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Criterion 1- Curricular Aspects

1.3- Curricular Enrichment

1.3.1.

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Criterion 1- Curricular Aspects

Key Indicator - 1.3 Curriculum Enrichment

1.3.1. Institution integrates crosscutting issues relevant to Professional Ethics, Gender, Human Values, Environment ond Sustainability into the Curriculum.

Sr. No.	Content (Document)
A.	Description
B.	List of B. Arch courses which addresses crosscutting issue Syllabus Pattern-2019,2015)
I.	Syllabus Details 2019 Pattern . Letter of implementation of syllabus . Course structure of Syllabus which addresses crosscutting issues . Course details of Syllabus which addresses crosscutting issues
II.	Syllabus Details 2015 Pattem . Letter of implementation of syllabus . Course structure of Syllabus which addresses crosscutting issues . Course details of Syllabus which addresses crosscutting issues.
C.	List of topics in Architectural Design Project course in B.Arch Programme which addresses crosscutting issue (from 2017-18 to 2021-22).
D.	List of events/ Programme/workshops/seminars etc.. organised by institute in B. Arch programme which addresses crosscutting issues(from 2017-18 to 2021- 22).

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1.3.1.

1.3.1. Institution integrates crosscutting issues relevant to Professional Ethics, Gender, Human Values, Environment ond Sustainability into the Curriculum.

A. Description

1.3.1 Institution integrates crosscutting issues relevant to Professional Ethics, Gender, Human Values, Environment and Sustainability into the Curriculum.

Integrating crosscutting issues such as professional ethics, gender, human values, environment, and sustainability into the curriculum is a commendable approach that helps foster a holistic and well-rounded education. By incorporating these topics across different subjects and disciplines, educational institutions can provide students with a comprehensive understanding of the interconnectedness between these issues and their relevance to various fields of study. Here are some key points about each of these crosscutting issues:

1. Professional Ethics: Including professional ethics in the curriculum allows students to develop a strong ethical framework that will guide their conduct and decision-making in their chosen professions. It helps them understand the importance of integrity, responsibility, and accountability in their professional lives.

2. Gender: Integrating gender issues into the curriculum promotes gender equality, challenges gender stereotypes, and fosters inclusivity. It helps students recognize and understand the impact of gender on various aspects of society, such as education, work, relationships, and cultural norms.

3. Human Values: Human values encompass principles such as empathy, respect, compassion, fairness, and social responsibility. By incorporating human values into the curriculum, institutions emphasize the development of well-rounded individuals who not only possess knowledge but also exhibit ethical behavior and a sense of civic duty.

4. Environment: The inclusion of environmental issues in the curriculum raises awareness about the importance of environmental conservation, sustainability, and the impact of human activities on the planet. It encourages students to become environmentally conscious and equips them with knowledge and skills to address environmental challenges.

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5. Sustainability: Integrating sustainability into the curriculum helps students understand the concept of sustainable development and the interconnectedness of social, economic, and environmental systems. It promotes critical thinking about long-term resource management, climate change mitigation, and the pursuit of a more sustainable future.

By incorporating these crosscutting issues into the curriculum, institutions create an educational environment that prepares students not only for academic success but also for responsible citizenship, ethical decision-making, and addressing real-world challenges in a holistic manner. It also instills values and attitudes that can contribute to a more inclusive, just, and sustainable society.

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BACHELOR OF ARCHITECTURE SYLLABUS (2015 PATTERN)

2015 PATTERN

Sr.No.	Year	Term	Subject Code	Subject Name	ISSUES ADDRESSED (Professional Ethics, Gender, Human Values, Environment and Sustainability	Detail Description
1	FIRST YEAR	I	1201501	Design I	Human Values	introduction to the field of architecture and its unique qualities relative to other professions.
			1201502(SV) 1201503(PP)	BUILDING TECHNOLOGY AND MATERIALS I	Professional Ethics	To help students develop and analytical and logical sequence in thinking
			1201504	THEORY OF STRUCTURES I	Professional Ethics	To Introduce Applied Mechanics as an important Subject for Architecture
			1201506	HUMANITIES	Human Values	To introduce the students to the study of humanities and its importance in understanding of human settlements and architecture.
			1201507	INTRODUCTION TO ARCHITECTURE	Professional Ethics	Introduction to the profession of architecture and its distinguishing characteristics with respect to other professions, trades and businesses.
		II	1201509	DESIGN II	Human Values, Environment and Sustainability	Study of a nearby rural, semi urban settlement / community for study, analysis and documentation of its built elements, open spaces and associated architectural character.
			1201510(SV) 1201511(PP)	BUILDING TECHNOLOGY AND MATERIALS II	Professional Ethics	To help students develop and analytical and logical sequence in thinking about structural aspects of architecture
			1201512	THEORY OF STUCTURES II	Professional Ethics	To Study and analyze the stresses in various Building Elements
			1201515	CLIMATOLOGY	Environment and Sustainability	To understand climate as a determinant of architectural design and to enable the students to evolve climate responsive design.
2	SECOND YEAR	I	2201517	Design III	Human Values	Aesthetical, functional (activity, user, space relation) , technical (construction and material) and environmental (climatic, socio-geographic) aspects of architectural design. • Various sources for inspiration for architectural design such as nature, history, geometry, culture etc
			2201518(SV) 2201519(PP)	BUILDING TECHNOLOGY AND MATERIALS III	Professional Ethics	To study other components of a building project
			2201520	THEORY OF STUCTURES III	Professional Ethics	To understand the principles
			2201521(SS) 2201522(PP)	BUILDING SERVICES I	Professional Ethics	To introduce students to following Building Services in low, medium and high rise buildings and inculcate in them the integration of services
		II	2201526	DESIGN IV	Human Values, Environment and Sustainability	To comprehend site specific stimuli through responses to physical, climate, visual, cultural contexts through indigenous construction, technology, building materials, structure etc.
			2201527(SV) 2201528(PP)	BUILDING TECHNOLOGY AND MATERIALS IV	Professional Ethics	To introduce students to different building materials
			2201529	THEORY OF STUCTURES IV	Professional Ethics	To introduce students to different building materials
			2201530(SS) 2201531(PP)	BUILDING SERVICES II	Environment and Sustainability	Introduction to rainwater harvesting and alternative energy sources.

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			3201533	TECHNICAL COMMUNICATION	Professional Ethics	To equip the students to communicate effectively using various modes of communication such as graphical, textual, oral and help them to develop various soft skills.
			320[illegible]1534	WORKING DRAWING I	Professional Ethics	To enable the students to prepare working drawings of an architectural project and imbibe the significance of working drawings from the point of view of execution of the work on site and as important component of tender documents.
3	THIRD YEAR	I	320[illegible]1535	Design V	Human Values, Environment and Sustainability	Designing in a different socio geographic context [other than where the institute is located]. • Undertake programming research to understand the socio-cultural patterns, geographic context and address the needs of the users and the site and evolve a sustainable design
			3201537(SV), 3201536(PP)	Building Technology and Materials-V	Professional Ethics	To understand the variations in frame structure with options of different types of slab like flat slab, ribbed and waffle slabs etc. along with pre-stressed RCC technology.
			3201538(PP)	THEORY OF STRUCTURE V	Professional Ethics	To design complex RCC structural elements
			3201539(SS	LANDSCAPE ARCHITECTURE I	Environment and Sustainability	Creating awareness about using Landscape design as a tool to address environmental concerns in Architecture.
			3201540 (SS) 3201541(PP)	BUILDING SERVICES III	Environment and Sustainability	To obtain knowledge of technical and design aspects of natural ventilation and HVAC
			3201543(SS	WORKING DRAWING II	Professional Ethics	To imbibe further the importance of working drawings as an essential tool for effective site execution and execution of a building contract.
		II	320154-(SV),3201545(PP)	DESIGN VI	Human Values	Designing a building by stacking of different functions vertically and addressing various concerns such as coordinating various building services, vertical circulation, basement parking, and structural grids with introduction to disaster management design strategies/techniques and universal design.
			3201546(PP), 3201547(SV)	Building Technology and Materials-V I	Professional Ethics	To understand issues and construction
			3201548(PP	THEORY OF STRUCTURE V	Professional Ethics	To instill in the Students a Confidence that they could develop and explore a Structural System of their own design and execute the same
			3201549(SS)	LANDSCAPE ARCHITECTURE I	Environment and Sustainability	To study use of Landscape design as a tool to address environmental concerns in Architecture.
			3201550 (SS) 3201551(PP	BUILDING SERVICES IV	Human Values,Professional Ethics	To obtain knowledge for fire safety measures and aspects of good acoustics and treatment in comprehensive architectural design
	[illegible] YEAR	I	4201554 (SV)	DESIGN VII	Human Values	students are also now expected to address spatial and visual language of their project with reference to the urban context and setting of their site.
			4201555 (SV	ADVANCED BUILDING TECHNOLOGY AND SERVICES I	Professional Ethics	To introduce advanced structural systems, materials and services required in buildings with complex and special requirements and enable the students to integrate the same in design.
			4201556(PP)	PROFESSIONAL PRACTICE I	Professional Ethics	To acquaint the Student with the Role and Stature of an Architect in Society, and understand the duties, responsibilities, liabilities and ethics as a professional.
			4201557 (SS)	URBAN STUDIES-I	Professional Ethics	Introduction to urban studies and relevance of its learning in Architecture ,profession, Affordable housing: introduction and concepts.
			4201560 (PP	Specification Writing	Professional Ethics	To know importance of specifications in contract document for any construction project.

		II	4201562(SV)	DESIGN VIII	Human Values	to address spatial and visual language of their project with reference to the urban context and setting of their site
			4201563 (SV)	ADVANCED BUILDING TECHNOLOGY AND SERVICES II	Professional Ethics	To introduce advanced structural systems, materials and services required in buildings with complex and special requirements and enable the students to integrate the same in design
			4201564 (PP)	PROFESSIONAL PRACTICE I	Professional Ethics	To familiarize and prepare the Student with adequate knowledge of an Architect's office administration, documentation and procedures of office and site management
			4201565 (SS)	Urban Studies-II	Professional Ethics	To introduce the students to the process of planning and urban development and associated legislation.
			4201568 (PP)	Specification Writing II	Professional Ethics	Technical and functional role of specifications in any construction project.
5	FIFTH YEAR	I	5201570 (SV)	Practical Training	Professional Ethics	Students should work in organization where architecture or its allied disciplines are carried under professional who is registered architect with COA
		II	5201572 (SS)	Elective IV	Professional Ethics, Environment and Sustainability	Architecture professionals will have to deal with more and more complex buildings as well as organizational structures to realize a project
			5201571 (SV)	Architectural Design Project	Environment and Sustainability	Design Demonstration i.e. formulation of design programme, site investigation and selection, and culmination in architectural design proposal

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BACHELOR OF ARCHITECTURE SYLLABUS (2015 PATTERN)

2019 PATTERN

Sr.No.	Year	Term	Subject Code	Subject Name	ISSUES ADDRESSED (Professional Ethics, Gender, Human Values, Environment and Sustainability	Detail Description
1	FIRST YEAR	I	1201902 [THECRY] & 1201903 [SV]	BUILDING CONSTRUCTION AND MATERIALS I	Professional Ethics	Students will develop a basic understanding of the relationship of materials to construction systems, techniques and methodology with specific reference to load bearing construction
			120190[illegible] [THEORY]	THEORY OF STUCTURES I	Professional Ethics	
			1201907 [SS]	COMMUNICATION SKILLS	Professional Ethics	To enhance skills required for effective communication in Architectural education and practice.
		II	1201909 [SV]	ARCHITECTURAL DESIGN I	Human Values, Environment and Sustainability	The student would be able to analyze simple spaces, identify factors affecting their design and be able to design a simple space for human use.
			1201910 [THECRY] & 1201911 [SV]	BUILDING CONSTRUCTION AND MATERIALS II	Professional Ethics	Students will expand a basic knowledge about earth quake, understanding of properties, construction techniques of timber with specific reference to use of timber in superstructure (spanning, framing techniques).
			1201917 [THEORY]	THEORY OF STUCTURES II	Professional Ethics	The understanding of effect of various forces in terms of various stresses and deflection for various structural members like beams and columns.
			1201915 [SS]	FUNDAMENTALS OF ARCHITECTURE	Professional Ethics	: Introduction to the profession of Architecture and its distinguishing characteristics with respect to other professions.
2	SECOND YEAR	I	2201917 [SV]	Architectural Design II	Human Values, Environment and Sustainability	To introduce students to socio-cultural aspects like life , culture, traditions, and their effect on architectural design etc.
						To understand the Climatic aspects those have a bearing on architectural design and address climatic concems like adequate la8ht, ventilation, protecttion from rain insulation, shading, beat Fin. thmuah passive strateales,
			2201921(SS)	Compuler Aided Drawing and Graphics	Professaonal Ethrcs	To enable the nudents to communic?te an architecturalidee / proposalin a legible and effectivemanner through various 6r(hitea'iuol pre!,:hlitionJ 6hd rcnderinE tochnrqurr.
			2201918 [P] & 2201919 [SV]	Building Construction and Materials III	Professaonal Ethrcs	Students will develop a basic understanding of the relationship of materials to construction systems, techniques and methodology with specific reference to reinforce cement concrete construction; an understanding of the concepts of concrete as a building construction material.
			2201920 [P]	Theory of Structures IV	Professaonal Ethrcs	
			2201922 [SS]	HISTORY OF ARCHITECTURE AND CULTURE III	Human Values	An understanding of architecture as a product shaped by various factors like religion and society.
			2201925 [SS]	Climatology	Environment and Sustainability	To understand climate as a determinant of architectural design and to enable the students to evolve climate responsive design.

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		II	2201926 [SV]	Architectural Design III	Human Values, Environment and Sustainability	To introduce students to sorio-cultulalaspects like lifesh/le, culture, traditions, and theireffect on architecturaldesi8n etc.
						To undeEtand the Climatic aspesls those have a bearing on architectural desi8n and address climaticconcems like adequate la8ht, ventilation, protectaon from rain, insulation, shading, heat Fin. thmuah passive strateales,
			2201927 [P]& 2201928 [SV]	Building Construction and Materials IV	Professaonal Ethrcs	Students will develop an understanding about concrete and its variants and artificial materials such as glass and plastic and their application in construction. Students will be developing knowledge about the vertical transportation systems and their design and construction requirement.
			2201929 [F]	Theory of Structures IV	Professaonal Ethrcs	To continue the study of Design of Various Elements
			2201930 [SS]	Environmental Science	Environment and Sustainability	Basic introduction to Multidisciplinary nature of environmental studies
3	THIRD YEAR	I	3201935 [SV]	Architectural Design IV	Human Values, Environment and Sustainability	To introduce students to socio-cultural aspects like life , culture, traditions, and their effect on architectural design etc.
						To undeEtand the Climatic aspesls those have a bearing on architectural desi8n and address climaticconcems like adequate la8ht, ventilation, protectaon from rain, insulation, shading, heat Fin. thmuah passive strateales,
			3201936[P]&3201937 [SV]	Building Construction and Materials V	Professaonal Ethrcs	Students will understand of the principle, methods, advantages and disadvantages of concrete floor construction systems and single basement construction. Students will get to know the proprietary construction techniques for partition ceilings with latest available materials.
			3201938 [P]	Theory of Structures V	Professaonal Ethrcs	
			3201939 [SS]	LANDSCAPE ARCHITECTURE	Environment and Sustainability	Creating awareness about usin8 [andscap€ design as a toolto address envkonmental comcerns irr Architecture.
			3201940 [SS]	ELECTIVE I [CONTEMPORARY ARCHITECTURE]	Professaonal Ethrcs	To analyse the contemporary trends/approaches in architectural production in terms of design, practices, its perception, appreciation and critical discourses.
			3201941 [P] & 3201942 [SS]	Building Services III	Environment and Sustainability	Principles olworking of natural ventilation, he.ti,rg, cooiing and HVAC syttems,aomponent5, materials aod provisions in a rchitectural desi8n
			3201943 [SS]	WORKING DRAWING I	Professaonal Ethrcs	To enable the students to prepare working drawings of an architectural project and imbibe the significance of working drawings from the point of view of execution of the work on site and as important component of tender documents.
		II	3201944[SV]+3201945[P]	Architectural DesignV	Human Values, Environment and Sustainability	To introduce students to socio-cultural aspects like lifesh/le, culture, traditions, and their effect on architectural design etc.
						To undeEtand the Climatic aspesls those have a bearing on architectural desi8n and address climatic concems like adequate light, ventilation, protection from rain, insulation, shading, heat Fin. thmuah passive strateales,
			3201946 [SV]	Building Construction and Materials VI	Professaonal Ethrcs	To create awareness with the best practices
			3201947 [F]	Theory of Structures VI	Professaonal Ethrcs	the Students a Confidence that they could develop and explore a Structural System of their own design and execute the same
			3201952 [SS]	WORKING DRAWING II	Professaonal Ethrcs	To enable the students to prepare working drawings of an architectural project and imbibe the significance of working drawings from the point of view of execution of the work on site and as important component of tender documents.

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1.3.1

Institution integrates crosscutting issues relevant to Professional Ethics, Gender, Human Values, Environment and Sustainability into the Curriculum

B) List of B. Arch courses which addresses crosscutting issue and Syllabus Details (Syllabus Pattern-2019,2015)

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शैक्षणिक विभाग
गणेशखिंड, पुणे-४११ ००७
दूरध्वनी क्र. : ०२०-२५६०१२५७/५८/५९
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संदर्भ क्र: CBS&T/631 दिनांक: 04/07/2019

परिपत्रक क्रमांक. ९४५/२०१९

विषय :— विज्ञान व तंत्रज्ञान विद्याशाखेअंतर्गत वास्तुशास्त्र पाच वर्ष बी.आर्च (२०१९ पॅटर्न) चा सुधारित आराखडा व प्रथम वर्ष अभ्यासक्रम शैक्षणिक वर्ष २०१९—२० पासून सुरू करणेबाबत...

विद्यापीठ अधिकार मंडळाने घेतलेल्या निर्णयानुसार सर्व संबंधितांस या परिपत्रकाद्वारे कळविण्यात येते की, विज्ञान व तंत्रज्ञान विद्याशाखेअंतर्गत वास्तुशास्त्र पाच वर्ष बी.आर्च (२०१९ पॅटर्न) चा सुधारित आराखडा व प्रथम वर्ष अभ्यासक्रम शैक्षणिक वर्ष २०१९—२० पासून सुरू करण्यास मान्यता देण्यात येत आहे.

सदर अभ्यासक्रम सावित्रीबाई फुले पुणे विद्यापीठाच्या www.unipune.ac.in या वेबसाईटवर Syllabi – Academic Year 2019 – Faculty of Science and Technology (Architecture) या शीर्षकाखाली उपलब्ध आहे.

मा. प्राचार्य, सर्व संलग्नित वास्तुशास्त्र महाविद्यालये यांना विनंती की, सदर परिपत्रकाचा आशय सर्व संबंधितांच्या निदर्शनास आणून द्यावा.

उपकुलसचिव
(शैक्षणिक विभाग)

MAHARASHTRA VIDYA PRASARAK SAMAJ College of Architecture Nashik

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शैक्षणिक विभाग
गणेशखिंड, पुणे-४११ ००७
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संदर्भ क्र: CB/S&T/115 दिनांक: 12/02/2020

परिपत्रक क्रमांक. ४१ / २०२०

विषय :— विज्ञान व तंत्रज्ञान विद्याशाखेंतर्गत वास्तुशास्त्र द्वितीय व तृतीय वर्ष बी.आर्च (२०१९ पॅटर्न) चा अभ्यासक्रम शैक्षणिक वर्ष २०२०—२१ पासून सुरू करणेबाबत.....

विद्यापीठ अधिकार मंडळाने घेतलेल्या निर्णयानुसार सर्व संबंधितांस या परिपत्रकाद्वारे कळविण्यात येते की, विज्ञान व तंत्रज्ञान विद्याशाखेंतर्गत वास्तुशास्त्र द्वितीय व तृतीय वर्ष बी.आर्च (२०१९ पॅटर्न) चा अभ्यासक्रम शैक्षणिक वर्ष २०२०—२१ पासून सुरू करण्यास मान्यता देण्यात येत आहे.

सदर अभ्यासक्रम सावित्रीबाई फुले पुणे विद्यापीठाच्या www.unipune.ac.in या वेबसाईटवर Syllabi – Academic Year 2020 – Faculty of Science and Technology (Architechture) या शीर्षकाखाली उपलब्ध आहे.

मा. प्राचार्य, सर्व संलग्नित वास्तुशास्त्र महाविद्यालये यांना विनंती की, सदर परिपत्रकाचा आशय सर्व संबंधितांच्या निदर्शनास आणून द्यावा.

उपकुलसचिव
(शैक्षणिक विभाग)

MAHARASHTRA VIDYA PRASARAK SAMAJ'S College of Architecture Nashik

PDEA's College Of Architecture Akurdi Pune 44

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SAVITRIBAI PHULE PUNE UNIVERSITY

[Formerly the University of Pune]

COURSE STRUCTURE

FIVE YEAR DEGREE COURSE IN ARCHITECTURE

[B.ARCH.]

TO BE IMPLEMENTED FROM 2019-20

BOARD OF STUDIES IN ARCHITECTURE

FACULTY OF SCIENCE AND TECHNOLOGY

COURSE STRUCTURE

BACHELOR OF ARCHITECTURE [B.Arch.]

The syllabus structure is based upon 28 clock hours per week for 1st to fourth year. Additionally 2 clock hours per week are assigned for utilisation for the lectures / allied activities focussing on the individual philosophy of the institute in form of audit courses / site visits / special lectures / workshops / seminars etc offering choice based activities for the institutes / students. The periods considered for calculating the teaching load are of 60 min duration. The architectural design / architectural design project and building construction studio credits are calculated as 1 hour = 1.5 credits, allied studios/labs/workshops are calculated as 1 hour = 0.5 credits and theory lectures are calculated as 1 hour = 1 credit. The detail structure of the syllabus for the ten semester course is given below.

(Note: SS= Sessional work; In Sem = In Semester exam ; End Sem = End semester exam; SV= Sessional and Viva voce; L= Lecture, S=Studio, T=Total ; Theory Paper -P

FIRST YEAR B.ARCH. SEMESTER I

CourseCode	CourseTitle	L	S	T	Theory		Sessional and / Viva		Total Marks	Credits
					In Sem	End Sem	SS	SV		
1201901	Basic Design	1	6	7			250		250	10
1201902	Building Construction & Materials I[P]	2		2	30	70			100	2
1201903	Building Construction & Materials I[SV]		3	3				100	100	5
1201904	Theory of Structures I	2		2	30	70			100	2
1201905	Architectural Graphics and Drawing I	1	4	5			100		100	3
1201906	History of Arch & Culture I	1	2	3			50		50	2
1201907	Communication Skills	2	1	3			50		50	2
1201908	Workshop I	1	2	3			100		100	2
		10	18	28					850	28
1201917	Audit Course									

FIRST YEAR B.ARCH. SEMESTER II

Course Code	Course Title	L	S	T	Theory		Sessional and / Viva		Total Marks	Credits
					In Sem	End Sem	SS	SV		
1201909	Architectural Design I	1	6	7				250	250	10
1201910	Building Construction & Materials II[P]	2		2	30	70			100	2
1201911	Building Construction & Materials II[SV]		3	3				100	100	5
1201912	Theory of Structures II	2		2	30	70			100	2
1201913	Architectural Graphics and Drawing II	1	4	5			100		100	3
1201914	History of Arch & Culture II	1	2	3			50		50	2
1201915	Fundamentals of Architecture	2	1	3			50		50	2
1201916	Workshop II	1	2	3			100		100	2
		10	18	28					850	28
1201918	Audit Course									

SECOND YEAR B.ARCH. SEMESTER III

Course Code	Course Title	L	S	T	Theory		Sessional and / Viva		Total Marks	Credits
					In Sem	End Sem	SS	SV		
2201917	Architectural Design II	1	6	7				250	250	10
2201918	Building Construction & Materials III[P]	2		2	30	70			100	2
2201919	Building Construction & Materials III[SV]		3	3				100	100	5
2201920	Theory of Structures III	2		2	30	70			100	2
2201921	Computer Aided Drawing and Graphics	1	3	4			50		50	2
2201922	History of Arch & Culture III	1	2	3			50		50	2
2201923	Building Services I[P]	2	0	2	30	70			100	2
2201924	Building Services I[SS]	0	2	2			50		50	1
2201925	Climatology	1	2	3			50		50	2
		10	18	28					850	28
2201935	Audit Course									

SECOND YEAR B.ARCH. SEMESTER IV

Course Code	Course Title	L	S	T	Theory		Sessional and / Viva		Total Marks	Credits
					In Sem	End Sem	SS	SV		
2201926	Architectural Design III	1	6	7				250	250	10
2201927	Building Construction & Materials IV[P]	2		2	30	70			100	2
2201928	Building Construction & Materials IV[SV]		3	3				100	100	5
2201929	Theory of Structures IV	2		2	30	70			100	2
2201930	Environmental Science	1	2	3			50		50	2
2201931	History of Arch & Culture IV	1	2	3			50		50	2
2201932	Building Services II[P]	2	0	2	30	70			100	2
2201933	Building Services II[SS]	0	2	2			50		50	1
2201934	Site Survey and Analysis	1	3	4			50		50	2
		10	18	28					850	28
2201936	Audit Course									

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THIRD YEAR B.ARCH. SEMESTER V

Course Code	Course Title	L	S	T	Theory		Sessional and / Viva		Total Marks	Credits
					In Sem	End Sem	SS	SV		
3201935	Architectural Design IV	1	6	7				250	250	10
3201936	Building Construction & Materials V[P]	2		2	30	70			100	2
3201937	Building Construction & Materials V[SV]		3	3				100	100	4
3201938	Theory of Structures V	2		2	30	70			100	2
3201939	Landscape Architecture	1	3	4			100		100	3
3201940	Elective I [Contemporary Architecture]	1	2	3			100		100	2
3201941	Building Services III[P]	2	0	2	30	70			100	2
3201942	Building Services III[SS]	0	1	1			50		50	1
3201943	Working Drawing I	1	3	4			100		100	2
		10	18	28					1000	28
3201953	Audit Course									

THIRD YEAR B.ARCH. SEMESTER VI

Course Code	Course Title	L	S	T	Theory		Sessional and / Viva		Total Marks	Credits
					In Sem	End Sem	SS	SV		
3201944	Architectural Design V[SV]		5	5				250	250	8
3201945	Architectural Design V*[P]	2		2		100			100	2
3201946	Building Construction & Materials VI	2	3	5				150	150	6
3201947	Theory of Structures VI	2		2	30	70			100	2
3201948	Research In Architecture I	1	2	3			50		50	2
3201949	Elective II	1	3	4			100		100	3
3201950	Building Services IV[P]	2		2	30	70			100	2
3201951	Building Services IV[SS]		1	1			50		50	1
3201952	Working Drawing II	1	3	4			100		100	2
		11	17	28					1000	28
3201954	Audit Course									

*The Architectural Design V [Paper] will be of 12 hours duration spread over two days of 6 hours a day. The first day will be 6 hours without break. The second day will be 6 hours with a break after 3 hours.

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FOURTH YEAR B.ARCH. SEMESTER VII

Course Code	Course Title	L	S	T	Theory		Sessional and / Viva		Total Marks	Credits
					In Sem	End Sem	SS	SV		
4201953	Architectural Design VI	1	7	8				300	300	11
4201954	Advanced Building Construction & Services I	1	2	3				150	150	4
4201955	Urban Studies I	2	2	4			100		100	3
4201956	Research In Architecture II	1	2	3			50		50	2
4201957	Elective III	1	2	3			50		50	2
4201958	Quantity Surveying & Specification Writing I	2	2	4	30	70			100	3
4201959	Professional Practice	2	1	3	30	70			100	3
		10	18	28					850	28
4201967	Audit Course									

FOURTH YEAR B.ARCH. SEMESTER VIII

Course Code	Course Title	L	S	T	Theory		Sessional and / Viva		Total Marks	Credits
					In Sem	End Sem	SS	SV		
4201960	Architectural Design VII	1	7	8				300	300	11
4201961	Advanced Building Construction & Services II	1	2	3				150	150	4
4201962	Urban Studies II	2	2	4			100		100	3
4201963	Elective IV	1	2	3			50		50	2
4201964	Elective V	1	2	3			50		50	2
4201965	Quantity Surveying & Specification Writing II	2	2	4	30	70			100	3
4201966	Project Management	2	1	3	30	70			100	3
		10	18	28					850	28
4201968	Audit Course									

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SAVITRIBAI PHULE PUNE UNIVERSITY

[Formerly the University of Pune]

DETAILED SYLLABUS OF FIRST YEAR B.ARCH

SEMESTER I AND II

FIVE YEAR DEGREE COURSE IN ARCHITECTURE

TO BE IMPLEMENTED FROM 2019-20

BOARD OF STUDIES IN ARCHITECTURE

FACULTY OF SCIENCE AND TECHNOLOGY

SEMESTER I

BASIC DESIGN			
Subject Code 1201901[SS]			
TeachingScheme		ExaminationScheme	
TotalContact Hours per week= (lectures=1, Studio=6, Total=7)		Sessional [CIA 125+ EA 125]	250
		Viva	NIL
		In-semester exam	NIL
		End Semester exam	NIL
		TotalMarks	250
		Total Credits	10

COURSE OBJECTIVES:

- To help students understand the basic elements and principles of design
- To introduce the techniques of creativity, observation skills and to improve sensitivity to surroundings
- To sensitize students to the multi-sensory aspect of space.
- To introduce to various sources of inspiration for creativity

COURSE CONTENT:

The course should cover the following aspects of basic design

1. Study of visual elements of design [such as points, lines, planes, shapes, forms, space, color and texture] and Study of principles of design [such as balance, contrast, scale, proportion, pattern, rhythm and emphasis].
2. Introduction to multi-sensory aspects of space.
3. Techniques to improve creativity [such as brainstorming, matrix of ideas, random. combinations, use of manipulative verbs, abstraction, transformation, list of mental associations and use of the ridiculous]
4. Space making through basic elements of design and principles of composition.
5. Role of experience, memory, fantasy, reality, imagination in design.
6. Sources of inspiration such as nature, history, material, climate, geometry, paradox, etc. for creativity.

SUBMISSION REQUIREMENT FOR SESSIONAL WORK:

There should be minimum eight assignments covering all the above course content to include two dimensional as well three dimensional explorations.

OUTCOME:

- Creation using elements and principles of design.
- Synthesis of multi-sensory aspects of space.
- Space making.

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RECOMMENDED READINGS:

- Poetics in Architecture : Theory of Design by Anthony Antoniadis
- Operative Design: A Catalog of Spatial Verbs Paperback – 1 Jul 2013 by Anthony di Mari
- Pattern Language – Christopher Alexander
- The Design of Everyday Things by Donald Norman
- Architecture : Form Space and Order – Francis D. K. Ching
- Interior Spaces : Francis D K. Ching
- Universal Principles of Design by William Lidwell, Kristina Holden, Jim Butler
- Graphic Thinking for Architects and Planners by Paul Lassau
- Tim Brown – Change By Design
- Elements of Space Making – Yatin Pandya

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BUILDING CONSTRUCTION AND MATERIALS I			
Subject Code 1201902 [THEORY] & 1201903 [SV]			
Teaching Scheme		Examination Scheme	
Total Contact Hours per week= (lectures=2, Studio=3, Total=5)		Sessional [CIA 25+EA 25]	50
		Viva [INT 25+ EXT 25]	50
		In-semester exam	30
		End Semester exam	70
		Total Marks	200
		Total Credits	07

COURSE OBJECTIVES:

- To develop a fundamental understanding of basic building elements, their function and behaviour under various conditions with specific reference to load bearing construction.
- To study the principles of designing components of load bearing structures – foundation, plinth, wall, openings etc. with study of materials suitable for load bearing construction.

COURSE CONTENT:

UNIT I Introduction to various building elements from foundation to roof and concept of load transfer.

UNIT II Introduction to building materials with characteristics, common tests, market forms and Applications.

1) Suitable for load bearing construction such as stone, bricks, concrete blocks, soil stabilized blocks, rammed earth construction etc.

2) Lime mortar; cement mortar; various pointing and plastering techniques and their processes

UNIT III Strip Foundations suitable for load bearing structures in stone and brick up to plinth level including foundation for steps--Plinth formation, DPC-- Introduction to various tools and equipment commonly used in construction.

UNIT IV Load bearing / non load bearing masonry construction using materials such as Stone, bricks, concrete blocks, soil stabilized blocks, rammed earth construction.

UNIT V Introduction to openings, spanning of openings by types of arches and lintels, principles and terminology of arch construction spanning of openings using materials mentioned in unit III.

UNIT VI Introduction to Bamboo as construction material.

SUBMISSION REQUIREMENT FOR SESSIONAL WORK: Hand drawn drawings/Proportionate sketches on Units 4 and 5; Assignments on units 1, 2, 3 and 6 include sketches, notes, market survey and min one model based on unit 4 or unit 5.

OUTCOME: Students will develop a basic understanding of the relationship of materials to construction systems, techniques and methodology with specific reference to load bearing construction

RECOMMENDED READINGS:

- Dr. B.C Punmia (2012) *Building Construction* (10th edition) Laxmi Publications.
- Harold B.Olin, John L. Schmidt (1994) *Construction principles, Materials and Methods*, John Wiley & Sons, Inc.
- Narayanamurty, D.; Mohan, D (1972) *The use of Bamboo and reeds in building construction* ,UNO Publications
- Roy Chudley, Roger Greeno (2016), *Construction Technology*, 11th Edition Routledge.
- S.C.Rangwala (2013) Engineering *materials* (Fortieth edition),Charotar Publishing pvt.ltd.
- S.K. Duggal(2016) *Building materials* (4th edition) – New age international publishers.
- Willam Morgan (1977)*The elements of structure: An introduction to the principles of building and structural engineering* Distributed by Sportshelf; 2nd edition
- W.B. Mckay (2015) *Building construction Vol. 1* (5th edition), Vol. 2 (4th edition) and Vol. 3 (5th edition).
- Bureau of Indian standards - Handbook on Masonry Design and Construction (First Revision);National Building Code of India 2016 (Volume 1) and I.S.I. Specifications

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COMMUNICATION SKILLS			
Subject Code 1201907 [SS]			
Teaching Scheme		Examination Scheme	
Total Contact Hours per week= (lectures=2, Studio=1, Total=3)		Sessional [CIA 25+ EA 25]	50
		In-semester exam	NIL
		End Semester exam	NIL
		Total Marks	50
		Total Credits	2

Communication Skills

Objectives: To enhance skills required for effective communication in Architectural education and practice.

Course Content

Unit 1: Introduction to the various modes of communication and their significance.

Unit 2 : **Written communication**: Paraphrasing, Grammar and punctuation. Developing vocabulary pertaining to architecture and design through reading. Introduction to technical writing and forms of writing in architecture discipline such as site visit report, letters, tour reports, appraisals, email etc.. Expressing ideas and concepts through words.

Unit 2: **Verbal communication**: Presenting an idea/ thought, debate, group discussion. And **Nonverbal aspects of communication** such as body language, posture, stance etc.

Unit 3: **Graphical communication**: Analytical diagrams, info graphics, flow charts, mind maps, posters, logo design.

Unit 4: Use of **Digital tools for communication**: Basics of Word based, numerical based software, and visual presentation techniques such as photography, videography etc.

Sessional work: Minimum 6 assignments to cover the aspects mentioned above. Assignments may be tied up with other subjects in the syllabus, wherever relevant. Assignments to be framed focusing on the profession of architecture.

OUTCOME : At the end of the course the student should be able to communicate fluently in English language and also use tools of communication such as written and graphical for effective communication.

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WORKSHOP I			
Subject Code 1201908 [SS]			
Teaching Scheme		Examination Scheme	
TotalContact Hours per week= (lectures=1, Studio=2, Total=3)		Sessional [CIA 50+EA50]	100
		Viva	NIL
		In-semester exam	NIL
		End Semester exam	NIL
		TotalMarks	100
		Total Credits	02

COURSE OBJECTIVES:

- To Introduce students to the Significance of Model making in Architecture in exploring and representing Massing, form of buildings and spaces
- Introduce to various basic model making techniques and materials their relationship.

COURSE CONTENT :

- Introduction to Importance of Model making in process and communication of Architectural design.
- Introduction to various materials (such as various paper, boards, foam board, wood, etc.) tools and techniques of architectural model making through construction of simple three dimensional objects and simple building models.
  It is expected that the limitations and advantage of all the materials is explained by demonstration/presentation.
  Models should preferably be co-ordinated with other subjects in the curriculum.

SUBMISSION REQUIREMENT FOR SESSIONAL WORK :

Minimum six assignments, with thrust on exploring at least three materials and techniques, understanding their appropriateness for the purpose.

OUTCOME:

Students at the end of Semester should be able to understand relevance of model making both in the process of design and as a Product

RECOMMENDED READINGS :

- John Taylor, Model Building for Architects and Engineers
- Rolf Janke, Architectural Models

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SEMESTER II

ARCHITECTURAL DESIGN I			
Subject Code 1201909 [SV]			
Teaching Scheme		Examination Scheme	
Total Contact Hours per week= (lectures=1, Studio=6, Total=7)		Sessional [CIA100+EA100]	200
		Viva [INT 25+ EXT 25]	50
		In-semester exam	NIL
		End Semester exam	NIL
		Total Marks	250
		Total Credits	10

COURSE OBJECTIVES:

- To introduce design as a process of decision making.
- To introduce to the aspects of decision making such as anthropometry, climate, form, function, structure and material.
- To understand experiential quality of space.
- To comprehensively understand the role of socio cultural and geographical factors in shaping of rural settlements and architecture.

COURSE CONTENT:

Unit 1 : Study and analysis of small scale built spaces with respect to its context, comfort, function, anthropometrical data and layout

Unit 2 : Designing of single activity space like a seating area in public space, kiosks, play area, entrance gate etc. demonstrating the application of the design principles and communicated effectively through two and three-dimensional hand drawings, sketches and models.

Unit 3 : Study and analysis of a rural settlement and architecture with respect to lifestyle, climate & social structure etc.

Unit 4 : Designing in the context of the studied settlement.

SUBMISSION REQUIREMENT FOR SESSIONAL WORK:

- Assignments focusing on each of the four units above and to be presented in various mediums like doodles, sketches, diagrams etc in addition to the architectural drawings and models.

OUTCOME :

The student would be able to analyze simple spaces, identify factors affecting their design and be able to design a simple space for human use.

RECOMMENDED READINGS :

- A Pattern language by Alexander Christopher
- Structure in Nature -Strategy for Design- Peter Pearce
- Patterns in Nature - Peter Streens
- Visual thinking- Arnheim Rudolf
- Architecture: Form Space and order _ Francis D.K. Ching
- Rybczynski, Witold. *How the other half builds*
- Jan A. Silva and Leslie Fairweather. *A.J. Metric Handbook*
- Michael Pause & Roger H. Clark. *Precedents in Architecture*
- Gail Greet Hannah (2002). *Elements of Design*
- Bernard Rudofsky (1964). *Architecture without Architects: A Short Introduction to non-pedigreed Architecture*
- Ching Francis D.K.(1979). *Form, Space and Order*
- Ching Francis D.K.(). *A Visual Dictionary of Architecture*
- Christopher Alexander (). *A Pattern Language*
- Christopher Alexander(). *The Timeless Way of Building*
- Robert Summer(). *Design Awareness*
- YatinPandya (). *Elements of Space Making*
- Paul Lassau (). *Graphic Thinking for Architects & Planners*
- Rybczynski, Witold. *How the other half builds*
- Jan A. Silva and Leslie Fairweather. *A.J. Metric Handbook*
- Michael Pause & Roger H. Clark. *Precedents in Architecture*
- *Elements of Design*

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BUILDING CONSTRUCTION AND MATERIALS II			
Subject Code 1201910 [THEORY] & 1201911 [SV]			
Teaching Scheme		Examination Scheme	
Total Contact Hours per week= (lectures=2, Studio=3, Total=5)		Sessional [CIA25+EA25]	50
		Viva [INT25+EXT 25]	50
		In-semester exam	30
		End Semester exam	70
		Total Marks	200
		Total Credits	2+5

COURSE OBJECTIVES:

- To develop a fundamental understanding of basic building elements, their function and behaviour under various conditions with specific reference to Timber construction.
- To study the principles of designing components of Timber Structure – Floor, Roofs ,Door, Windows

COURSE CONTENT:

UNIT I Introduction to earthquake, its magnitude and its effects earthquake resistant measures for load bearing construction. Construction of reinforced masonry walls, pillars and lintels; Masonry vaults and domes.

UNIT II Introduction to materials with characteristics, common tests, market forms and Applications.
1) Timber, timber derivatives and Introduction to various tools and equipment commonly used in carpentry work.
2) Roofing materials for small span sloping roofs including Mangalore tiles, sheet roof covering.

UNIT III Study of Single and double floor construction for G+1 building; Staircases – terminology and construction in timber.

UNIT IV Introduction to timber panelled and flush doors; various types of timber casement windows along with necessary joinery details, finishes required.

UNIT V Introduction to timber roof truss, forces in truss members; Construction of various types of roofs for spans up to 6m also king post and queen post truss.

UNIT VI Introduction to wooden partition and wall paneling used for interior application along with necessary joinery details, finishes required.

SUBMISSION REQUIREMENT FOR SESSIONAL WORK: Hand drawn drawings on Units 4,5 and 6; Assignments on units 1, 2 and 3 include sketches, notes, market survey and min one model based on unit 1,5 or unit 6.

OUTCOME: Students will expand a basic knowledge about earth quake, understanding of properties, construction techniques of timber with specific reference to use of timber in superstructure (spanning, framing techniques).

RECOMMENDED READINGS:

- Dr. B.C Punmia (2012) *Building construction* (10th edition) Laxmi Publications.
- Harold B.Olin, John L. Schmidt (1994) *Construction principles, Materials and Methods*, John Wiley & Sons, Inc.
- Roy Chudley, Roger Greeno (2016), *Construction Technology*, 11th Edition Routledge.
- S.C.Rangwala (2013) *Engineering materials* (Fortieth edition),Charotar Publishing pvt.ltd.
- S.K. Duggal(2016) *Building materials* (4th edition) – New age international publishers.
- Willam Morgan (1977) *The elements of structure: An introduction to the principles of building and structural engineering* Distributed by Sportshelf, 2nd edition.
- W.B. Mckay (2015) *Building construction Vol. 1* (5th edition), Vol. 2 (4th edition) and Vol. 3 (5th edition).

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WORKSHOP II			
Subject Code 1201916 [SS]			
Teaching Scheme		Examination Scheme	
Total Contact Hours per week= (lectures=1, Studio=2, Total=3)		Sessional [CIA 50+ EA 50]	100
		VIVA	NIL
		In-semester exam	NIL
		End Semester exam	NIL
		TotalMarks	100
		Total Credits	02

COURSE OBJECTIVES:

- To enable students to make Architectural models with various materials during process of Design and Construction studios and as final presentation to express ideas
- Introduction to Digital modeling with basic softwares

COURSE CONTENT :

- Introduction to advanced materials such as balsa wood, polymers/ plastics, cork and the techniques to make Architectural Models
- Introducing computer aided/ Digital 3D Modeling of simple and composite objects as an exploratory tool.

SUBMISSION REQUIREMENT FOR SESSIONAL WORK :

Minimum six number of assignments with thrust on exploring materials & tools (physical as well as digital), understanding their appropriateness for the purpose. At least one of the assignment should be based on the design project and building technology concepts each.

OUTCOME :

Surdents at the end of Semester should be able demonstrate sufficient skills in making architectural models.

RECOMMENDED READINGS :

- John Taylor, Model Building for Architects and Engineers
- Rolf Janke, Architectural Models
- Aidan Chopra, Sketchup-2014 for Dummies

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Approved by Council of Architecture, New Delhi (MH-96) Govt. of Maharashtra, DTE, Mumbai. (DTE Code 6897)
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Architectural Design II		
Course Code	2201917[SV]	
TeachingScheme	ExaminationScheme	
TotalContact Hoursperweek (lectures=1 Studio=6, Total = 7)	Sessional [CIA 100 + EA 100] Viva [Int 25 + Ext 25]	200 50
	In semester exam	NIL
	End Semester exam	NIL
	TotalMarks	250
	Total Credits	10

COURSE OBJECTIVE:

To understand Architectural Design as a process generating design brief and taking design decisions based on the following aspects:

- **Socio-Cultural Aspects:** To introduce students to socio-cultural aspects like lifestyle, culture, traditions, and their effect on architectural design etc.
- **Aesthetics:** To understand the Aesthetic aspects of Design (visual and experiential) along with spatial attributes (scale and proportions, volume, texture, light and shadows, etc.) and formal characteristics. (profile, base, corner, termination).
- **Anthropometry & Function:** To address functional aspects of design (activity, use of space, adequacy and efficiency of space for a particular activity, essential adjacencies of spaces, ease and efficiency of circulation, light, ventilation, user-space relationship, vertical connections)
- **Climate:** To understand the Climatic aspects those have a bearing on architectural design and address climatic concerns like adequate light, ventilation, protection from rain, insulation, shading, heat gain, through passive strategies.
- **Building Material and Construction Technology:** To study relevance of various building materials to a project, to get introduced to various expressions of a building material, to introduce a student to the construction technologies relevant to the building materials chosen, to understand the scope and limitations of a building technique to achieve the desired form and space.
- **Building Services:** To understand the spatial and structural implications of basic services involved in building design.
- **Site :** To understand the site and its context, both immediate and wider, in order to enable students to take decisions of zoning, circulation within site, distribution of built and open spaces, activity relationships and adjacencies, and views.
- **Universal Design:** To understand the concept and principles of universal design.
- **Precedent Studies:** To introduce the students to learn from case, referral, live studies - process of observation, analysis, documentation and deriving inferences.

COURSE OUTLINE:

- Project 1 (Major Project) : A dwelling for a single family or clusters of dwellings for multiple families with area 300 sq.m. to 500 sq.m. The project should explicitly address at least 4-5 aspects of the design decision process from those listed above. The project should be designed without the aid of mechanical means for vertical transportation.
- Project 2 (Minor Project): A time bound assignment Short term project focusing specifically on any one of the aspects mentioned in course objectives/ Hands-on Workshop / Exercise based on detailing any one of the components of Project 1 but with separate deliverables in addition to the deliverable of Project 1.

SESSIONAL WORK:

- Project 1 (Major Project): The student must represent the identification of core design aspect, formulation of design approach and development, and the final design outcome through architectural drawings along with representative details of construction. Along with the drawings, the student must develop the design through a series of models/ 3D visualizations made at various stages.
  Design deliverable for Project 1:
  i. Portfolio A - Architectural drawings and model at an appropriate scale
  ii. Portfolio B - Process drawings / tracings (Recommended)
  iii. Study models of various stage (Recommended)

- For Project 2 (Minor Project): The deliverable in case of a time bound assignment or a design exercise should be a portfolio of drawings and / or model. In case of Workshops the deliverable should be a report to be presented on the day of viva.

COURSE OUTCOME:

- At the end of the course the student is equipped to take design decisions by considering various aspects and methodically evolve a design and communicate it in form of 2D and 3D representations.

REFERENCE BOOKS :

1. Antoniades, A. (1992). The Epic of Gilgamesh: Utility to Metaphor Through the Dawn of Architecture. *IN Epic Space: Towards the Roots of Western Architecture*, 3-18.
2. Sommer, R. (1972). Design awareness.
3. Deasy, C. M. (1974). *Design for human affairs*. Halsted Press.
4. Alexander, C. (1977). *A pattern language: towns, buildings, construction*. Oxford university press.
5. Sealey, A. (1979). *Introduction to building climatology*. Commonwealth Association of Architects.
6. Franck, K. A., Lepori, R. B., & Franck, K. A. (2007). *Architecture from the inside out: from the body, the senses, the site, and the community* (p. 56). London: Wiley-Academy.
7. Salvadori, M. G., & Heller, R. (1963). *Structure in arquitecture* (No. 624). Prentice-Hall,.
8. Pandya, Y. (2005). *Concepts of space in traditional Indian architecture*. Mapin Publishing Pvt.
9. Koenigsberger, O. H. (1975). *Manual of tropical housing & building*. Orient Blackswan.
10. Neufert, E., &Neufert, P. (2012). *Architects' data*. John Wiley & Sons.

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11. Chiara, J. D., Panero, J., &Zelnik, M. (1991). *Time-saver standards for interior design and space planning*. McGraw-Hill.
12. Ching, F. D. (2014). *Architecture: Form, space, and order*. John Wiley & Sons.
13. Ching, F. D. (2011). *A visual dictionary of architecture*. John Wiley & Sons.
14. NithyaSrinivasan and KiranVenkatesh., *91 Houses*. InCite
15. Publications by Costford
16. 15a. Laurie Baker. *Brickwork*. Costford
17. 15b. Laurie Baker. *A Manual Of Cost Cuts For Strong Acceptable Housing*. Costford
18. 15c. Laurie Baker. *Houses : How to reduce building costs*. Costford
19. 15d. Laurie Baker. *Mud*. Costford
20. 15e. Laurie Baker. *Rubbish by Baker*. Costford
21. 15f. Laurie Baker. *Earthquake*. Costford
22. 15g. Laurie Baker. *Rural Community buildings*. Costford
23. 15h. Laurie Baker. *Chamoli Earthquake Hand Book*. Costford
24. 15h. Laurie Baker. *Rural House plans*. Costford
25. 15h. Laurie Baker. *Are Slums In-evitable*. Costford
26. 15h. Laurie Baker. *Alleppey : Venice of the East*. Costford
27. 15h. Laurie Baker. *Rainwater Harvesting*. Costford
28. Arvind Krishnan, (2001) *Climate Responsive architecture.Tata McGraw Hill*
29. It is strongly recommended that students are exposed on the books on works of Master architects

Building Construction and Materials III		
Course Code	2201918 [P]& 2201919 [SV]	
TeachingScheme	ExaminationScheme	
TotalContact Hoursperweek (lectures=2 Studio=3, Total = 5)	Sessional [CIA 25 + EA 25] Viva [Int 25 + Ext 25]	50 50
	In semester exam	30
	End Semester exam	70
	TotalMarks	200
	Total Credits	07

COURSE OBJECTIVES:

- To introduce students to soil study, its relevance to foundation.
- To introduce students to different building materials related to RCC construction.
- To understand basic principles of RCC construction w.r.t. smaller spans.

COURSE CONTENT:

UNIT I

- Introduction to Soil study &Foundation - Study of different types of soils and their bearing capacities; Concept of bulb of pressure and its significance for site investigation, Introduction to methods of site and strata investigation

- Introduction to different types of shallow foundations and footings and their application in construction

UNIT II:Reinforced Cement Concrete

- Cement: Composition of cement, properties, grades of cement& various types of cement and their uses
- Introduction to concrete as a material--Study of its ingredients viz. binding material, fine aggregate, coarse aggregate andwater cement ratio, storage of materials on site, understanding good quality material; field & lab tests involved
- Various concrete mixes and their application in construction, and workability of concrete, Various types of cement concrete, the properties and application, additives and admixtures used in concrete
- Concreting: form work for concreting, mixing, transporting and placing, consolidating and curing of concrete.
- Reinforcement ---steel, grades of steel and steel-mesh reinforcement; along with role of reinforcement in RCC.
- Introduction to the concept of Precast Concrete.

UNIT III Reinforced Cement Concrete Construction upto plinth

- RCC frame structure for smaller spans generally applicable to residential structures, along with earthquake resistant features, reference of a RCC drawing
- R.C.C structural details up to plinth viz. footings, external and internal plinth beams, with plinth formation, with details for toilet block at plinth level.

UNIT IV Reinforced Cement Concrete Construction in superstructure

- Construction of columns, beams for various types of end conditions
- R.C.C floor slab details, viz. one-way, two-way slabs with different end conditions, column-beam-slabjunction with details for toilet block, also lintel & weather-shed

UNIT V Windows in non- timber materials

- Study of non-timber windows with materials like Steel-framed, aluminum, UPVC and their construction details.

UNIT VI Flooring & paving materials

- Different flooring & paving types that are cast-in-situ viz. Mud flooring, Brick flooring, Indian Patent Stone finish, Terrazzo flooring etc. and readymade tiles available in market viz. natural stone tiles / slabs, mosaic cement tiles / blocks, ceramic tiles, vitrified tiles and other modern materials, including the process of providing or laying the flooring and pavement
- Floor finishes of various materials viz. carpet, linoleum, rubber, PVC etc.

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3. Numerical on Design of Cantilever Slab resting on a Beam (Beam Torsion in theory only)
4. Numerical on Design of Small Slabs like Toilet Sunken Slabs with Inverted Beams, Passage Slabs, Chajjas with Minimum Depth, Minimum Area of Steel with minimum/ maximum standards of Spacing.

Unit 5: Design of Beams (L.S.M for Flexure and Shear):

1. Numerical on Design of Simple Supported R.C.C Beams including Transfer of Load from Slab to Beam for one way slab only,
2. Theory only for Detailing in for a Beam supporting a Cantilever Porch

Unit 6: Design of Short R.C.C. Columns (L.S.M for Compression):

1. Definition of Short R.C.C. Columns. Various I.S.Provisions for Compression Members.Numerical on Design of Short R.C.C. Columns including Transfer of Load from Beam to Column

Course Outcome: *At the end of semester student develops*

1. *The understanding of the concepts of Fixity, Continuity and Torque*
2. *The Skills to Design small spanned Wooden Beams*
3. *The Skills to Design Small Spanned R.C.C Structure w.r.t Slabs, Beams and Columns and use it for his B.C.M and W.D. subjects*

Reference Books

1. Design of R.C.C. Structures by H.J.Shah
2. Design of R.C.C. Structures by Punmia and A.K.Jain
3. Design of Reinforced Concrete Structures by N.Krishnaraju
4. R.C.C Theory and Design by Dr. V.L.Shah and Dr.S.R.Karve
5. Strength of Materials by A.P.Dongre
6. Design and Analysis of Steel Structures by V.N.Vazirani. M.M.Ratwani and Vineet Kumar (For Wooden Structures Unit 2b)

Computer Aided Drawing and Graphics			
Subject Code		2201921[SS]	
Teaching Scheme		Examination Scheme	
Total Contact Periods per week (lectures=1, Studio=3)	04	Sessional [CIA 25 + EA 25]	50
		In semester exam	
		End Semester exam	
		TotalMarks	50
		Total Credits	02

COURSE OBJECTIVES:

- To enable the students to communicate an architectural idea / proposal in a legible and effective manner through various architectural presentations and rendering techniques.
- To enable the students to generate simple architectural drawings using **Computer Aided Drawing**
- To enable the students to express their design ideas through various sketching techniques

COURSE OUTLINE:

Unit 1 Graphics:

- Introduction to various mediums for architectural presentations invarious drawing formats (minimum two mediums)
- It is recommended to work on presentation drawings for any Architectural design project A set of drawing shall include rendering of Plans, Elevations, Sections with internal and external perspective views.

Unit 2 Computer Aided Drawing:

- Introduction to basics of Computer Aided Drawing with basic commands for Drawing, sufficient to construct simple geometrical shapes and 3D objects.
- Advance commands in CAD such as Setting Drawing parameters, Layer controls, Hatching, Model and paper space settings etc.
- Drafting single building from Semester II Design on CAD.

SUBMISSION REQUIREMENT FOR SESSIONAL WORK:

Sessional work should be planned to cover all the units mentioned in course outline with thrust on skill development, accuracy and understanding of the topics.

Unit 1	Demonstration of presentation techniques in various drawing formats (minimum two mediums) to include external perspective and internal perspective of students' own architectural design.	2 assignments [hand drawn]
Unit 2	CAD drawings (Plan, Section/s Elevation/s) with layers , hatch and dimensions from Semester II Design project	2 assignments
	CAD Drawings of orthographic solid objects studied in Semester II	2 assignments

OUTCOME :

- Students should be able to comprehend and express nuances of graphic language through various presentation techniques and methods learnt.
- Students should be able to communicate various ideas through architectural graphic representations (drafting and sketching).

RECOMMENDED READING:

Burden, E. E. (1971).*Architectural delineation: a photographic approach to presentation*. McGraw-Hill Companies.
Holmes, J. M. (1954). *Applied perspective;: The theory and application of perspective for architects, painters, and draughtsmen*. s.l.:s.n
Capelle, F. W. (1969).*Professional perspective drawing for architects and engineers*.s.l.:s.n
Schaarwachter, G. (1967).*Perspective for the Architect*.Thames and Hudson.
Sha Publishing Co. Ltd,:Interior perspective in Architectural Design- Japan Graphics
Japan Publishing Co: Modern Architectural Rendering best 180
Japan Publishing Co: Perspective Drawings of Modern Architecture
Japan Publishing Co: Air brushing in rendering
Shankar Mulik: Perspective and Sciography

HISTORY OF ARCHITECTURE AND CULTURE III

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Course Code		2201922[SS]	
Teaching Scheme		ExaminationScheme	
Total Contact Hours per week= (lectures=1, Studio=2, Total=3)		Sessional [CIA 25+EA 25] Viva	50 NIL
		In-semester exam	NIL
		End Semester exam	NIL
		TotalMarks	50
		Total Credits	02

Course Objectives:

1. To understand the development of European architecture through the historical period till 17th century AD.
2. To understand the relationship of religion and society with architecture
3. To understand the drivers of change, revival, and evolution of architecture

Course Outline:

Unit 1: Greek architecture including Greek temples, domestic architecture, public architecture, city planning, and the Acropolis.

Unit 2: Roman architecture including domestic architecture, public architecture, architecture of the forums, urban planning, structural innovations, forms, materials and techniques of construction.

Unit 3: Early Christian architecture including adaptation of Roman models, early church prototypes, Byzantine architecture

Unit 4: Early medieval manors, monasteries, Romanesque churches

Unit 5: Gothic architecture and developments therein with reference to church plans, structural techniques, and ornamentation, Gothic churches and cathedrals

Unit 6: Renaissance and resultant architecture including works of Andrea Palladio, Michelangelo, Brunelleschi. Works of Sir Christopher Wren and Inigo Jones. Post-Renaissance and Baroque architecture

Sessional Work:

- Minimum 25 representative buildings of the periods under study should be represented in Plans, sections and views- of various buildings discussed in the above units.
- One measured drawing and digital documentation of any site/ building / or part/features of the building related to the course content studied.. This can be undertaken as group work with identifiable individual contribution.
- One tutorial.

Course Specific Outcomes:

1. An understanding of architecture as a product shaped by various factors like religion and society.
2. An understanding of the formal, structural, and stylistic aspects of architectural development.
3. An understanding of the factors that bring about the processes of change in architectural manifestations and its meanings.

Recommended Readings:

Anderson, Christy. Renaissance Architecture.Oxford University Press, 2013.
Ching, Francis D K, Mark Jarzombek, VikramadityaPrakash. A Global History of Architecture.John Wiley and Sons, 2011.
Fletcher, Sir Banister and Dan Cruickshank. Sir Banister Fletcher's A History of Architecture On The Comparative Method. Architectural Press, 1996.
Frankyl, Paul. Gothic Architecture.Yale University Press, 2001.
Lawrence, A W. Greek Architecture. Yale University Press, 1957.
Summerson, John. The Classical Language of Architecture.Thames and Hudson, 1980.
Ward-Perkins, J B. Roman Imperial Architecture.Yale University Press, 1992.

Building Services I		
Course Code	2201923 [P] & 2201924 [SS]	
TeachingScheme	ExaminationScheme	
TotalContact Hoursperweek (lectures=2 Studio=2, Total =4)	Sessional [CIA 25 + EA 25]	50
	In semester exam	30
	End Semester exam	70
	TotalMarks	150
	Total Credits	03

COURSE OBJECTIVES:

To make students understand the Plumbing scope in the MEP services integration. To introduce students to following Plumbing Services in low, medium and high rise buildings and inculcate them the integration of services required in architectural design.
This term aims at following services:

- Systems for hot and cold water supply in a building premises
- Systems for Sewage, Sullage, Storm water & and its disposal within or from building premises.

COURSE OUTLINE:

Introduction to sourcing, storage, and distribution of hot and cold water in building premises including the study of all necessary components involved and their installation.

To introduce students to drainage systems viz. collection, conveyance & disposal of sewage, sullage and
Effluents from building premises, including methods, components and apparatus involved.

UNIT I Water supply - I

1.1 Principles and techniques of supplying water
- Treatment of water
- Concept of Pressure head
- Flow through pipes

1.2 Tapping of water mains on street by means of Ferrule
1.3 Requirement, Storage and distribution of water in building premises
- Sizing of Water tanks
- Static water storage requirements (Fire Tank)
- Collection and Storage systems
- Types of Pumps and applications
- Storage and Distribution in High rise buildings

1.4 Pipes and piping network
- Materials of Pipes
- Joinery
- Installation techniques

1.5 Various control valves and their applications

UNIT II Water supply - II

2.1 Types of Taps, Faucets, Fittings and advanced proprietary systems used in baths, kitchen and WC units.
2.2 Provisions, Installations and applications of above.

UNIT III Hot Water Supply.

3.1 Systems of hot water supply using conventional and non-conventional energy sources.
- Instantaneous and Centralized
- Direct system and In-Direct system
- Components and Equipment used for the same.

3.2 Piping Insulation, safety and special considerations in piping network.
3.3 Failures, precautions, and safety measures
3.4 Information on other Circulation systems i.e. ring system, up-feed/ down-feed systems, etc. and its application.

UNIT IV Drainage-I (Vertical Drainage systems)

4.1 Introduction to various sanitary fittings with necessary knowledge of provisions to be made and their Installations.
- Sanitary fittings like Wash basins, Sinks, Bathing units, Water Closets (Indian and European), Urinals
- Selection criteria and variations in Installing and provisions to be made for same
- Assembling, combining and coordinating them in washing, bathing and WC units

4.2 Study of various Traps, with their working and applications.
- All types of traps and their installation.

4.3 Pipes and piping network. Techniques of Vertical drainage system in shafts, ducts and external face of **low, medium and high rise buildings.**

- Study of service Shafts, Ducts, Floors
- Single and double stack systems with part and full ventilation.
- Pipe materials, their classification and methods of Installation
- Special fittings used for - Jointing and installations.
- Special fittings for High rise buildings (vent system, Expansion chambers, Pressure relief lines, Bypass Socket etc)
- Anti-Syphonic system of ventilation in drainage system

UNIT V Drainage-II (Horizontal Drainage system)

5.1 Techniques of underground drainage systems for waste water, effluents and sewage. Principle and concept of self-cleansing velocity in flow through pipes. Techniques in laying, leveling, planning, aligning, testing, inspection and maintenance

- Invert levels, Gradients, Access point planning
- Types of Chambers, Sumps, Channels, Shafts, service corridors, catch basins
- Ventilation of drainage system.
- Connection to Main Sewer Drain on Road side

5.2 Rainwater drainage system and surface runoff methods

- Storm water drainage systems.
- Invert levels, Gradients
- Sedimentation tanks and catch basins
- Rainwater harvesting methods

UNIT VI Sewage Treatment and Disposal

6.1 Disposal within the Premises.

- Septic tanks, its function, types and design (Sizing).
- Maintenance of Septic tank.

6.2 Waste Water and Sewage treatment plant (Large and Compact)

- Introduction to Waste water treatment plant
- Introduction to sewage treatment plant
- Decentralized waste water treatment

6.3 Bio-Gas plant and its functioning

SESSIONAL WORK

1. Illustrative Sketches of Installations of Bathroom accessories and Sanitary ware showing water inlet connection and Drain provisions
2. Preparing internal Water supply and Drainage layouts for Residential toilets, Kitchen and Public Toilets
3. Preparing external water supply and drainage layouts for individual Bungalow with septic tank
4. Preparing external water supply and drainage of a building site having more than one building on the site and connectivity to City Municipal Supply and Drain

- The drawing assignmentsto bebased upon the theory learnt and supported with necessary drawings and calculations (70% weightage).
- Visits to construction sites and preparing site visit reports, market survey and finding out latest trends and new materials (30% weightage).

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Architectural Design III		
Course Code	2201926 [SV]	
TeachingScheme	ExaminationScheme	
TotalContact Hoursperweek (lectures=1 Studio=6, Total = 7)	Sessional [CIA 100 + EA 100]	200
	Viva [Int 25 + Ext 25]	50
	In semester exam	NIL
	End Semester exam	NIL
	TotalMarks	250
	Total Credits	10

COURSE OBJECTIVE:

To understand Architectural Design as a process of generating design brief and taking design decisions based on the following aspects:

- **Socio-Cultural Aspects:** To introduce students to socio-cultural aspects like lifestyle, culture, traditions, and their effect on architectural design etc.
- **Aesthetics:** To understand the Aesthetic aspects of Design (visual and experiential) along with spatial attributes (scale and proportions, volume, texture, light and shadows, etc.) and formal characteristics. (profile, base, corner, termination).
- **Anthropometry & Function:** To address functional aspects of design (activity, use of space, adequacy and efficiency of space for a particular activity, essential adjacencies of spaces, ease and efficiency of circulation, light, ventilation, user-space relationship, vertical connections)
- **Climate:** To understand the Climatic aspects those have a bearing on architectural design and address climatic concerns like adequate light, ventilation, protection from rain, insulation, shading, heat gain, through passive strategies.
- **Building Material and Construction Technology:** To study relevance of various building materials to a project, to get introduced to various expressions of a building material, to introduce a student to the construction technologies relevant to the building materials chosen, to understand the scope and limitations of a building technique to achieve the desired form and space.
- **Building Services:** To understand the spatial and structural implications of basic services involved in building design.
- **Site :** To understand the site and its context, both immediate and wider, in order to enable students to take decisions of zoning, circulation within site, distribution of built and open spaces, activity relationships and adjacencies, and views.
- **Universal Design:** To understand the concept and principles of universal design.
- **Precedent Studies:** To introduce the students to learn from case, referral, live studies - process of observation, analysis, documentation and deriving inferences.

COURSE OUTLINE:

- **Project 1 (Major Project):** A design project that introduces the concept of site planning with multiple built spaces with an area 1000 sq.m. to 1500 sq.m.. This project should house a variety of core and allied activities requiring built, open, and transition spaces. The project should explicitly address at least four aspects of the design decision variables from those listed in course objectives.
- **Project 2 (Minor Project):** The students must undergo a Settlement study / study tour in a region with which is different in terms of socio geographic characteristics than the place where the institute is located.A short term project or eskee based in the settlement the students have studied.

SESSIONAL WORK:

- **Project 1 (Major Project):** The student must represent the identification of core design aspect, formulation of design approach and development, and the final design outcome through architectural drawings along with a narrative and representative details of construction. Along with the drawings, the student must develop the design through a series of models/ 3D visualizations made at various stages.
  Design deliverables -
  i. Portfolio A - Architectural drawings and model at an appropriate scale
  ii. Portfolio B - Process drawings / tracings (Recommended)
  iii. Study models of various stage (Recommended)
- **Project 2 (Minor Project):** The Study Tour documentationcovering details from whole to part and must include narratives, sketches, scale drawings, photographs. It may additionally have information presented in any other formats in addition to the ones mentioned above. The short term project or eskeeto be presented in form of drawings to explain the scheme.

COURSE OUTCOME :

- At the end of the course the student is equipped to take design decisions by considering various aspects and methodically evolve a design where two or more buildings are to be planned on a site and communicate it in form of 2D and 3D representations.

REFERENCE BOOKS

2. Lynch, K., Lynch, K. R., & Hack, G. (1984). *Site planning*. MIT press.
3. Rybczynski W. (1984). *How the Other half builds, Volume 1 : Space.* Centre for Mininum Cost Housing. McGill University. Montreal Canada
4. Carlos Barquin (1986). *How the Other half builds, Volume 2 : Plots.* Centre for Mininum Cost Housing. McGill University. Montreal Canada
5. Vikram Bhatt. (1990). *How the Other half build, Volume 3 : Self selection Process.* Centre for Mininum Cost Housing. McGill University. Montreal Canada
6. Rapoport, A. (1969). *House form and Cultua.* Prentice-Hall of India Private Ltd.: New Delhi, India.
7. Correa, C. (2010). *A place in the shade: the new landscape & other essays*. Penguin Books India.

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8. Dave, B., Thakkar, J., Shah, M., & Handa, O. (2013). *Prathaa: Kath-khuni Architecture of Himachal Pradesh*. SID Research Cell, School of Interiour Design, CEPT University.
9. Kanvinde, A., & Miller, H. J. (1969). *Campus design in India: experience of a developing nation*. Jostens/American Yearbook Company.
10. Adler, D. (2007). *Metric handbook*. Routledge
11. Neufert, E., &Neufert, P. (2012). *Architects' data*. John Wiley & Sons.
12. Gropius, W. (1956). *Scope of total architecture*. London: G. Allen &Unwin.
13. Giedion, S. (1967). *Space, time and architecture: the growth of a new tradition*. Harvard University Press.
14. Gibbered, Fredrick: Town Design.
15. David Gosling, Gordon Cullen – Visions of Urban Design.
16. Bawa, G., & Robson, D. (2002). *Geoffrey Bawa: the complete works*. Thames & Hudson..
17. Scheer, B. C. (2017). *The evolution of urban form: Typology for planners and architects*. Routledge.
18. It is strongly recommended that students are exposed on the books on works of Master architects

Building Construction and Materials IV		
Course Code	2201927 [P]& 2201928 [SV]	
TeachingScheme	ExaminationScheme	
TotalContact Hoursperweek (lectures=2 Studio=3, Total = 5)	Sessional [CIA 25 + EA 25] Viva [Int 25 + Ext 25]	50 50
	In semester exam	30
	End Semester exam	70
	TotalMarks	200
	Total Credits	07

COURSE OBJECTIVES:

- To understand basic principles of RCC construction w.r.t. Cantilever slabs, Staircase.
- To introduce students to vertical transportation systems.

COURSE CONTENT:

UNIT I Cement Concrete types

- Types of special concretes, to include lightweight concrete, ready-mixed concrete, ferro-cement etc; study of its ingredients viz. along with storage of materials on site, understanding good quality material and field & lab tests involved.

UNIT II Damp- & Water-Proofing

- Causes of dampness and reasons for damp- & water-proofing,Different methods or treatments of damp- & water-proofinghrick on edge, rough Shahabad stone, bitumen sheets

plastic sheets, epoxy resins and metallic water proofing materials and other proprietary materials application of the above in construction for terraces, chhajja, toilet slabs etc.

UNIT III Reinforced Cement Concrete Construction

- R.C.C structural details for balcony slabs, canopies and Construction of various types of pre-cast and in-situ RCC stairs, along with earthquake resistant features, reference of a RCC drawing

UNIT IV Vertical Transportation: Lifts, Escalators & Conveyors

- Study of elevators, escalators, conveyors – types, size, capacity, speed and Mechanical safety methods, provisions in civil work for installation of elevators and escalators

UNIT V Sliding & Sliding folding doors, Bay window

- Study of Various types of sliding and folding doors and
- Construction of Bay Window

UNIT VI Glass, Plastics

- Glass as a building material, brief history of its use through examples. Manufacture, properties and uses of glass. Various types of glass and its application in building construction
- Plastic as a building material; its properties, types, uses and application of plastics in building industry.
- Different types of adhesives and sealants used in building construction

SUBMISSION REQUIREMENT FOR SESSIONAL WORK:

- Hand drafted drawings on Units 3 and 5 to cover all the aspects of course outline in sufficient detail;; Assignments on units 1, 2, 4and 6 include sketches, notes, market survey and site visits.

OUTCOME:

- Students will develop an understanding about concrete and its variants and artificial materials such as glass and plastic and their application in construction. Students will be developing knowledge about the vertical transportation systems and their design and construction requirement.

RECOMMENDED READINGS:

- Dr. B.C Punmia (2012) Building construction (10th edition) Laxmi Publications.
- Harold B.Olin, John L. Schmidt (1994) Construction principles, Materials and Methods, John Wiley & Sons, Inc.
- Roy Chudley, Roger Greeno (2016), Construction Technology, 11th Edition Routledge.
- S.C.Rangwala (2013) Engineering materials (Fortieth edition),Charotar Publishing pvt.ltd.
- S.K. Duggal (2016) Building materials (4th edition) – New age international publishers.

- Hitchcock, Henry Russell and Philip Johnson. The International Style. W W Norton, 1997.
- Kagal, Carmen (ed). Vistara- The Architecture of India. The Festival of India, 1986.
- Lang, Jon. A Consise History of Modern Architecture in India. Permanent Black, 2002.
- The Masters of World Architecture (Series).
- Twombly, Robert (ed). Louis Kahn- Essential Texts. W W Norton, 2003.
- Various monographs on the works of twentieth century Architects.

Building Services II		
Course Code	2201932 [P] & 2201933 [SS]	
TeachingScheme	ExaminationScheme	
TotalContact Hoursperweek (lectures=2 Studio=2, Total =4)	Sessional [CIA 25 + EA 25]	50
	In semester exam	30
	End Semester exam	70
	TotalMarks	150
	Total Credits	03

COURSE OBJECTIVES:

To introduce students to Building Services in low, medium and high rise buildings and inculcate in them the understanding of integration of services in architectural design. The Building Services will include

- Solid Waste Management
- Lighting –Natural and Artificial
- Electrification

COURSE CONTENT:

Unit I –Solid Waste Management- This unit covers the collection, treatmentand disposal of organic and in-organic waste

- Collection- Garbage chutes and space requirement for manual mechanism
- Treatment and Disposal -Introduction to vermicomposting, organic waste composters, incinerators etc. and space requirements on site and in building

Unit II -Lighting-Natural- Introduction to integrated design approach for daylighting to cover

- Passive design strategies of siting, form, fenestration design,
- Choice of glazing material
- Methods for predicting daylight i.e. daylight factor.
- New technologies to access (light pipes) and control daylight (Lighting Controls)

Unit III -Lighting-Artificial

- Introduction to different sources of light, their characteristics (CRI, Color temperature and lamp life, energy consumption) lighting systems (Direct & Indirect) and their applications in building projects
- Lumen Method for designing appropriate lighting as per NBC 2016

Unit IV - Electrification

- Electrical installations in a building from the supply company mains to individual outlet pointsincluding meter board, distribution board, layout of points with load calculations.
- Electrical wiring systems for small and large installations including different materials involved
- Electrical control and safety devices – switches, fuse, circuit breakers,earthing, lightningconductors etc.
- Introduction to alternative sources of energy such as Solar PV, Wind turbines etc. and integration in building design

Unit V-Low Voltage network systems-Introduction to Low Voltage electrical systems and its integration in BMS –

- Wi-Fi and LAN network EPABX & Telecommunication system
- CCTV (Closed circuit TV and camera system)
- FA PA (Fire Alarm and Public address system)
- Access systems (Access control, Tracking, planning and provisions made)

SUBMISSION REQUIREMENT FOR SESSIONAL WORK:

- Preparing electrical layout and lighting plan of a building interior supported with necessary calculations (70% weightage).
- Visits to construction sites and preparing site visit reports, market survey and finding out latest trends and new materials for all the units.(30% weightage).

OUTCOME:

Students should be able to understand basic principles of daylight and artificial lighting and should be able to design a lighting plan for a space. They should be able to calculate the energy requirement of building electrical systems. Students should be able to identify space requirements and integration of these systems in architectural design.

RECOMMENDED READINGS:

- NationalBuilding Code of India 2016-Volume 2 , Bureau of Indian Standards
- Building Services and Equipments by Ashok L. Chhatre
- Building Services, By Mrs. ShubhangiBhide
- Building Construction Illustrated by Frances D K Ching

- Basics Lighting Design Ed. by Bielefeld, Bert
- Daylight in Architecture-Benjamin Evans
- Lighting in Buildings-HapkinsenH.D.Kajr
- Lighting in Architectural Design -Derek Philip

SITE SURVEY AND ANALYSIS			
Course Code		2201934 [SS]	
TeachingScheme		ExaminationScheme	
TotalContact Periodsperweek (lectures=1, Studio=3, total=4)		Sessional [CIA 25 + EA 25]	50 nil
		In-semester exam	nil
		End Semester exam	nil
		TotalMarks	50
		Total Credits	2

COURSE OBJECTIVES:

- To introduce students to the various factors related to Site Survey and Analysis relevant to Architectural Site Planning
- To enable the students to get conversant with locating the object positions in horizontal and vertical plane
- To prepare and interpret survey drawings.
- To develop understanding ofcontours and grading for Site development
- To analyze physical, socio-cultural and contextual parameters of the siteenabling Site planning

COURSE OUTLINE:

- **Unit 1. Linear Measurements**Measurements in horizontal plane, survey stations, survey lines open and closed traverse, locating objects by chaining and offsetting, direct and indirect ranging, locating field boundaries and working out area of field, measuring distances with chain, tapes, ODM's ,EDM's, introduction to Total Station, survey accessories, measurements along sloping ground. Chain Surveying: Base line, tie lines, check lines,Understanding of land demarcation drawings.

- **Unit 2.Directional and Angular Measurements**Magnetic and true meridian, Magnetic and true bearings, use of bearings, use of prismatic compass, calculation of included angles, Fore and back Bearings, declination plotting and adjustment of closed traverse, Uses of Transit Theodolite. Measuring horizontal and vertical angles, calculation height of buildings, use of Theodolite as technometer, tacheometric tables

- **Unit 3. Levelling**Dumpy level, auto and tilting level, principle lines of levelling instrument, axis of telescope, axis of bubble tube, line of collimation, vertical axis recording by collimation plane, method and rise-fall method, B.S/I.S/F.S, change point, level surface, horizontal surface, datum,Reduced Level/ elevation of a point, Bench Marks, GTS,PBM/ABM/TBM. Temporary Adjustments.
- **Unit 4. Plane Table Surveys** Accessories used in plane tabling, methods of locating objects, methods of table orientation, Advantages and disadvantages. Use of Planimeter: Area of zero circle, calculating area of irregular shape figures.
- **Unit 5. Contours** Plotting the contours and profiles,interpolation of contours, contour interval, Characteristics of contours, Profile levelling:Understanding gradient, cut and fill for desired ground level,direct and indirect methods of contouring, block contour surveys
- **Unit 6. Site Analysis and Synthesis**Understanding of Natural and Manmade aspects (such as microclimate, topography, hydrology and vegetation), physical and socio-cultural context of the site. Site Analysis of the above parameters, Site Synthesis and Site Suitability

SESSIONAL WORK:

1) Calculation of area of field(Chain and cross staff survey)
2) Compass Survey.
3) Plane Table Survey.
4) Block Contour Survey.
6) Slope Analysis and Profile Levelling.
7) Site Analysis and Synthesis (Associated with Design Project)

COURSE OUTCOME

- At the end of the course students would be able to comprehend the site characteristics, reading and interpreting survey drawings, understanding equipment and methods of surveying leveling.

REFERENCE BOOKS:

1) Basak, N.N, *Surveying and Levelling*, McGraw Hill Education (India) New Delhi, 1994
2) Kanetkar, T.P, Kulkarni, S.V, *Surveying and Levelling, Pune VidyarthiGrihaPrakashan, 2014*
3) Lynch, K, *Site Planning*, Cambridge: The MIT Press, 1962

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Architectural Design IV		
Course Code	3201935 [SV]	
TeachingScheme	ExaminationScheme	
TotalContact Hoursperweek (lectures=1 Studio=6, Total = 7)	Sessional [CIA 100 + EA 100]	200
	Viva [Int 25 + Ext 25]	50
	In semester exam	NIL
	End Semester exam	NIL
	TotalMarks	250
	Total Credits	10

COURSE OBJECTIVE:

To understand Architectural Design as a process of generating design brief and taking design decisions based on the following aspects:

- **Socio-Cultural Aspects:** To introduce students to socio-cultural aspects like lifestyle, culture, traditions, and their effect on architectural design etc.
- **Aesthetics:** To understand the Aesthetic aspects of Design (visual and experiential) along with spatial attributes (scale and proportions, volume, texture, light and shadows, etc.) and formal characteristics. (profile, base, corner, termination).
- **Anthropometry & Function:** To address functional aspects of design (activity, use of space, adequacy and efficiency of space for a particular activity, essential adjacencies of spaces, ease and efficiency of circulation, light, ventilation, user-space relationship, vertical connections)
- **Climate:** To understand the Climatic aspects those have a bearing on architectural design and address climatic concerns like adequate light, ventilation, protection from rain, insulation, shading, heat gain, through passive strategies.
- **Building Material and Construction Technology:** To study relevance of various building materials to a project, to get introduced to various expressions of a building material, to introduce a student to the construction technologies relevant to the building materials chosen, to understand the scope and limitations of a building technique to achieve the desired form and space.
- **Building Services:** To understand the spatial and structural implications of basic services involved in building design.
- **Site :** To understand the site and its context, both immediate and wider, in order to enable students to take decisions of zoning, circulation within site, distribution of built and open spaces, activity relationships and adjacencies, and views.
- **Universal Design:** To understand the concept and principles of universal design.
- **Precedent Studies:** To introduce the students to learn from case, referral, live studies - process of observation, analysis, documentation and deriving inferences.

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COURSE OUTLINE:

1. Designing of progressively complex spaces and buildings in terms of area, a specific community, typology, function etc, with emphasis on either scale or complexity of the project, or both.
2. Project could be evolved based on the current needs of the city and / or context responding to aspects like heritage and conservation, landscape and ecology, image and identity, etc.
3. Development of building design program from not only client or user's requirements but also in response to context specific factors like socio-economic, socio-cultural, environmental etc.
4. Introduction to develop a design philosophy/narrative as a thought process in design.
5. Analysing activities around the buildings within a campus and understand the same in context to relation of built form and open spaces, elements of landscape, pedestrian and vehicular movement, their segregation, managing sloping sites, contours, etc.
6. Introduction to Campus design with reference to design of campuses developed in the past.
7. In case of multiple buildings (existing and/or proposed) to be accommodated within a campus, analyse and understand their relationship with each other in context to establish continuity of form, construction, materials, design theme, climate, etc. and the same should reflect in the drawings and models.
8. Integrating functions, structure and services in a building with relevant structural system and its resultant effect on visual form / character of building
9. To understand various issues and aspects of sustainability, earthquake resistance, construction, universal accessibility, etc. and study how these could be integrated in the architectural design process.
   To study a location in urban context preferably in a different socio-geographic setting other than the Institute (not mandatory), and document the study done in the tour in the form of a report with emphasis on relevant aspects like climate, social structure, culture, architectural typology, construction technology, urban fabric, economy, etc or any other issues which need to be considered for envisaging a design project in totality.

SESSIONAL WORK

Assessment Criteria: Major project should have 80% weightage and 20% weightage should be given to the minor project.

A] Major project:

Project based on Campus Design with emphasis on site planning & relationship of built and open spaces, circulation and movement pattern, activity pattern, architectural character, image, identity, philosophy etc.

Deliverables:
i. Portfolio A - Architectural drawings at an appropriate scale preferably 1:200/1:100. And model to appropriate scale.
ii. Portfolio B - Process drawings / tracings (Recommended)
iii. Study models of various stage (Recommended)

B] Minor project:.

A Time Bound Project of 12 hours as a means to gauge students' ability to apply the learning of the design studio and in the process acclimatizing them to work under time constraint and meet deadlines. This project of 12 hrs may be based on the parameters of the Design VI paper such as :

1. The suggested nature of project can be in the form of a social amenity in an urban context. However individual colleges do have freedom to choose a topic.
2. Size of the site given for the design should be such that it fits imperial size sheet.
3. Preferred scale of the drawing would be 1:200.

Deliverables: Architectural drawings in appropriate scale preferably 1:200/1:100. (Model optional).

COURSE OUTCOME:

1] Build competency and ability to make communicative architectural drawings that are of readable scales, preferably in:
- 1:200 (Site level drawings & Model)
- 1:100 (Cluster level drawings)
- Appropriate details to be explored at 1:50/20/10 etc.

2] Be able to negotiate various scales in drawings and models.
3] Be equipped to resolve structural systems of various construction techniques and services.
4]

REFERENCE BOOKS

1. Lynch, K., Lynch, K. R., & Hack, G. (1984). *Site planning*. MIT press.
2. Rybczynski W. (1984). *How the Other half builds, Volume 1 : Space.* Centre for Mininum Cost Housing. McGill University. Montreal Canada
3. Carlos Barquin (1986). *How the Other half builds, Volume 2 : Plots.* Centre for Mininum Cost Housing. McGill University. Montreal Canada
4. Vikram Bhatt. (1990). *How the Other half build, Volume 3 : Self selection Process.* Centre for Mininum Cost Housing. McGill University. Montreal Canada
5. Rapoport, A. (1969). *House form and Cultua.* Prentice-Hall of India Private Ltd.: New Delhi, India.
6. Correa, C. (2010). *A place in the shade: the new landscape & other essays*. Penguin Books India.
7. Dave, B., Thakkar, J., Shah, M., & Handa, O. (2013). *Prathaa: Kath-khuni Architecture of Himachal Pradesh.* SID Research Cell, School of Interiour Design, CEPT University.
8. Kanvinde, A., & Miller, H. J. (1969). *Campus design in India: experience of a developing nation.* Jostens/American Yearbook Company.
9. Adler, D. (2007). *Metric handbook.* Routledge
10. Neufert, E., &Neufert, P. (2012). *Architects' data.* John Wiley & Sons.
11. Gropius, W. (1956). *Scope of total architecture.* London: G. Allen &Unwin.
12. Giedion, S. (1967). *Space, time and architecture: the growth of a new tradition.* Harvard University Press.
13. Gibbered, Fredrick: Town Design.
14. David Gosling, Gordon Cullen – Visions of Urban Design.
15. Bawa, G., & Robson, D. (2002). *Geoffrey Bawa: the complete works.* Thames & Hudson..
16. Scheer, B. C. (2017). *The evolution of urban form: Typology for planners and architects.* Routledge.
17. It is strongly recommended that students are exposed on the books on works of Master architects

Building Construction and Materials V		
Course Code	3201936[P]&3201937 [SV]	
TeachingScheme	ExaminationScheme	
TotalContact Hoursperweek (lectures=2 Studio=3, Total = 5)	Sessional [CIA 25 + EA 25] Viva [Int 25 + Ext 25]	50 50
	In semester exam	30
	End Semester exam	70
	TotalMarks	200
	Total Credits	06

COURSE OBJECTIVES:

- To understand the variations in frame structure with options of different types of slab like flat slab, ribbed and waffle slabs etc. along with pre-stressed RCC technology.
- To understand the construction of single basement along with its waterproofing, provision for access and ventilation details. To understand the construction of different types of retaining walls and the detailing of the same
- To introduce materials and technology of assembling interior elements like partitions, suspended ceiling, furniture units etc.

COURSE CONTENT:

UNIT I Materials for Interior Essentials

Characteristics, Properties and types of following materials and their application for interior essentials.

- Wood, wood derivatives and other panel materials used for interior application.
- Finishing materials like laminates, veneers, plastics and metal sheets.
- Paints and varnishes
- Hardware required for application to interior and furniture elements

UNIT II Foundations, Retaining Wall& single basement construction

- Concept of shallow and deep foundations with respect to basement construction, high rise buildings and different soil conditions
- Study of Single basement construction along with waterproofing details, also study of cast-in-situ and precast Retaining wall and its terminology, proportionsand construction details.

UNIT III Reinforced Cement Concrete construction

- Reinforced cement concrete floor construction systems like flat plate, flat slab, ribbed slab, waffle slab, band beam and slab, pre-stressed slabs along with earthquake resistant features, reference of a RCC drawing

UNIT IV Partitions and Paneling

- Study of demountable partition construction using proprietary and non-proprietary systems using non-timber materials
- Proprietary and non-proprietary systems of paneling in various materials

UNIT V Suspended Ceiling

- Study of Suspended ceiling construction using proprietary and non-proprietary systems using various materials

UNIT VI Furniture Design and assembly

- Study of furniture for residential, commercial, office buildings and assembly details using timber and other material along with finishing and upholstery.

SUBMISSION REQUIREMENT FOR SESSIONAL WORK: Hand drafted drawings on Units 4, 5 and 6 to cover all the aspects of course outline in sufficient detail;; Assignments on units 1, 2, and 3 including sketches, notes, market survey.

OUTCOME: Students will understand of the principle, methods, advantages and disadvantages of concrete floor construction systems and single basement construction. Students will get to know the proprietary construction techniques for partition ceilings with latest available materials.

RECOMMENDED READINGS:

- Dr. B.C Punmia (2012) *Building Construction* (10th edition) Laxmi Publications.
- Harold B.Olin, John L. Schmidt (1994) *Construction principles, Materials and Methods*, John Wiley & Sons, Inc.
- Narayanamurty, D.; Mohan, D (1972) *The use of Bamboo and reeds in building construction* ,UNO Publications
- Roy Chudley, Roger Greeno (2016), *Construction Technology*, 11th Edition Routledge.
- S.C.Rangwala (2013) Engineering *materials* (Fortieth edition),Charotar Publishing pvt.ltd.
- S.K. Duggal(2016) *Building materials* (4th edition) – New age international publishers.
- Willam Morgan (1977)*The elements of structure: An introduction to the principles of building and structural engineering* Distributed by Sportshelf; 2nd edition
- W.B. Mckay (2015) *Building construction Vol. 1* (5th edition), Vol. 2 (4th edition) and Vol. 3 (5th edition).
- National Building Code of India 2016 (Volume 1) and relevant I.S.I. Specifications.

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LANDSCAPE ARCHITECTURE		
Course Code	3201939 [SS]	
TeachingScheme	ExaminationScheme	
TotalContact Hoursperweek (lectures=1 Studio=3, Total =4)	Sessional [CIA 50 + EA 50]	100
	In semester exam	
	End Semester exam	
	TotalMarks	100
	Total Credits	03

COURSE OBJECTIVES:

- To introduce the students to Landscape Architecture and its scope.
- To understand the elements and principles of landscape design and role of landscape elements in design of outdoor environments on the site.
- To understand the Intent and content of designed landscapes.
- To develop understanding of site analysis and site planning and integrated design of open and built spaces.
- Creating awareness about using Landscape design as a tool to address environmental concerns in Architecture.

COURSE OUTLINE:

- **Unit 1.** Introduction to Landscape Architecture and its scope ,elements(natural and manmade) and their application in achieving functional, aesthetic, environmental and cultural goals.
- **Unit 2.** Principles and approaches in Landscape Design. Illustrations can be from contemporary as well as historic landscapes for understanding various approaches of design.
- **Unit 3.** Study of Hard landscape (civil work) details with respect to materials and construction techniques..
- **Unit 4.** Study of Softscape (plant material), their characteristics and contribution in terms of creating and imparting character to outdoor spaces.
- **Unit 5** Introduction to basics of Site planning and process of site planning.

SESSIONAL WORK:

- Minimum two assignments to expose the students to landscape elements, their application, principles of design and approaches of design.
- Short duration projects such as eskees to allow students to explore the palette of landscape elements in open space creation and design. – Minimum 2.

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Building Services III	
Course Code	3201941 [P] & 3201942 [SS]

TeachingScheme	ExaminationScheme	
TotalContact Hoursperweek (lectures=2 Studio=1, Total =3)	Sessional [CIA 25 + EA 25]	50
	In semester exam	30
	End Semester exam	70
	TotalMarks	150
	Total Credits	03

COURSE OBJECTIVES
- To comprehend building services as an integral part of architectural design process
- To obtain knowledge of technical and design aspects of natural ventilation, heating, cooling and HVAC

COURSE OUTLINE
- Principles of working of natural ventilation, heating, cooling and HVAC systems, components, materials and provisions in architectural design
- Functional and aesthetical aspects of building services coordination in architectural design

TEACHING PLAN
Unit I: Natural ventilation
1.1 Conditions of human thermal comfort
1.2 Factors affecting natural ventilation
1.3 Strategies to effect natural ventilation
Unit II: Mechanical ventilation
2.1 Systems of mechanical ventilation
2.2 Components of mechanical ventilation systems
2.3 Mechanical ventilation - Schematic design
2.4 Introduction to Psychometric charts
Unit III: Heating and cooling
3.1 Passive heating and cooling techniques
3.2 Low energy mechanical cooling techniques
Unit IV: Air-conditioning - 1
4.1 Principles of air-conditioning systems
4.2 Components of air-conditioning systems
Unit V: Air-conditioning - 2
5.1 Types of air-conditioning systems
Unit VI: Air-conditioning - 3
6.1 Onsite case study of air-conditioning system
6.2 Air-conditioning and ducting layout - Schematic calculations and design for a space / part of a building.

SESSIONAL WORK
Tutorials for Units I, II, III, IV and V (50% marks)
Onsite case study report for 6.1 (25% marks)
Schematic air-conditioning calculations and ducting layout for 6.2 (25% marks)

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Architectural DesignV		
Course Code	3201944[SV]+3201945[P]	
TeachingScheme	ExaminationScheme	
TotalContact Hoursperweek (lectures=2 Studio=5, Total = 7)	Sessional [CIA 100 + EA 100] Viva [Int 25 + Ext 25]	200 50
	In semester exam	NIL
	End Semester exam	100
	TotalMarks	350
	Total Credits	10

COURSE OBJECTIVE:

To understand Architectural Design as a processof generating design brief and taking design decisions based on the following aspects:

- **Socio-Cultural Aspects:** To introduce students to socio-cultural aspects like lifestyle, culture, traditions, and their effect on architectural design etc.
- **Aesthetics:** To understand the Aesthetic aspects of Design (visual and experiential) along with spatial attributes (scale and proportions, volume, texture, light and shadows, etc.) and formal characteristics. (profile, base, corner, termination).
- **Anthropometry & Function:** To address functional aspects of design (activity, use of space, adequacy and efficiency of space for a particular activity, essential adjacencies of spaces, ease and efficiency of circulation, light, ventilation, user-space relationship, vertical connections)
- **Climate:** To understand the Climatic aspects those have a bearing on architectural design and address climatic concerns like adequate light, ventilation, protection from rain, insulation, shading, heat gain, through passive strategies.
- **Building Material and Construction Technology:** To study relevance of various building materials to a project, to get introduced to various expressions of a building material, to introduce a student to the construction technologies relevant to the building materials chosen, to understand the scope and limitations of a building technique to achieve the desired form and space.
- **Building Services:** To understand the spatial and structural implications of basic services involved in building design.
- **Site :** To understand the site and its context, both immediate and wider, in order to enable students to take decisions of zoning, circulation within site, distribution of built and open spaces, activity relationships and adjacencies, and views.
- **Universal Design:** To understand the concept and principles of universal design.
- **Precedent Studies:** To introduce the students to learn from case, referral, live studies - process of observation, analysis, documentation and deriving inferences.

COURSE OUTLINE:

10. Designing of progressively complex spaces and buildings in terms of area, a specific community, typology, function etc, with emphasis on either scale or complexity of the project, or both.
11. Project could be evolved based on the current needs of the city and / or context responding to aspects like heritage and conservation, landscape and ecology, image and identity, etc.
12. Development of building design program from not only client or user's requirements but also in response to context specific factors like socio-economic, socio-cultural, environmental etc.
13. Introduction to develop a design philosophy/narrative as a thought process in design.
14. Analysing activities around the buildings within a campus and understand the same in context to relation of built form and open spaces, elements of landscape, pedestrian and vehicular movement, their segregation, managing sloping sites, contours, etc.
15. In case of multiple buildings (existing and/or proposed) to be accommodated within a site, analyse and understand their relationship with each other in context to establish continuity of form, construction, materials, design theme, climate, etc. and the same should reflect in the drawings and models.
16. Integrating functions, structure and services in a building with relevant structural system and its resultant effect on visual form / character of building
17. To understand various issues and aspects of sustainability, earthquake resistance, construction, universal accessibility, etc. and study how these could be integrated in the architectural design process.
18. To study a location in urban context preferably in a different socio-geographic setting other than the Institute (not mandatory), and document the study done in the tour in the form of a report with emphasis on relevant aspects like climate, social structure, culture, architectural typology, construction technology, urban fabric, economy, etc or any other issues which need to be considered for envisaging a design project in totality.

SESSIONAL WORK

Assessment Criteria: Major project should have 80% weightage and 20% weightage should be given to the minor project.

A] Major project:

System oriented project with emphasis on structural system, vertical and horizontal circulation, services like HVAC, electrical, fire-fighting systems, parking, rules &regulations etc. The project could also be evolved based on the need of the city with socio-economic context, historical context, ecological concerns, etc.

Deliverables:
i. Portfolio A - Architectural drawings at an appropriate scale preferably 1:200/1:100. And model to suitable scale.
ii. Portfolio B - Process drawings / tracings (Recommended)
iii. Study models of various stage (Recommended)

B] Minor project:

31. David Gosling, Gordon Cullen – Visions of Urban Design.
32. Bawa, G., & Robson, D. (2002). *Geoffrey Bawa: the complete works.* Thames & Hudson..
33. Scheer, B. C. (2017). *The evolution of urban form: Typology for planners and architects.* Routledge.
34. It is strongly recommended that students are exposed on the books on works of Master architects

Building Construction and Materials VI		
Course Code	3201946 [SV]	
TeachingScheme	ExaminationScheme	
TotalContact Hoursperweek (lectures=2 Studio=3, Total = 5)	Sessional [CIA 50 + EA 50] Viva [Int 25 + Ext 25]	100 50
	In semester exam	NIL
	End Semester exam	NIL
	TotalMarks	150
	Total Credits	06

COURSE OBJECTIVES:

- To introduce the design potential of steel as a material in building construction and it's inherent structural benefits.
- To create awareness with the best practices of steel as a construction material.
- To understand the concept of modular co-ordination and industrialized building construction along with precast technology.
- To understand issues and construction of earthquake resistant frame structures.

COURSE CONTENT:

UNIT I Metal and Metal alloys, Sheet roof covering

- Types of steel used in building construction- Use of Structural and non-structural steel for low and medium span building , their properties and advantages of steel in construction.
- Market forms of structural and non-structural steel.
- Use of lightweight steel for building construction.
- Built-up sections for structural purpose.
- Sheet roof coverings --Characteristics, Properties, market forms of sheet roof covering for medium and long spans and their application.

UNIT II Fencing and Gates

- Fencing using different materials like steel, barbed wire, chain-link, weld-mesh and other available materials in market.
- Construction details of fencing and suitable gate with due consideration to design parameters.

UNIT III Steel Trusses

- Understanding concepts of trusses, basic connections for trusses along with earthquake resistant features.
- Constructionof trusses for low rise medium span buildings.

UNIT IV Steel structure construction

- Understanding methods of construction of various components of steel structures; steel frame construction for multi-storey steel building.
- Construction details of assembly with stanchion, beams and metal deck flooring along with earthquake resistant features.
- Moisture and fire protections in steel framed buildings

UNIT V Modular co-ordination

- Concept of modular coordination for Industrialized building construction, planning andconstruction details
- Precast floor and roof construction along with the following systems developed by CBRI:

- Floor and roof construction using partially precast planks and joist.
- Floor and roof construction using precast Waffle unit.
- Introduction to locally available proprietary precast systems

UNIT VI Earthquake resistant frame structures.

- Overview of earthquake resisting structural systems.
- Application of Moment resisting frames, crossed braced frames and shear wall for Earthquake resistance structures.

SUBMISSION REQUIREMENT FOR SESSIONAL WORK: Hand drawn drawings on Units 3,4 and 5 to cover all the aspects of course outline in sufficient detail;; Assignments on units 1, 2,6 include sketches, notes, market survey and case-studies.

OUTCOME: Students will develop an understanding of possibilities of steel as an important building construction material. Understanding of properties of ferrous and non ferrous metals as materials for buildings will able students to use Steel innovatively in building projects.

RECOMMENDED READINGS:

- Central Public Work Department, Indian Building Congress. Handbook on Seismic Retrofit of Buildings.Narosa Publishing House. 2008
- Andrew Charleson. Seismic Design for Architects: Outwitting the Quake. Elsevier Ltd 2008
- Terri Meyer Boake. Understanding Steel Design: An Architectural Design Manual. Birkhauser Basel 2012.
- Stephen Emmitt. Barry's Advanced construction of buildings. Wiley, 2006

Pune District Education Association's
COLLEGE OF ARCHITECTURE
Sector 28, Pradhikaran, Akurdi, Pune - 411044.
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Approved by Council of Architecture, New Delhi (MH-96) Govt. of Maharashtra, DTE, Mumbai. (DTE Code 6897)
Ph. : 020-27650788, 25438705 | E-mail : principal@coa-pdea.org | Web. : www.coa-pdea.org

Building Services IV	
Course Code	3201950[P] & 3201951 [SS]
TeachingScheme	ExaminationScheme

TotalContact Hoursperweek (lectures=2 Studio=1, Total =3)	Sessional [CIA 25 + EA 25]	50
	In semester exam	30
	End Semester exam	70
	TotalMarks	150
	Total Credits	03

COURSE OBJECTIVES

- To comprehend building services as an integral part of architectural design process
- To obtain knowledge of fire safety provisions and aspects of good acoustics in architectural design

COURSE OUTLINE

- Properties of sound, strategies for reducing noise, aspects of treatments for good acoustical conditions
- Provisions for fire prevention, life safety and fire protection as per NBC 2016-Part 4

TEACHING PLAN

Unit I: Acoustics- 1

1.4 Generation and propagation of sound, properties of sound, human hearing ranges
1.5 Planning and design to control outdoor noise and indoor noise
1.6 Materials and construction for acoustical treatment, NRC and STC ratings

Unit II: Acoustics -2

2.1 Parameters for good acoustical conditions
2.2 Air and structure borne noise control

Unit III: Acoustics- 3

2.5 Reverberation time calculation and recommendation for acoustical treatment
2.6 Sound amplification systems

Unit IV: Fire prevention

4.1 The fire triangle, causes, impacts, basic terminology
4.2 Occupancy based classification of buildings, fire zones, construction types, fire rating requirements
4.3 Provisions for emergency power, escape lighting and exit signage,fire/smoke dampers
4.4 Provisions related to air conditioning,glazing, interior finishes, firecommand centre

Unit V: Life safety

5.1 Exit requirements, egress components
5.2 Compartmentalistion, provision for basements,gas supply, firedetection and alarm

Unit VI: Fire protection

6.1 Fire extinguishers/fixed firefighting installations, static water storage tanks, pump house, automaticsprinkler installations, automatic high velocity and medium velocity water spray systems, fixed foam installation, gas-based suppression system, automatic water mist systems

SESSIONAL WORK

- Tutorials for Units I to VI (50% marks)
- Reverberation time calculations and recommendations for acoustical treatment(25% marks)
- Design for provisions for fire prevention, life safety and fire protection (25% marks)

RECOMMENDED READING

- National Building Code of India 2016
- Architectural Acoustics - M. David Egan
- Architectural Acoustics: Principles and Design - Madan Mehta, James Allison Johnson, Jorge Rocafort
- Auditorium Acoustics and Architectural Design - Michael Barron
- Building Services Handbook- Fred Hall, Roger Greeno.

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सावित्रीबाई फुले पुणे विद्यापीठ

दूरध्वनी क्रमांक :
०२०-२५६९१२३३
२५६०१२५८
२५६०१२५९

शैक्षणिक विभाग
गणेशखिंड, पुणे-४११ ००७
टेलिग्राफ : 'युनिपुणे'
फॅक्स : ०२०-२५६९१२३३
वेबसाइट : www.unipune.ac.in
इ-मेल : boards@pun.unipune.ac.in

संदर्भ क्र. :सी.बी./इंजि / 903

दिनांक : 08/02/2014

परिपत्रक क्र. 94 / २०१५

विषय:— अभियांत्रिकी विद्याशाखेअंतर्गत B. Arch. and M. Arch. (Credit System) च्या नवीन अभ्यासक्रमांस व आराखडयास शैक्षणिक वर्ष २०१५-१६ पासून मान्यता देण्याबाबत..... .....

विद्यापीठ अधिकार मंडळाने घेतलेल्या निर्णयानुसार सर्व संबंधितांस या परिपत्रकाद्वारे कळविण्यात येते की, अभियांत्रिकी विद्याशाखेअंतर्गत B. Arch. and M. Arch. (Credit System) च्या खालील नवीन अभ्यासक्रमांस व आराखडयास शैक्षणिक वर्ष २०१५-१६ पासून मान्यता देण्यात येत आहे.

1. B. Arch. (2015 Course)
   - First and Second Year B. Arch.

2. M. Arch. (2015 Course):
   - M. Arch. (Landscape); M. Arch. (Environmental Architecture); M. Arch. (Digital Architecture); M. Arch. (Architectural Conservation) and M. Arch. (Computer Applications)

पुणे विद्यापीठाच्या सर्व संलग्न वास्तुशास्त्र महाविद्यालयांचे मा. प्राचार्य यांना विनंती की, सदर परिपत्रकाचा आशय सर्व संबंधित प्राध्यापक व विद्यार्थ्यांच्या निदर्शनास आणून द्यावा.

4/2/15
संचालकांकरिता
(म.वि.वि.मं)

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ेत माहितीसाठी व पुढील योग्य त्या कार्यवाहीसाठी:—

१. मा. अधिष्ठाता, अभियांत्रिकी विद्याशाखा
२. मा. संचालक, बी.सी.यु.डी.
३. मा. प्राचार्य, सर्व वास्तुशास्त्र महाविद्यालये
४. मा. संचालक, सर्व मान्यताप्राप्त संस्था
५. मा. परीक्षा नियंत्रक, पुणे विद्यापीठ
६. मा. संचालक, स्पर्धा परीक्षा केंद्र
७. मा. उपकुलसचिव, परीक्षा (१,२)
८. मा. सिस्टीम ॲनालिस्ट डेटा प्रोग्रेसिंग युनिट
९. मा. उपकुलसचिव, प्रवेश
१०. मा. उपकुलसचिव, विकास
११. मा. उपकुलसचिव, पात्रता
१२. सहाय्यक कुलसचिव (परीक्षा समन्वय)
१३. सहाय्यक कुलसचिव (परीक्षा—एस.ॲण्ड टी. विभाग)
१४. सहाय्यक कुलसचिव (गोपनीय कक्ष)
१५. सहाय्यक कुलसचिव (परदेशी विद्यार्थी केंद्र)
१६. सहाय्यक कुलसचिव (सभा दप्तर)
१७. कायदा अधिकारी
१८. जनसंपर्क अधिकारी
१९. कक्षाधिकारी (बहि:स्थ)
२०. कक्षाधिकारी (पात्रता विभाग)
२१. प्रमुख, विद्यापीठ उपकेंद्र : अहमदनगर, नाशिक.

वि.प. ठराव क्र. ब ४० पीए/४० /१४, दि. ३० डिसेंबर, २०१४

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सावित्रीबाई फुले पुणे विद्यापीठ
(पूर्वीचे पुणे विद्यापीठ)

दूरध्वनी क्रमांक :
०२०–२५६९१२३३
२५६०१२५८
२५६०१२५९

शैक्षणिक विभाग
गणेशखिंड, पुणे–४११ ००७
टेलिग्राफ : 'युनिपुणे'
फॅक्स : ०२०–२५६९१२३३
वेबसाइट : www.unipune.ac.in
इ–मेल : boards@pun.unipune.ac.in

संदर्भ क्र. सी.बी./इंजि. /34

दिनांक : 10/01/2017

परिपत्रक क्रमांक. 90 /२०१७

विषय :– तृतीय, चतुर्थ व पंचम वर्ष बी.आर्च २०१५ पॅटर्न अभ्यासक्रम शैक्षणिक वर्ष २०१७–१८ पासून लागू करण्यासंदर्भात.

विद्यापीठ अधिकार मंडळाने घेतलेल्या निर्णयानुसार सर्व संबंधितांस या परिपत्रकाद्वारे कळविण्यात येते की, तृतीय, चतुर्थ व पंचम वर्ष बी.आर्च २०१५ पॅटर्न अभ्यासक्रमास शैक्षणिक वर्ष २०१७–१८ पासून मान्यता देण्यात येत आहे.

सदर अभ्यासक्रम सावित्रीबाई फुले पुणे विद्यापीठाच्या www.unipune.ac.in या वेबसाईटवर Syllabi– Engineering या शीर्षकाखाली उपलब्ध आहे.

सावित्रीबाई फुले पुणे विद्यापीठाच्या सर्व संलग्न वास्तुशास्त्र महाविद्यालयांचे मा. प्राचार्य यांना विनंती की, सदर परिपत्रकाचा आशय सर्व संबंधित प्राध्यापक व विद्यार्थ्यांच्या निदर्शनास आणून द्यावा.

सेंचालकांकरिता
(म.वि.वि.मं)

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प्रत माहितीसाठी व पुढील योग्य त्या कार्यवाहीसाठी:—

१. मा. समन्वयक, अभियांत्रिकी विद्याशाखा
२. मा. संचालक, म.वि.वि.मं
३. मा. प्राचार्य, सर्व वास्तुशास्त्र महाविद्यालये
४. मा. संचालक, सर्व मान्यताप्राप्त संस्था
५. मा. परीक्षा नियंत्रक, सा. फु. पुणे विद्यापीठ
६. मा. संचालक, स्पर्धा परीक्षा केंद्र
७. मा. उपकुलसचिव, परीक्षा (१,२)
८. मा. सिस्टीम ॲनालिस्ट डेटा प्रोग्रेसिंग युनिट
९. मा. उपकुलसचिव, नियोजन व विकास
१०. मा. उपकुलसचिव, (पात्रता विभाग)
११. मा. उपकुलसचिव (सभा दप्तर)
१२. मा. संचालक (परदेशी विद्यार्थी केंद्र)
१३. सहायक कुलसचिव, शैक्षणिक प्रवेश विभाग
१४. सहायक कुलसचिव (गोपनीय कक्ष)
१५. सहायक कुलसचिव (परीक्षा—एस.ॲण्ड टी. विभाग)
१६. सहायक कुलसचिव (परीक्षा समन्वय)
१७. वरिष्ठ कायदा अधिकारी
१८. जनसंपर्क अधिकारी
१९. कक्षाधिकारी (बहि:स्थ)
२०. प्रमुख, विद्यापीठ उपकेंद्र : अहमदनगर, नाशिक.

वि.प. ठराव क्र. ब ०३ पीए/०३/२०१६, दि. २९ नोव्हेंबर, २०१६

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SAVITRIBAI PHULE PUNE UNIVERSITY

COURSE STRUCTURE

FIVE YEAR DEGREE COURSE IN ARCHITECTURE

[B.ARCH.]

TO BE IMPLEMENTED FROM 2015-16

BOARD OF STUDIES IN ARCHITECTURE

FACULTY OF ENGINEERING

COURSE STRUCTURE
FIVE YEARS DEGREE COURSE
BACHELOR OF ARCHITECTURE

As per the Council of Architecture guidelines approx. 75% course curriculum is prescribed. While remaining may be as per the individual philosophy of the institute. A total of 40 periods (45 min duration) per week per term shall be conducted for the course. Out of these 36 periods are specified below. 4 periods per week are given to the institutions to orient the course as per their own philosophy. Intensive study as per the institution's philosophy may also be done in addition to the detail syllabus in each subject.

The periods considered for calculating the teaching load are of 45 min duration. The credit calculation is based upon 60 minutes amounting to one credit.

Considering the peculiarity of Architecture Education, the studio load is considered equal to the lecture load as one to one contact with the students is desirable and hence credits are calculated by considering full load of lecture and studio periods.

The detail structure of the syllabus for the ten semesters course is given below.

(Note : SS= Sessional work ; PP=theory Paper ; SV = Sessional + Viva voce)

FIRST YEAR B.ARCH. SEM. I

Code	Subject	Teaching Scheme Periods/Week		Examination Scheme				Total Marks	Credits
		Lecture	Studio	In Semester	Sessional	Oral	End Semester		
1201501	Design I	3	7	--	200	50	--	250	7
1201502	Building Technology & Materials I (SV)	3	4	30			70	200	5
1201503	Building Technology & Materials I (PP)				50	50			
1201504	Theory of Structures I (PP)	1	2	30			70	100	2
1201505	Arch Drawing & Graphics I	2	5	--	100	--	--	100	4
1201506	Humanities	2	1	--	50	--	--	50	2
1201507	Introduction to Architecture	2	1	--	50	--	--	50	2
1201508	Workshop I	1	2	--	50	--	--	50	2
		14	22					800	24

FIRST YEAR B.ARCH. SEM. II

Code	Subject	Teaching Scheme Periods/Week		Examination Scheme				Total Marks	Credits
		Lecture	Studio	In Semester	Sessional	Oral	End Semester		
1201509	Design II	3	7	--	200	50	--	250	7
12015010	Building Technology & Materials II(SV)	3	4	30			70	200	5
12015011	Building Technology & Materials II (PP)				50	50			
1201512	Theory of Structures II	1	2	30			70	100	2
1201513	Arch Drawing & Graphics II	2	5	--	100	--	--	100	4
1201514	History of Architecture I	2	1	--	50	--	--	50	2
1201515	Climatology	2	1	--	50	--	--	50	2
1201516	Workshop II	1	2	--	50	--	--	50	2
		14	22					800	24

SECOND YEAR B.ARCH. SEM. III

Code	Subject	Teaching Scheme Periods/Week		Examination Scheme				Total Marks	Credits
		Lecture	Studio	In Semester	Sessional	Oral	End Semester		
2201517	Design III	3	8	--	200	50	--	250	7
2201518	Building Technology & Materials III(SV)	3	4	30			70	200	5
2201519	Building Technology & Materials III(PP)				50	50			
2201520	Theory of Structures III	1	2	30			70	100	2
2201521	Building Services I (SS)	2	2		50			150	3
2201522	Building Services I (PP)			30			70		
2201523	History of Architecture II	2	1	--	50	--	--	50	2
2201524	Arch Drawing & Graphics III	2	3	--	100	--	--	100	3
2201525	Surveying & Levelling	1	2	--	50	--	--	50	2
		14	22					900	24

PDEA's College Of Architecture Akurdi Pune 44

SECOND YEAR B.ARCH. SEM. IV

Code	Subject	Teaching Scheme Periods/Week		Examination Scheme				Total Marks	Credits
		Lecture	Studio	In Semester	Sessional	Oral	End Semester		
2201526	Design IV	3	8	--	200	50	--	250	7
2201527	Building Technology & Materials IV(SV)	3	4	30			70	200	5
2201528	Building Technology & Materials IV (PP)				50	50			
2201529	Theory of Structures IV	1	2	30			70	100	2
2201530	Building Services II (SS)	2	2		50			150	3
2201531	Building Services II (PP)			30			70		
2201532	History of Architecture III	2	1	--	50	--	--	50	2
2201533	Technical Communication	1	2		50			50	2
2201534	Working Drawing I	2	3		100			100	3
		14	22					900	24

THIRD YEAR B.ARCH. SEM. V

Code	Subject	Teaching Scheme Periods/Week		Examination Scheme				Total Marks	Credits
		Lecture	Studio	In Semester	Sessional	Oral	End Semester		
3201535	Design V	3	8	--	200	50	--	250	7
3201536	Building Technology & Materials V(SV)	3	4	30			70	200	5
3201537	Building Technology & Materials V (PP)				50	50			
3201538	Theory of Structures V	1	2	30			70	100	2
3201539	Landscape Architecture I	1	3		50			50	2
3201540	Building Services III (SS)	2	2		50			150	3
3201541	Building Services III (PP)			30			70		
3201542	History of Architecture IV	2	1	--	50	--	--	50	2
3201543	Working Drawing II	2	2		100			100	3
		14	22					900	24

PDEA's College Of Architecture Akurdi Pune 44

THIRD YEAR B.ARCH. SEM. VI

Code	Subject	Teaching Scheme Periods/Week		Examination Scheme				Total Marks	Credits
		Lecture	Studio	In Semester	Sessional	Oral	End Semester		
3201544	Design VI (SV)	3	8	--	200	50		350	7
3201545	Design VI (PP)			--	--	--	100		
3201546	Building Technology & Materials VI(SV)	3	4	30			70	200	5
3201547	Building Technology & Materials VI (PP)				50	50			
3201548	Theory of Structures VI	1	2	30			70	100	2
3201549	Landscape Architecture II	1	3		50			50	2
3201550	Building Services IV(SS)	2	2		50			150	3
3201551	Building Services IV (PP)			30			70		
3201552	Contemporary Arch Seminar	1	3	--	50	--	--	50	3
3201553	Elective I	1	2		50			50	2
		12	24					**950**	**24**

FOURTH YEAR B.ARCH. SEM. VII

Code	Subject	Teaching Scheme Periods/Week		Examination Scheme				Total Marks	Credits
		Lecture	Studio	In Semester	Sessional	Oral	End Semester		
4201554	Design VII	3	9		200	50		250	8
4201555	Advanced Building Technology and Services I	3	4		150	50		200	5
4201556	Professional Practice I	1	2	30			70	100	2
4201557	Urban Studies I	1	2		50			50	2
4201558	Research in Architecture I	1	2		50			50	2
4201559	Quantity Surveying and Estimation I	1	2	30			70	100	2
4201560	Specification Writing I	1	2	30			70	100	2
4201561	Elective II	1	1		50			50	1
		12	24					**900**	**24**

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THIRD YEAR B.ARCH. SEM. VI

Code	Subject	Teaching Scheme Periods/Week		Examination Scheme				Total Marks	Credits
		Lecture	Studio	In Semester	Sessional	Oral	End Semester		
3201544	Design VI (SV)	3	8	--	200	50		350	7
3201545	Design VI (PP)			--	--	--	100		
3201546	Building Technology & Materials VI(SV)	3	4	30			70	200	5
3201547	Building Technology & Materials VI (PP)				50	50			
3201548	Theory of Structures VI	1	2	30			70	100	2
3201549	Landscape Architecture II	1	3		50			50	2
3201550	Building Services IV(SS)	2	2		50			150	3
3201551	Building Services IV (PP)			30			70		
3201552	Contemporary Arch Seminar	1	3	--	50	--	--	50	3
3201553	Elective I	1	2		50			50	2
		12	24					**950**	**24**

FOURTH YEAR B.ARCH. SEM. VII

Code	Subject	Teaching Scheme Periods/Week		Examination Scheme				Total Marks	Credits
		Lecture	Studio	In Semester	Sessional	Oral	End Semester		
4201554	Design VII	3	9		200	50		250	8
4201555	Advanced Building Technology and Services I	3	4		150	50		200	5
4201556	Professional Practice I	1	2	30			70	100	2
4201557	Urban Studies I	1	2		50			50	2
4201558	Research in Architecture I	1	2		50			50	2
4201559	Quantity Surveying and Estimation I	1	2	30			70	100	2
4201560	Specification Writing I	1	2	30			70	100	2
4201561	Elective II	1	1		50			50	1
		12	24					**900**	**24**

FOURTH YEAR B.ARCH. SEM. VIII

Code	Subject	Teaching Scheme Periods/Week		Examination Scheme				Total Marks	Credits
		Lecture	Studio	In Semester	Sessional	Oral	End Semester		
4201562	Design VIII	3	9		200	50		250	8
4201563	Advanced Building Technology and Services II	3	4		150	50		200	5
4201564	Professional Practice II	1	2	30			70	100	2
4201565	Urban Studies II	1	2		50			50	2
4201566	Research in Architecture II	1	2		50			50	2
4201567	Quantity Surveying and Estimation II	1	2	30			70	100	2
4201568	Specification Writing II	1	2	30			70	100	2
4201569	Elective III	1	1		50			50	1
		12	24					**900**	**24**

FIFTH YEAR B.ARCH. SEM. IX

Code	Subject	Teaching Scheme Periods/Week		Examination Scheme				Total Marks	Credits
		Lecture	Studio	In Semester	Sessional	Oral	End Semester		
5201570	Practical Training	--	--	--	150	50	--	200	8
		--						**200**	**8**

FIFTH YEAR B.ARCH. SEM. X

Code	Subject	Teaching Scheme Periods/Week		Examination Scheme				Total Marks	Credits
		Lecture	Studio	In Semester	Sessional	Oral	End Semester		
5201571	Architectural Design Project	4	16	--	350	100	--	450	12
5201572	Elective IV	1	2		50			50	2
		5	18					**500**	**14**

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Fourth year 2015 Pattern

Semester VII

DRAFT SYLLABUS FOR APPROVAL OF FACULTY

DESIGN VII			
Subject Code		4201554 (SV)	
Teaching Scheme		Examination Scheme	
Total Contact Periods per week= 12 (lectures=3, Studio=9)	12	Sessional (Internal) Sessional (External) Viva (Internal) Viva (External)	100 100 25 25
		In-semester exam	nil
		End Semester exam	nil
		Total Marks	250
		Total Credits	8

Course Objective

Subject aims at preparing the students to handle complex architectural issues at this stage addressing various challenges in terms of scale, complexity of functions, social economic context, traffic and vehicular movement and so on. Along with the challenges of physical issues, students are also now expected to address spatial and visual language of their project with reference to the urban context and setting of their site.

Course Outline

- Multifamily Residential Development with Focus on : Mixed Use Development, Development of Communities, Addressing Issues of Social Stratification v/s Inclusiveness, Identification of target Group/ End User's requirement, Relation of Location/ Land values on Defining the Housing Product, Project being Part of the City Context, Green Initiatives, Efficient Planning of Services, Minimum Area 100 to 200 depending on Context and Complexity. Designed within parameters as laid out by Local Authority and NBC.
- One Esquee / Charette be undertaken in each of the Terms (One week Duration) exploring design solution for a project / component , ideas for which would help the Main Design project.

Submissions

The design has to be communicated through architectural graphics, two and three-dimensional sketches, models and narratives.

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ADVANCED BUILDING TECHNOLOGY AND SERVICES I			
Subject Code		4201555 (SV)	
Teaching Scheme		Examination Scheme	
Total Contact Periods per week= 07 (lectures=3, Studio=4)	07	Sessional (Internal) Sessional (External) Viva (Internal) Viva (External)	75 75 25 25
		In-semester exam	nil
		End Semester exam	nil
		Total Marks	200
		Total Credits	5

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COURSE OBJECTIVES:

- To introduce advanced structural systems, materials and services required in buildings with complex and special requirements and enable the students to integrate the same in design.

COURSE OUTLINE:

Unit 1 .Multi-basements. Design and construction of multi-basements giving constructional details required for natural Lighting, ventilation and surface water disposal. Study of various methods of access to parking areas other than ramps. Drawings to include application of all required services. [Minimum four A1 drawings]

- Unit 2. Industrial Buildings. : Types of roofing systems, PEB systems, Proprietary systems, Industrial flooring.
  Assignments. Drawings showing structural system, construction details and services in plan, section and elevation [minimum two A1 drawings]

- Unit 3. Swimming pools.
  Design and construction of swimming pools (Olympic size, semi Olympic, leisure pools) and study of situations such as -- at ground level , podium level and upper / roof level with reference to all constructional and services details. [Minimum two A1 drawings]

- Unit 4 Study of long span structures [indoor stadia, railway / metro stations, shopping malls, sky walks etc] in RCC and Steel to understand structural behavior. Introduction of lighting and ventilation of spaces in such large buildings.
  Assignment would comprise of Case study report and construction details in sketch form.

SESSIONAL WORK:

- Drawings / sketches / notes to be as mentioned in the course outline above. Computerized drawings may be allowed only when individual design / detailing is undertaken.

REFERENCE BOOKS

PEB manufacturer's details
Advanced Building Construction By MACKEY
Stadia by John Geraint

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URBAN STUDIES-I			
Subject Code		4201557 (SS)	
Teaching Scheme		Examination Scheme	
Total Contact Periods per week (lectures=1, Studio=2)	03	Sessional (Internal)	25
		Sessional (External) Viva (Internal)	25 nil nil
		In-semester exam	nil
		End Semester exam	nil
		Total Marks	50
		Total Credits	02

COURSE OBJECTIVES:

- To enable students to understand the urban context of an Architectural Project beyond the site and understand the implications of various factors (such as traffic-transportation, socio economics, urban landscape, spatial and visual aspects etc) influencing the development of an urban area.
- To introduce the students to urban planning and design theories and concepts and enable them to undertake planning and design of large scale land development.

COURSE OUTLINE:

- Introduction to urban studies and relevance of its learning in Architecture profession. Principles and theories of Urban Planning and Urban Design.
- Various aspects of urban land.
- Urban residential developments such as neighborhood planning, high-rise housing, slum rehabilitation, public housing, town planning schemes etc
- Affordable housing: introduction and concepts.

SESSIONAL WORK:

- **Handwritten journal** based upon the theory syllabus as above.
- **Assignments:**
  1. Subdivision of land for residential development (approx area 4Ha) –Individual submission (20 marks)
  2. Study of housing typologies as mentioned in course outline- Case study in a group of maximum 5 students (20 Marks)
  3. One Tutorial based upon course outline (10 marks)

REFERENCE BOOKS

1. Gallion, Arthur. ***The Urban Pattern***. New Delhi: CBS Publishers and Disrtibuters, 2003
2. Bacon, Edmund. ***Design of Cities*** London: Thames and Hudson, 1974
3. Paddison, Ronan. ***Handbook of Urban Studies***.London: sage Publications, 2001
4. Correa, Charles. ***Housing and Urbanisation***. London: Thames and Hudson, 2000.
5. Mohanty , Swati. ***Slum in India***. New Delhi:APH Publishing Corp.,2005.
6. Jagdale, Rohit. ***Slum Rehabilitation Schems in Mumbai***. University of Texas 2014.

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Fourth year 2015 Pattern

Semester VIII

DRAFT SYLLABUS FOR APPROVAL OF FACULTY

DESIGN VIII			
Subject Code		4201562(SV)	
Teaching Scheme		Examination Scheme	
Total Contact Periods per week= 12 (lectures=3, Studio=9)		Sessional (Internal) Sessional (External) Viva (Internal) Viva (External)	100 100 25 25
		In-semester exam	nil
		End Semester exam	nil
		Total Marks	250
		Total Credits	8

Course Objective

Subject aims at preparing the students to handle complex architectural issues at this stage addressing various challenges in terms of scale, complexity of functions, social economic context, traffic and vehicular movement and so on. Along with the challenges of physical issues, students are also now expected to address spatial and visual language of their project with reference to the urban context and setting of their site.

Course Outline [Project type 1 – one of the two options & Project type 2]

1. Study of Urban Areas in terms of Urban level issues like Mobility, movement network, builtform, disposition, character, identity, activities, open space networks, walkability, inclusiveness, etc.

Community participation initiatives and analysis.

Identify issues related to above aspects at Neighbourhood level and offer design solutions for improving the status of the neighbourhood with reference to the above aspects. Setting up of Guidelines to achieve the master plan objectives and broad implementation strategy to achieve sustainable neighbourhoods.

The project shall include a Study area and Master Plan area of 2- 3 Ha. with detailed Architectural Resolution of a component/s admeasuring not less than 10000 to 20000 sqm Area of Functional space depending on Context and Complexity.

The Architectural project should evolve of the study of the Area and be an outcome of issue formulation, Development Plan proposals for the area if any and a subset of the overall Master Plan for the Area.

OR

1. Multi Functional Complex of Buildings or Speciality Building in an Urban Context with substantial Complexity addressing Issues of Character, Identity, Builtform, Contextuality, Advanced Services, Green Initiatives , landscape integration, traffic management with impact on immediate surroundings, structural resolution in detail. Building Quantum not less than 10000 to 20000 sqm Area of Functional space depending on Context and Complexity and appropriate plot Area. (eg. Healthcare facility, Educational Institution, 5 Star Hotel, Convention Centre, Multimodal Transport Hub, Shopping Mall and Multiplex, redevelopment project etc.).

Project should explore the Impact on the Surrounds and from the Surrounds with reference to the Urban Insert being proposed.

2. One Esquee / Charette be undertaken in each of the Terms (One week Duration) exploring design solution for a project / component , ideas for which would help the Main Design project.

Submissions

The design has to be communicated through architectural graphics, two and three-dimensional sketches, models and narratives.

***

ADVANCED BUILDING TECHNOLOGY AND SERVICES II			
Subject Code		4201563 (SV)	
Teaching Scheme		Examination Scheme	
Total Contact Periods per week= 07 (lectures=3, Studio=4)	7	Sessional (Internal) Sessional (External) Viva (Internal) Viva (External)	75 75 25 25
		In-semester exam	nil
		End Semester exam	nil
		Total Marks	200
		Total Credits	5

COURSE OBJECTIVES:

- To introduce advanced structural systems, materials and services required in buildings with complex and special requirements and enable the students to integrate the same in design.

COURSE OUTLINE:

- Unit 1. .Auditoriums - Design and construction of Auditorium of min capacity 500 with provision of a balcony and application of all required services.
  All architectural drawings, framing plans and sections, showing all services and constructional detail for balcony [minimum four A1 drawings]

- Unit 2. Construction details of architectural features in design projects.
  Assignment -- Complete details with reference to materials used and details of construction. Minimum five working details to an appropriate scale. [Minimum 3 A1 size drawing].

- Unit 3. Introduction to high rise buildings.
  Behavior of high rise structures under different loading conditions. Understanding of structural systems for high rise structures. Assignment; Notes and sketches.

- Unit 4 Curtain walls-- Framing systems and construction details for a curtain wall.
  Assignment -- Students shall study cases of curtain wall and prepare working details for the same. [minimum one A1 size drawing].

SESSIONAL WORK:

- Drawings / sketches / notes to be as mentioned in the course outline above. Computerized drawings may be allowed only when individual design / detailing is undertaken.

REFERENCE BOOKS

Advance building construction by MACKEY
High Rise Buildings by JASWANT MEHTA
Theatres and Auditoriums byHarold Burris- Meyer &Edward Cole.
Architects Working Details

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3) Professional Practice - By Roshan H. Namavati
4) Professional Practice in India - By Madhav G. Deobhakta
5) Architectural Practice and Procedure - By Vasant .S. Apte

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Urban Studies-II			
SubjectCode		4201565 (SS)	
TeachingScheme		ExaminationScheme	
TotalContact Periodsperweek (lectures=1, Studio=2)	03	Sessional(Internal) Sessional(External) Viva (Internal) Viva (External)	25 25 nil nil
		In-semester exam	nil
		End Semester exam	nil
		TotalMarks	50
		Total Credits	02

COURSE OBJECTIVES:

- To introduce the students to the process of planning and urban development and associated legislation.
- To introduce the students to urban economics.

COURSE OUTLINE:

- Study of planning process in detail (Survey, analysis, proposals and development)
- Conservation and related Urban Design controls
- Planning and Urban Design legislation- introduction and relevance
- Unified Building bye laws and Development Control rules of local authorities.
- Urban economics: introduction and concepts (demand and supply, housing finance, Government schemes and various bodies etc)

SESSIONAL WORK:

- **Handwritten journal** based upon the theory syllabus as above.
- **Assignments**:
  1. Reading of Urban fabric: Study of existing town and town planning proposals for municipal council level town-(group work) (20 marks)
  2. Identification of urban issues related to various aspects such as environment, society, traffic and transportation, hills and hill slopes, riverfront development, urban heritage conservation through primary surveys(group work in a group of 5 students) (20 marks)
  3. One Tutorial based upon course outline (10 marks)

REFERENCE BOOKS

Urban Pattern: Arthur Gallion
City in History: Lewis Mumford
Spreriegen, Paul. Urban Design: ***The Architecture of Town and Cities.*** Malabar,FL-USAKrieger Publishing Co., 1967
Lynch, Kevin. ***The Image of The City*** London: The MIT Press, 1960
Book of Development Control Regulations by Local Municipal Corporation (latest edition available)
Book of AITP Exam study material: 'Planning Law and Legislation' by ITPI New Delhi
Guide to Planning Surveys including Landuse Classification: TCPO, Govt of India: 2004

Fifth year 2015 Pattern

Semester IX

DRAFT SYLLABUS FOR APPROVAL OF FACULTY

Practical Training		
Subject Code	5201570 (SV)	
Teaching Scheme	**Examination Scheme**	
Student should work for Total 120 working days in organization where architecture or its allied disciplines are practiced under supervision of a professional who is registered with COA India.	Sessional (Internal) Sessional (External) Viva (Internal) Viva (External)	75 75 25 25
	In-semester exam	NIL
	End Semester exam	NIL
	Total Marks	200
	Total Credits	8

Objectives:

- To undertake practical training under the guidance of experts / professionals.
- To Learn about architect's office management and learn about the process of design, execution and management of a project.

Course outline:

- Students should work in organization where architecture or its allied disciplines are carried under professional who is registered architect with COA
- In case a student undergoes Training at a firm outside India, the professional should be registered with the professional body governing practice in that country in addition to the registration with COA India.
- Total duration of Professional Training will be 120 working days in IX sem

Submissions :

- Prepare a separate report along with formal log book & work diary.
- Student should maintain week wise work record in a diary to summarize the work done in the office, site visits, meetings with clients, agencies, interaction with principal architect. This diary should be authenticated by the architect every week.
- Professionals should issue a certificate of performance to the student with respect to the work quality, overall approach, attitude towards office work.
- Students should produce report, log book, work diary & some drawings with permission from the employer [to indicate the kind of work s/he has carried out] at the time of sessional -viva voce examination.

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Fifth year 2015 Pattern

Semester X

DRAFT SYLLABUS FOR APPROVAL OF FACULTY

Elective IV			
SubjectCode		5201572 (SS)	
TeachingScheme		ExaminationScheme	
TotalContact Periodsperweek (lectures=1, Studio=2)	3	Sessional(Internal) Sessional(External) Viva (Internal) Viva (External)	25 25 NIL NIL
		In-semester exam	nil
		End Semester exam	nil
		TotalMarks	50
		Total Credits	2

COURSE OBJECTIVES:

The subject of Electives has been introduced in syllabus with specific intention of study of a particular subject of student's liking in greater detail but in the larger context of overall scope of Architecture syllabus at undergraduate level. This will give students an opportunity to develop their skills in a subject they may opt,to make their career in future.

Architecture professionals will have to deal with more and more complex buildings as well as organizational structures to realize a project .Architects need to be introduced to "Management Concepts" if they are to manage projects right from design stage through the documentation and construction stage.Acknowledging the fact that the Architectural Practice is a team effort and understanding the necessity of management in this field, the following elective topics have been suggested.

Note:This elective will not focus on design and technology aspects of the topics offered.

COURSE OUTLINE:

Individual College may offer topics depending upon the availability of experts and resource material. The colleges will have the opportunity to focus on a particular group of topics according to the overall philosophy and mission statement of the College. The probable management elective topics are as follows:

- Project Management
- Construction Management
- Environment and Energy management
- Architectural Design Management

SESSIONAL WORK:

The faculty is expected to set out the broad contour and sub aspects (including basic principles, case studies, application in building projects etc.) of the particular elective and conduct input and demonstration interactions and define the nature of the sessional work to be done by the students.

The students are expected to present the work done in an**A4 report format of 20 pages**, to include summary of interactions and sessional work prescribed by the faculty with a signed certificate from the concerned

Teacher / Expert stating that the study was carried out under his /her guidance and countersigned by the Principal / Academic coordinator.

Guidelines for content for the electives

Construction Management

Human Resource Management in Construction
Contracts and Claims Management
Construction Materials, Stores and Inventory Control and Technology Management
Construction Equipment Management
Construction Quality and Safety Management
Construction Site Administration and Control
Introduction to Computer applications for construction management

Project Management

Soft Skills in Project Management
Project Risk Management
Project Cost Estimation and Cost Control
Contracts and Claims Management
Project Procurement and Materials Management
Project Quality and Safety Management
Introduction to Computer Application in Contract Management

Environment and Energy Management

Environment and Energy Policies and Management in Indian Context
Environment Technology Management-Water and Waste Management Technologies
Energy Management in Buildings (Demand and Supply Management)
Building Management Systems

Architectural Design Management

Design Management
Drawing and Documentation Management
Computer Applications for Design Management

Architectural Design Project			
SubjectCode		5201571 (SV)	
TeachingScheme		ExaminationScheme	
TotalContact Periodsperweek=20 (lectures=4, Studio=16)	20	Sessional(Internal) Sessional(External) Viva (Internal) Viva (External)	175 175 50 50
		In-semester exam	nil
		End Semester exam	nil
		TotalMarks	450
		Total Credits	12

OBJECTIVE: To provide an opportunity to the students to apply the **knowledge gained** in earlier years to full-fledged Architectural Design project of student's choice with a holistic approach including background research, programme formulation, site selection investigations and design demonstration.

COURSE OUTLINE: The Architectural Design Project shall consist of **Design Demonstration** i.e. formulation of design programme, site investigation and selection, and culmination in architectural design proposal.

TOPIC FOR ARCHITECTURAL PROJECT: The topic for the project shall be approved by the Institute and guided by the Faculty. The student may consult external resource persons specializing in the chosen topic but the assessment shall be done by the faculty. **A guide** may guide upto EIGHT students during the session. In order to qualify to work as a Guide, the faculty must possess minimum of **ten** YEARS of teaching / professional experience.

SESSIONAL WORK:

The portfolio of the work submitted by the student shall contain MANUALLY LABOURED / COMPUTER GENERATED drawings **of sheet sizes as per international standards** and a PHYSICAL MODEL explaining the architectural proposal. Alongwith the drawings A4/A3 size report consisting of the background and rationale of the project, the methodology and the prints of the final proposal shall be submitted after the oral examination, to be kept in the library of the college. The choice of the size of the report is left to the institute , however, within one institute report size should be constant.

In addition the student may show other presentations like 3D views, walkthroughs etc. if permitted by the examiners.

SESSIONAL ASSESSMENT:

The Internal assessment of architectural project shall be carried out STAGE WISE as decided by the college. The final assessment in the examination shall be done by both Internal and External examiner in which the student shall display the work on the space allotted to him/her and explain his work and answer all the queries raised by the examiner.

The examiners shall assess the work done and presented by the student, duly approved by the Faculty. The drawings and models, duly stamped and signed by the Faculty shall be treated as authentic work done by the student under the guidance of the Faculty. The student may submit sufficient number of drawings required to satisfactorily explain the project. The student shall also present a separate portfolio of study & process sheets, study models etc.

ORAL EXAMINATION : The oral shall be held in the physical presence of the student in **examination centre of the candidate** jointly by the internal and external examiners. The student shall be allowed to present his project for minimum 10 minutes without any interruption. The student shall be judged for the depth of understanding of the subject and clarity of graphical presentation of the project.

RECOMMENDED READING:

All books relevant to the topic of the architectural project.

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1.3.1.

Institution integrates crosscutting issues relevant to Professional Ethics, Gender, Human Values, Environment ond Sustainability into the Curriculum.

C) List of topics in Architectural Design Project course in B.Arch Programme which addresses crosscutting issue (From AY 2017-2018 TO 2021-2022)

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C) List of topics in Architectural Design Project course in B.Arch Programme which addresses crosscutting issue (From 2018-2022).

The Institution integrates various crosscutting issues relevant to Professional Ethics, Gender, Human Values, Environment and Sustainability into the Curriculum. The fifth year students are also encouraged to research on the above issues as a part of Architectural Design Project [5201571(SV) 2015 Syllabus] and Architectural Project Part II [513422 (SV) 2008 Syllabusl.
Following students of Fifth year Architecture, worked on various crosscutting issues relevant to Professional Ethics, Gender, Human Values, Environment and Sustainability Under Architectural Design Project.

Academic Year: 2020-21
Architectural Design Project [5201571(SV) 2015 Syllabus] Semester: II

Professional Ethics, Gender, Human Values, Environment ond Sustainability

Sr. No.	Name	Name Of Thesis Topic	Crosscutting Issues
1	Ahir Tejas Shivram	Para-Olympic Training & Cultural Centre, Gahunje, Pune.	Human Values/ Gender
2	Bagade Mayuri Sharad	Adhar Kendra At Shirur, Pune.	Human Values
3	Dasari Yuga Ramesh	Meditation Center	Human Values
4	Garibe Omkar Kailas	Drug Rehabilitation Center,Badlapur	Human Values/ Gender
5	Gelot Nutan Bharat	Art And Design School, Pashan, Pune	Human Values/ Gender
6	Jagtap Leena Vikas	Vedic Gurukul- The Skills Nd Development Institute At Pandharpur	Human Values
7	Kamthe Siddhi Sanjay	Cancer Hospice At Pune	Human Values/ Professional Ethics
8	Kanade Ankita Sandip	Park -Developed By Morde Cadbury Factory At Manchar	Human Values
9	Khairnar Sayali Keshavrao	School And Hostel Facilities For Migrant Children At Nashik	Human Values/ Gender
10	Limkar Aditya Subhash	Forest Tourist Centre At Radhanagari	Human Values/ Gender
11	Mungse Rutuja Ramesh		Human Values/ Gender
12	Nighojkar Prajwal Avinash	Trauma Care Centre	Human Values/ Professional Ethics
13	Pakhale Pooja Rajendra	Eco Tourism Center With Cultural Background, At Jawhar, Palghar	Human Values, Environment and Sustainability

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14	Parmar Shubham Harshad	Bussiness And Education Incubation Centre At Navibmumbai	Human Values/ Professional Ethics
15	Patil Neha Netaji	Cancer Hospital At Pune	Human Values/ Professional Ethics
16	Patil Shweta Sanjay	Residential School Cums Skill Development Centre At Buldhana	Human Values/ Gender
17	Pote Saurabh Bhagwat	Architectural Museum	Human Values/ Professional Ethics
18	Shelar Bhushan Prakash	Institute Of Cinematic Arts	Human Values/ Professional Ethics
19	Shirvandkar Gayatri Mangesh	Urban Haat	Human Values
20	Tanksale Vaidehi Shridhar	Tribal Residential School, Pune	Human Values, Environment and Sustainability
21	Thotangare Kimaya Ashok	Cultural And Tourist Hub At Chikhaldara	Human Values
22	Ubale Vaishnavi Vinod	Bird Sanctuary At Bhigwan	Environment ond Sustainability
23	Waghere Vishwajeet Dnyaneshwar	Commercial Complex (It Park)	Professional Ethics

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1.3.1. Institution integrates crosscutting issues relevant to Professional Ethics, Gender, Human Values, Environment ond Sustainability into the Curriculum.

D) List of events/ Programme/workshops/seminars etc.. organised by institute in B. Arch programme which addresses crosscutting issues(from 2017-18 to 2021- 22).

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D) List of events/ Programme/workshops/seminars etc.organised by institute in B. Arch programme which addresses crosscuttinB issues(from 2017-18 to 2021- 22).

SR.NO	List Topic of program/Event/ workshop,/seminar etc.. Organised by institute	Date	Crosscutting Issues
	Academic Year 2021-22		
1.	Heritage walk – 3 (Morya Gosavi Temple)	07-12-2022	Human Values
2.	Seminar on "Art n skills"	21-09-2022	Professional Ethics
3.	Plumbing & Sanitation Site Visit (Bosch)	13/09/2022	Professional Ethics
4.	Seminar on " Student Betterment"	07-09-2022	Professional Ethics
5.	Advance Software Skill Development	24/04/2022	Professional Ethics
6.	Poster making on Earth Day – Presentation Skill	22/04/2022	Environment ond Sustainability
7.	Heritage Quiz and Sketching Competition	18/04/2022	Human Values
8.	Women's Defence Program	25/03/2022	Gender
9.	Heritage Walk - 4 (Bhausaheb rangari wada)	23/02/22	Human Values
10.	Farewell – Yugantar	18-02-2022	Human Values
11.	Grooming Session of Career in Urban Conservation	18/02/22	Professional Ethics
12.	Lata Mangeshkarji Abhivedan Programme	06/02/2022	Human Values
13.	Architectural Quiz – Soft Skills	05-02-2022	Professional Ethics
14.	Guest Lecture on "Hotel & Resort Design"	17-01-2022	Professional Ethics
15.	Sketch up Software Training Program	10/01/2022	Professional Ethics
16.	Fresher's Welcome – Yugantar	08-01-2022	Human Values
17.	Swachhta Abhiyan at Bhide Bridge Pune	13/12/2021	Environment ond Sustainability
18.	Structural Manifestation Art Fest	07-11-2021	Professional Ethics
19.	Vachan Prerana Din	18/10/2021	Human Values
20.	Dandiya Festival	04-10-2021	Human Values
21.	Ganesh Festival	10-09-2021	Human Values
22.	Rangoli Competition	07-09-2021	Human Values
23.	Yoga Day Celebration - 2021	21/06/2021	Human Values
24.	Auto Cad Institutional Training Program	21/04/2022 to 29/04/2022	Professional Ethics

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Academic Year 2020-21			
1.	Research Avishkar Competition	22/12/2020	Professional Ethics
2.	Building Technology and Materials Workshop RCC Slab and Staircase Models Workshop	12/02/2020	Professional Ethics
3.	Seminar Sketchup Software	20//01/2020	Professional Ethics
4.	Visit to the fire station @ Pimpri	05/01/2020	Professional Ethics
5.	Site Visit Moraya Temple	05/02/2020	Human Values
6.	Site Visit BS-I SWM	31-01-2020	Environment ond Sustainability
7.	Architectural Quiz	05/02/2021	Professional Ethics
8.	Grooming Session of career in Urban Conservation	18/02/2021	Professional Ethics
9.	Auto Cad Institutional Training Program	12/08/2019 to 04/09/2019	Professional Ethics
Academic Year 2019-20			
1.	Chhatrapati Shivaji Maharaj Jayanti Celebration	10/03/2020	Human Values
2.	Sankranti Kite Making Competition	15-01-2020	Human Values
3.	Annual Cultural Fest - 2019	27-12-2019	Human Values
4.	Green and Clean Campus Campaign	10/12/2019	Environment ond Sustainability
5.	Site Visit - Pabal	21/11/2019	Human Values
6.	Study Tour Report(3rd Year)	19/11/2019 to 26-/11/2019	Human Values
7.	Heritage walk site visit -Krishna Mandir	19/09/2019	Human Values
8.	Fresher's Welcome - Tarang 2019	31-08-2019	Human Values
9.	Auto Cad Institutional Training Program	12/08/2019 to 04/09/2019	Professional Ethics
10.	Site visit - BS-I STP	03/07/2019	Professional Ethics
11.	Plaster of Paris(POP)	31/08/2019	Professional Ethics
12.	Yoga Day Celebration - 2019	21/06/2019	Human Values
Academic Year 2018-19			
1.	Women Empowerment on the occasion of Women's Day Celebration	08/03/2019	Gender
2.	Traditional Day	22-01-2019	Human Values
3.	Cultural - Heaven & Hell Day	17-01-2019	Gender

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4.	Best Photography & Painting Competition	20-01-2019	Professional Ethics
5.	Sports Events	23-11-2018	Human Values
6.	Yoga Day Celebration - 2018	21/06/2018	Human Values
7.	Umbrella Workshop	11/08/2018	Human Values
8.	Student Skill Development Seminar	07/09/2018	Professional Ethics
9.	Pottery Workshop	27/10/2018	Human Values
10.	Plastic and Garbage Collection Campaign	28/10/2018	Environment ond Sustainability
11.	Brick Workshop	27/10/2018	Professional Ethics
12.	POP Workshop	8/09/2018	Professional Ethics
13.	Shivarajya Abhishek Celebration	06/06/2018	Human Values
Academic Year 2017-18			
1.	Chhatrapati Shivaji Maharaj Jayanti	19/02/2018	Human Values
2.	Technical Communication	31/01/2018	Professional Ethics
3.	Annual Cultural Fest - 2018	18-01-2018	Human Values
4.	Indoor Sports Games - 2018	16-01-2018	Professional Ethics
5.	Mind Power Training Workshop	01/09/2017	Professional Ethics
6.	GANPATI WORKSHOP	26 /09/2017	Human Values
7.	Sketching Session at M orya Gosavi Temple, Chinchwad, Pune.	11 /10/2017	Professional Ethics
8.	Brick Workshop	26 /11/2017	Professional Ethics
9.	Surya Namaskar Activity	14/12/2017	Human Values

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