SCHOOL OF ARCHITECTURE AND PLANNING

Master of Architecture (General)

Programme Code: SAP0101
Duration- 2 Years Full Time

PROGRAM STRUCTURE

AND

CURRICULUM & SCHEME OF EXAMINATION

2019-20

1.1 Vision, Mission and Core Values of the University

Vision of the University

To serve the society by being a global University of higher learning in pursuit of academic excellence, innovation and nurturing entrepreneurship.

Mission of the University

1. **Transformative educational experience**
2. **Enrichment by educational initiatives that encourage global outlook**
3. **Develop research, support disruptive innovations and accelerate entrepreneurship**
4. **Seeking beyond boundaries**

Core Values

- **Integrity**
- **Leadership**
- **Diversity**
- **Community**

1.2 Vision and Mission of the School

Vision of the School

To be amongst the top institutes in India imparting quality education and professional skills to the students to emerge as architects of global caliber and thus the society in large.

Mission of the School

1. To create and sustain a stimulating and responsive academic inclusive environment.
2. To regularly enhance the teaching contents & techniques in keeping with current and future trends.
3. To provide a competitive and career oriented programme.
4. To encourage students to be socially responsive and responsible architects.

Core Values

- Critical Thinking and Observation
- Analytical Skills
- Creativity
- Integrity to uphold authentic building traditions and architecture principles

1.3 Programme Educational Objectives (PEO)

PEO1 : To equip the students with the basic knowledge about the evolution of architecture as a distinct body of knowledge.
PEO2 : To sensitize the students about the specialized components within the field of architecture that are required to be integrated for a successful professional practice.
PEO3 : To familiarize the students with various levels of complexities of architectural design .
PEO4 : To ensure awareness amongst the students regarding architectural design as a functions of natural & cultural context.
PEO5 : To ensure familiarity amongst students about the current techniques and their validity related to good architecture.
PEO6 : To strengthen entrepreneurial and innovation culture among students.

1.3.3 Program Outcomes (PO's)

PO1: Architectural Knowledge

PO2: Critical thinking and Analysis

PO3: Problem solving and Design Development Skills

PO4: Communication and Display

PO5: Environment and sustainability

PO6:Professional Ethics

School of Architecture and Planning

Batch 2019-21

Program: MASTER OF ARCHITECTURE (GENERAL)

TERM: 1

S.No.	Subject Code	Subjects	L	T	P	Credits	Remarks
Jury Subjects							
1	MAJ 101	Design Studio – I	2	2	6	12	Compulsory
2	MAJ 102	Research Methodology I	4	0	0	4	Compulsory
3	MAJ 103	Theory & Criticism -I	2	0	0	2	Compulsory
4	MAJ 104	Digital Fabrication 1	0	2	2	4	Compulsory
		Total Credits				22	

School of Architecture and Planning

Batch 2019-21

Program: MASTER OF ARCHITECTURE (GENERAL)

TERM: 2

S.No.	Subject Code	Subjects	L	P	S	Credits	Remarks
Jury Subjects							
1	MAJ 111	Design Studio – II	2	2	6	12	Compulsory
2	MAJ 112	Research Methodology II	4	0	0	4	Compulsory
3	MAJ 113	Digital Fabrication II	0	2	2	4	Compulsory
4	MAJ 114	Theory & Criticism –II	2	0	0	2	Compulsory
		Total Credits				22	

School of Architecture and Planning

Batch 2019-21

Program: MASTER OF ARCHITECTURE (GENERAL)

TERM: 3

S.No.	Subject Code	Subjects	L	T	P	Credits	Remarks
JURY SUBJECTS							
1	MAR 201	Design Studio -3	2	-	12	8	Compulsory
2	MAR 205	Dissertation	1	2	-	2	Compulsory
3	MAR 203	Architectural Evaluation & Documentation	2	1	-	2	Compulsory
THEORY SUBJECTS							
4	MAR 202	Resource Conserving Architecture	2	1	1	3	Compulsory
5	MAR 204	Advanced Building Services - II	2	1	1	3	Compulsory
6	MAR 206	Elective -1 Traffic & Transport Design	2	1	-	3	Compulsory
7	MAR 207	Elective -2 Infrastructure Services					
					Total Credits	21	

School of Architecture and Planning

Batch 2019-21

Program: MASTER OF ARCHITECTURE (GENERAL)

TERM: 4

S.No.	Subject Code	Subjects	L	T	P	Credits	Remarks
PRACTICAL							
1	MAR 212	Architectural Design Thesis	4	5	14	16	Compulsory
THEORY							
2	MAR 213	Legislation, Policies & Arch. Practice	2	-	-	2	Compulsory
3	MAR 214	Elective-1 Finance & Economics In Building Industry	2	-	-	2	Compulsory
4	MAR 215	Elective-2 High Rise Buildings					
					Total Credits	20	

MAJ 101- Design Studio-1

School: SUSAP		**Batch : 2019-21**
Program: M.ARCH		**Current Academic Year:** 2019-20
Branch:		**Semester:1**
1	Course Code	MAJ 101
2	Course Title	Design Studio-1
3	Credits	12
4	Contact Hours (L-P-S)	2-2-6
	Course Status	Compulsory
5	Course Objective	• Exploring and designing for city level • Understanding the language of city spaces, plazas, etc in architectural design Learn about the different elements of urban design
6	Course Outcomes	CO1: students should develop skills of drawing and representation CO2: to assimilate learning of graphics, construction, structures and computers to apply to basic design. CO3: Explore creative processes and idea generation and demonstrate critical evaluation of these processes in their projects. CO4: Appraise how design can impact, interact with, and improve environments. CO5: Understand spaces with three-dimensional visualization through the use of block models and appropriate softwares.
7	Course Description	Architectural Design Project of a large magnitude in one of or similar categories of building typology emphasizing on need of Advance construction techniques and using modular co-ordination, pre-fabricated elements and technology.
8	Outline syllabus	
	Unit 1	Design Problem
	A	Introduction to Project
	B	Form and material based investigation
	C	Understanding spatial aspects based on activity, space, form and human scale
	Unit 2	Literature & Case Study
	A	Pre design study-Case study
	B	Pre design study -Literature Study, Site Analysis.
	C	Functional standards.

	Unit 3	Concept Development		
	A	Concept formulation and idea investigation		
	B	Preparation of design requirements, area requirements based on standards and their interrelation and circulation patterns.		
	C	Concept Formulation, Bubble Diagram and activity zoning.		
	Unit 4	Design Development		
	A	Design development- site development		
	B	Design development- floor Plans		
	C	Design development- sections and elevations		
	Unit 5	Design Presentation		
	A	Design sheets presentation		
	B	Model making on appropriate scale		
	C	Final portfolio submission		
	Mode of examination	Theory		
	Weightage Distribution	CA	MTE	ETE
		60%	0%	40%
	Text book/s*			
	Other References			

MAJ 102: RESEARCH METHODOLOGY -I

School: SAP		**Batch : 2019-21**
Program: M.Arch		**Current Academic Year: 2019-20**
Branch: General		**Semester: I**
1	**Course Code**	MAJ 102
2	**Course Title**	**Research Methodology I**
3	**Credits**	4
4	**Contact Hours (L-P-S)**	4-0-0
	Course Status	**Compulsory**
5	**Course Objective**	After successful completion of this course, student should be able to: • define the necessity of appropriate research • understand with the methods of conducting research • know the technical writing
6	**Course Outcomes**	CO1: to recognize the subjective and objective aspects of research CO2: to identify objectives and working out methodologies CO3: to relate to and analyse the structure of a research paper CO4: to compose the research in a clear and concise format easily accessible to a range of reader
7	**Course Description**	The aim of this course is to prepare the students to do research in the field of architecture. They are familiarized with academic writing standards and ethical aspects of academic research.
8	**Outline syllabus**	
	Unit 1	**Foundations of Research**
	1a	Meaning, Motivation, Utility of research in architecture
	1b	Objective and characteristics of research

	1c	Research and scientific method
	Unit 2	**Types of Research**
	2a	Descriptive vs. Analytical Research
	2b	Applied vs. Fundamental Research
	2c	Review of projects of design complexity, involving themes, subthemes and architectural expression
	Unit 3	**Tools and Techniques**
	3a	Used for collecting data (observational studies, surveys, interviews) and analysing data.
	3b	Multivariate analysis and software applications) for different research methods
	3c	Software for paper formatting, Software for detection of Plagiarism
	Unit 4	**Literature Review**
	4a	Need and process of literature review
	4b	Style of referencing and bibliography
	4c	Literature review writing
	Unit 5	**Citation methods and rules**
	5a	Foot note, text note, end note
	5b	Bibliography
	5c	Citation rules: MLA, APA, Chicago, Blue Book, OSCOLA
	Mode of examination	**Jury**

	Weightage Distribution	**CA**	**MTE**	**ETE**
		50%	-	50%
	Text book/s*	• Ross, R., "Research: An Introduction", Barnes and Noble Books. • Khanzode, V. V., "Research Methodology – Techniques and Trends", APH Publishing. • Kothari, C. R., "Research Methodology – Methods and Techniques", New Age International. • Knight, A. and Ruddock, L., "Advanced Research Methods in Built Environment", John Wiley & Sons.		
	Other References			

MAJ 103 – THEORY OF CRITICISM -I

School: SAP		**Batch : 2019-21**
Program:M.Arch		**Current Academic Year: 2019-20**
Branch:Architecture		**Semester: 1**
1	Course Code	MAJ 103
2	Course Title	Theory and Criticism I
3	Credits	2
4	Contact Hours (L-P-S)	2-0-0
	Course Status	Compulsory
5	Course Objective	To deliver knowledge and information about significant issues in current disciplinary thinking, as well as with the philosophical, political, and material contexts for works of art and architecture through different centuries.
6	Course Outcomes	CO1: To identify various architectural theorist and their theories during 17th to 19th century CO2: To evaluate various perspective of architectural theories CO3: To distinguish the different styles and theories of art CO4: To criticise and critique works and theories of various architectural theorists.
7	Course Description	This course aims to familiarize the students with various architectural theorists and their theories during 17th to 19th century. The course explores the description of literary theories, from wide domain of art, architecture, archaeology and criticism. It also includes various styles through time.
8	Outline syllabus	
	Unit 1	**Renaissance & Beyond: Works of Erwin Panofsky**
	A	Perspective as symbolic Form
	B	Meaning in the Visual Art
	C	Renaissance and Gothic Art
	Unit 2	**The Critique of Typology/ Language**
	A	Jean-Nicolas-Louis Durand
	B	Gintio Carlo Argan
	C	Quatremere de Quinchy
	Unit 3	**Late 19th Century Problem of Iron and Glass**

	A	In what style should we build	
	B	Sigfried Giedion	
	C	Mechanization takes command	
	Unit 4	**Space as Aesthetic Category**	
	A	August Schmarsow	
	B	Alois Riegl	
	C	Heinrich Wolfflin	
	Unit 5	**Production / Power**	
	A	Michel Foucault : Heterotopia	
	B	Henri Lefebvre: Production of Space	
	C	Manuel Castells: Urban Network	
Mode of examination	Jury		
Weightage Distribution	**CA**	**MTE**	**ETE**
	50%	-	50%
Text book/s*			

MAJ 104- Digital Fabrication-1

School: SUSAP		**Batch : 2019-21**
Program: M.ARCH		**Current Academic Year:** 2019-20
Branch:		**Semester:1**
1	Course Code	MAJ 104
2	Course Title	Digital Fabrication-1
3	Credits	4
4	Contact Hours (L-P-S)	0-2-2
	Course Status	Compulsory
5	Course Objective	The focus will be on invention rather than application of predefined ideas. With this approach this course is assumed to become a centre of innovative ideas as a solution for the conventional and future problems. This will bring the academic world of architecture in the forefront of design explorations and theories to have great impact on the professional world as an expected outcome. Students will be introduced to the machines and the workability of it. They are expected to the practical work more than the modeling and theoretical studies. The models will be assessed based on the detailing of the form on the basis of innovative joinery details and fixings and material combinations.
6	Course Outcomes	**CO1**. Understand the new modeling technique called as Associative modeling will be taught as one of the approach for form development. As a result the software plays a different role than replicating ideas in to 3D form. It becomes the base to develop digital concepts. **CO2.** Advance command where students will be given different small exercises which will be based on the primary stage form development in the 3D Modeling software. This work will be assessed on the basis of digital concept development and not on the rendering

		criteria's of the software. Formation of new tools, application and inter compatibility of the software will be analyzed. **CO3:** Outputting and settings, Render output in 3D views.		
7	Course Description	The interdependencies of software and machines will be explained in this module. The technical details of how the hardware works with the software for future modification suggested on analytical thinking will be possible.		
8	Outline syllabus			
	Unit 1	**Introduction to Digital Architecture 3D Modeling**		
	A	Basic 3D Interface with working tools, Mesh modeling, 2D Splines, navigating 3dsmax space, and working with objects.		
	B	Coordinate Systems, Arrays, Modifier stack – bend, Compound objects - Boolean, loft, etc., Basic Cameras.		
	C	Assignment		
	Unit 2	**Develop and create 3D Visualization and Animation**		
	A	Advance 3D Modeling and tools		
	B	Material mapping and techniques with Basic lights		
	C	Assignment		
	Unit 3	**Advanced Materials, Radiosity, Light Tracer, and Photoshop**		
	A	External References		
	B	Material properties and associated map parameters		
	C	Light tracing		
	Unit 4	**Efficiency in Rendering and Presentation Preparation**		
	A	Presentation Issues		
	B	InDesign, Photoshop		
	C	Advance layouts		
	Unit 5	**Presentation Preparation Continued with Render output**		
	A	Presentation Issues		
	B	Multi-view Orthographic Projection with Projection Techniques		
	C	Render Output and techniques		
	Mode of examination	Jury		
	Weightage Distribution	CA	MTE	ETE
		50%	0%	50%
	Text book/s*			
	Other References			

MAJ 111 - Design Studio-II

School: SUSAP		**Batch : 2019-21**
Program: M.ARCH		**Current Academic Year:** 2019-20
Branch:		**Semester:2**
1	Course Code	MAJ 111
2	Course Title	Design Studio-II
3	Credits	12
4	Contact Hours (L-P-S)	2-2-6
	Course Status	Compulsory
5	Course Objective	• Exploring and designing for city level • Understanding the language of city spaces, plazas, etc in architectural design Learn about the different elements of urban design
6	Course Outcomes	CO1: students should develop skills of drawing and representation CO2: to assimilate learning of graphics, construction, structures and computers to apply to basic design. CO3: Explore creative processes and idea generation and demonstrate critical evaluation of these processes in their projects. CO4: Appraise how design can impact, interact with, and improve environments.
7	Course Description	Architectural Design Project of a large magnitude in one of or similar categories of building typology emphasizing on need of Advance construction techniques and Advance Building services like: Projects for High end hospitality industry, Super specialty hospitals, Airports & mass transportation terminals, Research laboratories, High end IT parks & establishments, High rise buildings, State Secretariat and assembly, etc.
8	Outline syllabus	
	Unit 1	Design Problem
	A	Introduction to Project
	B	Form and material based investigation
	C	Understanding spatial aspects based on activity, space, form and human scale
	Unit 2	Literature & Case Study
	A	Pre design study-Case study
	B	Pre design study -Literature Study, Site Analysis.
	C	Functional standards.
	Unit 3	Concept Development

	A	Concept formulation and idea investigation		
	B	Preparation of design requirements, area requirements based on standards and their interrelation and circulation patterns.		
	C	Concept Formulation, Bubble Diagram and activity zoning.		
	Unit 4	Design Development		
	A	Design development- site development		
	B	Design development- floor Plans		
	C	Design development- sections and elevations		
	Unit 5	Design Presentation		
	A	Design sheets presentation		
	B	Model making on appropriate scale		
	C	Final portfolio submission		
	Mode of examination	Jury		
	Weightage Distribution	CA	MTE	ETE
		50%	0%	50%
	Text book/s*			
	Other References			

MAJ 112 : Research Methodology- II

School: SAP		**Batch : 2019-2021**
Program: M.Arch		**Current Academic Year: 2019-20**
Branch: General		**Semester: 2**
1	**Course Code**	MAJ 112
2	**Course Title**	**Research Methodology- II**
3	**Credits**	4
4	**Contact Hours (L-P-S)**	4-0-0
	Course Status	**Compulsory**
5	**Course Objective**	After successful completion of this course, student should be able to: • define the necessity of appropriate research • understand with the methods of conducting research • know the technical writing
6	**Course Outcomes**	CO1: to recognize the subjective and objective aspects of research CO2: to identify objectives and working out methodologies CO3: to relate to and analyse the structure of a research paper CO4: to compose the research in a clear and concise format easily accessible to a range of reader
7	**Course Description**	The course aims to establish the understanding of research through critical exploration of research language, methods and tools and techniques.
8	**Outline syllabus**	
	Unit 1	**Introduction**
	1a	Research in architecture- its importance and scope; Areas of research and types of research in architecture
	1b	Research process- identification of problem, formulation of research questions and hypothesis, collection of evidences and data analysis

	1c	Methods of inquiry		
	Unit 2	**Research process**		
	2a	Basic Overview		
	2b	Formulating the research problem		
	2c	Defining the research problem		
	Unit 3	**Research Methods**		
	3a	Research types: Quantitative vs. Qualitative Research		
	3b	Research types: Conceptual vs. Empirical Research		
	3c	Research Techniques and Tools: Questionnaire, Interview, Observation, Schedule, Check-list, Library records, Reports.		
	Unit 4	**Formulation of Hypothesis**		
	4a	Sources of hypothesis		
	4b	Characteristics and role of hypothesis		
	4c	Tests of Hypothesis		
	Unit 5	**Technical Report Writing**		
	5a	Research report writing		
	5b	Style Manuals		
	5c	IPR and Plagiarism		
	Mode of examination	**Jury**		
	Weightage Distribution	**CA**	**MTE**	**ETE**
		50%	-	50%

	Text book/s*	• Ross, R., "Research: An Introduction", Barnes and Noble Books. • Khanzode, V. V., "Research Methodology – Techniques and Trends", APH Publishing. • Kothari, C. R., "Research Methodology – Methods and Techniques", New Age International. • Knight, A. and Ruddock, L., "Advanced Research Methods in Built Environment", John Wiley & Sons.
	Other References	

MAJ 113- Digital Fabrication-II

School: SUSAP		**Batch : 2019-21**
Program: M.ARCH		**Current Academic Year:** 2019-20
Branch:		**Semester:2**
1	Course Code	MAJ 113
2	Course Title	Digital Fabrication-II
3	Credits	4
4	Contact Hours (L-P-S)	0-2-2
	Course Status	Compulsory
5	Course Objective	Digital Fabrication Design is the new revolution in the history of architecture. The focus will be on invention rather than application of predefined ideas. With this approach this course is assumed to become a centre of innovative ideas as a solution for the conventional and future problems. This will bring the academic world of architecture in the forefront of design explorations and theories to have great impact on the professional world as an expected outcome. M. Arch in Digital Fabrication Design takes a first step with an agenda of "Parametric Explorations". Based on this agenda, the studios, lectures and the supportive content will be channelized accordingly. The agenda will be changed after every 4 years to update the knowledge of Digital Architecture and creating a responsive architecture for the particular time line.
6	Course Outcomes	CO1. Understand This module is designed to set the minds of students to initialize the first stage exploration. It will set a psychological base to understand and develop individual theories on the lines of Digital Architecture. CO2. Advance Learning with the interdependencies of software and machines will be explained in this module. The technical details of how the hardware works with the software for future modification suggested on analytical thinking will be possible. CO3: The new modeling technique called as Associative modeling will be taught as one of the approach for form development. As a result the software plays a different role than replicating ideas in to 3D form. It becomes the base to develop digital concepts
7	Course Description	Students will be given different small exercises which will be based on the primary stage form development in the parametric software. This work will be assessed on the basis of digital concept development and not on the rendering criteria's of the software. Formation of new tools, application and intercompatibility of the software will be analyzed.

8	Outline syllabus			
	Unit 1	**Introduction to Digital Architecture 3D Modeling**		
	A	Introduction to Rhino 3D Interface with working tools, Mesh modeling, 2D Splines, navigating 3dsmax space, and working with objects.		
	B	Coordinate Systems, Arrays, Modifier stack – bend, Compound objects - Boolean, loft, etc., Basic Cameras.		
	C	Assignment		
	Unit 2	**Develop and create 3D Visualization and Animation**		
	A	Advance 3D Modeling and tools		
	B	Material mapping and techniques with Basic lights		
	C	Assignment		
	Unit 3	**Advanced Materials, Radiosity, Light Tracer, and Photoshop**		
	A	External References		
	B	Material properties and associated map parameters		
	C	Light tracing		
	Unit 4	**Efficiency in Rendering and Presentation Preparation**		
	A	Parametric Design using Grass hopper		
	B	Parametric Design using Grass hopper		
	C	Parametric Design using Grass hopper		
	Unit 5	**Presentation Preparation Continued with Render output**		
	A	Presentation Issues		
	B	Multi-view Orthographic Projection with Projection Techniques		
	C	Render Output and techniques		
	Mode of examination	Jury		
	Weightage Distribution	CA	MTE	ETE
		50%	0%	50%
	Text book/s*			
	Other References			

MAJ 114– Theory And Criticism-II

School: SAP		**Batch : 2019-21**
Program:M.Arch		**Current Academic Year: 2019-20**
Branch:Architecture		**Semester: 2**
1	Course Code	MAJ 114
2	Course Title	Theory and Criticism -II
3	Credits	2
4	Contact Hours (L-P-S)	2-0-0
	Course Status	Compulsory
5	Course Objective	To deliver knowledge and information about significant issues in current disciplinary thinking, as well as with the philosophical, political, and material contexts for works of art and architecture through different centuries.
6	Course Outcomes	CO1:To identify various architectural theorist and their theories during 17th to 19th century CO2: To evaluate various perspective of architectural theories CO3: To distinguish the different styles and theories of art CO4: To criticise and critique works and theories of various architectural theorists.
7	Course Description	This course aims to familiarize the students with various architectural theorists and their theories during 17th to 19th century. The course explores the description of literary theories, from wide domain of art, architecture, archaeology and criticism. It also includes various styles through time.
8	Outline syllabus	
	Unit 1	**Critiques of Modernity**
	A	Critical Regionalism : K Frampton
	B	Post Functionalism/Peter Eisenman
	C	Historicism: Alan Colquhoun and Leon Krier
	Unit 2	**Critique of the city**
	A	Collage City/Colin Rowe
	B	Robert Venturi/ Kitsch & Las Vegas
	C	Rem Koolhaas/Delirious New York
	Unit 3	**Place**
	A	Christian Norberg Schulz/ Gerius Loci
	B	Martin Heidegger and place
	C	Gaston *Bachelard & Poetics of Space*
	Unit 4	**Construction or Deconstructivism**

	A	Jaques Derrida		
	B	Mark Wigley		
	C	Jurgen Habermas		
	Unit 5	**Modernism after Post Modernism**		
	A	Neo Modernism/ High Tech Architecture		
	B	Peter Zumthor		
	C	Eye of the Skin		
	Mode of examination	Jury		
	Weightage Distribution	CA	MTE	ETE
		50 %	0%	50%
	Text book/s*			
	Other References			

MAR 201- Design Studio-3

School: SUSAP		**Batch : 2019-21**
Program: M.ARCH		**Current Academic Year:** 2019-20
Branch:		**Semester: 3**
1	Course Code	MAJ 201
2	Course Title	Design Studio-3
3	Credits	8
4	Contact Hours (L-P-S)	2-0-12
	Course Status	Compulsory
5	Course Objective	• Exploring and designing for city level • Understanding the language of city spaces, plazas, etc in architectural design Learn about the different elements of urban design
6	Course Outcomes	CO1: students should develop skills of drawing and representation CO2: to assimilate learning of graphics, construction, structures and computers to apply to basic design. CO3: Explore creative processes and idea generation and demonstrate critical evaluation of these processes in their projects. CO4: Appraise how design can impact, interact with, and improve environments. CO5: Understand spaces with three-dimensional visualization through the use of block models and appropriate softwares.
7	Course Description	Architectural Design Project of a large magnitude in one of or similar categories of building typology emphasizing on need of Advance construction techniques and using modular co-ordination, pre-fabricated elements and technology.
8	Outline syllabus	
	Unit 1	Design Problem
	A	Introduction to Project
	B	Form and material based investigation
	C	Understanding spatial aspects based on activity, space, form and human scale
	Unit 2	Literature & Case Study
	A	Pre design study-Case study
	B	Pre design study -Literature Study, Site Analysis.
	C	Functional standards.
	Unit 3	Concept Development

	A	Concept formulation and idea investigation		
	B	Preparation of design requirements, area requirements based on standards and their interrelation and circulation patterns.		
	C	Concept Formulation, Bubble Diagram and activity zoning.		
	Unit 4	Design Development		
	A	Design development- site development		
	B	Design development- floor Plans		
	C	Design development- sections and elevations		
	Unit 5	Design Presentation		
	A	Design sheets presentation		
	B	Model making on appropriate scale		
	C	Final portfolio submission		
	Mode of examination	Jury		
	Weightage Distribution	CA	MTE	ETE
		50%	0%	50%
	Text book/s*			
	Other References			

MAR 202: RESOURCE CONSERVING ARCHITECTURE

School: SAP		**Batch : 2019-21**
Program: M.Arch		**Current Academic Year: 2019-2020**
Branch:		**Semester:3**
1	**Course Code**	**MAR 202**
2	**Course Title**	**RESOURCE CONSERVING ARCHITECTURE**
3	**Credits**	3
4	**Contact Hours (L-P-S)**	2-1-1
	Course Status	**Compulsory**
5	**Course Objective**	After successful completion of this course, student should be able to acquire a comprehensive base of knowledge required to understand & apply the principles, techniques and relevant guidelines for planning and design of resource-conserving architecture.
6	**Course Outcomes**	CO1: Identify and understand the main methods of natural resource conservation and its history and briefly review of concepts of energy conservation and efficient patterns of energy use in architecture CO2: Analyze and compare different methods of planning and design of resource conservation in architecture CO3: Develop inclination and sensibility towards resource optimization in the built environment through Indian and foreign case studies
7	**Course Description**	Sustainable development and resource conserving strategies used to be integral part of previous habitat tradition. Pro-urban development strategy deprived our urban centres to be decongested and rural areas to be self-reliant. Natural resources' depletion in urban and sub-urban neighbourhoods is beyond

		recognition either due to non-existence of any relevant regulation or non-compliance and non-enforcement of policies. This course provides an overview of the existing policies and regulations relevant to Indian and international buildings' energy efficiency and resource conserving sustainable practices to meet the challenges of quality living.
8	**Outline syllabus**	
	Unit 1	**Introduction to resource conserving in architecture and its history**
	1a	Classification and characteristics of resources.
	1b	Brief review of use/ exploitation of resources for development in human history.
	1c	Concepts and need for conservation, renewable and non-renewable resources.
	Unit 2	**Brief review of concepts, parameters and principles of energy conservation**
	2a	Basic concepts, parameters and principles of energy conservation.
	2b	Brief review of concepts of conserving building materials, water, land etc.
	2c	Discussion of Indian and foreign case studies.
	Unit 3	**Patterns and efficiency of energy use in architecture**
	3a	Technologies, methods of energy conservation
	3b	Conserving building materials in architecture, (case studies)
	3c	Technologies/ methods of conservation and their implications.
	Unit 4	**Fundamentals of planning and design of resource conserving architecture**
	4a	Innovative and appropriate Design concepts
	4b	Construction Technologies involved inresource conserving architecture (case study)

	4c	Govt. policies/ Guidelines on the subject of resource conservation in architecture.		
	Unit 5	**Discussion /Presentation of Indian and foreign case studies**		
	5a	Case study I {Indian)		
	5b	Case study 2{Indian)		
	5c	Case study 1(foreign)		
	Mode of examination	**Theory**		
	Weightage Distribution	**CA**	**MTE**	**ETE**
		30%	**20%**	**50%**
	Text book/s*	RB1 : Greg P., "Natural Home Heating",Sterling Hill Production. , 2003 RB 2 : Hyde R., Wodson S., Chehire W. and Thowson M., "The Environmental Brief Pathways for Green Design", Taylor & Francis. , 2006 RB 3 :Yudelson J., "Greening Existing Buildings", Mc Graw Hills. , 2009 RB 4 : Baker, N. and Steemers, K., "Energy and Environment in Architecture: A Technical Design Guide", Routledge. , 2000		
	Other References			

MAR 203: Architectural Evaluation & Documentation

School: SUSAP		**Batch : 2019-21**
Program: M.ARCH		**Current Academic Year: 2019-20**
Branch: - General		**Semester: 3**
1	**Course Code**	**MAR 203**
2	**Course Title**	**Architectural evaluation & documentation**
3	**Credits**	**2**
4	**Contact Hours (L-T-P)**	**2-1-0**
	Course Status	**Compulsory**
5	**Course Objective**	After successful completion of this course, student should be able to: 1- To have acquired the ability to analyse and evaluate architectural projects etc. and also Understand architectural research with special emphasis on India. 2- To develop awareness and understanding of importance of Documentation, Research and Surveys practice of Architecture.
6	**Course Outcomes**	CO 1: Demonstrate skill in undertaking various aspects of Architectural Evaluation and techniques of analysis. CO 2: illustrate abilities towards architectural critical thinking, review and writing. CO 3: Ability to categorise methodology of research based on area of study -historical, cultural
7	**Course Description**	The idea behind this module is to understand the basic Architecture documentation which is both prescriptive and descriptive. That is, for some audiences it prescribes what should be true by placing constraints on decisions to be made. For other audiences it describes what is true by recounting decisions already made about a system's design.

8	**Outline syllabus**	
	Unit 1	**Introduction to architectural evaluation & Techniques of analysis & evaluation.**
		1. Introduction to architectural evaluation in general and definition, Purpose, Scope and its applications to Architecture, fine arts literature etc. **2.** Techniques of analysis and evaluation employed in buildings, projects competitions etc. **3.** Methods of appraisal / evaluation of building complexes and exhibitions.
	Unit 2	**Value of appraisal / evaluation reports and review, Techniques of report and review writing**
		1. Value of appraisal / evaluation reports and reviews in the field of architecture fine arts, literature. **2.** Their scope and merits **3.** Techniques of report and review writing, their application to architectural Publications
	Unit 3	**Purpose of Documentation, Selection of the project.**
		1. Purpose of Documentation: To Record Existing structure, to aim at conservation of the structure, etc. **2.** Selection of the project **3.** Heritage documentation, Monograph of an Architect, Contemporary project, etc.
	Unit 4	**Research: Historical research**
		1. Research: historical research related to Styles and contemporary works **2.** Influence of culture and technology, **3.** Context
	Unit 5	**Geodetic Survey and final presentation**

		1. Geodetic survey: Topographic maps, road maps, site maps etc. Architectural survey: survey methodology, physical measure drawings, 2. Photographic survey, Digital Architectural Photogrammetry, 2 D & 3D digital drawings, etc. 3. The final presentation shall be a document of a small Architectural example or part of the structure, where the content will cover various issues mentioned above.	
	Mode of examination	Jury	
	Weightage Distribution	**CA**	**ETE**
		50%	**50%**
	Textbooks	RB 1 - Research in Architecture by Architects by Dr. Lean Van Schaik RB 2 - Architecture and people by Eugene Raskin RB 3 -Architecture and Critical imaginations by Attoe Wayne RB 4 - Architecture Judgement by Collin Peters	

MAR 204: ADVANCED BUILDING SERVICES –II

School: SUSAP		**Batch : 2019-21**
Program: M.ARCH		**Current Academic Year: 2019-20**
Branch: - General		**Semester: 3**
1	**Course Code**	**MAR 204**
2	**Course Title**	**ADVANCED BUILDING SERVICES –II**
3	**Credits**	**3**
4	**Contact Hours (L-T-P)**	**2-1-1**
	Course Status	**Compulsory**
5	**Course Objective**	To acquire knowledge of various Mechanical communication systems, HVAC system, Acoustic system and Fire protection & prevention systems. To understand the working of the above system Identify and apply then in buildings.
6	**Course Outcomes**	CO1 To understand the functioning of various Mechanical communication systems, HVAC system, Acoustic system and Fire protection & prevention systems. CO2 To identify the above mentioned various relevant systems and understand their applications in buildings. CO3 To apply the various available alternatives of the above mentioned system and apply them in buildings.

7	**Course Description**	To understand the various Mechanical communication systems, HVAC system, Acoustic system and Fire protection & prevention systems, their working and applications.
8	**Outline syllabus**	
	Unit 1	**Mechanical & Communication systems (elevators, escalators, conveyors, etc.) and Security systems etc. in high rise building complexes, public buildings and open spaces & Parking, etc.**
		a. Study of Mechanical, Communication & Security systems in high rise building complexes, public buildings, Parking lots and complex structures like Hospitals, public transport terminals etc. b. Design parameters for determining the loads & requirement, Operation and maintenance of these Services. c. Case studies of different building typology and report preparation
	Unit 2	**Lighting, Heating, Ventilation & Air conditioning systems in high-rise building complexes, public buildings and open spaces, parking, etc.**
		a. Lighting, Heating, Ventilation & Air conditioning systems in high rise building complexes, public buildings, Parking lots and complex structures like Hospitals, public transport terminals etc. b. Design parameters for determining the loads & requirement, Operation and maintenance of these Services. c. Passive & active ways of control of heat, light, humidity etc. for comfort conditions. Introduction to simulation software to determine comfort conditions in various spaces.
	Unit 3	**Lighting, Heating, Ventilation & Air conditioning systems**
		a. Introduction to simulation software to determine comfort conditions in various spaces. b. Intelligent building systems. c. Case studies of different building typology and report preparation.

	Unit 4	**Acoustics and Acoustic Systems**		
		a. A brief overview of Acoustics and Acoustic Systems in building. b. Design parameters for determining the acoustical behaviour of spaces. Passive & active ways of control of acoustical behaviour of spaces for good hearing conditions. Introduction to simulation software to determine acoustical behaviour of spaces. c. Study of advance acoustical materials, types of finishes & treatments, specially manufactured items from manufacturer's catalogues, etc. Case study/ies different building typology and report preparation		
	Unit 5	**Fire Protection and Prevention System**		
		a. Code provisions from NBC for Fire protection and prevention in high rise building complexes, public buildings, Parking lots and complex structures like Hospitals, public transport terminals educational buildings, building types categorised under etc. b. Design parameters for determining the loads & requirement. c. Study of advance materials, types of finishes & treatments, specially manufactured items from manufacturer's catalogues, etc for prevention of fire and fire-fighting		
	Mode of examination	Theory		
	Weightage Distribution	**CA**	**MTE**	**ETE**
		30%	**20%**	**50%**
	Textbooks	RB 1 - Research in Architecture by Architects by Dr. Lean Van Schaik RB 2 - Architecture and people by Eugene Raskin RB 3 -Architecture and Critical imaginations by Attoe Wayne RB 4 - Architecture Judgement by Collin Peters		
	Other References			

MAR 205 – Dissertation I

School: SUSAP		**Batch : 2019-21**
Program: M.Arch		**Current Academic Year: 2019-20**
Branch:		**Semester: 3**
1	Course Code	MAR 205
2	Course Title	Dissertation
3	Credits	2
4	Contact Hours (L-P-S)	1-2-0
	Course Status	Compulsory
5	Course Objective	After successful completion of this course, student should be able to: Acquire a comprehensive base of knowledge required to understand & apply the principles, techniques and relevant guidelines for planning and design of resource-conserving architecture.
6	Course Outcomes	CO1: Identify a meaningful area/topic of study. CO2 : Construct a logical description CO3 : Summarize works of scholars. CO4 : Apply skills learnt to prepare study report independently.
7	Course Description	Students may choose a topic related to architecture and allied subjects. The topics must be vetted by the faculty. Emphasis must be on critical understanding, logical reasoning and structured writing. By the end of the semester, students are expected to submit a written report of approximately 8000 words wherein standard referencing conventions and technical writing norms must be adhered to. Students are expected to present the progress of the study at various stages of the semester. Final assessment of the student work may be based on written report as well as oral communication. However, greater weight age may be given for writing skills and research content of the study.
8	Outline syllabus	
	Unit 1	**Introduction to Dissertation**
		a) Statement of the problem.
		b) Purpose of the study
		c) Significance of the study.
	Unit 2	**Literature Review**
		a) Identify and group together common areas.
		b) Compare, contrast and evaluate issues.

		c) Demonstrate why the topic and research is relevant to your field of study.		
	Unit 3	**Methodology**		
		a) Sample		
		b) Data collection		
		c) Data analysis		
	Unit 4	**Implications and Limitations of study**		
		a) Identifying the limitations and how important each limitation is.		
		b) Explaining the nature of limitations.		
		c) Suggesting how such limitation could be overcome		
	Unit 5	**Implications and Recommendations**		
		a) Specific measures or directions that can be taken		
		b) Critical suggestion regarding the best course of action in a certa situation		
		c) Guide to resolve issues and result in a beneficial outcome		
	Mode of examination	Jury: Discussion based continuous evaluation, Research Report Presentation		
	Weightage Distribution	CA	MTE	ETE
		50%	-	50%
	Text book/s*			

MAR 206 - TRAFFIC & TRANSPORT DESIGN

School: SUSAP		**Batch : 2019-21**
Program: M.ARCH		**Current Academic Year: 2019-20**
Branch: - Architecture		**Semester: 3**
1	**Course Code**	**MAR 206**
2	**Course Title**	**TRAFFIC & TRANSPORT DESIGN**
3	**Credits**	**3**
4	**Contact Hours (L-P-S)**	**2-1-0**
	Course Status	**Elective**
5	**Course Objective**	After successful completion of this course, student should be able to understand evaluation of Urban Structure and Transportation, Management of Transportation system, policies in relation to the Environment considerations.
6	Course Outcomes	**CO1:** Recognize Urban Structure Transportation systems infrastructure, Transportation survey and studies **CO2 :**Describe the various transportation survey and study types **CO3 :**Categorise management of Transportation system and Regional Transport systems **CO4 :**Evaluate both Transport and Environment **CO5 :**Develop an understanding of transport policies
7	**Course Description**	This course is designed to help the students understand about the urban structure transportation systems , their management processes, integration of environment with transport and have a broad idea of transport policies set by the government at the various levels , such as central, state and urban local body level.
8	**Outline syllabus**	

	Unit 1	**Evaluation of Urban Structure Transportation systems**
		a. Evaluation of Urban Structure Transportation systems infrastructure and management, transportation systems and their types and their design and operating characteristics. b. Urban road hierarchy planning, engineering and management. c. Criteria for road and junction improvements and arterial improvement techniques
	Unit 2	**Transportation survey and studies**
		a. Study area definitions, surveys and their types, sampling methods, survey techniques; b. designing O-D and other Traffic and transportation surveys, programming and scheduling, processing of travel data, c. Analysis and interpretation of traffic studies.
	Unit 3	**Management of Transportation system**
		a. Existing organizational and legal framework, traffic and environmental management techniques and review of existing traffic management schemes. **b.** Framework for evaluation of system option and plan preparation **c.** Regional Transport system: Importance of accessibility in regional transport planning. Role of road, rail, air and water transport systems. Regional transport systems, planning road network, planning for micro regions
	Unit 4	**Transport and Environment**
		a. Traffic noise, factors affecting noise, noise abatement measures, standards. b. Air pollution standards, traffic safety, accident reporting and recording systems. Factors affecting road safety, transport planning for target groups, children, adults handicapped and women. c. Norms and guidelines for highway landscape, street lighting types, standards and design considerations, transport and environment, EIA of transport project

	Unit 5	**Transport policies**		
		a. Review of national, state and local level transport policies and their relevance in spatial and economic planning, pricing and funding of transport systems, transport technology, energy and environmental implication in transport planning in developing countries; planning for public transportation; planning for bicyclists and pedestrians. b. Regional road network planning, highway project planning and financing Public transportation planning. c. Overviews of system technologies, technological options, characteristics choice of technology corridor analysis integrated system plan concept, system selection, legal and institutional provisions, pricing and financing of public transport service.		
	Mode of examination	**Theory examination**		
	Weightage Distribution	**CA**	**MTE**	**ETE**
		30%	**20%**	**50%**
	Text Books	RB1: Urban Transit: Operations, Planning and Economics by Vukan Vuchic RB2: Urban Transit Systems and Technology by Vukan R. Vuchic		

MAR 207: INFRASTRUCTURE SERVICES

School: SUSAP		**Batch : 2019-21**
Program: M.ARCH		**Current Academic Year: 2019-20**
Branch: - Architecture		**Semester: 3**
1	**Course Code**	**MAR 207**
2	**Course Title**	**INFRASTRUCTURE SERVICES**
3	**Credits**	**3**
4	**Contact Hours (L-P-S)**	**2-1-0**
	Course Status	**Elective**
5	**Course Objective**	After successful completion of this course, student should be able to understand various Services employed in a large scale project and address planning and operational issues related to these services.
6	Course Outcomes	**CO1:** Understand various services designed in large scale Projects taken as case study **CO2 :** Describe the planning, designing and functional aspects of the services in detailed manner **CO3 :**Develop thorough knowledge of infrastructure services design and implementation
7	**Course Description**	This course is designed to help the students understand about various aspects of planning, design, execution and maintainability of services in the context of large residential/ institutional/commercial etc. complexes.The course aims to cover the infrastructural services, such as electrical, storm water drainage, sewerage etc, communication system and other civil infrastructure facilities.
8	**Outline syllabus**	
	Unit 1	**Case study**

		a. Case study of an existing large scale project of one of the building typologies like: High end hospitality industry, Super specialty hospitals, Airports & mass transportation terminals, Research laboratories, High end IT parks & establishments, High rise buildings, State Secretariat and assembly, Mass Housing Project of a large magnitude b. In view of the following aspects, within the project: • Infrastructure development planning • To understand financing issues and emerging options. c. Demand, gap and issues, pricing policies.
	Unit 2	**Water Supply**
		a. Water Cycle and Water Resources. Water Balance. Per capita water supply, norms, Water quality, Treatment of water. b. Storage of Water. Planning and Design criteria for Distribution. c. Block Cost Estimation of water Supply Scheme. Water Losses and Un-accounted for Water.
	Unit 3	**Water Supply**
		a. Rain Water Harvesting concept. **b.** Water Supply System. Watershed Management. Role of micro-level water management committee. Drainage and Sanitation. **c.** Basic planning and design criteria, norm, etc. Re-use and recycling of waste water. Treatment of waste water (conventional). Low cost treatment, land based treatment methods.
	Unit 4	**Electrical & Telecommunication services**
		a. Electrical services **b.** Telecommunication **c.** advanced communication services
	Unit 5	**Civic Amenities**

		a. Roads, Health care, Education **b.** Recreation, Community halls, Markets **c.** Communication, Security, Safety, (Fire station), etc.		
	Mode of examination	**Theory examination**		
	Weightage Distribution	**CA**	**MTE**	**ETE**
		30%	**20%**	**50%**
	Text Books	RB1: Planning and Architecture Edited by Dennis Sharp Editor RB2: Planning feasible learning places By Leggett S Bru Baker C. W. & Cohodes A. RB3 : Methods in Architecture By. Town Health		

MAR 212– ARCHITECTURAL DESIGN THESIS

School: SUSAP		**Batch : 2019-21**
Program: M.Arch		**Current Academic Year: 2019-20**
Branch:		**Semester: IV**
1	Course Code	MAR 212
2	Course Title	Architectural Design Thesis
3	Credits	16
4	Contact Hours (L-P-S)	4-5-14
	Course Status	Compulsory
5	Course Objective	1. Identify a contextually challenging architectural design problem. 2. Evolve strategy to evolve a good solution. 3. Evolve present and defend the proposed design
6	Course Outcomes	CO1: Identify a socio economic environmental context in need of a good architectural design for a key project. CO2 : Construct a database design brief noted in the context and knowledge base. CO3 : Analyse and prioritize the process to arrive at design solution. CO4 : Develop and present the proposed design.
7	Course Description	The M. Arch program culminates in a thesis project. Under the guidance of a thesis Mentor. Students are requrid formulate a cohesive thesis argument and project using supportive research and case studies and should demonstrate his ability and skills to do a critical enquiry through design. The nature of the work must be an original research or design project that involves additional learning of a substantive nature. The final proposal to be presented in appropriately rendered drawings, modules, 3D views and Report. The work must be documented with a written thesis completed to Institute specifications within the final term of the senior year.
8	Outline syllabus	
	Unit 1	**Identification of the project , preparation of Synopsis**
		a) Introduction/Background
		b) Aims & Objective, Rationale of the topic
		c) Site Identification and justification
	Unit 2	**Literature Study , Case study**
		a) Identify and group together common areas.

		b) Compare, contrast and evaluate issues.		
		c) Demonstrate why the topic and research is relevant to your field of study.		
	Unit 3	**Program formulation**		
		a) Detailed Design Program		
		b) Design Criteria / Approach specific to the topic chosen		
		c) Conceptual Design		
	Unit 4	**Design interventions**		
		a) Preliminary Design Drawings		
		b) Service Drawings		
		c) Landscape / Site Details		
	Unit 5	**Design Proposal and Report**		
		a) Detailed design proposal		
		b) Supporting literature study		
		c) All Drawings & Report		
	Mode of examination	Jury		
	Weightage Distribution	CA	MTE	ETE
		50%	-	50%
	Text book/s*			
	Other References			

MAR 213 – LEGISLATION, POLITICS AND ARCHITECTURE PRACTICE

School: SAP		**Batch : 2019-21**
Program: M.Arch		**Current Academic Year: 2019-2020**
Branch:		**Semester:4**
1	Course Code	MAR 213
2	Course Title	LEGISLATION, POLICIES AND ARCHITECTURAL PRACTICE
3	Credits	2
4	Contact Hours (L-P-T)	2-0-0
	Course Status	Compulsory
5	Course Objective	After successful completion of this course, student should be able to acquire a comprehensive base of knowledge required to understand & apply the norms for undisputed architectural practice across the world.
6	Course Outcomes	CO1: To develop knowledge of the profession and practice of architecture. CO2: Show understanding of profession of architecture, and required training for a career in architecture, through research project, and testing. CO3: Demonstrate understanding of various laws and policies. CO4: To understand the role of professional and statutory bodies.
7	Course Description	Professionals are required to discharge their obligations and commitments diligently and befitting with quality and standards of services. The laws of the land mandate that the professionals should provide services to the consumers in a required manner exercising duty of care and while doing so they should not commit any negligent act. In order to protect the interest of the consumers against the breach of duty, the deficient services have been defined by the statute and legal actions have been initiated on the erring professionals. The services rendered by architects have also been covered by the relevant laws of the country.
8	Outline syllabus	

	Unit 1	**An overview of the Architects Act 1972 in India & COA.**
	1a	An overview of the Town Planning Acts of Urban Development ministry of States & Central Government. The rules and regulations for Development Control and the principles behind the framing of these.
	1b	Regional Plan, Development Plans, at State, District, Urban agglomeration, Municipal Corporations & Councils, Improvement trusts, & Regional Development Authorities, CRZs, etc.
	1c	Procedures for formulations, Implementation and applying for Approvals at various levels.
	Unit 2	**Various Acts relevant to the Architectural profession**
	2a	Architects office and office Management. Interaction with the consultants.
	2b	Design Management Issues. Role & Duties of Architect as an Employer or Employee.
	2c	International Architectural practice and role of Various Statutory / Regulatory bodies in licensing like RIBA, AIA, etc.
	Unit 3	**Town Planning Acts of Urban Development ministry of States & Central Government.**
	3a	1972 in India – Scope of work, Professional conduct, Scale of fees, etc.
	3b	Architect's Professional liabilities and responsibilities
	3c	Architectural Competitions. Registration and continuation of registration of COA.
	Unit 4	**Rules and Regulations**

	4a	Development Control Rules, R P, DP, at State, District, Urban agglomeration, Local planning Authorities, CRZs, etc.		
	4b	An overview of various Acts relevant to the Architectural profession: Taxation laws like IT, Service Tax, etc.		
	4c	An overview of various Acts relevant to the Architectural profession: like Indian Contract Act, Environment related laws, etc.		
	Unit 5	**Regulations, Conditions and requirements of qualification, equivalence etc. for International practice.**		
	5a	Regulations for International practice in countries other than India like: USA, UK, Europe, Gulf countries, Asian countries etc.		
	5b	Conditions and requirements of qualification, equivalence etc. for International practice in countries other than India like: USA, UK, Europe, Gulf countries, Asian countries etc.		
	5c	Role & Duties of International Architectural practice		
	Mode of examination	**Theory**		
	Weightage Distribution	**CA**	**MTE**	**ETE**
		30%	**20%**	**50%**
	Text book/s*	RB1: COA Handbook of Professional Documents 2009 RB2: Maharshtra Regional Town Planning Act 1966 RB3: Professional Practice By Roshan Namavati 2005 Lakhani Book Depot RB4: Professional Practice By Madhav Deobhakta		
	Other References	Internet Sources.		

MAR 214: ELECTIVE-1 FINANCE & ECONOMICS IN BUILDING INDUSTRY

School: SUSAP		**Batch : 2019-21**
Program: M.Arch		**Current Academic Year: 2019-20**
Branch:		**Semester: IV**
1	Course Code	MAR 214
2	Course Title	Elective-1 Finance & Economics In Building Industry
3	Credits	2
4	Contact Hours (L-P-S)	2-0-0
	Course Status	ELECTIVE
5	Course Objective	After successful completion of this course, student should be able to: 1. To understand Factors influencing Location of development, issues like Business Finance, Sources of Finance, Capital Market, Financial Services etc.
6	Course Outcomes	CO1: To identify the significance and scope of building economics CO2: To discuss factors affecting location, productivity and efficiency of development CO3: To evaluate sources of finance CO4: To compare different scale projects and financing of projects
7	Course Description	The idea behind this module is to understand the relevance of finan and economics in the building industry.
8	Outline syllabus	
	Unit 1	**Building Economics**
		a. Introduction to Building Economics: Meaning & Scope
		b. Need and Significance of Study of building Economics.
		c. Inter-Dependence of Agriculture, Industrial and Economic Development
	Unit 2	**Factors influencing Location of development**
		d. Factors influencing Location of development.
		e. Factors affecting productivity and efficiency like Social & Cultural
		f. Factors affecting productivity and efficiency like Industrialisation, Urbanisation.
	Unit 3	**Large, medium and small scale development**
		a. Large, medium and small scale development in Private Sector.
		b. Large, medium and small scale development in Public Sector.
		c. Housing Policy of Indian Government
	Unit 4	**Business Finance & Sources of Finance**
		a. Estimating the short, Medium and long term financial requirements.
		b. Financial Plan- Characteristics & Limitations.

		c. Sources of Finance: Private Sector, Public Sector, Co-operative Sector Govt. Participation, and Foreign Sources.		
	Unit 5	**Capital Market & Financial Services**		
		a. Capital Market: Primary and Secondary Capital Market Players. Functioning & Critical Evaluation.		
		b. Financial Services relating to raising of Capital: Loan policies of Banks, Private, Public, & Government financial bodies.		
		c. Project Appraisal		
	Mode of examination	Jury		
	Weightage Distribution	CA	MTE	ETE
		30%	20%	50%
	Text book/s*			
	Other References	Financial Management –Theory and Practice, By Prasanna Chandra Tata McGraw Hill Financial Management By I M Pandey, Vikas PublishingHouse Managerial Finance, By J Fred Weston & Thomas E Copeland, The Dryden Press, New York. Fundamentals of Financial Management, By Van Horne J, C Prentice Hall, New Delhi Construction Management: Planning & Finance, By Cormican D, Construction Press, London		

MAR 215: ELECTIVE-2 HIGH RISE BUILDINGS

School: SUSAP		**Batch : 2019-21**
Program: M.Arch		**Current Academic Year: 2019-20**
Branch:		**Semester: IV**
1	Course Code	MAR 215
2	Course Title	**Elective-2 High Rise Buildings**
3	Credits	2
4	Contact Hours (L-P-S)	2-0-0
	Course Status	Compulsory
5	Course Objective	To understand basic design concepts and emerging technologies of high rise buildings. Acquire a comprehensive base of knowledge required to understand & apply the principles, techniques and relevant guidelines for planning and design of high rise buildings.
6	Course Outcomes	CO1: To identify the significance and scope of high rise buildings. CO2: To discuss factors affecting location, productivity and efficiency of development. CO3: To evaluate Structural system and building services. CO4: To evaluate management and sustainability.
7	Course Description	
8	Outline syllabus	
	Unit 1	**Introduction to High Rise Buildings**
		Definition, Scope and importance of subject.
		High rise buildings in urban environment.
		Physical planning considerations in High Rise Buildings.
	Unit 2	**Module 2: Design considerations for High Rise Buildings.**
		Architectural design considerations for high rise buildings,
		Space planning and design standards,
		Building byelaws and codes.
	Unit 3	**Module 3: Structural Systems & Building Services for High Rise Buildings.**
		High rise buildings Structural systems in RCC
		Steel for high rise buildings.
		Composite structural system considerations for wind loads and earthquake loads.
	Unit 4	**Module 4: Construction Planning and Management in High Rise Buildings.**
		Building Services- mechanical, electrical, fire fighting and protection,

		vertical transportation, HVAC, BAS and parking; Codes for these services.		
		Construction planning and management.		
		Equipments and construction techniques, materials for cladding, prefabrication.		
	Unit 5	**Module 5: Sustainable and Green high rise buildings**		
		An approach to sustainable and green high rise buildings		
		Design Guidelines for sustainable and green high rise buildings.		
		Concepts of Zero Energy Habitat.		
	Mode of examination	Jury		
	Weightage Distribution	CA	MTE	ETE
		30%	20%	50%
	Text book/s*			
	Other References	RB1: Design of Modern Highrise Reinforced Concrete Structures by Hiroyuki RB2: High-rise Manual: Typology and Design, Construction and Technologyby Johann Eisele and Ellen Kloft		