of the publisher/Edition and Year)	
1	Donald Norman, „Design of Everyday Things”, Basic Books; 2 edition (5 November 2013)
2	John Berger, „Ways of Seeing” 1972, Penguin, UK
3	Maitland Graves, „The Art of Color and Design”, McGraw-Hill, 1951
4	Robert Gill, “Rendering with Pen and Ink”, Thames & Hudson; Revised, Enlarged edition (2 April 1984)
5	Abid Husain, “National culture of India”, National Book Trust, India, 1994

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

CO	Course Outcomes	RBT Level	Level Indicator
CO1	Develop a deep understanding of basic design principles and visual arts, empowering students to apply creative and aesthetic considerations with discernment in architectural design.	L1, L2	Remember and understand
CO2	Apply a comprehensive understanding of basic design principles and visual arts to effectively incorporate creative and aesthetic considerations in architectural design projects.	L3	Apply
CO3	Analyze the fundamental principles of basic design and visual arts, equipping students with the ability to critically assess and apply creative and aesthetic elements in architectural design processes.	L4	Analyze
CO4	Develop the ability to creatively apply and integrate principles of basic design and visual arts, enabling students to create innovative and visually compelling architectural designs.	L5	Evaluate
CO5	Critically analyze the principles of basic design and visual arts, enabling students to evaluate and apply creative and aesthetic elements in architectural design with a discerning and thoughtful approach. art trends, periods, and artistic movements.	L6	Design

Mapping of Course Outcomes to Program Outcomes:

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
C01		✓				✓								
C02			✓											
C03		✓		✓		✓								
C04					✓					✓				
C05														

Weblinks and Video Lectures (e-Resources)	
1	The Getty Museum: Principles of Design:
2	Heilbrunn Timeline of Art History (The Met):
3	The Interaction of Color by Josef Albers:
4	Butterick's Practical Typography:
5	Thinking with Type:

Assessment Pattern (both CIE and SEE)

4 Credit Course – PCC								
Assessment Method	Component	Type of Assessment	Assessment Type used	Max. Marks	Evaluation Details	Reduced Marks	Min. Marks	Total
CIE	STUDIO	Constant Assessment	Presentation, quality and quantity of work.	40	Creativity and abstraction (15marks) Illustration, presentation and extraction (5 marks) Superiority, clarity, composition, neatness and readability (20marks)	40	20	40
		AAT	Portfolio	10	Completion and the quality of the final portfolio	10	5	10
		AAT	Seminar	15	Understanding of the subject (9 marks)	15	5	15
		AAT	Implementation	10	Attentiveness and efforts to achieve the given problem solutions.	15	7.5	15
Total CIE Practical						37.5	75	
SEE				75	SEE Exam is will take place as a VIVA exam, which will be conducted for 75 marks.	75	30	75
CIE+SEE							75+75	150

The Marks of Continuous Internal Evaluation (CIE) is 75 and for Semester End Exam (SEE) (viva) is 75marks. The student has to obtain a minimum of 50% of the maximum marks of CIE and 40 % of maximum marks of SEE (viva) to pass. The passing percentage shall not be less than the 50% in aggregate for a course (i.e. CIE and SEE (viva) put together). Based on the marks scored in CIE+SEE (viva) grading will be awarded for this course.

CIE- Continuous Internal Evaluation (50 Marks)

Bloom's Category	Continuous Assessment Tests				
	Presentation, quality and quantity of work.	Seminar	Implementation	Model	Portfolio
	30 Marks	15 Marks	10 Marks	10 Marks	10 Marks
Remember	2	3	-	-	3
Understand	2	2	3	5	2
Apply	6	3	-	-	-
Analyse	5	2	2	-	-
Evaluate	5	-	-	-	-
Create	10	5	5	5	5

CIE Course Assessment Plan

CO's	Marks Distribution					Total Marks	Weightage
	Test-1			Test-2			
	Module-1	Module-2	Module-3	Module-4	Module-5		
CO1	1	1	2	2	2	8	11%
CO2	2	3	3	3	3	14	18%
CO3	3	3	3	3	3	15	20%
CO4	3	3	3	4	4	18	24%
CO5	3	4	4	4	5	20	27%
Total	12	14	16	16	17	75	100%

SEE- Semester End Examination (50 Marks)

Bloom's Category	SEE Marks (90% Theory+10% Practical Questions)
Remember	4
Understand	4
Apply	14
Analyse	15
Evaluate	18

Create	20
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SEE Course Plan

CO's	Marks Distribution					Total Marks	Weightage
	Module-1	Module-2	Module-3	Module-4	Module-5		
CO1	1	1	2	2	2	8	11%
CO2	2	3	3	3	3	14	18%
CO3	3	3	3	3	3	15	20%
CO4	3	3	3	4	4	18	24%
CO5	3	4	4	4	5	20	27%
Total	12	14	16	16	17	75	100%

Course Contents and Lecture Schedule

Module No.	Topics	No. of Lectures
1	Understanding Proportion: Grasp the concept of proportion and its importance in architectural design, considering the relationship between elements and their overall composition.	2
1	Scale Awareness: Develop an awareness of scale in architecture, comprehending how different elements relate to human dimensions and the surrounding environment.	3
1	Spatial Organization: Understand how spatial organization influences the functionality and experience of architectural spaces, considering circulation, hierarchy, and relationships between different areas.	7
2	Form and Shape Exploration: Explore the use of various forms and shapes in architectural design, understanding how they contribute to the visual impact and overall composition of a building.	2
2	Material Considerations: Comprehend the characteristics of different materials, such as their properties, textures, and potential applications, to make informed choices in architectural design.	3
2	Color Theory: Understand the principles of color theory and its role in architectural design, considering the psychological and emotional impact of different color palettes.	3
3	Light and Shadow Manipulation: Grasp the importance of light and shadow in architecture, studying their effects on spatial perception, atmosphere, and visual interest.	8
3	Contextual Integration: Understand how to design architecture that responds harmoniously to its surrounding context, including the cultural, historical, and natural environment.	2
3	Sustainability and Environmental Design: Comprehend the principles of sustainable design, considering energy efficiency, material selection, and the integration of passive design strategies.	3
3	Conceptual Thinking: Develop skills in conceptual thinking, allowing for the generation of	5

	creative and innovative design ideas rooted in a clear architectural concept or narrative.	
4	User-Centric Design: Understand the importance of designing for the needs and experiences of users, considering factors such as accessibility, comfort, and usability.	5
4	Site Analysis: Learn how to analyze and evaluate site conditions, including topography, climate, and social context, to inform the design and placement of architectural elements.	2
4	Iterative Design Process: Embrace an iterative design process, involving sketching, modeling, and iterative refinement to explore multiple design possibilities and arrive at optimal solutions.	3
4	Presentation Techniques: Acquire skills in effectively communicating design ideas through various visual and oral presentation techniques, including drawings, renderings, and digital tools.	6
4	Collaboration and Communication: Understand the significance of effective collaboration and communication in architectural design, fostering teamwork, and effective exchange of ideas with clients, consultants, and other stakeholders.	2
5	Historical and Cultural Understanding: Develop an appreciation for architectural history and different cultural influences, allowing for the integration of diverse design inspirations and references.	3
5	Ethical and Professional Considerations: Understand the ethical and professional responsibilities of architects, considering codes of conduct, regulations, and the impact of design decisions on society and the environment.	6
Total		80 Hrs



Dayananda Sagar Academy of Technology & Management (Autonomous Institute under VTU)

Semester	:	1st			
Course Title	:	MODEL MAKING WORKSHOP			
Course Code	:	BAT106			
Course Type (Theory/ Practical/ Integrated/Studio)	:	STUDIO			
Category	:	BSAE			
Stream	:	ARCHITECTURE	CIE	:	50 Marks
Total Hours (L:T:P:S)	:	0:1:0:3 Hrs/Week	SEE (VIVA VOCE)	:	50 Marks
Credits	:	03	SEE Duration	:	-

Course Learning Objectives: To train the students to experiment and manipulate materials leading to creative exploration of forms.

Teaching-Learning Process(General Instructions):

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

- Making a student aware of various materials for model making
- Hands on training for model making in various forms and shapes
- Assign exercises in making different types of models using variety of materials available in the market.

Note:

- Student may be encouraged to use environment friendly materials.
- Progressive marks to include Submission of models as part of CIE.

Pedagogy (General Instructions):

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

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



DSATM

**Scheme of Teaching and Examinations for BE Programme -2023-24
Outcome Based Education and Choice Based Credit System (CBCS)
(Effective from the Academic Year 2023-24)**

COURSE SYLLABUS

Module No.	Contents of the Module	Hours
1	1. Generation of basic forms-cube, cone, dome and arch. 2. Generating of organic and geometrical forms/objects.	9
Pedagogy	Helping students to develop an understanding of different geometric forms and training the minds to recognize the solidity of these forms to different possibilities.	
2	3. Generation of forms & Material exploration: hands on skill by using wood, bamboo, metal wire, thread, balsa wood, cloth, paper board etc	9
Pedagogy	Helping students to develop an understanding of different geometric forms with different materials.	
3	4. Composite forms: Experimental form generation by combining various materials and shapes. (Rods, pipes, slabs, etc.) 5. Free Forms: Tensile structures, Funicular Shells using wood, fabric, plastic etc	9
Pedagogy	Helping students to develop an understanding of different free forms of different materials.	
4	6. Architectural forms: making of windows, wall doors, roofs, trees, shrubs, roads, vehicles etc.	9
Pedagogy	Helping students to develop an understanding of different architectural members with different materials.	
5	7. Introduction to digital modelling like 3D printing and laser cutting.	12
Pedagogy	Helping students to develop an understanding of different digital modes of modelling.	

Reference Books	
Books (Title of the Book/Name of the author/Name of the publisher/Edition and Year)	
1	Arjan Karssen & Bernard Otte, "Model Making: Conceive, Create and Convince", Frame Publishers (November 11, 2014).
2	David Neat, "Model-Making: Materials and Methods", CroWood Press, 2008.
3	JocquiAtkin, "250 tips, techniques, and trade secrets for potters", Barron's Educational Series, 2009.
4	Matt Driscoll, "Model Making for Architects", The Crowood Press Ltd, 2013.
5	Megan Werner, " Model making", Princeton Archit.Press, 2010.
6	Nick Dunn, "Architectural Model Making", Laurence King Publishing, 2014.
7	Roark T. Congdon, "Architectural Model Building", Fairchild Books; 1 edition, 2010.

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

CO	Course Outcomes	RBT Level	Level Indicator
CO1	To familiarize with different model making materials and methods	L1 & L2	Remember & Understand
CO2	To apply the hands on skills to experiment and manipulate different materials to make models of different scale	L3	Apply
CO3	To explore the possibilities of fusing them together to create 2D & 3D Composite forms, free forms and their compositions	L4	Analyze
CO4	To evaluate different materials and methods for making organic shapes & architectural models	L5	Evaluate
CO5	To create different architectural models with different material and model making skills	L6	Create

Mapping of Course Outcomes to Program Outcomes:

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

Weblinks and Video Lectures (e-Resources)	
1	https://ndl.iitkgp.ac.in
2	https://www.youtube.com/watch?v=Kfj2-A5rJoQ
3	https://www.youtube.com/watch?v=kMil6ETrmj0

Assessment Pattern (both CIE and SEE)

3 & 2 Credit Course								
Assessment Method	Component	Type of Assessment	Assessment Type used	Max. Marks	Evaluation Details	Reduced Marks	Min. Marks	Total
CIE	Studio	Continuous Assessment Tool	Sketch book & Models	30	<ul style="list-style-type: none"> • Sketch book (10 marks) • Documentation of Model making (10 marks) • Quality and Presentation of Models (10 marks) 	30	15	30
		AAT	Presentation of Models	10	<ul style="list-style-type: none"> • Accuracy and Completeness of Models 	20	10	20
		AAT	Exhibition of Models	10	<ul style="list-style-type: none"> • Exhibiting the models 			
	Total CIE Theory							25
SEE	Viva voce			50	SEE Exam is Viva Voce Exam, conducted for 50 Marks	50	20	50
CIE+SEE							50+50	100
<p>Note: A few of the Courses of 3 Credit are Integrated Course Type, for such courses the method suggested for 4 Credit IPCC shall be followed.</p>								

CIE- Continuous Internal Evaluation (50 Marks)

Bloom's Category	Studio			
	Continuous Assessment Tests		Alternative Assessment Tool (AAT)	
	Sketch Book	Models	Presentation	Exhibition
	15 Marks	15 Marks	10 Marks	10 Marks
Remember	3	-	-	-
Understand	3	-	-	-
Apply	4	-	2	
Analyse	5	4	2	2
Evaluate	-	5	3	4
Create	-	6	3	4

CIE Course Assessment Plan

CO's	Marks Distribution					Total Marks	Weightage
	STUDIO						
	Module-1	Module-2	Module-3	Module-4	Module-5		
CO1	1	1	1	1	1	5	10%
CO2	2	2	2	1	1	8	16%
CO3	2	2	2	1	1	8	16%
CO4	2	2	2	3	3	12	24%
CO5	3	3	3	4	4	17	34%
Total	10	10	10	10	10	50	100%

SEE- Semester End Examination (50 Marks)

Bloom's Category	SEE Marks (Viva Voce)
Remember	2.5
Understand	2.5
Apply	8
Analyse	8
Evaluate	12
Create	17

SEE Course Plan

CO's	Marks Distribution					Total Marks	Weightage
	Module-1	Module-2	Module-3	Module-4	Module-5		
CO1	1	1	1	1	1	5	10%
CO2	2	2	2	1	1	8	16%
CO3	2	2	2	1	1	8	16%
CO4	2	2	2	3	3	12	24%
CO5	3	3	3	4	4	17	34%
Total	10	10	10	10	10	50	100%

Course Contents and Lecture Schedule

Module No.	Topics	No. of Lectures
1	1) Generation of basic forms-cube, cone, dome and arch in sketch book then using chart paper.	9
	2) Generating of organic and geometrical forms/objects in sketch book then in paper.	
2	3) Generation of forms & Material exploration: hands on skill by using wood, bamboo, metal wire, thread, balsa wood, cloth, paper board etc. Drawing the design in sketch book then making the model with different materials.	9
3	4) Composite forms: Experimental form generation by combining various materials and shapes. (Rods, pipes, slabs, etc.) Drawing the design in sketch book then making the composition model with given materials.	9
	5) Free Forms: Tensile structures, Funicular Shells using wood, fabric, plastic etc. Experiments with different materials and developing the model.	
4	6) Architectural forms: making of windows, wall doors, roofs, trees, shrubs, roads, vehicles etc. Using the different knowledge learnt in three modules and developing the architectural forms.	9
5	7) Introduction to digital modelling like 3D printing and laser cutting. Exposing the students to present 3D methods and developing different models.	12
Total		48 Hrs



Dayananda Sagar Academy of Technology & Management
(Autonomous Institute under VTU)

Semester	:	1st			
Course Title	:	INNOVATION and DESIGN THINKING			
Course Code	:	BAT107			
Course Type (Theory/ Practical/ Integrated)	:	Integrated			
Category	:	Foundation			
Stream	:	NA	CIE	:	50 Marks
Total Hours (L:T:P:S)	:	1:1:0:0 Hours/Week	SEE	:	50 Marks
Credits	:	1	SEE Duration	:	2 Hours

Course Learning Objectives: Students will be taught

Sl.No	Course Objectives
1	To develop a comprehensive understanding of the design thinking process and its application in developing innovative and user-centric solutions to address real-world needs.
2	To develop an understanding of the principles of user-centered design in architecture, with a focus on empathizing with users and defining their needs and aspirations.
3	To apply design thinking principles in IT and architecture, specifically focusing on ideation to generate creative solutions and prototyping for visualization and iteration in architectural design.
4	To apply design thinking principles for strategic innovations, focusing on testing and iterating through user feedback, as well as exploring sustainable design and social impact in architecture.
5	To apply design thinking principles to architectural design in a hands-on project, fostering creative problem-solving and user-centered design skills.

Teaching-Learning Process Pedagogy (General Instructions):

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

1. Lecturer 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 concepts
3. Encourage collaborative (Group Learning) Learning in the class
4. Ask at least three HOTS (Higher-order Thinking) questions in the class, which promotes critical thinking
5. Adopt Problem Based Learning (PBL), which fosters students' Analytical skills, develops 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.



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Scheme of Teaching and Examinations for BE Programme -2023-24 Outcome Based Education and Choice Based Credit System (CBCS)(Effective from the Academic Year 2023-24)

COURSE SYLLABUS

Module No.	Contents of the Module	Hours
1	PROCESS OF DESIGN Understanding Design thinking Shared model in team-based design - Theory and practice in Design thinking - Explore presentation signers across globe - MVP or Prototyping	3
Pedagogy	Introduction about the design thinking: Chalk and Talk method Overview of design thinking principles and their relevance in architecture.Exploration of innovative architectural projects and case studies. Discussion on the role of architects as problem solvers and Change agents.Theory and practice through presentation MVP and Prototyping through live examples and videos	
2	Tools for Design Thinking Real-Time design interaction captures and analysis - Enabling efficient collaboration in digital space - Empathy for design - Collaboration in distributed Design	4
Pedagogy	Case studies on design thinking for real-time interaction and analysis Simulation exercises for collaborated enabled design thinking Live examples on the success of collaborated design thinking Techniques for empathizing with end-users and understanding their needs. User research methods, such as interviews, observations, and surveys. Defining design challenges based on user insights and stakeholder analysis.	
3	Design Thinking in IT Design Thinking to Business Process modelling - Agile in Virtual collaboration environment - Scenario based Prototyping	6
Pedagogy	Case studies on design thinking and business acceptance of the design Simulation on the role of virtual eco-system for collaborated prototyping Ideation techniques for generating innovative architectural concepts. Brainstorming sessions, mind mapping, and sketching exercises. Exploring divergent thinking and embracing ambiguity in design.	
4	DT For strategic innovations Growth - Story telling representation - Strategic Foresight - Change - Sense Making - Maintenance Relevance - Value redefinition - Extreme Competition - experience design - Standardization - Humanization - Creative Culture - Rapid prototyping, Strategy and Organization - Business Model design.	6
Pedagogy	User testing and feedback collection methods for architectural design. Analysing and interpreting user feedback to inform design decisions. Iterative design cycles and continuous improvement in architectural projects. Business model examples of successful designs Presentation by the students on the success of design	

	Live project on design thinking in a group of 4 students	
5	Design thinking workshop Design Thinking Work shop Empathize, Design, Ideate, Prototype and Test	6
Pedagogy	Students work in teams to apply design thinking methods to a real-world architectural design challenge. Iterative design process from problem definition to prototyping and testing. Presentation and critique of final design solutions. Design Thinking Work shop Empathize, Design, Ideate, Prototype and Test.	

Reference Books	
Books (Title of the Book/Name of the author/Name of the publisher/Edition and Year)	
1	John.R.Karsnitz, Stephen O'Brien and John P. Hutchinson, "Engineering Design", Cengage Learning (International edition) Second Edition, 2013
2	Roger Martin, "The Design of Business: Why Design Thinking is the Next Competitive Advantage", Harvard Business Press, 2009.
3	Hasso Plattner, Christoph Meinel and Larry Leifer (eds), "Design Thinking: Understand - Improve - Apply", Springer, 2011
4	Idris Mootee, "Design Thinking for Strategic Innovation: What They Can't Teach You at Business or Design School", John Wiley & Sons 2013.
5	Book - Solving Problems with Design Thinking - Ten Stories of What Works (Columbia Business School Publishing) Hardcover - 20 Sep 2013 by Jeanne Liedtka (Author), Andrew King (Author), Kevin Bennett (Author).

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

CO	Course Outcomes	RBT Level	Level Indicator
CO1	students will be able to understand the design thinking process, which will be useful to empathize with users, define problem statements, and to create ideas and solutions.	L1,L2	Remember & understand
CO2	students will be able to apply user-centered design methodologies in architecture, effectively empathize with users, conduct user research, define design problems, and generate design solutions that prioritize the needs and aspirations of users.	L3	Apply
CO3	students will be able to effectively analyse design thinking methodologies to generate innovative and creative solutions in the IT and architectural domains, demonstrating the ability to think critically, generate diverse ideas, and apply ideation techniques to address complex design challenges.	L4	Analyse
CO4	students will be able to effectively evaluate design thinking methodologies to test and iterate designs based on user feedback, while also incorporating sustainable design principles and considering the social impact of architectural solutions, leading to the development of strategic and socially responsible design innovations.	L5	Evaluate
CO5	Student will be able to create by apply design thinking principles to architectural design through the completion of a final project, showcasing their skills in problem framing, user empathy, ideation, prototyping, testing, and iteration, resulting in a user-centered architectural design solution.	L6	Design

Mapping of Course Outcomes to Program Outcomes:

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

Weblinks and Video Lectures (e-Resources)	
1	www.tutor2u.net/business/presentations/./productlifecycle/default.html
2	https://www.quicksprout.com/./how-to-reverse-engineer-your-competit
3	https://www.mindtools.com/brainstm.html
4	www.vertabelo.com/blog/documentation/reverseengineering https://support.microsoft.com/en-us/kb/273814
5	https://www.youtube.com/watch?v=2mjSDIBaUIM thevirtualins tractor.com/foreshortening.html https://dschool.stanford.edu/./designresources/./ModeGuideBOOTCAMP2010L.pdf https://dschool.stanford.edu/use-our-methods/ 6. https://www.interactiondesign.org/literature/article/5-stages-in-the-design-thinking-process 7. http://www.creativityatwork.com/design-thinking-strategy-for-innovation/ 49 8. https://www.nngroup.com/articles/design-thinking/ 9. https://designthinkingforeducators.com/design-thinking/ 10. www.designthinkingformobility.org/wp-content/./10/NapkinPitch_Worksheet.pdf
6	https://support.google.com/docs/answer/179740?hl=en
7	http://dschool.stanford.edu/dgift/

Assessment Pattern (both CIE and SEE)

1 Credit Course								
Assessment Method	Component	Type of Assessment	Assessment Type used	Max. Marks	Evaluation Details	Reduced Marks	Min. Marks	Total
CIE	Theory	AAT	Pedagogical Initiatives	25	Any two assessment Methods as per VTU Clause 22OB4.2 of regulations (If assessment is Project Based Learning, then one assessment method may be adopted).	25	10	25
		Test-1/ Project/ Activity	Theory	25	Average of two Internal Assessment Tests each of 25 Marks	25	10	25
		Test-2 Project/ Activity	Theory	25				
		Total CIE Theory						20
SEE				50	MCQ type question papers of 50 Questions with each question of 1 mark, Examination duration is 1 Hour	50	18	50
CIE+SEE							40	100

Note: A few of the Courses of 3 Credit are Integrated Course Type, for such courses the method suggested for 4 Credit IPCC shall be followed.

CIE- Continuous Internal Evaluation (50 Marks)

Bloom's Category	Theory		
	Continuous Assessment Tests		Alternative Assessment Tool (AAT) 25 Marks
	Test-1	Test-2	
	25 Marks	25 Marks	
Remember	5	5	
Understand	10	10	
Apply	10	10	
Analyse			5
Evaluate			10
Create			10

CIE Course Assessment Plan

CO's	Marks Distribution					Total Marks	Weightage
	Test-1			Test-2			
	Module-1	Module-2	Module-3	Module-4	Module-5		
CO1	15					15	30%
CO2		15				15	30%
CO3			10			10	20%
CO4				5		5	10%
CO5					5	5	10%
Total	15	15	10	5	5	50	100%

SEE- Semester End Examination (50 Marks)

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

Create	na
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SEE Course Plan

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

Course Contents and Lecture Schedule

Module No.	Topics	No. of Lectures
1	Process of design	1
1	Understanding Design thinking process (Empathize, Define, Ideate, Prototype, and Test).	1
1	employing design thinking, individuals and teams can develop innovative and user-centric solutions that address real needs.	1
2	Tools for Design Thinking	1
2	Empathize and Define: User-Centered Design in Architecture	1
2	Empathize and Define: User-Centered Design in Architecture	1
2	Empathize and Define: User-Centered Design in Architecture	1
3	Design Thinking in IT	1
3	Ideate: Generating Creative Solutions in Architecture	1
3	Ideate: Generating Creative Solutions in Architecture	1
3	Prototype: Visualization and Iteration in Architectural Design	1
3	Prototype: Visualization and Iteration in Architectural Design	1
3	Prototype: Visualization and Iteration in Architectural Design	1
4	DT For strategic innovations	1
4	Test and Iterate: User Feedback and Design Refinement	1
4	Test and Iterate: User Feedback and Design Refinement	1
4	Sustainable Design and Social Impact in Architecture	1
4	Sustainable Design and Social Impact in Architecture	1
4	Sustainable Design and Social Impact in Architecture	1
5	Applying Design Thinking Principles to Architectural Design	1
5	Applying Design Thinking Principles to Architectural Design	1
5	Applying Design Thinking Principles to Architectural Design	1
5	Applying Design Thinking Principles to Architectural Design	1
5	Design thinking workshop	1
5	Design thinking workshop	1
Total		25



Dayananda Sagar Academy of Technology & Management

(Autonomous Institute under VTU)

Semester	:	1st			
Course Title	:	PROFESSIONAL COMMUNICATIONS I			
Course Code	:	BAT108			
Course Type (Theory/ Practical/ Integrated)	:	Theory			
Category	:	AEC			
Stream	:	Architecture	CIE	:	50 Marks
Total Hours (L: T:P:S)	:	1:1:0:0 Hrs/Week	SEE	:	50 Marks
Credits	:	01	SEE Duration	:	2 Hours

Course Learning Objectives: Students will be taught

Sl.No	Course Objectives
1	To understand the Fundamentals of professional english communication & Communication Skills.
2	To identify the nuances of phonetics, intonation and enhance pronunciation skills for better communication skills.
3	To impart basic English grammar, vocabulary for better language proficiency and communication skills.
4	To equip the students with good reading and verbal communication skills in English

Teaching-Learning Process

Pedagogy (General Instructions):

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

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.



DSATM

Scheme of Teaching and Examinations for BE Programme -2023-24
Outcome Based Education and Choice Based Credit System (CBCS)
(Effective from the Academic Year 2023-24)

COURSE SYLLABUS

Module No.	Contents of the Module	Hours
1	Introduction to Communication skills Introduction to Communication skills, Introduction to types of communication, methods, use & application, Process of Communication, Barriers to Effective Communicative English, Interpersonal and Intrapersonal Communication Skills.	2
Pedagogy	Chalk and talk method, Videos, PowerPoint presentation to teach Communication skills, Creating real time stations in classroom discussions, Giving activities and assignments	
2	Phonetics & listening comprehension. Introduction to Sounds (Vowels & Consonants) Organs of Speech, Word Accent and Stress Shift, Rules for Word Accent, Intonation – purposes of intonation, Spelling Rules, and Words often Misspelt, Common Errors in Pronunciation. Exercise for Listening Comprehension.	2
Pedagogy	Chalk and talk method, Videos, PowerPoint presentation and Animation videos to teach phonetics in Practical method, creating real time stations in classroom discussions, Giving activities and assignments	
3	Basic English Communicative Grammar and Vocabulary Time and Tense, Agreement, Active-Passive, Narration, Use of Determiners, Prepositions & Phrasal Verbs. Word-formation, Synonyms, Antonyms, Homonyms, One-word Substitutes, Idioms and Phrases, Collocations, Abbreviations of Scientific and Technical Words.	4
Pedagogy	Chalk and talk method, Videos, PowerPoint presentation to teach Grammar, Animation videos on communication and language skills, creating real-time stations in classroom discussions, Giving activities and assignments	
4	Communication Techniques- Reading and listening Comprehension: Two lessons to be identified by the faculty for reading and listening.	3
Pedagogy	Videos, audios, movie for listening, Giving reading exercise, activities, and assignments	
5	Communication Techniques- Verbal presentations: Understanding the differences among seminars, conferences, convention, congress, debates, extempore speeches, panel discussions, group discussion etc. Students to make brief oral and visual presentations on selected topics. Understanding Importance of gesture, posture, and expressions in verbal presentations.	5
Pedagogy	Chalk and talk method, Videos, PowerPoint presentation to teach different verbal presentation techniques, Animation videos on verbal communication, creating real-time stations in classroom discussions, Giving activities and assignments	

List of Experiments or Programs

Sl.No	Experiments/Programs	COs
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		

Reference Books	
Books (Title of the Book/Name of the author/Name of the publisher/Edition and Year)	
1	Communication Skills by Sanjay Kumar and Pushp Lata, Oxford University Press - 2019.
2	English for Engineers by N.P.Sudharshana and C.Savitha, Cambridge University Press — 2018.
3	A Textbook of English Language Communication Skills , Infinite Learning Solutions—(Revised Edition) 2021.
4	A Course in Technical English—D Praveen Sam, KN Shoba , Cambridge University Press — 2020.
5	Technical Communication by Gajendra Singh Chauhan and Et al, Cengage learning India Pvt Limited [Latest Revised Edition] - 2019.
6	English Language Communication Skills — Lab Manual cum Workbook , Cengage learning India Pvt Limited [Latest Revised Edition] — 2019.
7	Technical Communication — Principles and Practice , Third Edition by Meenakshi Raman and Sangeetha Sharma, Oxford University Press 2017.

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

CO	Course Outcomes	RBT Level	Level Indicator
CO1	To Understand the Fundamentals of Communication Skills, phonetics, and Grammar for effective communication.	L1& L2	
CO2	To Apply the knowledge of verbal communication strategies, and to convey specific messages in a professional field.	L3	
CO3	To Analyse different communication methods and tools used in professional field for better communication.	L4	
CO4	Evaluate the effectiveness of different verbal and non-verbal communication in effective communication skill.	L5	

Mapping of Course Outcomes to Program Outcomes:

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

Weblinks and Video Lectures (e-Resources)

1	TED's Secret to Great Public Speaking:
2	The 7 Cs of Communication:
3	Purdue OWL (Online Writing Lab):
4	SkillsYouNeed: Active Listening:
5	The Gottman Institute - Communication:

Assessment Pattern (both CIE and SEE)

1 Credit Course

Assessment Method	Component	Type of Assessment	Assessment Type used	Max. Marks	Evaluation Details	Reduced Marks	Min. Marks	Total
CIE	Theory	AAT	Pedagogical Initiatives	25	Min two assessment Methods can be adopted.	25	12.5	25
		Test-1	Theory	25	Average of two Internal Assessment Tests each of 25 Marks	25	12.5	25
		Test-2	Theory	25				
Total CIE						25	50	
SEE				50	MCQ type question papers of 50 Questions with each question of 1 mark, Examination duration is 2 Hour	50	20	50
CIE+SEE							50	100

CIE- Continuous Internal Evaluation (50 Marks)

Bloom's Category	Theory		
	Continuous Assessment Tests		Alternative Assessment Tool (AAT)
	Test-1	Test-2	
	25 Marks	25 Marks	25 Marks
Remember & Understand	15 marks	15 marks	
Apply	10 marks	10 marks	
Analyse			10 marks
Evaluate			15 marks

CIE Course Assessment Plan

CO's	Marks Distribution					Total Marks	Weightage
	Test-1		Test-2				
	Module-1	Module-2	Module-3	Module-4	Module-5		
CO1	10	5	5			20	40%
CO2		10	5			15	30%
CO3			5	5		10	20%
CO4					5	5	10%
Total	10	15	15	5	5	50	

SEE- Semester End Examination (50 Marks)

Bloom's Category	SEE Marks (90% Theory+10% Practical Question)
Remember	25 marks
Understand	
Apply	20 marks
Analyse	5 marks
Evaluate	-
Create	-

SEE Course Plan

CO's	Marks Distribution					Total Marks	Weightage
	Module-1	Module-2	Module-3	Module-4	Module-5		
CO1	10	10				20 marks	40%
CO2			15			15 marks	30%
CO3				10		10 marks	20%
CO4					5	5 marks	10%
Total						50 marks	100%

Course Contents and Lecture Schedule

Module No.	Topics	No. of Lectures
1	Introduction to Communication skills, Introduction to types of communication, methods, use & application	2 hrs
	Process of Communication, Barriers to Effective Communicative English, Interpersonal and Intrapersonal Communication Skills.	
2	Introduction to Sounds (Vowels & Consonants) Organs of Speech, Word Accent and Stress Shift, Rules for Word Accent, Intonation – purposes of intonation, Spelling Rules, and Words often Misspelt, Common Errors in Pronunciation.	2 Hrs
	Exercise for Listening Comprehension.	
3	Time and Tense, Agreement, Active-Passive, Narration, Use of Determiners, Prepositions & Phrasal Verbs.	4 hrs
	Word-formation, Synonyms, Antonyms, Homonyms, One-word Substitutes, Idioms and Phrases, Collocations, Abbreviations of Scientific and Technical Words.	
	Assignment & Exercise related to English Grammar	
4	Reading and listening exercise	2 hrs
5	Understanding the differences among seminars, conferences, convention, congress, debates, extempore speeches, panel discussions, group discussion etc.	6 hrs
	Understanding Importance of gesture, posture, and expressions in verbal presentations.	
	brief oral and visual presentations on selected topics by students.	
Total		16 Hrs



Dayananda Sagar Academy of Technology & Management

(Autonomous Institute under VTU)

Semester	:	2 nd			
Course Title	:	ARCHITECTURAL DESIGN - II			
Course Code	:	BAT201			
Course Type (Theory/ Practical/Studio/Integrated)	:	Studio			
Category	:	PCC			
Stream	:	Architecture	CIE	:	100 Marks
Credits	:	6	SEE (Viva-Voce)	:	100 Marks
Total Hours (L:T:P:S)	:	0:1:0:6 Hrs/Week	SEE Duration	:	-

Course Learning Objectives: Students will be taught

Sl.No	Course Objectives
1	To develop the ability to generate solutions to spatial constructs, i.e., space and form which integrate principles of design with functional requirements by emphasizing the study of variables like light, movement, transformation, scale, structure & skin., physical constraints and cultural context, either urban or rural, Formal and informal housing
2	To develop the ability to translate abstract principles of design into architectural solutions for simple problems.

Teaching-Learning Process

Pedagogy (General Instructions):

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

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 devise innovative pedagogy to improve teaching-learning.



Scheme of Teaching and Examinations for B.Arch. Programme -2023-24
Outcome Based Education and Choice Based Credit System (CBCS)
(Effective from the Academic Year 2023-24)

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COURSE SYLLABUS

Module No.	Contents of the Module	Hours
1	<p>Introduction to "Nature of Space":</p> <ul style="list-style-type: none"> Understanding the notions of PLACE: A "boundary", a "centre" and a "spirit", PATH: A "way" and a "goal", DOMAIN: A conglomeration of paths and goals that forms a "whole" with its own "identity", Understanding the notions of "Enclosure, Ambiguity, and Transparency", "Spatial Context in formal and informal built environment. - open, closed, transition spaces", 	12
Pedagogy	<p>Observing and documenting the built environmental condition around and experiencing enclosures (field trips) to learn Architecture Notions Mapping of one's journey between two locations exploring movement, navigation, circulation, direction and discovery (with representation, scale, starting point, orientation, landmarks, and imagery). Development of a small space encompassing the notions.</p>	
2	<p>Culture & Design:</p> <ul style="list-style-type: none"> Understanding social attitudes to Build-form: extroverted/introverted, formal/informal, typical/individual, simple/labyrinthine, contiguous/isolated etc. "Cultural Context - inclusion, exclusion, spatial segregation", 	18
Pedagogy	Exercise to identify architectural needs based on study on any Social/Cultural context.	
3	<p>Introduction to "Poetics of Space":</p> <ul style="list-style-type: none"> Light, movement, transformation, scale, structure, and skin. 	12
Pedagogy	<ul style="list-style-type: none"> Presentation of observations and analysis through case studies based on literature survey & field visit. Study models, Sketches and Drawings of study models - plans and sections (suitable scale) Text / language as a tool; emotion, cultural, climatic, e.g.- contemplative / severe / dramatic / minimalist / natural / organic / contemporary / traditional / etc., 	
4	<p>Understanding the role of Physical Context</p> <p>- terrain, materials, structure, etc</p>	12
Pedagogy	<ul style="list-style-type: none"> Design exercises on relationship between form and structure. Presentation of observations and analysis through case studies based on literature survey & field visit. Study models, Sketches and Drawings of study models - plans and sections (suitable scale). 	
5	<p>Design process to test the learning of the semester using a multifunctional program to incorporate "nature of space", "Cultural context", "poetics of space" and "physical constraints",</p> <ul style="list-style-type: none"> Generation of a design brief for a multifunctional program, generation of areas based on human activity and anthropometric data, Selection of a suitable site, Idea generation, design development, & design drawings, 	36

	Eg. - Small scale: residential building, Information centre, Co working spaces, design related office spaces, etc.	
Pedagogy	<ul style="list-style-type: none"> • Presentation of observations and analysis through case studies based on literature survey & field visit. • Study models, Sketches and Drawings of study models - plans and sections (suitable scale). • An analysis on analogy of space, function, modern and vernacular materials used, etc. • Submission will include Idea generation, Study models, Sketches to achieve the desired result, development drawings and a set of plans, sections and elevations & model to suitable scale. A consolidated portfolio containing exercises related to each of the above topics are to be submitted for progressive assessment & Viva voce examination. 	

List of Exercises

Module.No	Experiments/Programs	COs
1	Spatial analysis	CO1, CO3
2	Minor Project related to Cultural Context	CO2, CO3, CO5
3	Exercise to play with Light, movement, transformation, scale, structure, and skin	CO4
4	Site Inspiration	CO3, CO4
5	Major Project	CO2, CO3, CO5

Reference Books

Books (Title of the Book/Name of the author/Name of the publisher/Edition and Year)

1. Alain de Botton, "How Proust Can Change your life", Picador, 1997.
2. Alain de Botton, "The Architecture of Happiness", Sep. 2006, Vintage Books.
3. Alan Fletcher, "The art of looking sideways", Phaidon Press, 2001
4. Anthony Di Mari and Nora Yoo, "Operative Design: A Catalogue of Spatial Verbs", 2012, BIS Publishers.
5. Anthony Di Mari, "Conditional Design: An Introduction to Elemental Architecture", 2014, 1st Edition, Thames & Hudson.
6. Bruno Munari, "Design as Art", Penguin UK, 25-Sep-2008
7. Charles George Ramsey and Harold Sleeper, "Architectural Graphic Standards", 1992, Wiley
8. Christopher Alexander, "Notes on the Synthesis of Form", 1964, Harvard University Press.
9. Debkumar Chakrabarti, "Indian Anthropometric Dimensions For Ergonomic Design Practice", 1997, National Institute of Design.
10. François Blanciak, "Site less: 1001 Building Forms", 2008, MIT Press
11. Frank Ching, James F. Eckler, "Introduction to Architecture", 2012, John Wiley & Sons, US
12. Frank D.K. Ching, "Architecture: Form, Space, and Order", 4th Edition, Sep. 2014, John Wiley & Sons
13. Herman Hertzberger, "Lessons for Students in Architecture", 2005, 010 Publishers
14. Italo Calvino, "Invisible Cities", Harcourt Brace Jovanovich (May 3, 1978)
15. John Berger, "Way of Seeing", 1972, Penguin, UK
16. John Hancock Callender, "Time-Saver Standards for Architectural Design Data", 1982, McGraw-Hill
17. Michael Pause and Roger H. Clark, "Precedents in Architecture: Analytic Diagrams, Formative Ideas, and Partis", Van Nostrand Reinhold, 1985.
18. Paul Jacques Grillo, "Form, Function and Design", 1975, Dover Publications, New York
19. Paul Jacques Grillo, "What is Design?", 1960, P. Theobald
20. Paul Lewis, Marc Tsurumaki, David J. Lewis, "Manual of Section", Princeton Architectural Press, 2016
21. Peter H. Reynolds, "The Dot", 2013, Candlewick Press

22. Philip Jodidio, "Tree houses. Fairy tale castles in the air", 2012, Taschen
 23. Robert W. Gill, "Rendering with Pen and Ink", Van Nostrand Reinhold (1 June 1984)
 24. Tom Alphin, "The LEGO Architect", 2015, No Starch Press

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

CO	Course Outcomes	RBT Level	Level Indicator
CO1	To Remember and Understand poetics of space, physical context, and built environment.	L1, L2	Remember and understand
CO2	To Apply Principles of design notions of spaces and cultural considerations to develop spatial designs.	L3	Apply
CO3	To Analyze the relationship between culture and design, identifying the social attitudes that influence built-form.	L4	Analyse
CO4	To Evaluate the poetics of space in architectural design, examining how elements like light, movement, and scale impact the overall experience.	L5	Evaluate
CO5	Generate a Design for a multifunctional program that incorporates the nature of space, poetics of space, and physical constraints.	L6	Design

Mapping of Course Outcomes to Program Outcomes:

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

Weblinks and Video Lectures (e-Resources)

- <https://ndl.iitkgp.ac.in>
- <https://www.youtube.com/watch?v=ly8orBNiNQM>
- <https://www.youtube.com/watch?v=gKddX70INMg>
- <https://www.youtube.com/watch?v=Ij0TnkAqsts>
- <https://www.youtube.com/watch?v=k4dVgbuxBAw>

3 Credit Course –

Assessment Method	Component	Type of Assessment	Assessment Type used	Max. Marks	Evaluation Details	Reduced Marks	Min. Marks	Total
CIE	Studio Assessment	AAT	Individual Discussion	50	Regular on time discussion + Incorporation of changes in design + Presentation skills.	25	12.5	25
			Group Work	20	Observations at site + Group Co-ordination + Analysis	15	7.5	15
			Site Visits	10				
			Models	20	Pre-session, Materials and Scale.	10	5	10
			Sheets	20	Presentation, Accuracy, Details, Architectural Drawings.	10	5	10
Total CIE Studio						50		50

	Panel Review	Viva Voca	Review	50	Presentation skills, Communication of ideas, Design	25	12.5	40
			Portfolio + Models	30	She Presentation, Accuracy, Details, Architectural Drawings. etc, presentation	15	7.5	
Total CIE Review							20	40
SEE	External Viva Voca			100	Portfolio + Model + Review	100	40	100
CIE+SEE							100	200
<p>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 Voca. The total of CIE + SEE shall be a minimum of 100 (50% of Maximum Marks -200).</p>								

- <https://www.youtube.com/watch?v=2d1VrCvdzby>
- <https://www.youtube.com/watch?v=k4dVgbuxBAw>

Assessment Pattern (both CIE and SEE)

Course Contents and Lecture Schedule

Module No.	Topics	No. of Hours
1, 3	Spatial analysis	12 Hrs
1, 2, 3, 5	Minor Project - Design of a residence	18 Hrs
	Review - 1	3 Hrs
1, 3	Site Inspiration	9 Hrs
1,2,3, 4,5	Major Project - Design of a co working office space for 4 design professionals	42 Hrs
	Review - 2	4 Hrs
4	Bridge - Structural experience	14 Hrs
Final Internal Review		7 Hrs
Total		90 Hrs



Dayananda Sagar Academy of Technology & Management

(Autonomous Institute under VTU)

Semester	:	2 nd			
Course Title	:	Materials and Methods in Building Construction-II			
Course Code	:	BAT202			
Course Type (Theory/Practical/Studio/Integrated)	:	Studio			
Category	:	BSAE			
Stream	:	Architecture	CIE	:	50 Marks
Credits	:	4	SEE	:	100 Marks
Total Hours (L:T:P:S)	:	1:0:0:3 hrs/week	SEE Duration	:	4 Hrs.

Course Learning Objectives: Students will be taught

Sl.No	Course Objectives
1	To remember and understand the various terminology of staircase, roof trusses.
2	To choose suitable materials and construction methods for different architectural and structural components.
3	To Analyse the structural and aesthetic qualities of diverse building materials and techniques, considering trusses, foundation and staircase.
4	To evaluate performance, cost, and environmental implications of building materials and techniques, determining their suitability and effectiveness.
5	To design construction systems and elements using appropriate building materials, considering manufacturing, properties, methods, and sustainability.

Teaching-Learning Process

Pedagogy (General Instructions):

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

- 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.
- Show Video/animation films to explain the infrastructures and the mechanism involved in the principle.
- Encourage collaborative (Group) Learning in the class.
- Ask at least three HOT (Higher-order Thinking) questions in the class, which promotes critical thinking.
- 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.
- Topics will be introduced in multiple representations.
- Show the different ways to solve the same problem and encourage the students to come up with their own creative ways to solve them.
Discuss how every concept can be applied to the real world - and when that's possible, it helps improve the students' understanding.
- Individual teachers can device innovative pedagogy to improve teaching-learning.



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**Scheme of Teaching and Examinations for B.Arch. Programme -2023-24
Outcome Based Education and Choice Based Credit System (CBCS)
(Effective from the Academic Year 2023-24)**

COURSE SYLLABUS

Module No.	Contents of the Module	Hours
1	<p>1. Wooden doors: Types of wooden Doors - Doors with Frames, Doors on Pivot, Single & Double shutters, Wood with Glass shutters, Flush doors. Types of Wood details Types of wooden windows & ventilator; Casement, Top Hung & Fixed types,Details of joinery.</p> <p>2. Timber Roof - Lean to roof, Collared Roof, King post roof, Queen Post Roof; details of joinery.</p>	9
Pedagogy	<p>a. Engage students through interactive lectures and discussions on the importance of understanding Wooden Doors</p> <p>b. Utilize visual aids, case studies, and examples of iconic structures to highlight key milestones.</p> <p>c. Encourage research projects to delve deeper into specific eras or aspects of Timber Roof construction methods.</p> <p>d. Organize site visits to historical buildings or architectural sites to provide firsthand exposure.</p> <p>e. Assess student understanding through written assignments, presentations, and practical exercises.</p>	
2	<p>3. Cement & Steel: Cement Types, applications, Tests - laboratory and field. Steel Properties and uses of reinforced steel.</p> <p>4. Concrete: Ingredients, grades, admixtures, properties, production, mix,proportioning and placing of concrete</p>	6
Pedagogy	<p>a. Understanding how cement, steel and concrete are tested in field and in laboratory.</p> <p>b. Exploring the properties, uses and application of cement, steel and concrete in a typical building and in special applications.</p> <p>c. Field visit to understand different materials used in concrete and quality parameters of concrete before and after concrete casting</p>	
3	<p>5. Reinforced Cement Concrete: Form work, placing, and compaction, curing of concrete, sampling and testing of concrete. Construction joints, expansion joints, finish in concrete, chemical admixtures. Advantages and disadvantages with respect to thermal properties and impact on life cycle of a building.</p> <p>6. RCC Foundations (Isolated footing) and Columns (Square and Round). Raft foundations, Grillage foundations and combined footing</p>	9
Pedagogy	<p>a. Conduct interactive lectures showcasing different foundation types, properties, and their extraction methods.</p> <p>b. Include hands-on activities to demonstrate foundation techniques.</p> <p>c. Organize field trips to construction sites for practical exposure.</p> <p>d. Assign projects that require students to design foundations like isolated footing, Raft foundations</p> <p>e. Evaluate student comprehension through assessments that test knowledge of stone properties and applications.</p>	
4	<p>Staircase: Anthropometry of stairs, types of Staircases.</p> <p>7. Timber Stairs: Single and Double Stringer stairs: construction methods and joinery.</p> <p>8. RCC Stairs: Waist slab, folded plate, stringer beam stairs, precast stairs: construction methods and</p>	12
Pedagogy	<p>a. Provide lectures on staircases and their importance in construction.</p> <p>b. Demonstrate staircase construction techniques using brick and stone</p>	

Module.No	Experiments/Programs	COs
1.	Sheet: Explanation of different types of wooden doors	CO2.CO5
2.	Sheet: Explanation of different types of wooden windows	CO2, CO4
3.	Sheet: Explanation of different types of wooden trusses (King Post & Queen Post)	CO1, CO3, CO5
4.	Sheet: Explanation of different types of wooden trusses (Collar Beam,Lean to Roof)	CO1, CO4
5.	Sheet: Explanation of isolated and combined footing details	CO2, CO3
6.	Sheet: Explanation of Raft Foundation	
7.	Sheet: Explanation of Grillage Foundation	CO1
8.	Sheet: Overview of different types of staircases	CO1
9.	Sheet : Explanation of RCC staircase	CO2, CO5
10.	Sheet: Explanation of wooden staircase - Single Stringer	CO2, CO3, CO4
11.	Sheet : Explanation of Wooden staircase- Double Stringer	CO2, CO3,CO4
12.	Sheet : Explanation of Steel Staircase	CO2, CO3
13.	Sheet: Explanation of Composite Staircase	CO2, CO3

	c. Engage students in hands-on activities, such as constructing small-scale staircases e, Assess student understanding through practical exercises or quizzes on staircase construction.	
5	9. Steel Stairs: Stringer stairs, Folded Type, Spiral stairs, Fire escape stairs: construction methods and joinery. 10. Composite Stairs: Brick/stone, Steel/Timber, Concrete/wood, steel/ glass: construction methods and joinery.	12
Pedagogy	a. Provide lectures on staircases and their importance in construction. b. Demonstrate staircase construction techniques using steel and composite materials c. Engage students in hands-on activities, such as constructing small-scale staircases e, Assess student understanding through practical exercises or quizzes on staircase construction.	

List of Exercises

Reference Books	
Books (Title of the Book/Name of the author/Name of the publisher/Edition and Year)	
1	Francis K Ching „Building construction“, Wiley; 5 edition (February 17, 2014)
2	W.B. Mckay, "Building Construction", Donhead, 2005
3	R. Barry, "Construction of Buildings" Vol 1., 1999 by Wiley-Blackwell
4	Roy Chudley, "Construction Technology", 3rd Edition, Longman, 1999

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

CO	Course Outcomes	RBT Level	Level Indicator
CO1	To remember and understand the various terminology of staircase, roof trusses	L1, L2	Remember, Understand
CO2	To apply suitable materials and construction methods for different architectural and structural components.	L3	Apply
CO3	To Analyse the structural and aesthetic qualities of diverse building materials and techniques, considering trusses, foundation and staircase.	L4	Analyse
CO4	To evaluate performance, cost, and environmental implications of building materials and techniques, determining their suitability and effectiveness.	L5	Evaluate
CO5	To design construction systems and elements using appropriate building materials, considering manufacturing, properties, methods, and sustainability.	L6	Create

Mapping of Course Outcomes to Program Outcomes:

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

Weblinks and Video Lectures (e-Resources)

1	https://architectureideas.info/2014/01/stairs-terminology/
2	https://www.architecturaldigest.com/story/types-of-stairs-explained
3	https://theconstructor.org/geotechnical/foundation-types-and-uses/9237/
4	https://civiltoday.com/geotechnical-engineering/foundation-engineering/161-types-of-foundation
5	https://www.designingbuildings.co.uk/wiki/Timber_roof

Assessment Pattern (both CIE and SEE)

4 Credit Course –									
Assessment Method	Component	Type of Assessment	Assessment Type used	Max. Marks	Evaluation Details	Reduced Marks	Min. Marks	Total	
CIE	Theory	AAT	Pedagogical Initiatives	10	Any two assessment Methods as per VTU Clause 22OB4.2 of regulations (If assessment is Project Based Learning, then one assessment method may be adopted).	10	4	10	
		Test-1	Theory	25	Average of two Internal Assessment Tests each of 25 Marks, scale down the Marks to 15 Marks	15	6	15	
		Test-2	Theory	25					
	Total CIE Theory						10	4	25
	Lab	Conduction of Experiments	Performance with Record & Observation Book	15	Conduction of Experiments and Preparation of Laboratory Records	15	6	25	
		CIE Practicaltest	Evaluation & Viva-Voce	10	One test after conduction of all Experiments	10	4		
Total CIE Review						10	4	25	
SEE				100	SEE Exam is Theory Exam, conducted for 100 Marks, scored marks are scaled down to 50 marks	50	20	50	
CIE+SEE						40	40	100	
<p>Note: The Marks of Continuous Internal Evaluation (CIE) is 50 and for Semester End Exam (SEE) is 100 marks. The student has to obtain a minimum of 50% of the maximum marks of CIE and 40 % of maximum marks of SEE to pass. The passing percentage shall not be less than the 50% in aggregate for a course (i.e. CIE and SEE put together).</p>									
Based on the marks scored in CIE+SEE grading will be awarded for this course									

4 Credit Course

Assessment Method	Component	Type of Assessment	Assessment Type used	Max. Marks	Evaluation Details	Reduced Marks	Min. Marks	Total
CIE	Studio	Continuous Assessment Tool	Sheetwork/ Portfolio	30	Accuracy and Completeness of Construction Drawing Sheets (20 marks) Documentation and Portfolio (10 marks) Quality and Presentation of Construction Models (10 marks)	30	15	30
		AAT	Material Palette	10	Content and Research (10 marks) Organization and Structure (3 marks) Writing Style and Language (2 marks)	10	5	10
			Seminar	10	Knowledge understanding and Presentation Skills (6 marks) Engagement and Interaction (3 marks) (1 mark)	10	5	10
Total CIE Marks							25	50
SEE				100	SEE Exam	100	40	100
CIE+SEE							50+10	150
<p>Note: The Marks of Continuous Internal Evaluation (CIE) is 50 and for Semester End Exam (SEE) is 100 marks. The student has to obtain a minimum of 50% of the maximum marks of CIE and 40 % of maximum marks of SEE to pass. 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</p>								

CIE- Continuous Internal Evaluation (50 Marks)

Bloom's Category	Studio			
	Continuous Assessment Tool		Alternative Assessment Tool (AAT)	
	Sheet Work and portfolio	Models	Material palette	Seminar
	25 Marks	05 Marks	10 Marks	10 Marks
Remember	2	-	-	2
Understand	2	-	-	2
Apply	3	-	2	3
Analyse	5	-	2	3
Evaluate	5	2	3	-
Create	8	3	3	-

CIE Course Assessment Plan

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

SEE- Semester End Examination (100 Marks)

Bloom's Category	SEE Marks
Remember	10
Understand	10
Apply	15
Analyse	15
Evaluate	20
Create	30

SEE Course Plan

CO's	Marks Distribution					Total Marks	Weightage
	Module-1	Module-2	Module-3	Module-4	Module-5		
CO1	2	2	2	2	2	10	10%
CO2	2	2	2	2	2	10	10%
CO3	4	4	4	4	4	20	20%
CO4	6	6	6	6	6	30	30%
CO5	6	6	6	6	6	30	30%
Total	20	20	20	20	20	100	100 %

Course Contents and Lecture Schedule

Module No.	Topics	No. of Hours
1	a. Introduction to the course, syllabus review, and course objectives. b. Types of wooden doors and windows c. Timber roof construction methods d. Steel roof truss systems	9
1	Properties and applications of cement, steel, and concrete Testing methods for construction materials	6
2	a. Formwork, placing, and curing of concrete b. Construction joints, expansion joints, and finishes c. RCC foundations and columns	9
2	a. Staircase design principles and anthropometry b. Construction methods for timber, RCC, and steel staircases	12
2	a. Introduction to Steel Stairs: Stringer stairs, Folded Type, Spiral stairs, Fireescape staircase, construction methods and joinery. b. Introduction to Composite Stairs: Brick/stone, Steel/Timber, Concrete/wood, steel/glass	12
Total		48 Hrs.



Dayananda Sagar Academy of Technology & Management

(Autonomous Institute under VTU)

Semester	:	2 nd			
Course Title	:	Architectural Graphics-II			
Course Code	:	BAT203			
Course Type (Theory/ Practical/Studio/Integrated)	:	Integrated			
Category	:	PCC			
Stream	:	Architecture	CIE	:	50 Marks
Credits	:	3	SEE (Viva Voce)	:	50 Marks
Total Hours (L:T:P:S)	:	0:1:0:3 Hrs/week	SEE Duration	:	-

Course Learning Objectives: Students will be taught

Sl.No	Course Objectives
1	Students learn the basics of 3D representation techniques, including projections, sectioning, perspective, sciography, rendering, and CAD commands, to communicate architectural design ideas.
2	Application of 3D representation techniques: In this phase, students would apply the principles of 3D representation to create 3D representations of objects, furniture, and built forms. They would use a variety of techniques, such as sections of solids, perspective drawings, free-hand perspective drawings.
3	Analysis of 3D representation techniques: In this phase, students would analyze the effectiveness of different 3D representation techniques in communicating architectural design ideas. They would consider the strengths and weaknesses of different techniques and how they can be used to achieve different results.
4	Evaluation of 3D representation techniques: In this phase, students would evaluate the effectiveness of different 3D representation techniques in communicating architectural design ideas. They would consider the needs of the audience and the purpose of the communication when selecting the best technique.
5	Creation of new 3D representation techniques: In this phase, students would create new and innovative 3D representation techniques by combining their knowledge of the principles of 3D representation with their creativity and problem-solving skills. They would develop new techniques that are more effective in communicating architectural design ideas.

Teaching-Learning Process

Pedagogy (General Instructions):

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

1. The students need to draft the sheets in the studios.
2. Use of models for explanation and better visualization
3. Use of models in explanation of object drafting
4. Use of Video animation for easy understanding of various drawings.
5. Softwares for Drawing & Drafting



Scheme of Teaching and Examinations for B.Arch. Programme -2023-24
Outcome Based Education and Choice Based Credit System (CBCS)
(Effective from the Academic Year 2023-24)

DSATM

COURSE SYLLABUS

Module No.	Contents of the Module	Hours
1	1. Section of geometrical solids and construction of true shapes. 2. Interpenetration of geometric solids, combination of different forms in architectural compositions. Ex: Projecting towers of vertical circulation on building facades, chimney over sloping roofs and projecting canopies and balconies on facades and dormer windows.	9
Pedagogy	<ul style="list-style-type: none">- The students need to do the discussions on assignments in the studios.- Explore videos in various websites using animation of geometrical drawings.- A consolidated portfolio containing exercises related to each of the above topics are to be submitted for viva-voce examination.	
2	3. Introduction to perspective drawing, Understanding the methods of perspective projections through picture plane, station point, vanishing point, ground level, eye level, cone of vision and central line of vision - their variations and resultant effects. 4. One-point perspective drawings: exercises of perspective drawings of simple built forms, architectural elements.	9
Pedagogy	<ul style="list-style-type: none">- The students need to do the discussions on assignments in the studios.- Explore videos in various websites using animation of geometrical drawings.- A consolidated portfolio containing exercises related to each of the above topics are to be submitted for viva-voce examination.	
3	5. Two-point & Three-point perspective drawings: exercises of perspective drawings of simple built forms, architectural elements. 6. Introduction to Sociography: Principles of shade and shadow constructions for geometrical solids, architectural elements and built forms. Construction of shadows on floor plans, elevations, sectional elevations and roof-top views.	12
Pedagogy	<ul style="list-style-type: none">- The students need to do the discussions on assignments in the studios.- Explore videos in various websites using animation of geometrical drawings.- A consolidated portfolio containing exercises related to each of the above topics are to be submitted for viva-voce examination.	
4	7. Introduction to 2D drafting software: Creation of files, tools, commands, layers, blocks and symbols in AutoCAD; 8. Using latest version of relevant CAD software: 2D commands, Classroom exercises such as measured drawings (windows, doors and staircases etc.,) understanding layers, paper space Vs model space, line weights and print set up. Drawing of simple objects and shapes in AutoCAD.	9
Pedagogy	<ul style="list-style-type: none">- Conversion of orthographic projections done in Graphics I to computerized drawing in AutoCAD.- Explore videos in various websites using animation of geometrical drawings- A consolidated portfolio containing exercises related to each of the above topics are to be submitted for viva-voce examination.	
5	9. Creation of Orthographic Projections and Isometric Views of solids through AutoCAD. Drawing of simple building plans, sections and elevations & view in AutoCAD. 10. Presentation of time problem; plan of a floor of a single storied building of I/II semester architectural design studio project.	12
Pedagogy	<ul style="list-style-type: none">- The students need to do the discussions on assignments in the studios.- Explore videos in various websites using animation of geometrical drawings.	

- A consolidated portfolio containing exercises related to each of the above topics are to be submitted for viva-voce examination.

List of Exercises

Module.No	Experiments/Programs	COs
1	Section of geometrical solids 1 & 2	CO1& 2
2	Interpenetration of geometric solids (shapes & built form) 1, 2 & 3	CO2 & 3
3	Introduction to perspective drawing 1&2	CO1 & 2
4	One-point perspective of simple objects like cubes, cylinders and other geometrical shapes. & One-point perspective of simple buildings without ornamentation 1& 2	CO3&5
5	Two-point perspective of simple buildings with projections and architectural features, major project with ornamentation details. 1&2	CO3&5
6	Three-point perspective of simple objects. 1	CO3&5
7	Sciography: 1, 2, & 3	CO3 & 4
8	Free-hand perspective with sociography drawings 1	CO3& 5
9	2D drafting in software 1& 2	CO1& 2
10	3D drafting in software 1& 2	CO1& 2

Reference Books

Books (Title of the Book/Name of the author/Name of the publisher/Edition and Year)

1	Bhatt, N.D. and Panchal, V.M., "Engineering Drawing - Plane and Solid Geometry", 48th Ed., Charotar Publishing House. (1996)
2	Francis D.K.Ching, "Architectural Graphics", VanNostrandReinholdCo., 1985.
3	I.H. Morris, "Geometrical Drawing for Art Students", Longmans(1902)
4	ShankarMalik, "Perspective&Sciography", 1994, Allied Publisher
5	Ellen Finkelstein, "AutoCAD 2012 and AutoCAD LT 2012 Bible", Wiley Publishing Inc.
6	Griffin, A.W. and Brunicardi, V.A., "Introduction to Architectural Presentation Graphics", Prentice Hall.

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

CO	Course Outcomes	RBT Level	Level Indicator
CO1	Students will be able to understand and remember the principles of 3D representation, including projections, sectioning, perspective, sciography, and CAD commands.	Remember & understand	R & U
CO2	Apply 3D representations of objects, furniture, and built forms using a variety of techniques, such as sections of solids, perspective drawings, shadows, free-hand perspective drawings, and measured drawings.	Apply	A
CO3	Analyse the effectiveness of 3D representation techniques in communicating architectural design ideas, internal structure, visual appearance, and functionality.	Analyse	An
CO4	Evaluate the effectiveness of different 3D representation techniques in communicating architectural design ideas.	Evaluate	E
CO5	Create new and innovative 3D representation techniques by combining their knowledge of the principles of 3D representation with their creativity and problem-solving skills.	Create	C

Mapping of Course Outcomes to Program Outcomes:

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

Weblinks and Video Lectures (e-Resources)

1	https://ndl.iitkgp.ac.in
2	https://www.youtube.com/watch?v=VIVfHNDu1ds
3	https://www.youtube.com/watch?v=lpOIUIUbk14
4	https://www.youtube.com/watch?v=uAH9gsUZBEY
5	<ul style="list-style-type: none"> https://www.youtube.com/watch?v=1gpNcVgOzjg https://www.youtube.com/watch?v=bjhkxFDvD78 https://www.youtube.com/watch?v=JBGzoOlwFt4 https://www.youtube.com/watch?v=7K2yaBfaVhk https://www.youtube.com/watch?v=vY20JGI4v44

Assessment Pattern (both CIE and SEE)

3 Credit Course –								
Assessment Method	Component	Type of Assessment	Assessment Type used	Max. Marks	Evaluation Details	Reduced Marks	Min. Marks	Total
CIE	Studio	20 Drafted sheets	Evaluation on visualisation & quality of drawings	200	Each sheet is evaluated on the basis of creativity & visualisation skills, quality of line weights/drafting skills, on time submission	50	25	50
Total CIE Studio							25	50
SEE	Viva voce on 20 Drafted sheets			100	SEE Exam is Viva voce, conducted for 50 Marks.	50	20	50
CIE+SEE							50	100
<p>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 to pass the Viva voce is 20 (40% of Maximum marks – 50). The average score of CIE + SEE shall be not less than 50% maximum marks of the course, based on this grading will be awarded.</p>								

CIE- Continuous Internal Evaluation (50 Marks)

Bloom's Category	Studio
	Progressive Assessment
	Total 20 Sheets from all the topics of the Modules
	50 Marks
Remember	5
Understand	5
Apply	17.5
Analyse	10
Evaluate	5
Create	7.5

CIE Course Assessment Plan

CO's	Marks Distribution					Total Marks	Weightage
	Progressive Marking of sheets submitted on each topic in the syllabus						
	Module-1	Module-2	Module-3	Module-4	Module-5		
CO1	10	10	-	10	10	40	20
CO2	15	10	-	20	20	65	33
CO3	15	10	20	--	-	45	22
CO4	-	-	20	-	-	20	10
CO5	-	10	20	-	-	30	15
Total	40	40	60	30	30	200	100

SEE- Semester End Examination (50 Marks)

Bloom's Category	SEE Marks (Viva Voce on the sheets done on each topic in the syllabus during the semester)
Remember	5
Understand	5
Apply	16.5
Analyse	11.5
Evaluate	5
Create	7.5

SEE Course Plan

CO's	Marks Distribution					Total Marks	Weightage
	Module-1	Module-2	Module-3	Module-4	Module-5		
CO1	10	10	-	10	10	40	20
CO2	15	10	-	20	20	65	33
CO3	15	10	20	-	-	45	22
CO4	-	-	20	-	-	20	10
CO5	-	10	20	-	-	30	15
Total	40	40	60	30	30	200	100

Course Contents and Lecture Schedule

Module No.	Topics	No. of Hours
1	Section of geometrical solids and construction of true shapes.	9
1	Interpenetration of geometric solids, combination of different forms in architectural compositions. Ex: Projecting towers of vertical circulation on building facades, chimney over sloping roofs and projecting canopies and balconies on facades and dormer windows.	
2	Introduction to perspective drawing, Understanding the methods of perspective projections through picture plane, station point, vanishing point, ground level, eye level, cone of vision and central line of vision - their variations and resultant effects.	12
2	One-point perspective drawings: exercises of perspective drawings of simple built forms, architectural elements. Interior views of a room with furniture. Exercises of perspective by changing the variables, their positions of PP, CV, SP and eye-level etc.	
3	Two-point & three-point perspective drawings: exercises of perspective drawings of simple built forms, architectural elements. Interior views of a room with furniture. Exercises of perspective by changing the variables, their positions of PP, CV, SP and eye-level etc.	9
3	Introduction to Sciography: Principles of shade and shadow constructions for geometrical solids, architectural elements and built forms. Construction of shadows on floor plans, elevations, sectional elevations and roof-top views.	
4	Introduction to 2D drafting software: Creation of files, tools, commands, layers, blocks and symbols in AutoCAD;	9
4	Using latest version of relevant CAD software: 2D commands, Classroom exercises such as measured drawings (windows, doors and staircases etc.,) understanding layers, paper spaceVs model space, line weights and print set up. Drawing of simple objects and shapes in AutoCAD.	
5	Creation of Orthographic Projections and Isometric Views of solids through AutoCAD. Drawing of simple building plans, sections and elevations & view in AutoCAD	12
5	Presentation of time problem; plan of a floor of a single storied building of I/II semester architectural design studio project.	
Total		51 Hrs



Dayananda Sagar Academy of Technology & Management

(Autonomous Institute under VTU)

Semester	:	2nd			
Course Title	:	History of Architecture II			
Course Code	:	BAT204			
Course Type (Theory/ Practical/Studio/Integrated)	:	Theory			
Category	:	PCC			
Stream	:	Architecture	CIE	:	50 Marks
Credits	:	3	SEE	:	100 Marks
Total Hours (L:T:P:S)	:	3:0:0:0 Hrs/Week	SEE Duration	:	3 Hours

Course Learning Objectives: Students will be taught

SI.No	Course Objectives
1	To provide an understanding of the evolution of Hindu Architecture in India in its various stylistic modes, characterized by technology, ornamentation and planning practices.

Teaching-Learning Process

Pedagogy (General Instructions):

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

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 devise innovative pedagogy to improve teaching-learning.



Scheme of Teaching and Examinations for B.Arch. Programme -2023-24
Outcome Based Education and Choice Based Credit System (CBCS)
(Effective from the Academic Year 2023-24)

DSATM

COURSE SYLLABUS

Module No.	Contents of the Module	Hours
1	<ol style="list-style-type: none"> 1. Introduction to Classical (Buddhist): Mahayana phase, stupa and rock cutcave Architecture. 2. Buddhist Examples: Study of principles of design of buildings through study of three kinds of Architecture: a) Monumental; Great Stupa at Sanchi, Chaitya at Karli, Viharas at Ajanta, and Toranas at Sanchi b) Domestic (Built to inhabit) and c) Civic space. 3. Introduction to Jain Architecture: Study of principles of design of buildings through study of three kinds of Architecture-Khandagiri,Udayagiri caves: a) Monumental; b) Domestic (Built to inhabit) and c) Civic space 	8
Pedagogy	<ul style="list-style-type: none"> - The teacher can use PPTs, Videos to discuss the buildings, style of architecture. - The students need to sketch the buildings for its unique qualities. - Quizzes, models, seminars from students can be encouraged 	
2	<ol style="list-style-type: none"> 4. Evolution of Hindu temple: Indo Aryan and Dravidian - Early temples atUdaigiri, Tigawa and Sanchi. 5. Evolution of Hindu temple: Dravidian Experiments at Aihole (Durga templeand LadKhan temple), Deogarh, Bhitargaon and Badami. 6. Beginnings of Dravidian architecture: Pallavas, rathas at Mamallapuram, Shore temple, Kailsanatha and Vaikuntaperumal temples at Kancheepuram. 	8
Pedagogy	<ul style="list-style-type: none"> - The teacher can use PPTs, Videos to discuss the buildings, style of architecture. - The students need to sketch the buildings for its unique qualities. - Quizzes, models, seminars from students can be encouraged 	
3	<ol style="list-style-type: none"> 7. The Cholas contribution: Study of principles of design of buildings throughstudy of three kinds of Architecture: a) Monumental; Brihadeshwara temple at Thanjavur and Gangaikonda Cholapuram b) Domestic (Built to inhabit) and c) Civic space; 8. The Pandyan & Madurai Dynasties contribution: Study of principles of design of buildings through study of three kinds of Architecture: a) Monumental; Gopurams Madurai Meenakshi temple and Srirangam. b) Domestic (Built to inhabit) and c) Civic space 	8
Pedagogy	<ul style="list-style-type: none"> - The teacher can use PPTs, Videos to discuss the buildings, style of architecture. - The students need to sketch the buildings for its unique qualities. - Quizzes, models, seminars from students can be encouraged 	
4	<ol style="list-style-type: none"> 9. The Hoysala contribution: Study of principles of design of buildings through study of three kinds of Architecture: a) Monumental; Eg: Channakesava temple, Belur, Hoysalesvara temple, Halebid, Kesava temple, Somnathpur b) Domestic (Built to inhabit) and c) Civic space; 10. Indo Aryan Mode: the beginnings in Orissa the Lingaraja at Bhubaneshwar. 	8
Pedagogy	<ul style="list-style-type: none"> - The teacher can use PPTs, Videos to discuss the buildings, style of architecture. - The students need to sketch the buildings for its unique qualities. - Quizzes, models, seminars from students can be encouraged 	
5	<ol style="list-style-type: none"> 11. Hindu architecture at Rajputana & Khajuraho group: (Temple of Surya, Orisa, Marwar) and Gujarat (Temple of Surya, Modhera). The Khajuraho group: Khandariya Mahadev, Jain temples - Chaumukh temple at Ranpur 12. Later Dravidian period: The Vijayanagar and- Noted temples at Hampi (Vitthala temple and Hazara Rama temple). 	8
Pedagogy	<ul style="list-style-type: none"> - The teacher can use PPTs, videos to discuss the buildings, style of architecture. 	

Pedagogy	<ul style="list-style-type: none"> - The students need to sketch the buildings for its unique qualities. - Quizzes, models, seminars from students can be encouraged
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Reference Books	
Books (Title of the Book/Name of the author/Name of the publisher/Edition and Year)	
1	Bannister Fletcher , "History of Architecture", CBS Publishers, 1992
2	"Indian Architecture, Buddhist and Hindu Period" by Brown, Percy
3	"Architecture of India - Buddhist and Hindu" by Grover Satish

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

CO	Course Outcomes	RBT Level	Level Indicator
CO1	To understand the evolution of Buddhist, Jain and Hindu Architecture (Dravidian and Indo Aryan) through different dynasties	L1	R & U
CO2	To apply the knowledge of Buddhist, Jain and Hindu Architecture to recognize, classify and evaluate different architecture monuments.	L2	A
CO3	To analyse the historic monuments in terms of their planning, form, functions, method of construction, materials used, planning techniques, ornamentation etc.,	L3	An
CO4	To evaluate the chronological stylist developments of Buddhist, Jain and Hindu Architectural Styles.	L4	E
CO5	To design/create spaces to match with present context inspired from the Buddhist, Jain and Hindu Architectural monuments in terms of spatial arrangement, climatic response, materials used, construction techniques, response to the context etc.,	L5	C

Mapping of Course Outcomes to Program Outcomes:

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

Weblinks and Video Lectures (e-Resources)	
1	https://ndl.iitkgp.ac.in
2	https://www.youtube.com/watch?v=TyMkt90B0fs
3	https://www.youtube.com/watch?v=4yYzQrdP5QE
4	https://www.youtube.com/watch?v=5AS6cj7Uhk4
5	https://www.youtube.com/watch?v=0FUyVmmfEHs
6	https://www.youtube.com/watch?v=0AHu2yolmcg
7	https://www.youtube.com/watch?v=aSVtCd0m57c
8	https://www.youtube.com/watch?v=f8NRoUqczzc
9	https://www.youtube.com/watch?v=q_GF7rs8n80
10	https://www.youtube.com/watch?v=zRh3v4ccwsY
11	https://www.youtube.com/watch?v=pHWPLdrwVZU

Assessment Pattern (both CIE and SEE)

3 Credit Course –

Assessment Method	Component	Type of Assessment	Assessment Type used	Max. Marks	Evaluation Details	Reduced Marks	Min. Marks	Total
CIE	Theory	AAT	Pedagogical Initiatives	40	Any two assessment Methods as per VTU Clause 22OB4.2 of regulations (If assessment is Project Based Learning, then one assessment method may be adopted).	20	10	20
		Test-1	Theory	20	Average of three Internal Assessment Tests each of 25 Marks	30	15	30
		Test-2	Theory	20				
		Test-3	Theory	20				
Total CIE Theory							25	50
SEE				100	SEE Exam is Theory Exam, conducted for 100 Marks, scored marks are scaled down to 50 marks	100	40	100
CIE+SEE							65	150
<p>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 to pass the theory exam is 40 (40% of Maximum marks – 100). The average score of CIE + SEE shall be not less than 50% maximum marks of the course, based on this grading will be awarded.</p>								

CIE- Continuous Internal Evaluation (50 Marks)

Bloom's Category	Continuous Assessment Tests			Theory
	Test-1	Test-2	Test-3	Alternative Assessment Tool (AAT) (Activity + Assignment) 40 Marks
	20 Marks	20 Marks	20 Marks	
Remember				-
Understand	10	10	10	-
Apply	10	10	10	-
Analyse	20	20	20	-
Evaluate	-	-	-	20
Create	-	-	-	20

CIE Course Assessment Plan

CO's	Marks Distribution					Total Marks	Weightage
	Test-1		Test-2		Test-3		
	Module-1	Module-2	Module-3	Module-4	Module-5		
CO1	10	10	10	10	5	45	45%
CO2							
CO3	-	10	10	10	10	30	30%
CO4	5	-	-	-	10	15	15%
CO5	-	-	-	-	-	-	-
Total	15	20	20	20	25	100	100%

SEE- Semester End Examination (50 Marks)

Bloom's Category	SEE Marks (100% Theory)
Remember	40%
Understand	
Apply	30%
Analyse	30%
Evaluate	-
Create	-

SEE Course Plan

CO's	Marks Distribution					Total Marks	Weightage
	Module-1	Module-2	Module-3	Module-4	Module-5		
CO1	5	10	10	10	5	40	40%
CO2							
CO3		10	10	10		30	30%
CO4	10	5	5	10		30	30%
CO5							
Total							

Course Contents and Lecture Schedule

Module No.	Topics	No. of Hours
1	Introduction to Classical (Buddhist): Mahayana phase, stupa and rock cut cave Architecture.	8
1	Buddhist Examples: Great Stupa at Sanchi, Chaitya at Karli, Viharas at Ajanta, Toranas at Sanchi	
1	Introduction to Jain Architecture	
2	Evolution of Hindu temple: Indo Aryan and Dravidian, Early temples at Udaigiri, Tigawa and Sanchi.	8
2	Evolution of Hindu temple: Dravidian Experiments at Aihole (Durga temple and LadKhan temple), Deogarh, Bhitargaon	
2	Beginnings of Dravidian architecture: Pallavas, rathas at Mamallapuram, Shore temple, Kailsanatha and Vaikuntaperumal temples at Kancheepuram	
3	The Cholas contribution: Brihadeshwara temple at Thanjavur, Gangaikonda, Chalapuram	8
3	The Pandyan & Madurai Dynasties contribution: Gopurams Madurai (Meenakshi temple), Srirangam.	
4	The Hoysala contribution: Channakesava temple-Belur, Hoysalesvara temple, Halebid, Kesava temple, Somnathpur	8
4	Indo Aryan Mode: the beginnings in Orissa - the Lingaraja at Bhubaneshwar	
5	Hindu architecture at Rajputana & Khajuraho group: Temple of Surya, Orisa, Marwar and Gujarat, Temple of Surya-Modhera, The Khajuraho group: Khandariya Mahadev, Jain temples -Chaumukh temple at Ranpur	8
5	Later Dravidian period: The Vijayanagar and- Noted temples at Hampi (Vitthala temple Hazara Rama temple),	
Total		40 Hrs



Dayananda Sagar Academy of Technology & Management

(Autonomous Institute under VTU)

Semester	:	2 nd			
Course Title	:	Basic Design and theory of Design			
Course Code	:	BAT205			
Course Type (Theory/ Practical/Studio/Integrated)	:	STUDIO			
Category	:	PCC			
Stream	:	Architecture	CIE	:	50 Marks
Credits	:	4	SEE (Viva Voce)	:	100 Marks
Total Hours (L:T:P:S)	:	1:0:0:3	SEE Duration	:	-

Course Learning Objectives: Students will be taught

Sl.No	Course Objectives
1	To foster an appreciation for both Oriental and Western performing arts, recognizing their cultural, historical, and artistic significance.
2	To Develop an understanding of the principles of aesthetics and architectural composition in order to create visually pleasing and harmonious architectural designs.
3	To develop a comprehensive understanding of spatial organization principles in architecture and their impact on the overall design composition.
4	To introduce students to the concept of abstraction in art and develop their understanding of its techniques and applications.
5	To develop a comprehensive understanding of styles in art and architecture, their classification, chronology, and evolution, as well as their connection to changing fashions, beliefs, technology, and artistic movements.

Teaching-Learning Process

Pedagogy (General Instructions):

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.
- 2. Applying the theories and techniques:** Students shall be able to recognize and read the basic design theories through various books and documents and apply the technicality into their design.
- 3. Site Visits:** To sensitize students to be more observant to their surroundings and promoting it as a basic creative instinct in them. Trying to blend artistic parameter with social parameter in evolving meaning.
- 4. Experimentation and iteration:** practicing a number of new skills, such as visualization and Representation and Architecture as the art of composing spaces dimensionally accurate and built with different materials.
- 5. Presentation & Communication:** Architecture as Technology to achieve better quality and performance students are asked to use digital mode of presentation and communicate their design.
- 6. Critique and revision:** Students presenting their designs to the studio mentors, to receive feedback and suggestions for improvement. Revisions to be implemented on their designs based on this feedback.



DSATM

**Scheme of Teaching and Examinations for B.Arch. Programme -2023-24
Outcome Based Education and Choice Based Credit System (CBCS)
(Effective from the Academic Year 2023-24)**

COURSE SYLLABUS

Module No.	Contents of the Module	Hours
1	<p>Appreciation of oriental and western performing arts.</p> <p>Study tools-</p> <ul style="list-style-type: none"> • Exploring Performing arts of India, • Regional Folk Dance and Crafts like, Leather puppets etc. - To understand the oriental & western styles. Use them in product design. 	9
Pedagogy	<ul style="list-style-type: none"> • Documentation any one art form of western Society. • To observe and understand different elements and principles involved in making that artform. • Observing and documenting various skill set needed to execute that art form or the craftsmanship required to make that work of art. • Understand the creative process and use the understanding in a composition. 	
2	<ol style="list-style-type: none"> 1. Principles of Aesthetics and Architectural Composition 2. Contrast, harmony, accentuation, restraint in Architectural composition. Illustrations and its application to the practice of design in historical as well as contemporary building. 3. Repose, vitality, strength in Architectural composition. <p>- Principles of Aesthetics and Architectural Composition</p>	9
Pedagogy	<ul style="list-style-type: none"> • Intangible to tangible analysis by taking our classical music composition to 3d composition using the grammar of music which are present in Principles of art and design. • Understanding the commonalities between the performing art, Visual art and their compositions. • To learn basic design principles such as balance, symmetry, rhythm, repetition, hierarchy, unity, proportion, emphasis, contrast 	
3	<p>Spatial organizations of Masses in Architecture</p> <ol style="list-style-type: none"> 1. Linear, radial, grid organization. Illustrations of linear, radial, grid organization in spatial organizations of masses in Architecture and its application to the practice of design with both historical as well as contemporary buildings. <p>Study Tools-</p> <p>Process of Representation of natural pattern to abstraction using pure geometrical/dimensional form using various visual media. Ex. Charcoal / pencil / crayons / oils etc.</p> <p>Use of 2D & 3D hands on working models to synthesize and create form to</p> <ul style="list-style-type: none"> - appreciate the difference between architecture and spatial organizations. 	12
Pedagogy	<ul style="list-style-type: none"> • semi-enclosed space, an enclosed space. • Analysis of spaces using - Form, color, texture, light, ventilation, space and scale along with circulation. • Submission will include Idea generation, Study models, Sketches and drawings to achieve the desired results. • Drawings of the human body in various postures with required measurements. 	

	<ul style="list-style-type: none"> Study Tools- Any three can be explored <ul style="list-style-type: none"> Observation & Study to develop hand & cognitive skill. Colors, Pattern & textures, and function Additive and Subtractive of Forms Freehand sketching Exercises of rendering techniques 	
4	<p>Introduction to Abstraction:</p> <ol style="list-style-type: none"> Ornamentation in Architecture: Historical perspective of the use of ornament in buildings and use of ornament as a decoration to embellish parts of a building. Use and need of ornament in architectural design - different types of ornamentation in buildings. Ornamentation in Architecture Criticism-Argument against ornamentation. Ideas of architect Adolf Loos (Ornament and Crime); Ornaments as economically inefficient and morally degenerate, reduction of ornament or lack of decoration as the sign of an advanced society. <p>Study Tools- Structural/Material translation from concept and architectural form.</p>	12
Pedagogy	<ul style="list-style-type: none"> Exercises to introduce 2D concepts to 3D forms without functional constraints and Human scale. Declaring the conceptual theme of any composition at the beginning, before the exploring the volume using Horizontal and vertical elements or planes. Study of patterns and use the pattern, both physical and material patterns as well as patterns of transformation and Integration. Appreciation of the difference between architecture and the chosen pattern. 	
5	<p>Style in art & Architecture: Basis for classification of styles including chronology of styles arrangement according to order that changes over time.</p> <p>Evolution of styles; reflecting the emergence of new ideas as reaction to earlier styles as a result of changing of fashions, beliefs, technology etc. Popular and modern art, Art trends, periods and Isms.</p> <p>Study Tools-</p> <ul style="list-style-type: none"> Material Study Experience of architecture in basic psychological and physiological terms 	9
Pedagogy	<ul style="list-style-type: none"> Understanding the difference and similarities while the design of a non-enclosed space, a semi-enclosed space, an enclosed space. Submission will include Idea generation, Study models, Sketches, and drawings to achieve the desired results. 	

List of Experiments or Programs

Module.No	Experiments/Programs	COs
1	Mind Mapping - Mapping of Space(s).	CO1
2	Line, Plane and Volume - Students have to work in the third dimension, converting a line into planes, shapes into volume. Parameters are set for minimum and maximum heights.	CO2
3	Art and role of Art in Society	CO2

	<ul style="list-style-type: none"> Folk arts - Understanding various folk arts of India, observing different elements and principals involved in making arts and applying creative process and making composition. Pop Art - Additive and Subtractive of Forms Freehand sketching and color sense. <p>Commercial Art - Applying design creativity through drama and AD making, understanding posters, set creation and communication.</p>	
4	Architectural principles - Visit to Pyramid valley and applying architectural principles on the prism and understating the scale in Architectural composition.	CO3
5	Classical Music - Intangible to tangible analysis, listing to music and igniting sense of space through hand.	CO3
6	Spatial organizations of Masses in Architecture - Process of Representation of natural pattern to abstraction using pure geometrical/dimensional form using various visual media.	CO3
7	3D Composition: Understanding the difference and similarity while design of a non-enclosed space, a semi-enclosed space, an enclosed space.	CO4
8	POP (Plaster of Paris) Carving - Understanding the ornamentation in architecture and depicting through model.	CO5

Reference Books

Books (Title of the Book/Name of the author/Name of the publisher/Edition and Year)

1	Form, Space and Order” by Francis DK Ching
2	Design Fundamentals in Architecture” by Parmar VS
3	Theory of Architecture by Paul Alan Johnson
4	Creating Architectural Theory by John Lang

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

CO	Course Outcomes	RBT Level	Level Indicator
CO1	Students will be able to critically understand and interpret Oriental and Western performances, understanding their unique characteristics, cultural contexts, and contributions to the broader field of performing arts.	L1, L2	Remember & understand
CO2	Students will be able to apply the principles of aesthetics and architectural composition to effectively design and communicate architectural concepts, demonstrating an understanding of spatial relationships, balance, proportion, rhythm, and visual harmony in their designs.	L3	Apply
CO3	Students will be able to effectively analyze , plan, and design architectural spaces, applying spatial organization principles to create functional, aesthetically pleasing, and harmonious built environments.	L4	Analyse
CO4	Students will be able to create abstract artworks, demonstrating an understanding of abstract concepts, techniques and the ability to communicate ideas and emotions through non-representational forms.	L5	Evaluate
CO5	Students will be able to critically analyze and interpret artworks in relation to their respective styles and periods, demonstrating knowledge of the chronological development of art styles and their societal and cultural significance, and identifying the key characteristics and influences of popular art trends, periods, and artistic movements.	L6	Design

Mapping of Course Outcomes to Program Outcomes:

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

Weblinks and Video Lectures (e-Resources)

1	https://ndl.iitkgp.ac.in
2	https://www.youtube.com/watch?v=UpfBk9dIJ8o
3	https://www.youtube.com/watch?v=kH8WwdAwNpM
4	https://www.youtube.com/watch?v=yyKXJhHwqWk
5	https://www.youtube.com/watch?v=1BNbXBQnhGg
6	https://www.youtube.com/watch?v=n4dZduYMD9E
7	https://www.youtube.com/watch?v=CT97m8_YeAQ
8	https://www.youtube.com/watch?v=Er06itucWtk

Assessment Pattern (both CIE and SEE)

4 Credit Course –								
Assessment Method	Component	Type of Assessment	Assessment Type used	Max. Marks	Evaluation Details	Reduced Marks	Min. Marks	Total
CIE	Studio	Continuous Assessment Tool	Presentations /Sheet Work and Models	40	Creativity and Abstraction (15marks) Presentation and communicating given subject using digital tool (5 marks) Quality, completeness, clarity and legibility in model making (20 marks)	40	20	
		AAT	Portfolio	10	Quality of portfolio (10 Marks)	10	5	10
		AAT	Seminar	15	Knowledge and understanding (9marks) Presentation Skills (4 marks) Engagement and Interaction (2mark)	10	5	10
		AAT	Role Play	10	Narration (5 Marks) Performance (5Marks)	15	7.5	15
Total CIE Practical							37.5	75
SEE				75	SEE Exam is viva Exam, conducted for 75 Marks.	75	30	75
CIE+SEE							75+75	150

The Marks of Continuous Internal Evaluation (CIE) is 75 and for Semester End Exam (SEE) (viva) is 75marks. The student has to obtain a minimum of 50% of the maximum marks of CIE and 40 % of maximum marks of SEE (viva) to pass. The passing percentage shall not be less than the 50% in aggregate for a course (i.e. CIE and SEE (viva) put together). Based on the marks scored in CIE+SEE (viva) grading will be awarded for this course.

CIE- Continuous Internal Evaluation (75 Marks)

Bloom's Category	Studio				
	Continuous Assessment Tests		Alternative Assessment Tool (AAT)		
	Sheet	Model	Portfolio	Seminar	Role Play
	15 Marks	25 Marks	10 Marks	10 Marks	15 Marks
Remember	2	-	2	2	-
Understand	2	-	2	2	-
Apply	5	-	-	3	5
Analyse	6	5	-	3	-
Evaluate	-	7	-	-	-
Create	-	13	5	-	10

CIE Course Assessment Plan

CO's	Marks Distribution					Total Marks	Weightage
	STUDIO						
	Module-1	Module-2	Module-3	Module-4	Module-5		
CO1	1	1	2	2	2	8	11%
CO2	2	3	3	3	3	14	18%
CO3	3	3	3	3	3	15	20%
CO4	3	3	4	4	4	18	24%
CO5	3	4	4	4	5	20	27%
Total	12	14	16	16	17	75	100%

SEE- Semester End Examination (75 Marks)

Bloom's Category	SEE Marks (Viva Voce)
Remember	4
Understand	4
Apply	14
Analyse	15
Evaluate	18
Create	20

SEE Course Plan

CO's	Marks Distribution					Total Marks	Weightage
	Module-1	Module-2	Module-3	Module-4	Module-5		
CO1	1	1	2	2	2	8	11%
CO2	2	3	3	3	3	14	18%
CO3	3	3	3	3	3	15	20%
CO4	3	3	4	4	4	18	24%
CO5	3	4	4	4	5	20	27%
Total	12	14	16	16	17	75	100%

Course Contents and Lecture Schedule

Module No.	Topics	No. of Hours
1	Understanding of Art and role of Art in Society	2
1	Understand different forms of art	2

1	Understanding various folk arts of India, observing different elements and principles involved in making arts and applying creative process and making composition.	5
2	Understanding and memorizing basic design principles.	2
2	Principles of Aesthetics and Architectural Composition	2
2	Applying basic design principles on the prism and understating the scale in Architectural composition.	5
3	Spatial organizations of Masses in Architecture: Illustrations of linear, radial, grid organization in spatial organizations of masses in Architecture	2
3	Representation of natural pattern to abstraction using pure geometrical/dimensional form using various visual media. Ex. Charcoal/pencil/crayons/oils etc.	2
3	Use of 2D & 3D hands on working models to synthesize and create form to appreciate the difference between architecture and spatial organizations.	4
3	Additive and Subtractive of Forms: Process of Representation of natural pattern to abstraction using pure geometrical/dimensional form using various visual media.	4
4	Ornamentation in Architecture: Historical perspective of the use of ornament in buildings and use of ornament as a decoration to embellish parts of a building.	2
4	Ornamentation in Architecture Criticism-Argument against ornamentation. Ideas of architect Adolf Loos (Ornament and Crime)	3
4	Study of patterns and use the pattern, both physical and material patterns as well as patterns of transformation and Integration.	3
4	POP (Plaster of Paris) Carving - Understanding the ornamentation in architecture and depicting through model.	6
5	Understanding the style in art & Architecture	2
5	Evolution of styles; reflecting the emergence of new ideas as reaction to earlier styles as a result of changing of fashions, beliefs, technology etc. Popular and modern art, Art trends, periods and Isms.	2
5	Line, Plane and Volume - Students have to work in the third dimension, converting a line into planes, shapes into volume. Parameters are set for minimum and maximum heights.	5
Total		51 Hrs.



Dayananda Sagar Academy of Technology & Management

(Autonomous Institute under VTU)

Semester	:	2 nd		
Course Title	:	Building Structures-I		
Course Code	:	BAT206		
Course Type (Theory/Practical/Integrated)	:	Theory		
Category	:	BSAE		
Stream	:	Arch./Civil	CIE	: 50 Marks
Credits	:	3	SEE	: 100 Marks
Total Hours (L:T:P:S)	:	3:0:0:0	SEE Duration	: 3 Hours

Course Learning Objectives: Students will be taught

Sl.No	Course Objectives
1	Introduction to principles of mechanics, structural material & different force system & on structural properties.

Teaching-Learning Process

Pedagogy (General Instructions):

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

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 analyse 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.



DSATM

Scheme of Teaching and Examinations for B.Arch. Programme -2023-24
Outcome Based Education and Choice Based Credit System (CBCS)
(Effective from the Academic Year 2023-24)

COURSE SYLLABUS

Module No.	Contents of the Module	Hours
1	Different construction materials with emphasis on structural properties viz. steel, concrete, wood, glass, aluminium. Different types of loads, the structure is being subjected to as per IS 875 Part I & II	8
Pedagogy	1. Theory classes to evaluate the structural properties of materials. 2. Specifications and applications as per IS Codes. 3. Documenting of learning through sketches, notes, assignments	
2	Mechanics - Classification of mechanics, force, characteristics of force, classification of force system, Resultant of force, Composition of force, Axioms in mechanics, Principles of transmissibility, Moment of force, Resultant of coplanar concurrent force system, and Free body diagrams.	8
Pedagogy	1. Theory classes to evaluate the Basics of Mechanics. 2. Documenting of learning through sketches, notes, assignments.	
3	Resultant of coplanar non concurrent force system, couple & characteristics of couple, different types of loads, different types of beams, statically determinate & statically indeterminate, different types of supports, problems on support reactions, Equilibrium of Co-planar Concurrent and Non-Concurrent forces. Note: In the numerical pertaining to support reactions, loading on the beam shall be restricted to only point load & uniformly distributed load].	8
Pedagogy	1. Theory classes to evaluate the forces of structural systems in Buildings. 2. Documenting of learning through sketches, notes, assignments.	
4	Center of gravity, centroid, to locate the centroid of composite section from the 1st principles. Moment of inertia, radius of gyration, parallel axis theorem, perpendicular axis theorem. Numericals on determination of moment of inertia of composite section about any defined axis.	8
Pedagogy	1. Theory classes to evaluate the moments Building System. 2. Documenting of learning through sketches, notes, assignments.	
5	Truss - Triangulation concept, different types of trusses, assumption made in the analysis of truss. Analysis of the truss by the "Method of Joints" (Simple problems) to calculate the dead weight of the truss from given data.	8
Pedagogy	1. Theory classes to evaluate the forces of structural systems in a typical truss. 2. Documenting of learning through sketches, notes, assignments.	

Reference Books	
Books (Title of the Book/Name of the author/Name of the publisher/Edition and Year)	
1	R.K.Bansal, " A Textbook of Engineering Mechanics", Laxmi Publications, 2008
2	S.S. Bhavikatti, " Engineering Mechanics", New Age International, 1994.
3	S. Ramamrutham, "Engineering Mechanics ", Dhanpat Rai Publishing, New Delhi, 2016.

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

CO	Course Outcomes	RBT Level	Level Indicator
CO1	To remember & understand the behavior & properties of structural materials/elements	L1&L2	Remember & Understand
CO2	To apply the concepts of structural behaviour to solve real time problems.	L3	Apply
CO3	To analyze the forces & reactions of the structural members.	L4	Analyse
CO4	To investigate and demonstrate the real time project like trusses.	L5	Investigate& demonstrate
CO5	To design beams as per architectural requirements.	L6	Design

Mapping of Course Outcomes to Program Outcomes:

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

Weblinks and Video Lectures (e-Resources)	
1	https://ndl.iitkgp.ac.in
2	https://www.youtube.com/watch?v=CcHPzDPYkho
3	https://www.youtube.com/watch?v=Hn_iozUo9m4
4	https://www.youtube.com/channel/UCXAS_Ekkq0iFJ9dSUIkcAkw

Assessment Pattern (both CIE and SEE)

3 & 2 Credit Course									
Assessment Method	Component	Type of Assessment	Assessment Type used	Max. Marks	Evaluation Details	Reduced Marks	Min. Marks	Total	
CIE	Theory	AAT	2 -Activities	20	Any two activities	20	10	20	
			2-Assignments	20	Any two assignments	20	10	20	
		Test-2	Test-1	Theory	20	Average of three Internal Assessment Tests each of 20 Marks	60	30	60
			Test-2	Theory	20				
			Test-2	Theory	20				
		Total CIE Theory							50
Total CIE Theory marks reduced to 50M							25	50	

SEE		100	SEE Exam is Theory Exam, conducted for 100 Marks, scored marks are scaled down to 50 marks	100	50	100
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CIE+SEE

75 150

Note: The weightage of Continuous Internal Evaluation (CIE) is 50% and for Semester End Exam (SEE) is 50%. The minimum passing mark for the CIE is 50% of the maximum marks (50 marks). A student shall be deemed to have satisfied the academic requirements and earned the credits allotted to each subject/ course if the student secures not less than 40% (40 Marks out of 100)in the semester-end examination(SEE), and a minimum of 50% (75 marks out of 150) in the sum total of the CIE (Continuous Internal Evaluation) and SEE (Semester End Examination) taken together.

CIE- Continuous Internal Evaluation (50 Marks)

Bloom's Category	Theory			Alternative Assessment Tool (AAT)	
	Continuous Assessment Tests			Activities	Assignments
	Test-1	Test-2	Test-3		
	20 Marks	20 Marks	20 Marks	20 Marks	20 Marks
Remember					
Understand	10	10	10		
Apply	10	5			
Analyse		5	10		
Evaluate				10	10
Create				10	10

CIE Course Assessment Plan

CO's	Marks Distribution					Activities	Assignments	Total Marks	Weightage
	Test-1		Test-2		Test-3				
	Module-1	Module-2	Module-3	Module-4	Module-5				
CO1	10	5	-	-	5	-	-	20	20%
CO2						-	-	20	20%
CO3	-	5	5	5	5	-	-	20	20%
CO4	-	-	5	5	10	-	-	20	20%
CO5	-	-	-	-	-	10	10	20	20%
CO6	-	-	-	-	-	10	10	20	20%
Total	10	10	10	10	20	20	20	100	100%

SEE- Semester End Examination (100 Marks)

Bloom's Category	SEE Marks (100% Theory)
Remember	20
Understand	20
Apply	30
Analyse	30
Evaluate	-
Create	-

SEE Course Plan

CO's	Marks Distribution					Total Marks	Weightage
	Module-1	Module-2	Module-3	Module-4	Module-5		
CO1	10	10	10	5	5	40M	40%
CO2							
CO3	-	10	10	10		30M	30%
CO4	-	-	-	10	20	30M	30%
CO5	-	-	-	-	-	-	-
CO6	-	-	-	-	-	-	-
Total	10	20	20	25	25	100M	100%

Course Contents and Lecture Schedule

Module No.	Topics	No. of Lectures
1	Different construction materials with emphasis on structural properties viz. steel, concrete, wood, glass, Aluminium.	6
2	Different types of loads: The structure is being subjected to as per IS 875 Part I & II.	2
3	Mechanics: Classification of mechanics, force, characteristics of force, classification of force system.	2
4	Resultant of force, Composition of force, Axioms in mechanics, Principles of transmissibility.	2
5	Moment of force, Resultant of coplanar concurrent force system, and Free body diagrams.	4
6	Resultant of coplanar noncurrent force system: Couple & characteristics of couple.	2
7	Different types of loads, different types of beams, statically determinate & statically indeterminate beams.	2
8	Different types of supports: Problems on support reactions, Equilibrium of Co-planar Concurrent and Non-Concurrent forces.	4
9	Center of gravity: Centroid, to locate the centroid of composite section from the 1st principles.	2
10	Moment of inertia, radius of gyration, parallel axis theorem, perpendicular axis theorem.	2
11	Numerical on determination of moment of inertia of composite section about any defined axis. Note: In the question paper restrict the question to the numerical and not on the derivation of the formula.	4
12	Truss - Triangulation concept, different types of trusses, assumption made in the analysis of truss.	4
13	Analysis of the truss by the " Method of Joints " (Simple problems) to calculate the dead weight of the truss from given data.	4
Total		40 Hrs



Dayananda Sagar Academy of Technology & Management

(Autonomous Institute under VTU)

Semester	:	2nd			
Course Title	:	Site Survey and Analysis			
Course Code	:	BAT207			
Course Type (Theory/ Practical/ Studio/Integrated)	:	Practical			
Category	:	BSAE			
Stream	:	Arch/Civil	CIE	:	50 Marks
Credits	:	2	SEE (Viva Voce)	:	50 Marks
Total Hours (L:T:P:S)	:	0:1:2:0 Hrs/week	SEE Duration	:	-

Course Learning Objectives: Students will be taught

Sl.No	Course Objectives
1	The basics of need of survey, objectives, principles, classification and instruments types and uses.
2	The process of doing survey of smaller sites using chain survey and plane table survey methods.
3	To book the levels of the lands and interpolate the contours.
4	The use and application of advance survey instruments like Theodolite, Total Station and GPS.
5	To analyse the site on the bases of survey information, climate, orientation and topographical features

Teaching-Learning Process

Pedagogy (General Instructions):

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

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 devise innovative pedagogy to improve teaching-learning.



DSATM

**Scheme of Teaching and Examinations for B.Arch. Programme -2023-24
Outcome Based Education and Choice Based Credit System (CBCS)
(Effective from the Academic Year 2023-24)**

COURSE SYLLABUS

Module No.	Contents of the Module	Hours
1	Introduction to Surveying - Definition, classification, principles of surveying, character of work Learning to read a land survey drawing, types of land survey drawing, scale and north, legends and symbols. Introduction to Chain Surveying - Instruments, erecting perpendicular, obstacles in chaining, area by offset.	5
Pedagogy	<ul style="list-style-type: none"> - Chalk and talk brainstorming, assignment and sheets. - Exercise on reading of topographic maps and its interpretation. - Show and tell session on chain surveying instruments. 	
2	Plane Table Surveying - Accessories used advantages and disadvantages, Methods of plane table surveying (radiation and intersection). Levelling - Definition, Classification, types and instruments used.	5
Pedagogy	<ul style="list-style-type: none"> - Hands on exercise on plan table survey 	
3	Levelling - Booking and reduction of levels (HI Method, Rise and Fall Method). Contouring : Characteristics of contours, direct and indirect methods of contours, interpolation and uses of contours.	4
Pedagogy	<ul style="list-style-type: none"> - Demonstration and hands on exercise on booking of levels and drawing of contours. 	
4	Advance Survey Instruments - Theodolite - Basic Concepts, measuring horizontal and vertical angles Total Station - Accessories used, uses of total station and applications Introduction to GPS, GIS and Remote sensing	6
Pedagogy	<ul style="list-style-type: none"> - Demonstration of advance survey instruments like theodolite, Total station and GPS 	
5	Analysis of a Site - To learn about site factors like topography, hydrology, soils, landforms, vegetation, climate and micro climate and influence of water bodies. Surrounding factors - Accessibility, infrastructures available, sources of water supply and means of disposal system, architectural and visual aspects Preparation of maps of matrix analysis, composite analysis, locality plans, topographical analysis and analysis of Man-made structures, sensuous qualities, cultural data, images and data correlation.	6
Pedagogy	<ul style="list-style-type: none"> - Case study application of site analysis in corresponds to Architectural Design Projects. 	

List of Experiments or Programs

Module.No	Experiments/Programs	COs
1	Land survey drawing reading and interpretation	CO2
2	Plane table survey on field	CO2
3	Levelling and contour mapping	CO5
4	Demonstration of advance survey instruments	CO1
5	Case study analyses on site conditions for architectural design project	CO3

Reference Books

1	B C Punmia, " Surveying Volume I", Firewall Media, 2005.
2	K R Arora, "Surveying " Standard Book House, 7th edition.
3	R. Subramanian, " Fundamentals of Surveying and Levelling ", Oxford Uni. Press., 2014.

4	S K Duggal, "Surveying", Vol 1, 14th Edition, McGraw Hill Education, 2013
5	TP Kanetkar, SV Kulkarni, "Surveying and Levelling(Part-1)", PuneVidyarthi Griha Prakashan, 2014

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

CO	Course Outcomes	RBT Level	Level Indicator
CO1	Understand the objective, principles and application of surveying and instruments used.	Remember and understand	L1 and L2
CO2	Apply the knowledge of chaining, levelling and contouring onsite.	Apply	L3
CO3	Analyze the site conditions through surveying and various factors like climate, topography, vegetation and infrastructure availability.	Analyse	L4
CO4	Evaluate the use of survey methods for site analyse and also evaluate the architectural intervention best for the given site.	Evaluate	L5
CO5	Create site survey drawings through various surveying techniques.	Create	L6

Mapping of Course Outcomes to Program Outcomes:

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

Weblinks and Video Lectures (e-Resources)

1	https://ndl.iitkgp.ac.in .
2	https://www.faro.com/en/Industries/Architecture-Engineering-and-Construction
3	https://www.youtube.com/watch?v=-JgCfsooiu0 .
4	https://www.youtube.com/watch?v=4hJs81gbl7o .
5	https://www.youtube.com/watch?v=ZGx37X7KXvc .
6	https://www.youtube.com/watch?v=MEtAircjNc8 .
7	https://www.youtube.com/watch?v=j8poe2vvD2Q

Assessment Pattern (both CIE and SEE)

4 Credit Course –								
Assessment Method	Component	Type of Assessment	Assessment Type used	Max. Marks	Evaluation Details	Reduced Marks	Min. Marks	Total
CIE	AAT	Assignments	Notes and Drawing sheets	50	Answering assignment questions and Quiz activity with completion of drawings as instructed in class	25	10	25
Total CIE Theory							10	25

	Lab and Field work	Conduction of Experiments	Performance with Record & Observation Book	50	Conduction of Experiments and Preparation of Laboratory Records	25	10	25
Total CIE Studio							10	25
SEE					SEE Exam will be Viva voice	50	25	50
CIE+SEE							40	100
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 to pass the Viva voce is 20 (40% of Maximum marks – 50). The average score of CIE + SEE shall be not less than 50% maximum marks of the course, based on this grading will be awarded.								

CIE- Continuous Internal Evaluation (50 Marks)

Bloom's Category	AAT	Practical
	25 Marks	25 Marks
Remember	5	-
Understand	5	-
Apply	10	10
Analyse	5	5
Evaluate	-	5
Create	-	5

CIE Course Assessment Plan

CO's	Marks Distribution					Total Marks	Weightage
	Module-1	Module-2	Module-3	Module-4	Module-5		
CO1	4	3		4		11	22%
CO2	3	3	3	2		11	22%
CO3		2		3	4	9	18%
CO4	2		3		4	9	18%
CO5	2	3	3		2	10	20%
Total	11	11	9	9	10	50	100%

SEE- Semester End Examination (50 Marks)

Bloom's Category	SEE Marks (Viva Voce)
Remember	15
Understand	15
Apply	10
Analyse	10
Evaluate	
Create	

SEE Course Plan

CO's	Marks Distribution					Total Marks	Weightage
	Module-1	Module-2	Module-3	Module-4	Module-5		
CO1	6	6	6	6	6	30	60%
CO2	-	4	4		2	10	20%
CO3	-	-	4	4	2	10	20%
CO4	-	-	-	-	-	-	-
CO5							

Total	6	10	14	10	10	50	100%
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Course Contents and Lecture Schedule

Module No.	Topics	No. of Hours
1	Introduction to the subject	2
	Definition, classification, principles of surveying, character of work, shrunk scale.	2
	Chain and its types, Ranging Rod, Tapes, pegs.	2
2	Ranging and Types of Ranging. setting out angles, erecting perpendicular, field survey	2
	Obstacles in chain surveying, calculation of area by offsets.	2
	Plane Table Surveying - Accessories used advantages and disadvantages, Methods of plane table surveying (radiation and intersection).	2
	Field survey and lab visit for demonstration and show and tell session	2
3	Levelling - Definition, classification, booking and reduction of levels by HI method	2
	Booking of reduction of levels by rise and fall method, Profile Levelling	2
4	Contouring: Characteristics of contours, direct and indirect methods of contours, interpolation and uses of contours.	2
	Field Survey on Levelling and demonstration of contemporary instruments - theodolite, total station and GPS	2
5	Observation and Analysis of a Site - Survey without instruments using geometry and anthropometric measures. To learn a terrain on site factors like topography, hydrology, soils, landforms, vegetation, climate and micro climate and influence of water bodies.	2
	Learning to read a land survey drawing, types of land survey drawing, scale and north, legends and symbols.	2
Total		26 Hrs



Dayananda Sagar Academy of Technology & Management

(Autonomous Institute under VTU)

Semester	:	2nd			
Course Title	:	Professional English II			
Course Code	:	BAT208			
Course Type (Theory/ Practical/Studio/Integrated)	:	Theory			
Category	:	HSMC			
Stream	:	Humanities	CIE	:	50 Marks
Credits	:	1	SEE	:	50 Marks
Total Hours (L:T:P:S)	:	1:1:0:0 Hour /Week	SEE Duration	:	2 Hours

Course Learning Objectives: Students will be taught

Sl.No	Course Objectives
1	To understand and identify the Common Errors in Writing and Speaking.
2	To Achieve better technical writing and Presentation skills.
3	To read technical proposals properly and make them to Write good technical reports.
4	Acquire Employment and Workplace communication skills.
5	To learn about Techniques of Information Transfer through presentation in different level.

Teaching-Learning Process

Pedagogy (General Instructions):

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

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.



Scheme of Teaching and Examinations for B.Arch. Programme -2023-24
Outcome Based Education and Choice Based Credit System (CBCS)
(Effective from the Academic Year 2023-24)

DSATM

COURSE SYLLABUS

Module No.	Contents of the Module	Hours
1	Module 1: Analytical / Technical Writing skill: Introduction to Technical writing process, Technical Reports writing, Significance of Reports, Types of Reports, Writing Case studies, book reviews, literature reviews.	5
Pedagogy	Chalk and talk method, PowerPoint presentation to teach Grammar, Animation videos on communication and language skills, Giving activities and assignments.	
2	Communication methods: Interviewing techniques, framing Questionnaires, Group discussions	3
Pedagogy	Chalk and talk method, Power Point presentation to teach Grammar and phonetics, Animation videos on communication and language skills, creating real time stations in classroom discussions,	
3	Professional Communication for Employment: Preparing for Job Application, Components of a Formal Letter, Formats and Types of official, employment, Business Letters, Resume vs Bio Data, Profile, CV and others, Types of resumes, Writing effective resume for employment, Model Letter of Application (Cover Letter) with Resume, Emails, Blog Writing, Memos (Types of Memos) and other recent communication types.	7
Pedagogy	Chalk and talk method, PowerPoint presentation to teach Grammar and phonetics, Animation videos on communication and language skills, creating real time stations in classroom discussions, giving activities and assignments (Connecting Campus & community with companies real time situations).	
4	Digital Presentation techniques: Advanced presentation techniques, Multi-media presentation, Audio-visual projection and Computer based presentations. Creating graphics using Adobe Photoshop.	7
Pedagogy	Audio visual presentation of using Adobe photoshop. Giving activities and assignments	
5	3D Presentations Movie making Flash movies, animation graphics, and walkthrough	3
Pedagogy	Learning 3D Presentations through relevant softwares. Giving activities and assignments	

Reference Books

Books (Title of the Book/Name of the author/Name of the publisher/Edition and Year)

1	A Course in Technical English, Cambridge University Press - 2020.
2	Professional Writing Skills in English, Infinite Learning Solutions - (Revised Edition) 2021.
3	Functional English (As per AICTE 2018 Model Curriculam) Cengage learning India Pvt Limited [Latest Revised Edition] - 2020.
4	Communication Skills by Sanjay Kumar and Pushp Lata, Oxford University Press - 2018. Refer it's workbook for activities and exercises - "Communication Skills - I (A Workbook)" published by Oxford University Press - 2018.
5	Technical Communication - Principles and Practice, Third Edition by Meenakshi Raman and Sangeetha Sharma, Oxford University Press 2017.
6	High School English Grammar & Composition by Wren and Martin, S Chandh & Company Ltd - 2015.
7	Effective Technical Communication - Second Edition by M Ashraf Rizvi, McGraw Hill Education (India) Private Limited - 2018.
8	Intermediate Grammar, Usage and Composition by M.L.Tichoo, A.L.Subramanian, P.R.Subramanian, Orient Black Swan - 2016. Communication Skills by Sanjay Kumar and Pushp Lata, Oxford University Press - 2019.

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

CO	Course Outcomes	RBT Level	Level Indicator
CO1	To Understand the Fundamentals of Communication Skills,phonetics & Grammer, technical writing for effective communication.	Remember and Understand	L1 and L2
CO2	To Apply the knowledge of verbal and non-verbal communication skill for interviewing, questionnaires, letter writing & other communication types.	Apply	L3
CO3	To Analyse different ways of information transfer used in professional field for effective interpretation.	Analyse	L4
CO4	To Evaluate the different verbal and non-verbal techniques to communicate effectively.	Evaluate	L5
CO5	To Create digital presentations, flash movies, animations and walk through using relevant softwares.	Create	L6

Mapping of Course Outcomes to Program Outcomes:

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

Weblinks and Video Lectures (e-Resources)

1	https://www.youtube.com/watch?v=l7QfTE2vauU
2	https://www.youtube.com/watch?v=OIIDNEED4I0

Assessment Pattern (both CIE and SEE)

1 Credit Course –								
Assessment Method	Component	Type of Assessment	Assessment Type used	Max. Marks	Evaluation Details	Reduced Marks	Min. Marks	Total
CIE	Theory	AAT	Pedagogical Initiatives	40	Any two assessment Methods as per VTU Clause 22OB4.2 of regulations (If assessment is Project Based Learning, then one assessment method may be adopted).	20	08	20
		Test-1	Theory	20	Average of three Internal Assessment Tests each of 20 Marks	30	12	30
		Test-2	Theory	20				
		Test-3	Theory	20				
Total CIE Studio						20	20	50
SEE				50	MCQ type question papers of 50 Questions with each question of 1 mark, Examination duration is 1	50	18	50
					Hour			

CIE+SEE 40 100

Note: A few of the Courses of 3 Credit are Integrated Course Type, for such courses the method suggested for 4 Credit IPCC shall be followed.

CIE- Continuous Internal Evaluation (50 Marks)

Bloom's Category	Theory			Alternative Assessment Tool (AAT)
	Continuous Assessment Tests			
	Test-1 20 Marks	Test-2 40 Marks	Test-3 20 Marks	
Remember	15	5	-	-
Understand				
Apply	5	15	5	-
Analyse	-	-	15	-
Evaluate	-	-	-	20 Marks
Create	-	-	-	20 Marks

CIE Course Assessment Plan

CO's	Marks Distribution					Total Marks	Weightage
	Progressive Marking of sheets submitted on each topic in the syllabus						
	Module-1	Module-2	Module-3	Module-4	Module-5		
CO1	25		15			40	20
CO2	5		25			30	15
CO3		40	10	20	20	90	45
CO4					10	10	5
CO5					30	30	15
Total	30	40	50	20	60	200	100

SEE- Semester End Examination (50 Marks)

Bloom's Category	SEE Marks (90% Theory+10% Practical Questions)
Remember	25 Marks
Understand	
Apply	20 Marks
Analyse	5 Marks
Evaluate	-
Create	-

SEE Course Plan

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

Course Contents and Lecture Schedule

Module No.	Topics	No. of Hours
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1	Introduction to technical writing process, technical report writing, Significance of Reports	2
1	Types of Reports, Writing case studies,	2
1	Book reviews, literature reviews	1
2	Interviewing techniques, framing questionnaires	1
2	Group discussions	2
3	Preparing for Job application, components of a Formal Letter	2
3	Formats and types of official, employment, business letters	2
3	Resume v/s Bio Data, Profile, CV and others, types of resumes	2
3	Writing effective resume for employment, Cover letter of application with Resume	1
4	Emails, blog writing, Memos and other recent communication types.	2
4	Advanced presentation techniques, Multimedia presentation	2
4	Audio -visual projection and computer-based presentations.	2
4	Creating graphics using Adobe photoshop	1
5	Creating graphics using Adobe photoshop	1
5	Making Flash movies	1
5	Animation graphics, Walkthrough	1
Total		25 Hrs.



Dayananda Sagar Academy of Technology & Management

(Autonomous Institute under VTU)

Semester	:	2 nd			
Course Title	:	Scientific Foundation of health			
Course Code	:	BAT209			
Course Type (Theory/ Practical/Studio/Integrated)	:	Theory			
Category	:	AEC			
Stream	:	Any Dept.	CIE	:	50 Marks
Credits	:	1	SEE	:	50 Marks
Total Hours (L:T:P:S)	:	1:1:0:0 Hr/Week	SEE Duration	:	2 Hours

Course Learning Objectives: Students will be taught

Sl.No	Course Objectives
1	To know about Health and wellness (and its Beliefs)
2	To acquire Good Health & It's balance for positive mind-set
3	To Build the healthy lifestyles for good health for their better future
4	To Create of Healthy and caring relationships to meet the requirements of MNC and LPG world
5	To learn about Avoiding risks and harmful habits in their campus and outside the campus for their bright future
6	To Prevent and fight against harmful diseases for good health through positive mindset

Teaching-Learning Process

Pedagogy (General Instructions):

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

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 devise innovative pedagogy to improve teaching-learning.



**Scheme of Teaching and Examinations for B.Arch. Programme -2023-24
Outcome Based Education and Choice Based Credit System (CBCS)
(Effective from the Academic Year 2023-24)**

DSATM

COURSE SYLLABUS

Module No.	Contents of the Module	Hours
1	<p><u>Good Health and It's balance for positive mindset:</u> What is Health, Why Health is very important Now? - What influences your Health? Health and Behavior, Health beliefs and advertisements, Advantages of good health (Short term and long-term benefits), Health and Society, Health and family, Health and Personality - Profession. Health and behavior, Disparities of health in different vulnerable groups. Health and psychology, Methods to improve good psychological health. Psychological disorders (Stress and Health - Stress management), how to maintain good health, Mindfulness for Spiritual and Intellectual health, Changing health habits for good health. Health and personality.</p>	5
Pedagogy	<p>To know about health, adopting new healthier habits may protect from serious health.</p> <ol style="list-style-type: none"> Mental and physical health discussion. Physical health leads to bodily functions Mental health refers to emotional, social wellbeing and psychological 	
2	<p><u>Building of healthy lifestyles for better future:</u> Developing a healthy diet for good health, Food and health, Nutritional guidelines for good health and willingness, Obesity and overweight disorders and its management, eating disorders - proper exercises for its maintenance (Physical activities for health), Fitness components for health, Wellness and physical function,</p>	3
Pedagogy	<ol style="list-style-type: none"> Occupational health and safety Student behavior affects health and safety. Health behavior - preventive illness and sick role. 	
3	<p><u>Creation of Healthy and caring relationships :</u> Building communication skills (Listening and speaking), Friends and friendship - education, the value of relationships and communication, Relationships for Better or worsening of life, understanding of basic instincts of life (more than a biology), Changing health behaviors through social engineering,</p>	7
Pedagogy	<ol style="list-style-type: none"> Communication. The way to talk with friends or partners is an important part of a relationship. Everyone involved should be able to communicate feelings, opinions, and beliefs. Boundaries. Boundaries are physical, emotional, and mental limits or guidelines a person sets for themselves which others need to respect. Consent. Consent is important in all relationships Coercion (harassment) can look like pressure to do something, physical force, bargaining, or someone holding power over another to get what they want. Trust. Each person in the relationship should have confidence in one another. 	
4	<p><u>Avoiding risks and harmful habits:</u> Characteristics of health compromising behaviors, Recognizing and avoiding of addictions, how addiction develops and addictive behaviors, Types of addictions, influencing factors for addictions, Differences between addictive people and non-addictive people</p>	7

	and their behavior with society, Effects and health hazards from addictions Such as..., how to recovery from addictions.	
Pedagogy	<ul style="list-style-type: none"> - Identify the Consequences of Bad Habits - Make Bad Habits Difficult and Painful - Changing Mindset - Associate with Supporters Practice Positive Speaking - Create a New Environment for Good Habits to Grow 	
5	<p><u>Preventing and fighting against diseases for good health :</u></p> <p>Process of infections and reasons for it, how to protect from different types of transmitted infections such as....,</p> <p>Current trends of socio-economic impact of reducing your risk of disease, how to reduce risks for good health,</p> <p>Reducing risks and coping with chronic conditions, Management of chronic illness for Quality of life,</p> <p>Health and Wellness of youth: a challenge for the upcoming future Measuring of health and wealth status.</p>	3
Pedagogy	<ul style="list-style-type: none"> - Maintaining proper hygienic and sanitary conditions of the environment. - Providing good socio-economic conditions. - Providing health care services. - Imparting health education and promoting public awareness. - Providing proper facilities for preventing diseases. 	

List of Experiments or Programs

Module.No	Experiments/Programs	COs
1	Spending time with nature, going for a walk or meditation and focusing on the good environment	CO1
2	Exercise and Yoga helps deal with negative thoughts and making them a part of daily routine makes happy and calm all day long.	CO2
3	Healthy eating habits	CO3
4	Student's discussions to feel comfortable in the group activities	CO3
5	prepare Flowcharts	
6	Quizzes	CO4
7	Seminars and assignments	CO5

Reference Books

Books (Title of the Book/Name of the author/Name of the publisher/Edition and Year)

1	Health Psychology (Second edition) by Charles Abraham, Mark Conner, Fiona Jones and Daryl O'Connor - Published by Routledge 711 Third Avenue, New York, NY 10017.
2	Health Psychology - A Textbook, FOURTH EDITION by Jane Ogden McGraw Hill Education (India) Private Limited Open University Press
3	HEALTH PSYCHOLOGY (Ninth Edition) by SHELLEY E. TAYLOR - University of California, Los Angeles, McGraw Hill Education (India) Private Limited- Open University Press
4	Scientific Foundations of Health (Health & Wellness) - General Books published for university and colleges references by popular authors and published by the reputed publisher.
5	SWAYAM / NPTEL/ MOOCS/ We blinks/ Internet sources/ YouTube videos and other materials / notes

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

CO	Course Outcomes	RBT Level	Level Indicator
CO1	Demonstrate the knowledge of health and wellness	L2	Remembering
CO2	Maintain a balanced good health for positive mindset	L3	Applying
CO3	Inculcate and develop healthy lifestyle habits for good health	L3	Applying
CO4	Follow innovative and positive methods to avoid risks from harmful habits within campus and outside campus.	L3	Applying
CO5	To Prevent and fight against harmful diseases for good health through positive mindset	L4	Analysing

Mapping of Course Outcomes to Program Outcomes:

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

Weblinks and Video Lectures (e-Resources)

1	Videos from the Health foundation on health care improvement, quality, sustainability and population health. https://www.health.org.uk/videos
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Assessment Pattern (both CIE and SEE)

1 Credit Course –								
Assessment Method	Component	Type of Assessment	Assessment Type used	Max. Marks	Evaluation Details	Reduced Marks	Min. Marks	Total
CIE	Theory	AAT	Writing 500 words on nature walk, environment. (10)	10	Submission of paper	10	5	10
			Preparing flowcharts on healthy lifestyle. (10)		Document submission			
			Quiz on harmful diseases (10)		MCQ submission			
		Test-1	Theory	20	Average of two Internal Assessment Tests each of 20 Marks, scale down	50	25	50
Test-2	Theory	20						
Test-3	Theory	20						

				the Marks to 20 Marks			
					Total CIE Theory	25	50
SEE			50	SEE Exam is Theory Exam, conducted for 50 Marks,	50	20	50
						CIE+SEE	100
The Minimum Marks to be secured in CIE to appear for SEE shall be 10 (50% of Maximum marks – 25) in the Theory Component and 10 (40% of Maximum Marks -50) Time allotted for 2 hours							

CIE- Continuous Internal Evaluation (50 Marks)

Bloom's Category	Theory			
	Continuous Assessment Tests			Alternative Assessment Tool (AAT)
	Test-1	Test-2	Test-3	
	20 Marks	40 Marks	20 Marks	10 Marks
Remember	10	5	5	-
Understand				
Apply	5	10	5	-
Analyse	5	5	10	-

CIE Course Assessment Plan

CO's	Marks Distribution					Total Marks	Weightage
	Test-1		Test-2		Test-3		
	Module-1	Module-2	Module-3	Module-4	Module-5		
CO1	4		4		2	12	20%
CO2	4	4		2	2	14	24%
CO3		6	4	2	2	16	26%
CO4		2	2	2	2	10	16%
CO5			2		2	8	14%
Total	8	12	12	10	10	60/3=20	100%

SEE- Semester End Examination (50 Marks)

Bloom's Category	SEE Marks (50 Marks MCQ)
Remember	24
Understand	
Apply	16
Analyse	10
Total	50

SEE Course Plan

CO's	Marks Distribution					Total Marks	Weightage
	Module-1	Module-2	Module-3	Module-4	Module-5		
CO1	4		2	2		8	16%
CO2	4	4	2	2		12	24%
CO3	2	4	2	2	2	12	24%
CO4			4	2	2	8	16%
CO5		4	2	2	2	10	20%
Total	10	12	12	10	6	50	100%

Course Contents and Lecture Schedule

Module No.	Topics	No. of Hours
1	Good health and it's balance for positive mindset	
	- Mental and physical health discussion.	2
	- Physical health leads to bodily functions	2
	- Mental health refers to emotional, social wellbeing and psychological	1
2	Building of healthy lifestyles for better future	
	- Occupational health and safety	1
	- Student behaviour affects health and safety.	1
	- Health behaviour - preventive illness and sick role.	1
3	Creation of healthy and caring relationships	
	- Communication. The way to talk with friends or partners is an important part of a relationship. Everyone involved should be able to communicate feelings, opinions, and beliefs.	2
	- Boundaries. Boundaries are physical, emotional, and mental limits or guidelines a person sets for themselves which others need to respect.	2
	- Consent. Consent is important in all relationships Coercion (harassment) can look like pressure to do something, physical force, bargaining, or someone holding power over another to get what they want. Trust. Each person in the relationship should have confidence in one another.	3
4	Avoiding risks and harmful habits	
	- Identify the Consequences of Bad Habits	1
	- Make Bad Habits Difficult and Painful	1
	- Changing Mindset	1
	- Associate with Supporters	1
	- Practice Positive Speaking	1
	- Create a New Environment for Good Habits to Grow	2
5	Preventing and fighting against diseases for good health :	
	- Maintaining proper hygienic and sanitary conditions of the environment.	1
	- Providing good socio-economic conditions	1
	- Providing health care services. Imparting health education and promoting public awareness, proper facilities for preventing diseases	1
Total		25 Hrs