



UNIVERSITY OF JAMMU

(NAAC ACCREDITED A+ GRADE UNIVERSITY)
Baba Sahib Ambedkar Road, Jammu-180006 (J&K)

NOTIFICATION (20/Jan/Adp/24)

It is hereby notified for the information of all concerned that the Vice-Chancellor, in anticipation of the approval of the Competent Bodies, has been pleased to authorize the adoption of the Scheme and Syllabus in the subject of Architecture (B. Arch. Degree Programme) Choice Based Credit System (CBCS) for Semester I to VI (First Year to Third Year) from the Academic Session 2019-20 onwards as per the details given in the ANNEXURE-I (Page 01 to 70)

The Scheme of Examination and Syllabus of Studies B.Arch. are available in the University Website: www.jammuuniversity.in.

Sd/-
DEAN ACADEMIC AFFAIRS

No. F.Acd/III/20/7804-//
Dated: 6/02/2020

Copy for information & necessary action to:-

1. Special Secretary to the Vice-Chancellor, University of Jammu for the kind information of the worthy Vice-Chancellor please.
2. Sr. PA to the Dean Academic Affairs/Registrar/Controller of Examinations
3. Principal, GCET, Jammu
4. Deputy/Assistant Registrar (Exams/Confidential)
5. Section Officer (Confidential)
6. Incharge Website

Sumita Sharma
Deputy Registrar (Academic)
5/2/2020
05/02/2020

EG



SCHOOL OF ARCHITECTURE **JAMMU**

BACHELOR OF ARCHITECTURE (Five-Year Full Time Degree Program) **SCHEME OF EXAMINATION** **AND SYLLABUS – 2019** (CHOICE BASED CREDIT SYSTEM)

(APPLICABLE TO 2019-20 BATCH ONWARDS)

(Semester – I to Semester – VI)

(First Year to Third Year)



ABBREVIATIONS / CODES / NOMENCLATURE	
Course Code Convention	
DTYSLNP	D: Degree Program Code
	T: Course Type Code
Example	Y: Year Level (1, 2, 3, through 5 for years 1 to 5)
AA5101T	SL: Semester Level (1, 2, 3, through 10 for semesters 1 to 10)
AH4021S	N: Semester-wise Course Number
AE3086L	P: Course Pedagogy Code (Lecture/ Studio/ Practical, etc.)
Degree Program Convention	
A	Architecture
Course Type Convention	
A	Architecture
E	Engineering
F	Fine Arts
H	Humanities & Sociology
L	Elective Course
O	Open Course/ MOOC/ SWAYAM
N	Non Credit
V	Special Lecture Topic
Course Pedagogy (Main) Convention	
A	Internship
L	Lecture
P	Practical
S	Studio
T	Thesis
Course Pedagogy (Additional) Convention	
D	Discussion Seminar
I	Independent Study/ Self Work
M	Make-up Tutorial
R	Research Seminar
W	Design Workshop
Teaching Scheme Convention	
L	Lecture
P	Practical
S	Studio
T	Tutorial
C	Course Credit
NC	Non Credit
NA	Not Applicable
Examination Scheme Convention	
IA	Internal Assessment
EE	External Examination
CP	Class Presence
CA	Class Assignment
MT	Mid Term
T	Theory Paper
J	Jury
V	Viva-Voce
D	Duration of Examination in hours

**1. STUDY OF ACADEMIC PROGRAMME AND ITS DURATION**

- 1.1. The Bachelor of Architecture (B. Arch.) program shall be of minimum duration of five (5) academic years or ten (10) semesters of minimum fifteen (15) working weeks each, inclusive of one semester of practical training during 8th Semester.
- 1.2. The Bachelor of Architecture (B. Arch.) program shall have to complete in a maximum period of eight (8) years. However, in special circumstances a candidate be granted an extension of one (1) year by the School to complete the program. This extension shall be given only once to the student.

2. RULES OF ADMISSION

Rules of Admission shall be as per the prevalent rules of the University of Jammu along with the eligibility criteria as prescribed by the Council of Architecture (CoA).

3. PROGRAMME DESIGN AND INTENT

The five years of the program shall have to divide as given in Table 1 below:

Table 1: Division of Five Years of the Program

STAGE – I				
S. No.	Title of Study	Year	Semester	Intent/ Purpose
1	Basic Studies (BS)	Year I	Semester I	<ul style="list-style-type: none"> Introduce students to the world of architecture. Create interest in them regarding architecture. Introduce the basic skills essential for understanding architecture.
			Semester II	
2	Foundation Studies (FS)	Year II	Semester III	<ul style="list-style-type: none"> Lay the foundation of critical thinking in architecture. Lay the foundation of holistic approach to design. Gain technical knowledge of all the critical aspects of architecture like MEP/ BMS/ Waste management, etc. Understand the building codes, regulations and other methodologies of construction of buildings.
			Semester IV	
3	Exploration Studies (ES)	Year III	Semester V	<ul style="list-style-type: none"> Encourage students to delve deeper into the topics that they have learnt. Inculcate into students the idea that architecture is limitless and that there is a tremendous scope for further exploration. Train students to explore beyond the regular curriculum in order to achieve better solutions to the problems.
			Semester VI	



STAGE – II				
S. No.	Title of Study	Year	Semester	Intent/ Purpose
4	Experimentation Studies (ES)	Year IV	Semester VII	<ul style="list-style-type: none"> • Train students to experiment fearlessly with their designs in order to make their solutions more apt and appropriate. • Encourage the students to use different permutations and combinations of their skills and knowledge to better their solutions.
			Semester VIII	
5	Application Studies (AS)	Year V	Semester IX	<ul style="list-style-type: none"> • Train students to apply whatever skills and knowledge they have acquired on to their projects. • Encourage students to produce final design projects those are ready to build.
			Semester X	

4. **COURSE PEDAGOGY**

To achieve the desired intent, the school shall follow the course pedagogy as given below:

4.1. **Lecture (L)**

Lectures are the basic and primary mode of teaching to help understand the theory/ concepts. Faculty members shall deliver lectures to transfer the specific knowledge, theories, and concepts effectively to the students. These lectures shall have to be supplemented by regular tests to verify whether the concepts have had been understood.

4.2. **Practical (P)**

To develop a hands-on approach, students shall do small projects individually or in groups, both on and off campus in order to acquire skills in various materials and technologies. The technical workshops, educational workshops and community activity shall also form an integral part of Practical.

4.3. **Studio (S)**

In these studios, the students shall be confronted with real life situations and shall be coached to identify the problems first and then to resolve them by bringing up the best possible solutions. These studios shall be like laboratories where the creative idea is born. These studios shall help students to evolve and experiment with their ideas. The studios shall be the spaces that evoke and enhance the feeling of working in groups thereby teaching students the essence of teamwork and collaboration along with individual contribution.

4.4. **Internship (A)**

The student shall have to train as an intern under a practicing architect for a specified period. The Internship shall take care of the nuances of the profession, which the student cannot get in the academic environment. It shall help the student to bring finesse to knowledge and skills that the student has acquired. The internship shall also provide opportunity for the students to work with their role models and no one can replace that feeling of gratification to work under great masters.

4.5. **Thesis (T)**

The Faculty members shall coach and guide the individual students on one-to-one basis in conducting research and writing the results of a topic and/ or undertaking research on a design project and writing the results. Thesis is the most important aspect of the



student's academic journey. It is the final integration of all the knowledge and skills that student has acquired right from the first year through the fourth year. It is the time for implementation and application of that knowledge. It is the final justification and in way a proof that the student is ready to graduate and acquire the coveted title of an 'ARCHITECT'.

In addition to the above methods, the Faculty members may take up any other method(s) as given below:

4.6. **Discussion seminar (D)**

Discussion on pre-assigned topics, reading and/or brief lectures/ presentations shall have to be taken-up. Through this, the students shall learn how to facilitate/ moderate a discussion; put forward various points and how to formulate, articulate their arguments.

4.7. **Research seminar (R)**

The student shall go through the process of critical enquiry within a specified field and topic of his interest by way of reading other persons' work(s) to understand the arguments, form coherent connections based on his understanding and then communicate the hypothesis through writing, supported by valid arguments of his own.

4.8. **Design Workshop (W)**

The students shall confront with real life problems and be coached to build, develop, and evolve the best possible solutions through construction of prototypes. In a way, these shall be the fusion of Practical(s) & Studio(s). Design Workshops shall, help in development of necessary skills, enhance decision making and understanding the process of execution from design concepts.

4.9. **Independent Study (I)**

The students shall select a topic of interest, read certain book on that topic, and do an assignment based on that topic. The faculty member shall guide the students in this study and shall also supervise and approve the assignment undertaken.

4.10. **Makeup Tutorial (M)**

Such students who miss their classes for reasons whatsoever, if interested, shall engage the faculty member for one-to-one sessions to make up for missed classes subject to the availability of the concerned faculty member(s).

5. MODE OF ASSESSMENT

5.1. The students shall be assessed in each course by way of the following modes:

- i. **Internal Assessment (IA)**
- ii. **External Examination (EE)**

5.2. The courses, having Internal Assessment as the only mode of assessment be called as **Internal Only (IO)** courses, whereas the courses having both Internal Assessment and External Examination as the modes of assessment be called as **Internal External (IE)** courses.

**6. INTERNAL ASSESSMENT SCHEME**

6.1. The components of the Internal Assessment shall be as follows:

i. **Class Presence (CP)**, calculated as per the attendance of the student as per the Table 3 given below:

Table 3: Calculation for CP of a student in each course

S. No.	Percentage of Attendance secured	No. of Marks awarded
1	Below 75%	0
2	Equal to or more than 75 % but less than 80%	2%
3	Equal to or more than 80 % but less than 85%	4%
4	Equal to or more than 85 % but less than 90%	6%
5	Equal to or more than 90 % but less than 95%	8%
6	more than 95 %	10%

ii. **Class Assignments (CA)**, which shall include all sorts of assignments (reading, writing and others) announced in the class. Studio courses shall also have design exercises as part of their class assignments. There shall be minimum **three (3)** class assignments for all lecture/ studio/ practical courses. All assignments shall be due at the time indicated. Late submissions not accepted without an officially documented excuse. Marks up to 10% shall deduct for late submission.

iii. **Mid-Term (MT)**, which shall include a test based on the Lectures/ Studio/ Practical conducted by the faculty. This test shall be in the form of Theory Paper or Jury or Viva-voce and shall be mandatory to all students. Absence in MT shall be marked zero.

6.2. The weightage of marks for the Internal Assessment Scheme shall be as given in Table 4 below:

Table 4: Weightage for Internal Assessment Scheme

S. No.	Mode of Assessment	Overall Weightage (OW)	Component	Component Weightage
1	Internal Assessment (IA)	50%	CP	10% of OW
			CA I	20% of OW
			CA II	20% of OW
			CA III	20% of OW
			MT	30% of OW

6.3. Any student not able to submit his assignment(s) on time and/ or not able to attend the scheduled Mid-Term shall be marked zero. However, in genuine cases, the decision of the Principal in writing shall be final and binding.

6.4. The Internal Assessment record of each student for each semester have to be maintained properly by the respective Subject Co-coordinators for the purpose of audit, conducted by the officer-in-charge, nominated by the University.



7. EXTERNAL EXAMINATION SCHEME

7.1. The components of the External Examination shall be as follows:

- i. **Theory Paper;** shall be conducted for all Lecture type courses.
- ii. **Jury;** shall be conducted for all Studio type courses.
- iii. **Viva-voce;** shall be conducted for all Practical type courses.

7.2. Theory Paper set by the external examiners shall consist of the following:

- i. **Multiple Choice Questions (MCQ)** based on the contents of the course with four possible answers out of which only one is correct.
- ii. **Short Answer Type Questions (SATQ)** based on the contents of the course, which shall have the descriptive answers of not more than 100-150 words.
- iii. **Long Answer Type Questions (LATQ)** based on the contents of the course, which shall have descriptive answers of not more than 250-300 words, in order to judge the ability to apply given knowledge and analyze given situation.

7.3. The Jury shall take place in a designated area of the School and the students shall display work (done in the entire semester) through digital/ print media on A0/ A1/ A2 sheets, along with detailed models and reports, if any.

7.4. The students shall display their work well before the scheduled time of Jury, conveyed to them in advance. Any student not able to attend the scheduled Jury shall be marked zero. However, in genuine cases, the decision of the Principal in writing shall be final and binding.

7.5. The weightage of marks for the External Examination Scheme shall be as given in Table 5 below:

Table 5: Weightage for External Examination Scheme

S. No.	Mode of Assessment	Overall Weightage (OW)	Component	Component Weightage
1	External Examination (EE)	50%	Theory Paper	100% of OW
			Jury	100% of OW
			Viva-voce	100% of OW

8. RULES OF EXAMINATION

Rules of Examination shall be, as approved by the Board of Studies in Architecture (BoSA) and as issued/ amended by Jammu University from time to time.



SEMESTER-WISE TEACHING AND EXAMINATION SCHEME

S.No.	Course Code	Course Title	Teaching Scheme					Examination Scheme			
			L	T	P	S	C	IA	EE	TOTAL	D
1	SEMESTER - I										
1	A F 1 0 1 1 S	Design Communication - I	1	0	0	4	5	50	50	100	-
2	A A 1 0 1 2 S	Model Making Practices - I	0	0	4	0	2	50	50	100	-
3	A A 1 0 1 1 L	History of Architecture - I	2	1	0	0	3	50	50	100	3
4	A A 1 0 1 2 L	Theory of Architecture - I	2	1	0	0	3	50	50	100	3
5	A A 1 0 1 3 L	Orientation to Architecture	2	0	0	2	4	50	50	100	3
6	A H 1 0 1 4 L	Communication Skills	2	1	0	0	3	50	50	100	3
7	A E 1 0 1 1 P	Workshop Practices - I	0	0	4	0	2	50	50	100	3
TOTAL			9	3	8	6	22	350	350	700	15

2	SEMESTER - II										
1	A F 1 0 2 1 S	Design Communication - II	1	0	0	4	5	50	50	100	-
2	A A 1 0 2 2 S	Model Making Practices - II	0	0	4	0	2	50	50	100	-
3	A A 1 0 2 1 L	History of Architecture - II	2	1	0	0	3	50	50	100	3
4	A A 1 0 2 2 L	Theory of Architecture - II	2	1	0	0	3	50	50	100	3
5	A E 1 0 2 1 P	Workshop Practices - II	0	0	4	0	2	50	50	100	3
6	A A 1 0 2 2 P	Software Applications - I	2	0	2	0	3	50	50	100	3
7	A E 1 0 2 3 P	Surveying & Levelling	2	0	2	0	3	50	50	100	3
8	A N 1 0 2 1 I	National Service Scheme (NSS)	NA	NA	NA	NA	NC	0	0	0	NA
TOTAL			9	2	12	4	21	350	350	700	15

3	SEMESTER - III										
1	A A 2 0 3 1 S	Architectural Design Studio - I	1	0	0	4	5	50	50	100	-
2	A A 2 0 3 2 S	Design Documentation - I	1	0	0	2	3	50	50	100	-
3	A A 2 0 3 1 L	History of Architecture - III	2	1	0	0	3	50	50	100	3
4	A A 2 0 3 2 L	Building Construction Technology - I	1	0	0	2	3	50	50	100	3
5	A E 2 0 3 3 L	Building Materials - I	2	0	0	0	2	50	50	100	3
6	A E 2 0 3 4 L	Building Systems & Management - I	2	0	0	0	2	50	50	100	3
7	A E 2 0 3 5 L	Theory of Structures - I	2	1	0	0	3	50	50	100	3
8	A A 2 0 3 2 P	Software Applications - II	2	0	2	0	3	50	50	100	3
TOTAL			13	2	2	8	24	400	400	800	18

In case of any discrepancy in Teaching or Examination Scheme across documents, please report the same to the Head of School for immediate review, consideration and decision.

**SEMESTER-WISE TEACHING AND EXAMINATION SCHEME**

S.No.	Course Code	Course Title	Teaching Scheme					Examination Scheme			
			L	T	P	S	C	IA	EE	TOTAL	D
4	SEMESTER - IV										
1	A A 2 0 4 1 S	Architectural Design Studio - II	1	0	0	4	5	50	50	100	-
2	A A 2 0 4 2 S	Design Documentation - II	1	0	0	2	3	50	50	100	-
3	A A 2 0 4 1 L	History of Architecture - IV	2	1	0	0	3	50	50	100	3
4	A A 2 0 4 2 L	Building Construction Technology - II	1	0	0	2	3	50	50	100	3
5	A E 2 0 4 3 L	Building Materials - II	2	0	0	0	2	50	50	100	3
6	A E 2 0 4 4 L	Building Systems & Management - II	2	0	0	0	2	50	50	100	3
7	A E 2 0 4 5 L	Theory of Structures - II	2	1	0	0	3	50	50	100	3
8	A A 2 0 4 2 P	Software Applications - III	2	0	2	0	3	50	50	100	3
TOTAL			13	2	2	8	24	400	400	800	18

5	SEMESTER - V										
1	A A 3 0 5 1 S	Architectural Design Studio - III	1	0	0	7	8	50	50	100	-
2	A A 3 0 5 1 L	Economics of Design	2	0	0	0	2	50	50	100	3
3	A A 3 0 5 2 L	Building Construction Technology - III	1	0	0	2	3	50	50	100	3
4	A L 3 0 5 3 L	Elective - I (Choice 1)	2	0	0	2	4	50	50	100	3
	A L 3 0 5 4 L	Elective - I (Choice 2)	2	0	0	2	4	50	50	100	3
	A L 3 0 5 5 L	Elective - I (Choice 3)	2	0	0	2	4	50	50	100	3
5	A A 3 0 5 6 L	Building Codes & Regulations - I	2	0	0	0	2	50	50	100	3
6	A E 3 0 5 7 L	Environmental Design Procedures - I	2	0	0	0	2	50	50	100	3
7	A A 3 0 5 2 P	Software Applications - IV	2	0	2	0	3	50	50	100	3
TOTAL			12	0	2	11	24	350	350	700	18

6	SEMESTER - VI										
1	A A 3 0 6 1 S	Architectural Design Studio - IV	1	0	0	7	8	50	50	100	-
2	A E 3 0 6 1 L	Estimation Costing & Specifications	2	1	0	0	3	50	50	100	3
3	A A 3 0 6 2 L	Building Construction Technology - IV	1	0	0	2	3	50	50	100	3
4	A L 3 0 6 3 L	Elective - II (Choice 1)	2	1	0	0	3	50	50	100	3
	A L 3 0 6 4 L	Elective - II (Choice 2)	2	1	0	0	3	50	50	100	3
	A L 3 0 6 5 L	Elective - II (Choice 3)	2	1	0	0	3	50	50	100	3
5	A A 3 0 6 6 L	Building Codes & Regulations - II	2	0	0	0	2	50	50	100	3
6	A E 3 0 6 7 L	Environmental Design Procedures - II	2	0	0	0	2	50	50	100	3
7	A A 3 0 6 2 P	Software Applications - V	2	0	2	0	3	50	50	100	3
TOTAL			12	2	2	9	24	350	350	700	18

In case of any discrepancy in Teaching or Examination Scheme across documents, please report the same to the Head of School for immediate review, consideration and decision.

**FIRST YEAR (SEMESTER – I)**

A F 1 0 1 1 S					Design Communication - I											
Teaching Scheme					Internal Assessment						External Examination			TOTAL	D	
L	T	P	S	Credits	CP	CA-I	CA-II	CA-III	MT	IA TOTAL	T	J	V	EE TOTAL		MARKS
1	0	0	4	5	5	10	10	10	15	50		50		50	100	-
Pre-Requisite (s)					NIL											

COURSE OUTCOMES

After successful completion of this course, students shall be able to;

1. Introduce students to various ways and techniques of communication design ideas.
2. Get awareness about various tools and strategies available and shall learn how to use them effectively.
3. Turn abstract ideas into practical outcomes for intended users.

COURSE CONTENTS*(75 Contact Periods)***Unit-I: Line & Shape***(20 Contact Periods)*

Visual Art based concepts of line, types of lines, line direction, line quality, line as value, line as suggestion of form; shape, volume and mass, natural shapes, distorted shapes, abstracted shapes, pure shapes and forms, curvilinear shapes, rectilinear shapes and combinations, positive & negative shapes.

Unit-II: Pattern & Texture*(15 Contact Periods)*

Visual Art based concepts of pattern & texture, difference and similarities in pattern & texture, tactile and visual texture.

Unit-III: Illusion of Space & Motion*(20 Contact Periods)*

Visual Art based concepts of depth through perspectives; motion, ways of suggesting motion, optical (eye) movement.

Unit-IV: Value & Colour*(20 Contact Periods)*

Visual Art based concepts of value pattern, value as emphasis, techniques to create value; Colour, characteristics of colour, properties of colour, colour palettes, techniques of colour mixing, cool & warm colours, colour as a tool of emphasis, colour & balance, colour schemes and uses of colour, colour as a psychological tool.

NOTES:

For consulting books on the above-mentioned topics, kindly refer to the "Suggested Books" section of this document.
For important instructions, kindly refer to the "Note to Course Co-ordinator/ Faculty" and "Note to Paper Setters/ External Examiners" sections of this document.

**FIRST YEAR (SEMESTER – I)**

A A 1 0 1 2 S					Model Making Practices - I											
Teaching Scheme					Internal Assessment						External Examination			TOTAL	D	
L	T	P	S	Credits	CP	CA-I	CA-II	CA-III	MT	IA TOTAL	T	J	V	EE TOTAL		MARKS
0	0	4	0	2	5	10	10	10	15	50		50		50	100	-
Pre-Requisite (s)					NIL											

COURSE OUTCOMES

After successful completion of this course, students shall be able to;

1. Learn how to use architectural modelling equipment and tools properly.
2. Learn how to make architectural models and inculcate this habit right from the beginning.
3. Enhance the understanding of design by the technique of Learning by Doing.

COURSE CONTENTS**(60 Contact Periods)****Unit-I: Introduction To Model Making****(20 Contact Periods)**

Introduction to model making, its necessity and importance, tools & materials used for model making, surface development, scale, its importance and scale selection.

Studio exercises based on surface development of simple solids like cube, cuboid, cone, pyramid, and cylinder.

Unit-II: Form Development**(40 Contact Periods)**

Form development with the help of different additive and subtractive operations.

Studio exercises based on form development using Merging, Nesting, Offsetting, Carving, Compressing, Fracturing, Grading, Shifting, Notching, and Twisting.

NOTES:

For consulting books on the above-mentioned topics, kindly refer to the "Suggested Books" section of this document.

For important instructions, kindly refer to the "Note to Course Co-ordinator/ Faculty" and "Note to Paper Setters/ External Examiners" sections of this document.

**FIRST YEAR (SEMESTER – I)**

A A 1 0 1 1 L					History of Architecture - I											D
Teaching Scheme					Internal Assessment						External Examination				TOTAL	
L	T	P	S	Credits	CP	CA-I	CA-II	CA-III	MT	IA TOTAL	T	J	V	EE TOTAL	MARKS	
2	1	0	0	3	5	10	10	10	15	50	50			50	100	3
Pre-Requisite (s)					NIL											

COURSE OUTCOMES

After successful completion of this course, students shall be able to;

1. Know the historic background of different cultures and traditions in context to Indian architecture.
2. Get awareness about the technological advancements that significantly impacted the architectural development around India.
3. Analyse what was appropriate and what was inappropriate in context with the Indian architecture.

COURSE CONTENTS*(45 Contact Periods)***Unit-I: Architecture as a Measure of Man***(10 Contact Periods)*

Lectures based on fundamental principles underlying Indian architecture; architecture as the measure of man, the need for shelter focusing on the houses of Banni Kutch; 'pols' of Ahmedabad; Jaisalmer, Rajasthan; the squatter settlements of Mumbai; the urban shrines.

Unit-II: Architecture as a Model of Cosmos*(15 Contact Periods)*

Lectures based on architecture as a model of the cosmos, Vastupurusha mandala; architecture with special focus on Stupa at Sanchi, Madhya Pradesh; university at Nalanda, Bihar; temple architecture at Elephanta near Mumbai; Kailasa in Ellora; Srirangam, Tamil Nadu; Meenakshi temple at Madurai; Sun temple at Konark.

Lectures based on sub-terranean architecture with focus on the Adalaj.

Unit-III: Islamic Architecture*(10 Contact Periods)*

Lectures based on Islamic architecture with focus on the paradise garden; Humayun's tomb; the Taj Mahal; the Qutub Minar with special attention to the materials, quality and finesse.

Unit-IV: Assimilation And Transformation In Architecture*(10 Contact Periods)*

Lectures based on the influence, assimilation and transformation in architecture with examples of Diwan-i-khas at Fatehpursikri; Jain temple at Ranakpur, Rajasthan; Padmanabhapuram temple complex in Kerala; the city planning of Jaipur.

NOTES:

For consulting books on the above-mentioned topics, kindly refer to the "Suggested Books" section of this document.

For important instructions, kindly refer to the "Note to Course Co-ordinator/ Faculty" and "Note to Paper Setters/ External Examiners" sections of this document.

**FIRST YEAR (SEMESTER – I)**

A A 1 0 1 2 L					Theory of Architecture - I												
Teaching Scheme					Internal Assessment						External Examination				TOTAL	D	
L	T	P	S	Credits	CP	CA-I	CA-II	CA-III	MT	IA TOTAL	T	J	V	EE TOTAL	MARKS		
2	1	0	0	3	5	10	10	10	15	50	50			50	100	3	
Pre-Requisite (s)					NIL												

COURSE OUTCOMES

After successful completion of this course, students shall be able to;

1. Get introduced to the basic principles of architecture.
2. Get awareness of the many aspects of the practice of good architecture.
3. Formulate own design philosophies.

COURSE CONTENTS*(45 Contact Periods)***Unit-I: Basic principles of Architecture***(20 Contact Periods)*

Lectures based on Vitruvius and the three basic principles proposed by him, viz. Firmitas (strength), Utilitas (functionality) and Venustas (beauty).

Visual Art based exercises to reinforce the concepts of strength and stability (Firmitas), basic function and usage (Utilitas) and concept of scale and proportion for aesthetics (Venustas)

Unit-II: Ordering principles of Architecture*(25 Contact Periods)*

Lectures based on ordering principles namely, axis, symmetry, rhythm, datum, hierarchy and transformation.

Visual Art based exercises to reinforce the concepts of the same with respect to architecture.

NOTES:

For consulting books on the above-mentioned topics, kindly refer to the "Suggested Books" section of this document.

For important instructions, kindly refer to the "Note to Course Co-ordinator/ Faculty" and "Note to Paper Setters/ External Examiners" sections of this document.

**FIRST YEAR (SEMESTER – I)**

A A 1 0 1 3 L					Orientation to Architecture											
Teaching Scheme					Internal Assessment						External Examination			TOTAL	D	
L	T	P	S	Credits	CP	CA-I	CA-II	CA-III	MT	IA TOTAL	T	J	V	EE TOTAL		MARKS
2	0	0	2	4	5	10	10	10	15	50	50			50	100	3
Pre-Requisite (s)					NIL											

COURSE OUTCOMES

After successful completion of this course, students shall be able to;

1. Get introduced to the rigor of architectural education.
2. Get awareness of the many aspects of the profession of architecture.
3. Know whether he is interested in architecture as a career.

COURSE CONTENTS*(60 Contact Periods)***Unit-I: Introduction To Architecture***(10 Contact Periods)*

Lectures based on the architecture and its context; difference between architecture & building; definition of an architect; overview of design and design method.

Unit-II: Architecture Profession And Architecture Education *(20 Contact Periods)*

Lectures based on architecture as a profession and architectural projects delivery process; architecture in practice, role players and their importance; design process and its stages. Education of an architect with discussion on typical program curriculum, project based learning (PBL), design studio, student projects, presentations and jury.

Unit-III: Vocabulary Used In Architecture*(10 Contact Periods)*

Common terms and vocabulary used in architecture that a first year student should know.

Unit-IV: Famous Architects – World And Indian*(20 Contact Periods)*

Renowned architects of the world with information on their most famous architectural projects. Renowned architects of India with information on their most famous architectural projects.

NOTES:

For consulting books on the above-mentioned topics, kindly refer to the “Suggested Books” section of this document. For important instructions, kindly refer to the “Note to Course Co-ordinator/ Faculty” and “Note to Paper Setters/ External Examiners” sections of this document.

**FIRST YEAR (SEMESTER – I)**

A H 1 0 1 4 L					Communication Skills											
Teaching Scheme					Internal Assessment						External Examination				TOTAL	D
L	T	P	S	Credits	CP	CA-I	CA-II	CA-III	MT	IA TOTAL	T	J	V	EE TOTAL	MARKS	
2	1	0	0	3	5	10	10	10	15	50	50			50	100	3
Pre-Requisite (s)					NIL											

COURSE OUTCOMES

After successful completion of this course, students shall be able to;

1. Develop skills in effective verbal communication.
2. Write concisely and correctly and present ideas in a Logical manner.
3. Develop general public speaking skills and confidence.

COURSE CONTENTS*(45 Contact Periods)***Unit-I: Verbal Communication***(20 Contact Periods)*

Lectures based on understanding the differences among seminars, conferences, convention, congress, debates, extempore speeches, and panel discussions etc., Verbal presentations on architectural topics.

Lectures based on understanding simple grammar, using appropriate words, filling of blanks, completing of sentences, active and passive voice, correcting mistakes in texts, use of proverbs and metaphors.

Lectures based on reading and listening comprehension to develop the ability to read and listen with understanding and draw reasoned conclusions.

Lectures based on interpretation of questionnaires, application forms and analysis of materials such as texts, reports, technical literature.

Taking Notes from spoken and written English and comprehension of lectures and speeches to locate key points.

Unit-II: Written Communication*(25 Contact Periods)*

Writing letters to principal, head of the departments and teachers.

Professional letters to fellow architects, clients, public authorities, contractors, enquiries to industries, dealers.

Writing essays on current political, technical and social problems and architectural projects.

NOTES:

For consulting books on the above-mentioned topics, kindly refer to the "Suggested Books" section of this document.

For important instructions, kindly refer to the "Note to Course Co-ordinator/ Faculty" and "Note to Paper Setters/ External Examiners" sections of this document.

**FIRST YEAR (SEMESTER – I)**

A E 1 0 1 1 P					Workshop Practices - I											TOTAL MARKS	D
Teaching Scheme					Internal Assessment						External Examination						
L	T	P	S	Credits	CP	CA-I	CA-II	CA-III	MT	IA TOTAL	T	J	V	EE TOTAL			
0	0	4	0	2	5	10	10	10	15	50			50	50	100	3	
Pre-Requisite (s)					NIL												

COURSE OUTCOMES

After successful completion of this course, students shall be able to;

1. Learn how to use workshop equipment and tools properly.
2. Learn how to do fabrication jobs.
3. Enhance the understanding of design by the technique of Learning by Doing.

COURSE CONTENTS*(60 Contact Periods)***Unit-I: Introduction***(04 Contact Periods)*

Introduction to the Tools used in Carpentry and Fitting.

Unit-II: Trade Exercises*(48 Contact Periods)*

At least two exercises from each trade:

- A. Carpentry: Middle lap T joint, Cross lap joint, Mortise and Tenon T joint, Bridle T joint
 B. Fitting: Square joint, V joint, Half round joint, Dovetail joint

Unit-III: Demonstration*(08 Contact Periods)*

- A. Demonstration on Plumbing pipes, fittings and joints.
 B. Demonstration on Power tools in wood working.

NOTES:

For consulting books on the above-mentioned topics, kindly refer to the “Suggested Books” section of this document.
 For important instructions, kindly refer to the “Note to Course Co-ordinator/ Faculty” and “Note to Paper Setters/ External Examiners” sections of this document.



**NOTE TO COURSE CO-ORDINATOR/ FACULTY
FIRST YEAR (SEMESTER – I)**

S.No.	Course Code	Note to Course Co-ordinator/ Faculty
1	A F 1 0 1 1 S	<u>STUDIO</u>
2	A A 1 0 1 2 S	1. Detailed teaching program/ lesson plan shall be made and circulated to the students at the commencement of the semester. 2. At least TWO (2) Time-problems and ONE (1) Final Design Problem shall be completed in the entire semester, covering the entire syllabus uniformly.
3	A A 1 0 1 1 L	<u>LECTURE</u>
4	A A 1 0 1 2 L	1. Detailed teaching program/ lesson plan shall be made and circulated to the students at the commencement of the semester.
5	A A 1 0 1 3 L	
6	A H 1 0 1 4 L	2. The Course Co-ordinator shall be free to collaborate with other subject faculty, engage an additional faculty for assistance, engage Industry experts for special lectures, take students for Field-work, Market surveys and/ or Construction sites, etc. wherever required. Permissions from Principal/ HOD shall be taken. 3. Minimum THREE (3) class assignments shall be completed in the entire semester, covering the entire syllabus uniformly.
7	A E 1 0 1 1 P	<u>PRACTICAL</u> 1. Detailed teaching program/ lesson plan shall be prepared and circulated to the students at the commencement of the semester. 2. Software shall be taught with the version available at the School. 3. The classes shall be held in the Workshop/ Computer Lab/ On-Field.

**NOTE TO PAPER SETTERS/ EXTERNAL EXAMINERS
FIRST YEAR (SEMESTER – I)**

S.No.	Course Code	Note to External Examiners
1	A F 1 0 1 1 S	<u>JURY</u>
2	A A 1 0 1 2 S	1. Exam shall be an Open Jury type. 2. Jury shall examine the displayed work done by the student in full semester. 3. The duration of the Jury shall be the time taken to examine all the students. 4. Minimum passing marks: Forty five percent.
3	A A 1 0 1 1 L	<u>THEORY PAPER</u> (Conducted by University)
4	A A 1 0 1 2 L	1. Question paper shall consist of THREE Sections; A, B and C.
5	A A 1 0 1 3 L	2. Section A shall consist of TEN MCQs of One (1) Mark each.
6	A H 1 0 1 4 L	Student shall ATTEMPT ALL. 3. Section B shall consist of SIX SATQs of Five (5) Marks each. Student shall ATTEMPT ANY FOUR. 4. Section C shall consist of THREE LATQs of Ten (10) Marks each. (These may be Sketching/ Drawing based) Student shall ATTEMPT ANY TWO. Minimum passing marks: Forty five percent.
7	A E 1 0 1 1 P	<u>VIVA-VOCE</u> 1. Exam shall be Viva-voce type. 2. Student shall be examined through Viva and/ or by spontaneous test exercises in Workshop/ Computer Lab/ On-Field. 3. The duration of the Viva-voce shall be the time taken to examine all the students. 4. Minimum passing marks: Forty five percent.



SUGGESTED BOOKS

FIRST YEAR (SEMESTER – I)

S.No.	Course Code	Book Title
1	A F 1 0 1 1 S	1 Freehand Drawing And Discovery By Reekie, F, Viva Books. 2 Perspective From Basic To Creative By Robert Gill. 3 Sketching By Pratap Mullick. 4 Sketching And Drawing By Vasudev Kamath. 5 Water Colour Rendering By Hayashi Studio (1994), Graphic-Sha Publishing Co., Ltd. 6 Colour In Architectural Illustration By Rochan, Richard & Linton, Herald (1989).
2	A A 1 0 1 2 S	1 Model Making By Megan Werner. 2 Studio Craft & Techniques For Architects By Miriam Delaney, Anne Gorman. 3 Operative Design: A Catalogue Of Spatial Verbs By Anthony Di Mari.
3	A A 1 0 1 1 L	1 Indian Architecture: Buddhist And Hindu Periods By Percy Brown. 2 Indian Architecture: Islamic Period By Percy Brown. 3 History Of Architecture And Ancient Building Materials In India By Satish Chandra. 4 Encyclopedia Of Indian Architecture: Hindu Buddhist Jain And Islamic By Nagarch. 5 Concise History Of Modern Architecture In India By Lang, Jon. 6 Architecture In India Since 1990 By Rahul Mehrotra. 7 Vistara: The Architecture Of India, Edited By Carmen Kaigal.
4	A A 1 0 1 2 L	1 Concepts Of Space In Traditional Indian Architecture By Yatin Pandya, 2005. 2 Design Fundamentals By Parmar V. S., (1990), Somaiya Publications Private Limited, New Delhi. 3 Space Form & Order By D. K. Ching. 4 Elements Of Space Making By Yatin Pandya. 5 A History Of Architecture: Settings And Rituals By Spiro Kostof.
5	A A 1 0 1 3 L	1 Beginner's Guide: How To Become An Architect By Ryan Hansanuwat. 2 Becoming An Architect: A Guide To Careers In Design By Lee W. Waldrep. 3 101 Things I Learned In Architecture School By Matthew Frederick. 4 Vitruvius: The Ten Books On Architecture By Vitruvius, Herbert Langford Warren. 5 10 X 10 (Architecture) By Editors Of Phaidon Press.
6	A H 1 0 1 4 L	1 Working In English: Teachers Book, Jones Leo. 2 Communicative English For Professional Courses, Mudambadithaya G.S.
7	A E 1 0 1 1 P	1 House Carpentry Simplified By Nelson Burbank, (1986), Mcgraw Hill Publications, NY. 2 Workshop Technology, Vol 1 By Hajra Choudhury (1998), Media Promoters & Publishers. 3 Basic Carpentry Techniques By J.J. Williams, (1981), Ortho Books.

**FIRST YEAR (SEMESTER – II)**

A F 1 0 2 1 S					Design Communication - II											
Teaching Scheme					Internal Assessment						External Examination			TOTAL MARK	D	
L	T	P	S	Credits	CP	CA-I	CA-II	CA-III	MT	IA TOTAL	T	J	V	EE TOTAL	MARK	D
1	0	0	4	5	5	10	10	10	15	50		50		50	100	-
Pre-Requisite (s)					AF1011S											

COURSE OUTCOMES

After successful completion of this course, students shall be able to;

1. Introduce students to various ways and techniques of communication design ideas.
2. Get awareness about various tools and strategies available and to learn how to use them effectively.
3. Turn abstract ideas into practical outcomes for intended users.

COURSE CONTENTS*(75 Contact Periods)***Unit-I: Unity & Harmony***(20 Contact Periods)*

Visual Art based concepts of gestalt principle of perception, ways to achieve unity/ harmony, unity with variety, examples of harmony.

Unit-II: Emphasis & Focal Point*(20 Contact Periods)*

Visual Art based concepts of emphasis, ways to achieve emphasis, degree of emphasis.

Visual Art based concepts of focus, achieving focus, maintaining it, ways of creating focal point.

Unit-III: Scale & Proportion*(15 Contact Periods)*

Visual Art based concepts of scale, ways of manipulating scale.

Visual Art based concepts of proportion, human proportion, and golden proportion.

Unit-IV: Balance & Rhythm*(20 Contact Periods)*

Visual Art based concepts of imbalance, symmetrical balance, asymmetrical balance, radial balance.

Visual Art based concepts of rhythm & motion, alternating rhythm, progressive rhythm.

NOTES:

For consulting books on the above-mentioned topics, kindly refer to the "Suggested Books" section of this document.

For important instructions, kindly refer to the "Note to Course Co-ordinator/ Faculty" and "Note to Paper Setters/ External Examiners" sections of this document.

**FIRST YEAR (SEMESTER – II)**

A A 1 0 2 2 S					Model Making Practices - II										
Teaching Scheme					Internal Assessment						External Examination			TOTAL	D
L	T	P	S	Credits	CP	CA-I	CA-II	CA-III	MT	IA TOTAL	T	J	V	EE TOTAL	MARK
0	0	4	0	2	5	10	10	10	15	50		50		50	100
Pre-Requisite (s)					AA1012S										

COURSE OUTCOMES

After successful completion of this course, students shall be able to;

1. Learn how to use architectural modelling equipment and tools properly.
2. Learn how to make architectural models and inculcate this habit right from the beginning.
3. Enhance the understanding of design by the technique of Learning by Doing.

COURSE CONTENTS*(60 Contact Periods)***Unit-I: Architectural Model Making***(60 Contact Periods)*

During the entire semester, the student shall prepare scaled models with focus on usage of materials, detail and finesse. The following models shall be prepared:

- A. Model of a Chair;
- B. Model of a Structural Form/ Model of an Organic Form;
- D. Model of any famous building (Architectural Environment).

The design, materials and the scale of the model shall be discussed, finalized and approved by the Course-coordinator/ Faculty.

NOTES:

For consulting books on the above-mentioned topics, kindly refer to the "Suggested Books" section of this document. For important instructions, kindly refer to the "Note to Course Co-ordinator/ Faculty" and "Note to Paper Setters/ External Examiners" sections of this document.

**FIRST YEAR (SEMESTER – II)**

A A 1 0 2 1 L					History of Architecture - II											
Teaching Scheme					Internal Assessment						External Examination			TOTAL MARK	D	
L	T	P	S	Credits	CP	CA-I	CA-II	CA-III	MT	IA TOTAL	T	J	V			EE TOTAL
2	1	0	0	3	5	10	10	10	15	50	50			50	100	3
Pre-Requisite (s)					NIL											

COURSE OUTCOMES

After successful completion of this course, students shall be able to;

1. Know the historic background of different cultures and traditions in context to world architecture.
2. Get awareness about the technological advancements that significantly impacted the architectural development around the world.
3. Analyse what was appropriate and what was inappropriate in context with the world architecture.

COURSE CONTENTS*(45 Contact Periods)***Unit-I: Antiquity Architecture***(06 Contact Periods)*

Lectures based on Antiquity Architecture with focus on elements and construction style; Case studies on Giza Pyramids, Stone Henge, Petra and Abu Simbal Temple.

Unit-II: Greek And Roman Architecture*(15 Contact Periods)*

Lectures based on Greek Architecture and Roman Architecture with focus on elements and construction style; Case studies on Acropolis and Parthenon (Greek Architecture), Case studies on The Colosseum, Roman Aqueduct and Pantheon (Roman Architecture).

Unit-III: Early Christian And Byzantine Architecture*(06 Contact Periods)*

Lectures based on Early Christian & Byzantine Architecture with focus on the elements and construction style; Case studies on Hagia Sophia and St. Mark's Cathedral.

Unit-IV: Romanesque Architecture*(06 Contact Periods)*

Lectures based on Romanesque Architecture with focus on elements and construction style; Case studies on Pisa, Abbey Fontaney and Windsor Castle.

Unit-V: Islamic Architecture And Gothic Architecture*(12 Contact Periods)*

Lectures based on Islamic Architecture with focus on elements and construction style; Case studies on Dome of the Rock and Mecca.

Lectures based on Gothic Architecture with focus on elements and construction style; Case studies on Notre Dame Paris and Chartres Cathedral.

NOTES:

For consulting books on the above-mentioned topics, kindly refer to the "Suggested Books" section of this document.

For important instructions, kindly refer to the "Note to Course Co-ordinator/ Faculty" and "Note to Paper Setters/ External Examiners" sections of this document.

**FIRST YEAR (SEMESTER – II)**

A A 1 0 2 2 L					Theory of Architecture - II											
Teaching Scheme					Internal Assessment						External Examination			TOTAL MARK	D	
L	T	P	S	Credits	CP	CA-I	CA-II	CA-III	MT	IA TOTAL	T	J	V	EE TOTAL	MARK	D
2	1	0	0	3	5	10	10	10	15	50	50			50	100	3
Pre-Requisite (s)					AA1012L											

COURSE OUTCOMES

After successful completion of this course, students shall be able to;

1. Get introduced to the basic principles of architecture.
2. Get awareness of the many aspects of the practice of good architecture.
3. Formulate own design philosophies.

COURSE CONTENTS*(45 Contact Periods)***Unit-I: Modern Principles Of Architecture - I***(15 Contact Periods)*

Lectures based on modern principles namely, place, function & flexibility, structure, comfort, light. Visual Art/ Model based exercises to reinforce the concepts of place making, flexibility of space, structural stability, and usage of natural light in a space.

Unit-II: Modern Principles Of Architecture - II*(30 Contact Periods)*

Lectures based on modern principles namely, sustainability, legibility, sound, surface, detail. Visual Art/ Model based exercises to reinforce the concepts of durability, longevity, simplicity and clarity, surface treatment and detailing.

NOTES:

For consulting books on the above-mentioned topics, kindly refer to the "Suggested Books" section of this document.

For important instructions, kindly refer to the "Note to Course Co-ordinator/ Faculty" and "Note to Paper Setters/ External Examiners" sections of this document.

**FIRST YEAR (SEMESTER – II)**

A E 1 0 2 1 P					Workshop Practices - II											TOTAL MARK	D
Teaching Scheme					Internal Assessment						External Examination						
L	T	P	S	Credits	CP	CA-I	CA-II	CA-III	MT	IA TOTAL	T	J	V	EE TOTAL			
0	0	4	0	2	5	10	10	10	15	50			50	50	100	3	
Pre-Requisite (s)					NIL												

COURSE OUTCOMES

After successful completion of this course, students shall be able to;

1. Learn how to use workshop equipment and tools properly.
2. Learn how to do fabrication jobs.
3. Enhance the understanding of design by the technique of Learning by Doing.

COURSE CONTENTS*(60 Contact Periods)***Unit-I: Introduction***(04 Contact Periods)*

Introduction to the Tools used in Tin-Smithy and Black-Smithy.

Unit-II: Trade Exercises*(48 Contact Periods)*

At least two exercises from each trade:

A. Tin-Smithy: Tray, Cylinder, Hopper, Funnel.

B. Black Smithy: operations such as upsetting, drawing down, punching, and bending.

Unit-III: Demonstration*(08 Contact Periods)*

A. Demonstration on Welding techniques and processes.

B. Demonstration on Power tools in construction, electrical engineering and mechanical engineering.

NOTES:

For consulting books on the above-mentioned topics, kindly refer to the "Suggested Books" section of this document.

For important instructions, kindly refer to the "Note to Course Co-ordinator/ Faculty" and "Note to Paper Setters/ External Examiners" sections of this document.

**FIRST YEAR (SEMESTER – II)**

A A 1 0 2 2 P					Software Applications - I											
Teaching Scheme					Internal Assessment						External Examination			TOTAL	D	
L	T	P	S	Credits	CP	CA-I	CA-II	CA-III	MT	IA TOTAL	T	J	V	EE TOTAL	MARK	
2	0	2	0	3	5	10	10	10	15	50			50	50	100	3
Pre-Requisite (s)					NIL											

COURSE OUTCOMES

After successful completion of this course, students shall be able to;

1. Learn the use of basic software and apply same skills in producing faster and accurate designs.
2. Get awareness about the field of digitalization and help students in pursuing further studies
3. Produce accurate architectural designs and drawings along with faster co-ordination with different teams.

COURSE CONTENTS*(60 Contact Periods)***Unit-I: Introduction to Computers and Software***(02 Contact Periods)*

Introduction to computers, parts of a computer, setting up of a computer, creating folders, loading of software.

Unit-II: MS-Office – Word*(06 Contact Periods)*

MS-Office – Word: Introduction to MS-WORD-2007 or higher version, Text basics, Text formatting and saving file, Working with objects, Header and footer, Bullets and numbered lists, Tables, Styles and content, Merging documents, Sharing and maintaining document, Proofing the document, Printing.

Unit-III: MS-Office – Excel*(06 Contact Periods)*

MS-Office – Excel: Introduction to MS-EXCEL-2007 or higher version, Formatting excel workbook, Perform calculations with basic functions, Sort and filter data with excel, Create effective charts to present data visually, Protecting and sharing the workbook, Proofing and printing.

Unit-IV: MS-Office – PowerPoint*(06 Contact Periods)*

MS-Office – PowerPoint: Introduction to MS-POWERPOINT-2007 or higher version, Setting up Powerpoint environment, Creating slides and applying themes, Working with bullets and numbering, Working with objects, Hyperlinks and action buttons, Working with movies and sounds, Using SmartArt and tables, Animation and slide transition, Using slide master, Slide show option, Proofing and printing.

Practice Exercises*(40 Contact Periods)*

MS-Office – Practice exercises like writing letters in MS Word, tables and mathematical data entry in MS Excel, making presentations of the assignments in MS PowerPoint.

NOTES:

For consulting books on the above-mentioned topics, kindly refer to the “Suggested Books” section of this document.

For important instructions, kindly refer to the “Note to Course Co-ordinator/ Faculty” and “Note to Paper Setters/ External Examiners” sections of this document.

**FIRST YEAR (SEMESTER – II)**

A E 1 0 2 3 P					Surveying & Levelling											
Teaching Scheme					Internal Assessment						External Examination			TOTAL	D	
L	T	P	S	Credits	CP	CA-I	CA-II	CA-III	MT	IA TOTAL	T	J	V	EE TOTAL	MARK	D
2	0	2	0	3	5	10	10	10	15	50			50	50	100	3
Pre-Requisite (s)					NIL											

COURSE OUTCOMES

After successful completion of this course, students shall be able to;

1. Learn the use of basic surveying tools and apply geometric and trigonometric principles to basic surveying calculations.
2. Get awareness about the field procedures in basic types of surveys and equip students to prepare accurate, legible and complete notes in a well-prepared field book.
3. Apply drawing techniques in the development of a topographic map and to create awareness about the limitations of the basic surveying instruments and the possible errors that could arise.

COURSE CONTENTS*(60 Contact Periods)***Unit-I: Introduction and Measurements***(12 Contact Periods)*

Lectures based on Measurements & Computations; Basic Mathematics for Surveying; Measuring Horizontal Distances and Vertical Distances; Measuring Angles and Directions with on-field exercises.

Unit-II: Field Surveys*(48 Contact Periods)*

Lectures based on Property Surveys; Topographic Surveys & Maps; Construction Surveys with on-field exercises.

NOTES:

For consulting books on the above-mentioned topics, kindly refer to the "Suggested Books" section of this document.

For important instructions, kindly refer to the "Note to Course Co-ordinator/ Faculty" and "Note to Paper Setters/ External Examiners" sections of this document.



NOTE TO COURSE CO-ORDINATOR/ FACULTY FIRST YEAR (SEMESTER – II)

S.No.	Course Code	Note to Course Co-ordinator/ Faculty
1	A F 1 0 2 1 S	<u>STUDIO</u>
2	A A 1 0 2 2 S	1. Detailed teaching program/ lesson plan shall be made and circulated to the students at the commencement of the semester. 2. At least TWO (2) Time-problems and ONE (1) Final Design Problem shall be completed in the entire semester, covering the entire syllabus uniformly.
3	A A 1 0 2 1 L	<u>LECTURE</u>
4	A A 1 0 2 2 L	1. Detailed teaching program/ lesson plan shall be made and circulated to the students at the commencement of the semester. 2. The Course Co-ordinator shall be free to collaborate with other subject faculty, engage an additional faculty for assistance, engage Industry experts for special lectures, take students for Field-work, Market surveys and/ or Construction sites, etc. wherever required. Permissions from Principal/ HOD shall be taken. 3. Minimum THREE (3) class assignments shall be completed in the entire semester, covering the entire syllabus uniformly.
5	A E 1 0 2 1 P	<u>PRACTICAL</u>
6	A A 1 0 2 2 P	1. Detailed teaching program/ lesson plan shall be prepared and circulated to the students at the commencement of the semester.
7	A E 1 0 2 3 P	2. Software shall be taught with the version available at the School. 3. The classes shall be held in the Workshop/ Computer Lab/ On-Field.

NOTE TO PAPER SETTERS/ EXTERNAL EXAMINERS FIRST YEAR (SEMESTER – II)

S.No.	Course Code	Note to External Examiners
1	A F 1 0 2 1 S	<u>JURY</u>
2	A A 1 0 2 2 S	1. Exam shall be an Open Jury type. 2. Jury shall examine the displayed work done by the student in full semester. 3. The duration of the Jury shall be the time taken to examine all the students. 4. Minimum passing marks: Forty five percent.
3	A A 1 0 2 1 L	<u>THEORY PAPER</u> (Conducted by University)
4	A A 1 0 2 2 L	1. Question paper shall consist of THREE Sections; A, B and C. 2. Section A shall consist of TEN MCQs of One (1) Mark each. Student shall ATTEMPT ALL. 3. Section B shall consist of SIX SATQs of Five (5) Marks each. Student shall ATTEMPT ANY FOUR. 4. Section C shall consist of THREE LATQs of Ten (10) Marks each. (These may be Sketching/ Drawing based) Student shall ATTEMPT ANY TWO. Minimum passing marks: Forty five percent.
5	A E 1 0 2 1 P	<u>VIVA-VOCE</u>
6	A A 1 0 2 2 P	1. Exam shall be Viva-voce type.
7	A E 1 0 2 3 P	2. Student shall be examined through Viva and/ or by spontaneous test exercises in Workshop/ Computer Lab/ On-Field. 3. The duration of the Viva-voce shall be the time taken to examine all the students. 4. Minimum passing marks: Forty five percent.



SUGGESTED BOOKS

FIRST YEAR (SEMESTER – II)

S.No.	Course Code	Book Title
1	A F 1 0 2 1 S	1 Freehand Drawing And Discovery By Reekie, F, Viva Books. 2 Perspective From Basic To Creative By Robert Gill. 3 Sketching By Pratap Mullick. 4 Sketching And Drawing By Vasudev Kamath. 5 Water Colour Rendering By Hayashi Studio (1994), Graphic-Sha Publishing Co., Ltd. 6 Colour In Architectural Illustration By Rochan, Richard & Linton, Herald (1989).
3	A A 1 0 2 2 S	1 Model Making By Megan Werner. 2 Studio Craft & Techniques For Architects By Miriam Delaney, Anne Gorman. 3 Operative Design: A Catalogue Of Spatial Verbs By Anthony Di Mari.
4	A A 1 0 2 1 L	1 Sir Banister Fletcher's A History Of Architecture By Banister Fletcher. 2 World History Of Architecture By Lawrence Wodehouse, Marian Moffett & Michael Fazio. 3 World Architecture: The Masterworks By Will Pryce. 4 The Phaidon Atlas Of Contemporary World Architecture By Phaidon. 5 Encyclopedia Of World Architecture By Henri Stierlin.
2	A A 1 0 2 2 L	1 Concepts Of Space In Traditional Indian Architecture By Yatin Pandya, 2005. 2 Design Fundamentals By Parmar V. S., (1990), Somaiya Publications Private Limited, New Delhi. 3 Space Form & Order By D. K. Ching. 4 Elements Of Space Making By Yatin Pandya. 5 A History Of Architecture: Settings And Rituals By Spiro Kostof.
5	A E 1 0 2 1 P	1 Workshop Technology, Vol 1 By Hajra Choudhury (1998), Media Promoters & Publishers.
6	A A 1 0 2 2 P	1 MS-Office 2010 Training Guide By Prof. Satish Jain, M. Geetha. 2 Microsoft Office 2016 All-In-One For Dummies By Peter Weverka.
7	A E 1 0 2 3 P	1 Surveying Vol. I By K. R. Arora, (2000), Standard Book House, Delhi. 2 Textbook Of Surveying And Levelling By Agor, R. Khanna. 3 Advanced Surveying: Total Station, Gis And Remote Sensing By Satheeshgopi. 4 Surveying Vol 1 & 2 By B. C. Punmia.

**SECOND YEAR (SEMESTER – III)**

A A 2 0 3 1 S					Architectural Design Studio - I											
Teaching Scheme					Internal Assessment						External Examination			TOTAL	D	
L	T	P	S	Credits	CP	CA-I	CA-II	CA-III	MT	IA TOTAL	T	J	V	EE TOTAL		MARKS
1	0	0	4	5	5	10	10	10	15	50		50		50	100	-
Pre-Requisite (s)					NIL											

COURSE OUTCOMES

After successful completion of this course, students shall be able to;

1. Develop spatial thinking and skills necessary for the analysis and design of architectural space and form.
2. Understand architectural enclosures as mediating between people and the outside world.
3. Understand and learn the integration of different aspects of design with an objective of bettering the design solution.
4. Gain exposure to design thinking processes including envisioning, planning and various forms of analysis all of which help shape a robust problem statement that forward design innovation.
5. Work cooperatively as part of a team and take a leadership role when required.
6. Demonstrate basic competence in architectural design.

COURSE CONTENTS*(75 Contact Periods)***Unit-I: Design With Human Context***(75 Contact Periods)*

The theme of the design studio sequence shall be USER (HUMAN) CONTEXT. The focus remains on Ergonomics and Anthropometry. Lectures include topics such as Ergonomics, Anthropometry and Behavioural aspects of design with Lectures based on layout patterns, circulation patterns, bubble-diagrams, relationships of different spaces and derivation of space-area program.

Time Problem exercises shall be based on the layout of Kitchen/ Toilet/ Bedroom/ Dining Room/ Living Room.

Final Design Problem exercise shall be based on Residence for a family of six/ Residence for a Doctor/ Residence for an Artist.

NOTES:

For consulting books on the above-mentioned topics, kindly refer to the "Suggested Books" section of this document.

For important instructions, kindly refer to the "Note to Course Co-ordinator/ Faculty" and "Note to Paper Setters/ External Examiners" sections of this document.

**SECOND YEAR (SEMESTER – III)**

A A 2 0 3 2 S					Design Documentation - I											
Teaching Scheme					Internal Assessment						External Examination			TOTAL	D	
L	T	P	S	Credits	CP	CA-I	CA-II	CA-III	MT	IA TOTAL	T	J	V	EE TOTAL		MARKS
1	0	0	2	3	5	10	10	10	15	50		50		50	100	-
Pre-Requisite (s)					NIL											

COURSE OUTCOMES

After successful completion of this course, students shall be able to;

1. Understand the documents required from conception to completion of a design project.
2. Prepare and comprehend the drawings and documents.
3. Prepare schedules and other documents.

COURSE CONTENTS*(45 Contact Periods)***Unit-I: Introduction and Equipment***(02 Contact Periods)*

Introduction, Drafting Equipment and its care, Drawing & Drafting Fundamentals; Drawing Classification Systems, Sheet sizes.

Unit-II: Line Drawing*(04 Contact Periods)*

Lines, Line-types, Line-weights, Line-patterns, Lettering, Hatching patterns, Title Blocks, Annotations, Dimensioning, Drafting Conventions and Symbols, Tags and Graphic symbols used in Design drawings.

Unit-III: Orthographic Projection Systems*(09 Contact Periods)*

Concept of Orthographic projection system, Drawing of Isometric Views of simple and complex objects.

Unit-IV: Perspective*(09 Contact Periods)*

Concept of Perspective, Drawing of One-point and Two-point Perspective of simple and complex objects.

Unit-V: Sciography*(09 Contact Periods)*

Concept of Sciography, Drawing of Sciography of simple and complex objects.

Unit-VI: Schematic Drawings*(12 Contact Periods)*

Preparation of architectural Schematic drawings of a small/ medium project including rendering and presentation techniques. Schematic drawings shall include Floor Plan(s), Roof Plan, Exterior Elevations, Interior Elevations, Sections and Site Plan.

NOTES:

For consulting books on the above-mentioned topics, kindly refer to the "Suggested Books" section of this document.

For important instructions, kindly refer to the "Note to Course Co-ordinator/ Faculty" and "Note to Paper Setters/ External Examiners" sections of this document.

**SECOND YEAR (SEMESTER – III)**

A A 2 0 3 1 L					History of Architecture - III											
Teaching Scheme					Internal Assessment						External Examination			TOTAL	D	
L	T	P	S	Credits	CP	CA-I	CA-II	CA-III	MT	IA TOTAL	T	J	V	EE TOTAL	MARKS	D
2	1	0	0	3	5	10	10	10	15	50	50			50	100	3
Pre-Requisite (s)					NIL											

COURSE OUTCOMES

After successful completion of this course, students shall be able to;

1. Know the historic background of different cultures and traditions in context to Indian architecture.
2. Get awareness about the technological advancements that significantly impacted the architectural development around India.
3. Analyse what was appropriate and what was inappropriate in context with the Indian architecture.

COURSE CONTENTS*(45 Contact Periods)***Unit-I: Colonial Architecture***(12 Contact Periods)*

Lectures based on Colonial Architecture with backdrop of science and technology, commerce and urbanization during the Industrial Revolution in England, Case studies on Victoria Terminus, Raj Bhavan at Kolkata, the Rashtrapati Bhavan at New Delhi, the Gateway of India at Mumbai, Garrison Church of St. Martin at Delhi and Aurobindo Ashram at Pondicherry.

Unit-II: Contemporary Modern Architecture*(24 Contact Periods)*

Lectures based on Contemporary Modern Architecture with focus on the buildings of Chandigarh like the Secretariat, Assembly & High Court at Chandigarh, buildings at New Delhi like Sri Ram Center, Hall of Nations at Pragati Maidan, institutional buildings like the IIM Ahmedabad, IIM Bangalore, industrial buildings like R&D building of Semi-Conductor Complex at Chandigarh, Escorts at Faridabad, Canteen for Mill workers at Ahmedabad, high rise buildings like Kanchanjunga Apartments at Mumbai.

Unit-III: Cultural Resonance In Architecture*(09 Contact Periods)*

Lectures based on Cultural resonance in architecture with focus on Vidhan Bhavan at Bhopal, Gandhi Smarak Sangrahalaya at Ahmedabad, Sangath at Ahmedabad, Hotel Cida De Goa at Panjim and Asiad Village at Delhi.

NOTES:

For consulting books on the above-mentioned topics, kindly refer to the "Suggested Books" section of this document.

For important instructions, kindly refer to the "Note to Course Co-ordinator/ Faculty" and "Note to Paper Setters/ External Examiners" sections of this document.

**SECOND YEAR (SEMESTER – III)**

A A 2 0 3 2 L					Building Construction Technology - I											
Teaching Scheme					Internal Assessment						External Examination			TOTAL	D	
L	T	P	S	Credits	CP	CA-I	CA-II	CA-III	MT	IA TOTAL	T	J	V	EE TOTAL		MARKS
1	0	0	2	3	5	10	10	10	15	50	50			50		100
Pre-Requisite (s)					NIL											

COURSE OUTCOMES

After successful completion of this course, students shall be able to;

1. Understand the principles and techniques of architectural construction & detailing.
2. Represent construction materials, building components and their connections and assemblies.
3. Produce technically correct and proficient construction details.

COURSE CONTENTS*(45 Contact Periods)***Unit-I: Built Environment***(06 Contact Periods)*

Lectures based on built environment, structure and its elements along with their components and functions, construction activities, construction documents and construction drawings.

Unit-II: Site Works*(09 Contact Periods)*

Lectures based on site survey, soil investigation, considerations for site layout, security, lighting and electrical supply, site office and accommodation.

Unit-III: Material Storage & Public Utility Services*(06 Contact Periods)*

Lectures based on material storage, public utility services, setting out, levels and angles, overview of road construction.

Unit-IV: Working Methods and Systems*(15 Contact Periods)*

Lectures based on tubular scaffolding and scaffolding systems[^], shoring systems[^], demolition and its methods.

Unit-V: Construction Machinery & Equipment*(09 Contact Periods)*

General considerations of setting a plant; heavy machinery and equipment involved in construction like bulldozers, scrapers, graders, tractor shovels, excavators, transport vehicles, hoists, rubble chutes and skips, cranes, concreting plant.

[^] The Faculty shall ensure that the students prepare at least two drawing sheets on the underlined topics.

NOTES:

For consulting books on the above-mentioned topics, kindly refer to the "Suggested Books" section of this document.

For important instructions, kindly refer to the "Note to Course Co-ordinator/ Faculty" and "Note to Paper Setters/ External Examiners" sections of this document.

**SECOND YEAR (SEMESTER – III)**

A E 2 0 3 3 L					Building Materials - I												
Teaching Scheme					Internal Assessment						External Examination				TOTAL	D	
L	T	P	S	Credits	CP	CA-I	CA-II	CA-III	MT	IA TOTAL	T	J	V	EE TOTAL	MARKS		
2	0	0	0	2	5	10	10	10	15	50	50			50	100	3	
Pre-Requisite (s)					NIL												

COURSE OUTCOMES

After successful completion of this course, students shall be able to;

1. Gain knowledge of different materials that can be used in building construction.
2. Understand the role of each material in achieving your design goals.
3. Apply gained knowledge in selecting the right materials for the right cause.

COURSE CONTENTS**(30 Contact Periods)****Unit-I: Cementitious Materials And Aggregates****(06 Contact Periods)**

Lectures based on Cementitious Materials, their types, properties, uses and applications.

Lectures based on Aggregates, their types, properties, uses and applications.

Unit-II: Mortars, Concretes And Admixtures**(06 Contact Periods)**

Lectures based on Mortars, their types, properties, uses and applications.

Lectures based on Concrete, their types, properties, uses and applications.

Lectures based on Chemical and Mineral Admixtures for concrete, their types, properties, uses and applications.

Unit-III: Burnt-Clay Units, Building Stones And Glass**(06 Contact Periods)**

Lectures based on Burnt-Clay Units, their types, properties, uses and applications.

Lectures based on Building Stones, their types, properties, uses and applications.

Lectures based on Glass and Glass Blocks, their types, properties, uses and applications.

Unit-IV: Gypsum Products, Wood And Wood Products**(06 Contact Periods)**

Lectures based on Gypsum Products, their types, properties, uses and applications.

Lectures based on Wood and Wood Products, their types, properties, uses and applications.

Unit-V: Iron, Steel And Steel Alloys**(06 Contact Periods)**

Lectures based on Iron, Steel and Steel Alloys, their types, properties, uses and applications.

NOTES:

For consulting books on the above-mentioned topics, kindly refer to the "Suggested Books" section of this document.

For important instructions, kindly refer to the "Note to Course Co-ordinator/ Faculty" and "Note to Paper Setters/ External Examiners" sections of this document.



SECOND YEAR (SEMESTER – III)

A E 2 0 3 4 L					Building Systems & Management - I											
Teaching Scheme					Internal Assessment					External Examination			TOTAL	D		
L	T	P	S	Credits	CP	CA-I	CA-II	CA-III	MT	IA TOTAL	T	J	V		EE TOTAL	MARKS
2	0	0	0	2	5	10	10	10	15	50	50			50	100	3
Pre-Requisite (s)					NIL											

COURSE OUTCOMES

After successful completion of this course, students shall be able to;

1. Learn the fundamentals of different building systems like vertical transportation, HVAC, fire and life safety systems, etc.
2. Understand the role of each system in achieving the desired building performance.
3. Apply gained knowledge in integrating the systems into architectural design.

COURSE CONTENTS

(30 Contact Periods)

Unit-I: Vertical Circulation System

(09 Contact Periods)

Lectures based on classification of vertical circulation systems like ramps, stairs, escalators, elevators, dumbwaiters and their types, planning considerations for passenger elevators.

Unit-II: HVAC System And Methods of Heating Buildings

(06 Contact Periods)

Definitions of terms of heating, ventilation, and air conditioning (HVAC), heat and humidity, major factors in HVAC design, ventilation, movement of air with fans, duct design, heat losses, heat gains.

General procedure for sizing a heating plant, heating-load-calculation example, warm-air heating, hot-water heating systems, steam-heating systems, unit heaters, radiant heating, snow melting, radiators and convectors, heat pumps, solar heating.

Unit-III: Methods Of Cooling And Air Conditioning

(09 Contact Periods)

General procedure for sizing an air-conditioning plant, refrigeration cycles, air-distribution temperature for cooling, condensers, compressor-motor units, cooling equipment-central plant packaged units, zoning, packaged air-conditioning units, absorption units for cooling, ducts for air conditioning, built-up air-conditioning units, variable-air-volume (VAV) systems, air-water systems, year-round air conditioning.

Unit-IV: Acoustic System

(06 Contact Periods)

Lectures based on sound production and transmission, nomenclature for analysis of sound, sound characteristics and effects on hearing, measurement of sound, sound and vibration control, acoustical performance data, acoustical criteria, helpful hints for noise control.

NOTES:

For consulting books on the above-mentioned topics, kindly refer to the "Suggested Books" section of this document. For important instructions, kindly refer to the "Note to Course Co-ordinator/ Faculty" and "Note to Paper Setters/ External Examiners" sections of this document.

**SECOND YEAR (SEMESTER – III)**

A E 2 0 3 5 L					Theory of Structures - I											
Teaching Scheme					Internal Assessment						External Examination			TOTAL	D	
L	T	P	S	Credits	CP	CA-I	CA-II	CA-III	MT	IA TOTAL	T	J	V	EE TOTAL		MARKS
2	1	0	0	3	5	10	10	10	15	50	50			50	100	3
Pre-Requisite (s)					NIL											

COURSE OUTCOMES

After successful completion of this course, students shall be able to;

1. Learn about various structural systems and typologies.
2. Get aware of the performance and material consequences of various structural systems.
3. Integrate these structural systems and typologies into the architectural designs successfully.

COURSE CONTENTS*(45 Contact Periods)***Unit-I: Structure, Stability & Strength***(06 Contact Periods)*

Lectures based on structure and structural forms; natural and man-made.

Lectures based on definition and meaning of stability & strength, their co-relation.

Unit-II: Types of Loads, Reactions And Forces*(09 Contact Periods)*

Gravity loads, lateral loads, dynamic loads, impact loads, load paths.

Tension, compression, shear, torsion, bending.

Forces; applied and reactive, translational movement, rotational movement, levers, moment.

Unit-III: Equilibrium And Working With Forces*(15 Contact Periods)*

Translational equilibrium, rotational equilibrium, sign conventions, equilibrium equations, free body diagrams and familiar examples of equilibrium, introduction to bending in beams.

Force vectors and line of action, combining and resolving concurrent forces, familiar examples of concurrent forces.

Unit-IV: Supports, Reactions & Restraint Of Movement*(06 Contact Periods)*

Roller and frictionless – surface supports, pinned supports, fixed supports, hanger supports, familiar examples of support conditions – stable or unstable.

Unit-V: Load Distribution*(09 Contact Periods)*

Point loads, distributed loads, equivalent point loads, uniformly distributed loads, non – uniformly distributed loads.

NOTES:

For consulting books on the above-mentioned topics, kindly refer to the “Suggested Books” section of this document.

For important instructions, kindly refer to the “Note to Course Co-ordinator/ Faculty” and “Note to Paper Setters/ External Examiners” sections of this document.

**SECOND YEAR (SEMESTER – III)**

A A 2 0 3 2 P Software Applications - II																
Teaching Scheme					Internal Assessment						External Examination				TOTAL	D
L	T	P	S	Credits	CP	CA-I	CA-II	CA-III	MT	IA TOTAL	T	J	V	EE TOTAL	MARKS	
2	0	2	0	3	5	10	10	10	15	50			50	50	100	3
Pre-Requisite (s)					NIL											

COURSE OUTCOMES

After successful completion of this course, students shall be able to;

1. Learn the use of basic software and apply same skills in producing faster and accurate designs.
2. Get awareness about the field of digitalization and help students in pursuing further studies
3. Produce accurate architectural designs and drawings along with faster co-ordination with different teams.

COURSE CONTENTS*(60 Contact Periods)***Unit-I: SKETCH-UP: Introduction And Basic Tools***(10 Contact Periods)*

Sketch Up – Introduction to Sketch Up, Zoom, Pan and Rotate, Understanding the XYZ axis, Selecting toolbars, applying templates, Drawing and using the Pencil tool, Drawing basic geometric shapes, Drawing with measurements, Drawing circles and arcs. Discovering Layers, Using shortcuts, Measuring items inside SketchUp, Moving and Move/ Copy, Array, Rotate, Scale.

Unit-II: Modelling Techniques*(10 Contact Periods)*

Sketch Up – Importing CAD Drawings into SketchUp, Information and database, Making Components, Making Groups, Saving and re-loading Components. Modelling Techniques using Push/ Pull, Follow Me, Intersecting geometry, Copy and Offset faces, edges and polygons, Paint Bucket, Material Editor, Textures and Bitmaps, Positioning Textures. Section Cuts.

Unit-III: Animation & Printing*(10 Contact Periods)*

Creating new Scenes, Creating new Styles, Saving scenes and styles. Overview of Animation, Dimensions inside SketchUp, Annotation inside SketchUp, Printing from SketchUp, Exporting 2D images or PDFs.

Practice Exercises*(30 Contact Periods)*

Sketch Up – Practice exercises like making models of simple objects, like box, sphere, cone, pyramid, etc.

Sketch Up – Practice exercises like making models of complex objects with detailed material applications and architectural presentations.

NOTES:

For consulting books on the above-mentioned topics, kindly refer to the “Suggested Books” section of this document.

For important instructions, kindly refer to the “Note to Course Co-ordinator/ Faculty” and “Note to Paper Setters/ External Examiners” sections of this document.



**NOTE TO COURSE CO-ORDINATOR/ FACULTY
SECOND YEAR (SEMESTER – III)**

S.No.	Course Code	Note to Course Co-ordinator/ Faculty
1	A A 2 0 3 1 S	<u>STUDIO</u>
2	A A 2 0 3 2 S	1. Detailed teaching program/ lesson plan shall be made and circulated to the students at the commencement of the semester. 2. At least TWO (2) Time-problems and ONE (1) Final Design Problem shall be completed in the entire semester, covering the entire syllabus uniformly.
3	A A 2 0 3 1 L	<u>LECTURE</u>
4	A A 2 0 3 2 L	1. Detailed teaching program/ lesson plan shall be made and circulated to the students at the commencement of the semester.
5	A E 2 0 3 3 L	2. The Course Co-ordinator shall be free to collaborate with other subject faculty, engage an additional faculty for assistance, engage Industry experts for special lectures, take students for Field-work, Market surveys and/ or Construction sites, etc. wherever required. Permissions from Principal/ HOD shall be taken.
6	A E 2 0 3 4 L	3. Minimum THREE (3) class assignments shall be completed in the entire semester, covering the entire syllabus uniformly.
7	A E 2 0 3 5 L	
8	A A 2 0 3 2 P	<u>PRACTICAL</u> 1. Detailed teaching program/ lesson plan shall be prepared and circulated to the students at the commencement of the semester. 2. Software shall be taught with the version available at the School. 3. The classes shall be held in the Workshop/ Computer Lab/ On-Field.

**NOTE TO PAPER SETTERS/ EXTERNAL EXAMINERS
SECOND YEAR (SEMESTER – III)**

S.No.	Course Code	Note to External Examiners
1	A A 2 0 3 1 S	<u>JURY</u>
2	A A 2 0 3 2 S	1. Exam shall be an Open Jury type. 2. Jury shall examine the displayed work done by the student in full semester. 3. The duration of the Jury shall be the time taken to examine all the students. 4. Minimum passing marks: Forty five percent.
3	A A 2 0 3 1 L	<u>THEORY PAPER</u> (Conducted by University)
4	A A 2 0 3 2 L	1. Question paper shall consist of THREE Sections; A, B and C.
5	A E 2 0 3 3 L	2. Section A shall consist of TEN MCQs of One (1) Mark each. Student shall ATTEMPT ALL.
6	A E 2 0 3 4 L	3. Section B shall consist of SIX SATQs of Five (5) Marks each. Student shall ATTEMPT ANY FOUR.
7	A E 2 0 3 5 L	4. Section C shall consist of THREE LATQs of Ten (10) Marks each. (These may be Sketching/ Drawing based) Student shall ATTEMPT ANY TWO. Minimum passing marks: Forty five percent.
8	A A 2 0 3 2 P	<u>VIVA-VOCE</u> 1. Exam shall be Viva-voce type. 2. Student shall be examined through Viva and/ or by spontaneous test exercises in Workshop/ Computer Lab/ On-Field. 3. The duration of the Viva-voce shall be the time taken to examine all the students. 4. Minimum passing marks: Forty five percent.



SUGGESTED BOOKS

SECOND YEAR (SEMESTER – III)

S.No.	Course Code	Book Title
1	A A 2 0 3 1 S	1 Architect's Data By Ernst Neufert, Peter Neufert, Johannes Kister 2 Room And Furniture Layout Kit By Muncie Hendler. 3 Human Factors And Ergonomics Design Handbook, Third Edition By Barry Tillman, David J. Fitts, Rhonda Rose-Sundholm, Peggy Tillman.
2	A A 2 0 3 2 S	1 Architectural Working Drawings By Ralph W. Liebing. 2 Architectural Drawing By David Derne. 3 Architectural Working Drawings: Residential & Commercial Buildings By William P. Spence. 4 Commercial Drafting & Detailing By Allen Jeffers & Kenneth D. Smith. 5 A Manual Of Construction Documentation By Glenn E. Wiggins.
3	A A 2 0 3 1 L	1 Indian Architecture: Buddhist And Hindu Periods By Percy Brown. 2 Indian Architecture: Islamic Period By Percy Brown. 3 Vistara: The Architecture Of India, Edited By Carmen Kaigal.
4	A A 2 0 3 2 L	1 Construction Of Buildings, London, Vol. 1 To 5 By Barry R. 2 Fundamentals Of Building Construction: Materials & Methods By Edward Allen And Joseph Iano. 3 Building Construction Handbook, Seventh Edition By R. Chudley And R. Greeno. 4 Mitchell's Advanced Building Construction By Foster, Stroud. 5 Mckay's Building Construction By William Barr Mckay.
5	A E 2 0 3 3 L	1 Construction Of Buildings, London, Vol. 1 To 5 By Barry R. 2 Fundamentals Of Building Construction: Materials & Methods By Edward Allen And Joseph Iano. 3 National Building Code, Sp 7, By Bureau Of Indian Standards. 4 Building Design And Construction Handbook By Frederick S. Merritt And Jonathan T. Ricketts. 5 Building Materials By P. C. Varghese. 6 Building Materials And Construction By Sushil Kumar.
6	A E 2 0 3 4 L	1 Building Design And Construction Handbook By Frederick S. Merritt And J. T. Ricketts 2 Plumbing Design And Practice By S. G. Deolalikar. 3 Design Of Mechanical And Electrical Systems In Buildings By J. Trost, Ifte Choudhury.
7	A E 2 0 3 5 L	1 Tony Hunt's Structure Notebook. 2 Understanding Structures By Fuller Moore. 3 Building Structures: Understanding The Basics By Malcolm Millais. 4 Structure & Architecture By Angus J. Macdonald. 5 Architect's Pocket Book By Charlotte Baden-Powell. 6 Architectural Structures By G. G. Schierle.
8	A A 2 0 3 2 P	1 Introduction To Google Sketchup By Aidan Chopra. 2 The D'oh Book For Sketch Up By Rich O' Brien.

**SECOND YEAR (SEMESTER – IV)**

A A 2 0 4 1 S					Architectural Design Studio - II											
Teaching Scheme					Internal Assessment						External Examination			TOTAL MARK	D	
L	T	P	S	Credits	CP	CA-I	CA-II	CA-III	MT	IA TOTAL	T	J	V	EE TOTAL	MARK	D
1	0	0	4	5	5	10	10	10	15	50		50		50	100	-
Pre-Requisite (s)					AA2031S											

COURSE OUTCOMES

After successful completion of this course, students shall be able to;

1. Develop spatial thinking and skills necessary for the analysis and design of architectural space and form.
2. Understand architectural enclosures as mediating between people and the outside world.
3. Understand and learn the integration of different aspects of design with an objective of bettering the design solution.
4. Gain exposure to design thinking processes including envisioning, planning and various forms of analysis all of which help shape a robust problem statement that forward design innovation.
5. Work cooperatively as part of a team and take a leadership role when required.
6. Demonstrate basic competence in architectural design.

COURSE CONTENTS*(75 Contact Periods)***Unit-I: Design With Site Analysis And Form***(75 Contact Periods)*

The theme of the design studio sequence shall be SITE ANALYSIS & FORM. The focus remains on site typology, building orientation and climatic aspects. Lectures include topics such as zoning and site circulation with Lectures based on pedestrian and vehicular movements, cluster-diagrams, zoning diagrams and site sections.

Time Problem exercises shall be based on Form Development/ Pedestrian Movement/ Vehicular Movement & Parking/ Zoning Techniques/ Orientation methods.

Final Design Problem exercise shall be Guest House/ Art Gallery/ Play School on a sloping site.

NOTES:

For consulting books on the above-mentioned topics, kindly refer to the “Suggested Books” section of this document.

For important instructions, kindly refer to the “Note to Course Co-ordinator/ Faculty” and “Note to Paper Setters/ External Examiners” sections of this document.

**SECOND YEAR (SEMESTER – IV)**

A A 2 0 4 2 S					Design Documentation - II											
Teaching Scheme					Internal Assessment						External Examination			TOTAL MARK	D	
L	T	P	S	Credits	CP	CA-I	CA-II	CA-III	MT	IA TOTAL	T	J	V			EE TOTAL
1	0	0	2	3	5	10	10	10	15	50		50		50	100	-
Pre-Requisite (s)					AA2032S											

COURSE OUTCOMES

After successful completion of this course, students shall be able to;

1. Understand the working drawings and documents required from conception to completion of a design project.
2. Prepare and comprehend the drawings and documents.
3. Prepare schedules and other documents.

COURSE CONTENTS*(45 Contact Periods)***Unit-I: Introduction To Working Drawings***(10 Contact Periods)*

Introduction to Types of drawings and Schedules to be prepared for building construction purposes, Introduction to various building components, List of drawings, details and their purposes/ function in a set of working drawings of a medium/ large project. Informing about the established practices of providing allied information/ notes on various types of drawings. Check list as a guide for preparation and checking of working drawings and details.

Unit-II: Drafting Conventions*(10 Contact Periods)*

Aspects of Architectural Drafting for Good For Construction (GFC) including Line-work, Grids, Lettering, Dimensioning, Annotations, Title Block(s), Office standards, Representation of different materials, Schedules/ Tables and Notes on GFC drawings, Drafting Conventions and Symbols, Types of Tags and Graphic Symbols used in GFC drawings, Method of representing various components, contents and specific information in working drawings/ details.

Unit-III: GFC Drawings*(25 Contact Periods)*

Preparation of architectural GFC drawings and details of a small/ medium project. Preparation of Structural, Electrical and Plumbing drawings of a small/ medium project. Specifications of building materials and simple construction as separate document or annotated on the working drawings.

^The Faculty shall ensure that the students prepare GFC drawings for at least one design project.

NOTES:

For consulting books on the above-mentioned topics, kindly refer to the "Suggested Books" section of this document.

For important instructions, kindly refer to the "Note to Course Co-ordinator/ Faculty" and "Note to Paper Setters/ External Examiners" sections of this document.

**SECOND YEAR (SEMESTER – IV)**

A A 2 0 4 1 L					History of Architecture - IV											
Teaching Scheme					Internal Assessment						External Examination			TOTAL	D	
L	T	P	S	Credits	CP	CA-I	CA-II	CA-III	MT	IA TOTAL	T	J	V	EE TOTAL	MARK	
2	1	0	0	3	5	10	10	10	15	50	50			50	100	3
Pre-Requisite (s)					NIL											

COURSE OUTCOMES

After successful completion of this course, students shall be able to;

1. Know the historic background of different cultures and traditions in context to world architecture.
2. Get awareness about the technological advancements that significantly impacted the architectural development around the world.
3. Analyse what was appropriate and what was inappropriate in context with the world architecture.

COURSE CONTENTS*(45 Contact Periods)***Unit-I: Renaissance Architecture***(06 Contact Periods)*

Lectures based on Renaissance Architecture with focus on elements and construction style; Case studies on St. Maria Novella, Pazzi Chapel and Villa Rotunda.

Unit-II: Eclectic And Neo-Classical Architecture*(12 Contact Periods)*

Lectures based on Eclectic Architecture with focus on elements and construction style; Case studies on Parliament at London and St. Pancras Station at London.

Lectures based on Neo-Classical Architecture with focus on elements and construction style; Case studies on Pantheon of Paris and Stockholm Library.

Unit-III: Industrial Architecture*(09 Contact Periods)*

Lectures based on Industrial Architecture with focus on elements and construction style; Case studies on Eiffel Tower, Crystal Palace, Reliance Building at Chicago and Coal Brook Dale Bridge.

Unit-IV: Architecture Of The 20th Century*(12 Contact Periods)*

Lectures based on Architecture of the 20th Century with focus on elements and construction style; Case studies on Barcelona Pavilion, Villa Savoye, Falling water and Robie House.

One famous work of Renzo Piano, Mario Botta, Frank Gehry, Norman Foster, Santiago Calatrava, Peter Eisenman, SOM and HOK, Zaha Hadid.

Unit-V: Architecture Of The 21st Century*(06 Contact Periods)*

Lectures based on Architecture of the 21st Century with focus on elements and construction style. Case studies on one famous work of Heatherwick Studio, MAD Architects, BIG.

NOTES:

For consulting books on the above-mentioned topics, kindly refer to the "Suggested Books" section of this document.

For important instructions, kindly refer to the "Note to Course Co-ordinator/ Faculty" and "Note to Paper Setters/ External Examiners" sections of this document.



SECOND YEAR (SEMESTER – IV)

A A 2 0 4 2 L					Building Construction Technology - II											
Teaching Scheme					Internal Assessment						External Examination			TOTAL MARK	D	
L	T	P	S	Credits	CP	CA-I	CA-II	CA-III	MT	IA TOTAL	T	J	V	EE TOTAL	TOTAL MARK	D
1	0	0	2	3	5	10	10	10	15	50	50			50	100	3
Pre-Requisite (s)					AA2032L											

COURSE OUTCOMES

After successful completion of this course, students shall be able to;

1. Understand the principles and techniques of architectural construction & detailing.
2. Represent construction materials, building components and their connections and assemblies.
3. Produce technically correct and proficient construction details.

COURSE CONTENTS

(45 Contact Periods)

Unit-I: Excavations And Foundations

(10 Contact Periods)

Excavations – types and methods, Timbering[^] in firm soil and loose soil, Underpinning[^] - types of underpinning, ground water control, soil stabilisation and improvement. Foundations – function, materials and sizing; types of foundations; Typical Detail of Piled Foundation[^].

Unit-II: Basement Construction

(08 Contact Periods)

Retaining walls – types and methods of construction, Typical Detail of Brick Retaining Wall[^], Typical Detail of Brick Faced Mass Concrete Retaining Wall[^], Gabions and Mattresses, Basement construction and its waterproofing, Typical Detail of Basement Waterproofing[^]

Unit-III: Walls, Wall Openings, Doors And Windows

(12 Contact Periods)

Brick walls – principles of brick bonding and types of brick bonds, Typical Detail of English Bond Brick Wall[^], Typical Detail of Flemish Bond Brick Wall[^], jointing and pointing works, block walls and cavity walls, Typical Detail of Cavity Wall[^], parapet walls and fin-walls, Typical Detail of Parapet Wall[^], Arches and openings – basic formwork used and methods of construction, Doors and windows – basic types and construction with glazing, hardware and ironmongery, Typical Detail of Door/ Window Jamb[^], Typical Detail of Door/ Window Head[^], Typical Detail of Window Sill[^], Typical Detail of Door Threshold[^], Internal door, their types.

Unit-IV: Timber Framed Construction And Wall Cladding

(09 Contact Periods)

Timber framed construction, its types and methods, its advantages and disadvantages, Wall cladding for external walls, Typical Detail of Vertical Tile Hanging[^], Typical Detail of Timber Weatherboarding[^].

Unit-V: Roof Construction

(06 Contact Periods)

Roofs – basic forms; timber pitched roof and its types, single lap tiling, double lap tiling, slating; flat roofs, Typical Detail of Ridge[^] in single lap tiling, Typical Detail of Eaves[^] in single lap tiling, Typical Detail of Ridge[^] in double lap tiling, Typical Detail of Eaves[^] in double lap tiling, Typical Detail of Ridge[^] in slating, Typical Detail of Eaves[^] in slating.

[^]The Faculty shall ensure that the students prepare at least two drawing sheets on the underlined topics.

NOTES:

For consulting books on the above-mentioned topics, kindly refer to the “Suggested Books” section of this document.

For important instructions, kindly refer to the “Note to Course Co-ordinator/ Faculty” and “Note to Paper Setters/ External Examiners” sections of this document.

**SECOND YEAR (SEMESTER – IV)**

A E 2 0 4 3 L					Building Materials - II										
Teaching Scheme					Internal Assessment						External Examination			TOTAL	D
L	T	P	S	Credits	CP	CA-I	CA-II	CA-III	MT	IA TOTAL	T	J	V	EE TOTAL	MARK
2	0	0	0	2	5	10	10	10	15	50	50			50	100
Pre-Requisite (s)					NIL										

COURSE OUTCOMES

After successful completion of this course, students shall be able to;

1. Gain knowledge of different materials that can be used in building construction.
2. Understand the role of each material in achieving your design goals.
3. Apply gained knowledge in selecting the right materials for the right cause.

COURSE CONTENTS**(30 Contact Periods)****Unit-I: Aluminium, Copper And Their Alloys****(06 Contact Periods)**

Lectures based on aluminium and aluminium-based alloys, their types, properties, uses and applications.

Lectures based on copper and copper-based alloys, their types, properties, uses and applications.

Unit-II: Lead, Nickel And Their Alloys**(06 Contact Periods)**

Lectures based on lead and lead-based alloys, their types, properties, uses and applications.

Lectures based on nickel and nickel-based alloys, their types, properties, uses and applications.

Unit-III: Plastics And Combination With Other Material**(06 Contact Periods)**

Lectures based on plastics and plastic products, their types, properties, uses and applications.

Lectures based on combination of plastics with other materials, their types, properties, uses and applications.

Unit-IV: Porcelain Products, Paints And Coatings**(06 Contact Periods)**

Lectures based on porcelain-enamelled products, their types, properties, uses and applications.

Lectures based on paints and coatings, their types, properties, uses and applications.

Unit-V: Asphalt And Bitumen, Joint Seals And Compounds**(06 Contact Periods)**

Lectures based on asphalt and bituminous products, their types, properties, uses and applications.

Lectures based on joint seals and compounds, their types, properties, uses and applications.

NOTES:

For consulting books on the above-mentioned topics, kindly refer to the "Suggested Books" section of this document.

For important instructions, kindly refer to the "Note to Course Co-ordinator/ Faculty" and "Note to Paper Setters/ External Examiners" sections of this document.

**SECOND YEAR (SEMESTER – IV)**

A E 2 0 4 4 L					Building Systems & Management - II											
Teaching Scheme					Internal Assessment						External Examination			TOTAL	D	
L	T	P	S	Credits	CP	CA-I	CA-II	CA-III	MT	IA TOTAL	T	J	V	EE TOTAL	MARK	D
2	0	0	0	2	5	10	10	10	15	50	50			50	100	3
Pre-Requisite (s)					NIL											

COURSE OUTCOMES

After successful completion of this course, students shall be able to;

1. Learn the fundamentals of different building systems like vertical transportation, HVAC, fire and life safety systems, etc.
2. Understand the role of each system in achieving the desired building performance.
3. Apply gained knowledge in integrating the systems into architectural design.

COURSE CONTENTS**(30 Contact Periods)****Unit-I: Plumbing System****(05 Contact Periods)**

Health requirements for plumbing, water quality, water treatment, water quantity and pressures, water distribution in buildings, plumbing fixtures and equipment, water demand and fixture units, water-pipe sizing.

Unit-II: Waste Water Piping And Gas Piping System**(06 Contact Periods)**

Wastewater disposal, sewers, wastewater-system elements, waste-pipe materials, layout of waste piping, interceptors, piping for indirect wastes, rainwater drainage, waste-pipe sizing, venting, plumbing-system inspection and tests.

Gas supply, Gas-pipe sizes, estimating gas consumption, Gas-pipe materials.

Unit-III: Sprinkler Systems**(05 Contact Periods)**

Sprinkler systems, automatic sprinklers, types of sprinkler systems, system design, standpipes, water supplies for sprinkler and standpipe systems, central station supervisory systems.

Unit-IV: Electrical Systems**(09 Contact Periods)**

Electrical power, direct-current systems, alternating-current systems, electrical loads, emergency power, electrical conductors and raceways, power system apparatus, electrical distribution in buildings, circuit and conductor calculations, light and sight, quality of light, colour rendering with lighting, quantity of light, lighting methods, daylight, characteristics of lamps, characteristics of lighting fixtures, systems design of lighting, special electrical systems.

Unit-V: Communication Systems**(05 Contact Periods)**

Glossary, grounding, communications room and communications closet layout, wiring diagrams, fibre-optic cable, fibre-optic connectors, horizontal cabling.

NOTES:

For consulting books on the above-mentioned topics, kindly refer to the "Suggested Books" section of this document.

For important instructions, kindly refer to the "Note to Course Co-ordinator/ Faculty" and "Note to Paper Setters/ External Examiners" sections of this document.

**SECOND YEAR (SEMESTER – IV)**

A E 2 0 4 5 L					Theory of Structures - II											
Teaching Scheme					Internal Assessment						External Examination			TOTAL	D	
L	T	P	S	Credits	CP	CA-I	CA-II	CA-III	MT	IA TOTAL	T	J	V	EE TOTAL	MARK	D
2	1	0	0	3	5	10	10	10	15	50	50			50	100	3
Pre-Requisite (s)					NIL											

COURSE OUTCOMES

After successful completion of this course, students shall be able to;

1. Learn about various structural systems and typologies.
2. Get aware of the performance and material consequences of various structural systems.
3. Integrate these structural systems and typologies into the architectural designs successfully.

COURSE CONTENTS*(45 Contact Periods)***Unit-I: Soil Mechanics***(06 Contact Periods)*

Earth's interior, earth's crust, natural soils, ground water, engineered fill, foundation settlement, soil bearing capacity and subsurface conditions.

Unit-II: Foundations, Structural Walls And Columns*(09 Contact Periods)*

Shallow Foundations, Deep Foundations, Loads and Deformational stresses, stresses and wall construction, retaining walls. Columns – compression and bending, column loading, column compression, column bending and column buckling.

Unit-III: Introduction To Beams, SMDs For Beams*(12 Contact Periods)*

Beams – beam types, deformation, deflection & beam behaviour, statically determinate beams, statically indeterminate beams, other considerations for beams.

Sign conventions, typical shear & moment diagrams, creating shear & moment diagrams, comparing “V” and “M” for uniformly distributed versus concentrated loading, summary of deformation, shear & moment relationships.

Unit-IV: Rigid Frames, Slab Systems And Stress – Strain*(09 Contact Periods)*

Triangular frames, Rectangular frames, making rectangular frames rigid, lateral resistance systems. One – way slab systems, Two – way slab and beam systems, Two – way slab, Two – way joist systems.

Stress, strain, stress versus strain, properties of materials, stress distribution diagrams.

Unit-V: Introduction To Trusses*(09 Contact Periods)*

Introduction to trusses, trusses as beams, types of trusses, design considerations, truss joints, truss loading, truss analysis.

NOTES:

For consulting books on the above-mentioned topics, kindly refer to the “Suggested Books” section of this document.

For important instructions, kindly refer to the “Note to Course Co-ordinator/ Faculty” and “Note to Paper Setters/ External Examiners” sections of this document.

**SECOND YEAR (SEMESTER – IV)**

A A 2 0 4 2 P					Software Applications - III											
Teaching Scheme					Internal Assessment						External Examination			TOTAL	D	
L	T	P	S	Credits	CP	CA-I	CA-II	CA-III	MT	IA TOTAL	T	J	V	EE TOTAL	MARK	
2	0	2	0	3	5	10	10	10	15	50			50	50	100	3
Pre-Requisite (s)					NIL											

COURSE OUTCOMES

After successful completion of this course, students shall be able to;

1. Learn the use of basic software and apply same skills in producing faster and accurate designs.
2. Get awareness about the field of digitalization and help students in pursuing further studies
3. Produce accurate architectural designs and drawings along with faster co-ordination with different teams.

COURSE CONTENTS*(60 Contact Periods)***Unit-I: AUTOCAD: Introduction***(02 Contact Periods)*

AutoCAD – Introduction to AutoCAD, AutoCAD interface, Ribbons and Toolbars, Preliminary settings.

Unit-II: Drawing And Editing Tools*(05 Contact Periods)*

AutoCAD – Line and ‘Ortho’, Units, Coordinates and UCS, Offset, Selection window and delete, Trim and Extend, Fillet and Chamfer, Zoom and Zoom Tools, Regen drawing, Saving and opening files, Object Snap, Move, Copy, Rotate, Scale, Mirror, Stretch, Align, Undo and Redo.

Unit-III: Objects Of Design And Object Properties*(05 Contact Periods)*

Rectangle, Circle, Arc, Polygon, Ellipse, Donut, Point and Point Style, Divide and Measure, Polyline and Edit Polyline, Hatch, Edit Hatch and Explode.

Colour, Linetype, Linetype Scale, Line width, Layers, Properties, Match Properties.

Unit-IV: Adding Text And Dimensions*(05 Contact Periods)*

Text Style, Single Line Text, Multi-Line Text, Text Editing, Dimensioning, Linear Dimension, Aligned Dimension, Radius and Diameter, Angle, Dimension Style, Dimension Update, Edit Dimension Text, The ‘Distance’ command.

Unit-V: Printing And Advanced Functions For 2D*(03 Contact Periods)*

Print command, Plot Style, Printer Properties, Auto-save files path.

The Grip, Rectangular Array, Polar Array, Arraypath, Blocks, Layout, External References XREF, Inserting Images.

Practice Exercises*(40 Contact Periods)*

AutoCAD – Practice exercises to develop proficiency in creating simple drawings of design projects.

AutoCAD – Practice exercises to develop proficiency in creating detailed drawings of design projects.

NOTES:

For consulting books on the above-mentioned topics, kindly refer to the “Suggested Books” section of this document.

For important instructions, kindly refer to the “Note to Course Co-ordinator/ Faculty” and “Note to Paper Setters/ External Examiners” sections of this document.



**NOTE TO COURSE CO-ORDINATOR/ FACULTY
SECOND YEAR (SEMESTER – IV)**

S.No.	Course Code	Note to Course Co-ordinator/ Faculty
1	A A 2 0 4 1 S	<u>STUDIO</u>
2	A A 2 0 4 2 S	1. Detailed teaching program/ lesson plan shall be made and circulated to the students at the commencement of the semester. 2. At least TWO (2) Time-problems and ONE (1) Final Design Problem shall be completed in the entire semester, covering the entire syllabus uniformly.
3	A A 2 0 4 1 L	<u>LECTURE</u>
4	A A 2 0 4 2 L	1. Detailed teaching program/ lesson plan shall be made and circulated to the students at the commencement of the semester.
5	A E 2 0 4 3 L	2. The Course Co-ordinator shall be free to collaborate with other subject faculty, engage an additional faculty for assistance, engage Industry experts for special lectures, take students for Field-work, Market surveys and/ or Construction sites, etc. wherever required. Permissions from Principal/ HOD shall be taken.
6	A E 2 0 4 4 L	3. Minimum THREE (3) class assignments shall be completed in the entire semester, covering the entire syllabus uniformly.
7	A E 2 0 4 5 L	
8	A A 2 0 4 2 P	<u>PRACTICAL</u> 1. Detailed teaching program/ lesson plan shall be prepared and circulated to the students at the commencement of the semester. 2. Software shall be taught with the version available at the School. 3. The classes shall be held in the Workshop/ Computer Lab/ On-Field.

**NOTE TO PAPER SETTERS/ EXTERNAL EXAMINERS
SECOND YEAR (SEMESTER – IV)**

S.No.	Course Code	Note to External Examiners
1	A A 2 0 4 1 S	<u>JURY</u>
2	A A 2 0 4 2 S	1. Exam shall be an Open Jury type. 2. Jury shall examine the displayed work done by the student in full semester. 3. The duration of the Jury shall be the time taken to examine all the students. 4. Minimum passing marks: Forty five percent.
3	A A 2 0 4 1 L	<u>THEORY PAPER</u> (Conducted by University)
4	A A 2 0 4 2 L	1. Question paper shall consist of THREE Sections; A, B and C.
5	A E 2 0 4 3 L	2. Section A shall consist of TEN MCQs of One (1) Mark each.
6	A E 2 0 4 4 L	Student shall ATTEMPT ALL.
7	A E 2 0 4 5 L	3. Section B shall consist of SIX SATQs of Five (5) Marks each. Student shall ATTEMPT ANY FOUR. 4. Section C shall consist of THREE LATQs of Ten (10) Marks each. (These may be Sketching/ Drawing based) Student shall ATTEMPT ANY TWO. Minimum passing marks: Forty five percent.
8	A A 2 0 4 2 P	<u>VIVA-VOCE</u> 1. Exam shall be Viva-voce type. 2. Student shall be examined through Viva and/ or by spontaneous test exercises in Workshop/ Computer Lab/ On-Field. 3. The duration of the Viva-voce shall be the time taken to examine all the students. 4. Minimum passing marks: Forty five percent.



SUGGESTED BOOKS

SECOND YEAR (SEMESTER – IV)

S.No.	Course Code	Book Title
1	A A 2 0 4 1 S	1 Architect's Data By Ernst Neufert, Peter Neufert, Johannes Kister. 2 Conditional Design: An Introduction To Elemental Architecture By Anthony Di Mari. 3 Site Analysis: A Contextual Approach To Sustainable Land Planning And Site Design By James A. Lagro Jr. 4 Basics Architectural Design By Bert Bielefeld. 5 Operative Design: A Catalogue Of Spatial Verbs By Anthony Di Mari.
2	A A 2 0 4 2 S	1 Architectural Working Drawings By Ralph W. Liebing. 2 Architectural Drawing By David Derne. 3 Architectural Working Drawings: Residential & Commercial Buildings By William P. Spence. 4 Commercial Drafting & Detailing By Allen Jefferis & Kenneth D. Smith. 5 A Manual Of Construction Documentation By Glenn E. Wiggins.
3	A A 2 0 4 1 L	1 Sir Banister Fletcher's A History Of Architecture By Banister Fletcher. 2 World History Of Architecture By Lawrence Wodehouse, Marian Moffett & Michael Fazio. 3 World Architecture: The Masterworks By Will Pryce. 4 The Phaidon Atlas Of Contemporary World Architecture By Phaidon. 5 Encyclopedia Of World Architecture By Henri Stierlin.
4	A A 2 0 4 2 L	1 Construction Of Buildings, London, Vol. 1 To 5 By Barry R. 2 Fundamentals Of Building Construction: Materials & Methods By Edward Allen And Joseph Iano. 3 Building Construction Handbook, Seventh Edition By R. Chudley And R. Greeno. 4 Mitchell's Advanced Building Construction By Foster, Stroud. 5 Mckay's Building Construction By William Barr Mckay.
5	A E 2 0 4 3 L	1 Construction Of Buildings, London, Vol. 1 To 5 By Barry R. 2 Fundamentals Of Building Construction: Materials & Methods By Edward Allen And Joseph Iano. 3 National Building Code, Sp 7, By Bureau Of Indian Standards. 4 Building Design And Construction Handbook By Frederick S. Merritt And Jonathan T. Ricketts.
6	A E 2 0 4 4 L	1 Building Services Handbook By Fred Hall. 2 Building Services By Mouafak Zaher. 3 Building Design And Construction Handbook By Frederick S. Merritt And J. T. Ricketts. 4 Building Services Engineering By David V. Chadderton.
7	A E 2 0 4 5 L	1 Structure & Architecture By Angus J. Macdonald. 2 Architect's Pocket Book By Charlotte Baden-Powell. 3 Architectural Structures By G. G. Schierle.
8	A A 2 0 4 2 P	1 Managing Autocad In The Design Firm: A Manual For Architects And Interior By Karen Vagts. 2 Autocad Workbook For Architects And Engineers By Shannon R. Kyles.

**THIRD YEAR (SEMESTER – V)**

A A 3 0 5 1 S					Architectural Design Studio - III											
Teaching Scheme					Internal Assessment						External Examination				TOTAL	D
L	T	P	S	Credits	CP	CA-I	CA-II	CA-III	MT	IA TOTAL	T	J	V	EE TOTAL	MARKS	
1	0	0	7	8	5	10	10	10	15	50		50		50	100	-
Pre-Requisite (s)					AA2041S											

COURSE OUTCOMES

After successful completion of this course, students shall be able to;

1. Develop spatial thinking and skills necessary for the analysis and design of architectural space and form.
2. Understand architectural enclosures as mediating between people and the outside world.
3. Understand and learn the integration of different aspects of design with an objective of bettering the design solution.
4. Gain exposure to design thinking processes including envisioning, planning and various forms of analysis all of which help shape a robust problem statement that forward design innovation.
5. Work cooperatively as part of a team and take a leadership role when required.
6. Demonstrate basic competence in architectural design.

COURSE CONTENTS*(120 Contact Periods)***Unit-I: Design With Building Services***(120 Contact Periods)*

The theme of the design studio sequence shall be BUILDING SERVICES. The focus remains on building services and utilities. Lectures include topics such as vertical circulation, HVAC, MEP services with Lectures based on lifts, staircases, air conditioning, plumbing, firefighting, acoustics, daylighting, etc.

Time Problem exercises shall be based on Functional Work-flow/ Human Comfort/ Security/ Emergency requirements.

Final Design Problem exercise shall be Motel/ Primary Health Care Centre/ High-Rise Building.

NOTES:

For consulting books on the above-mentioned topics, kindly refer to the "Suggested Books" section of this document.

For important instructions, kindly refer to the "Note to Course Co-ordinator/ Faculty" and "Note to Paper Setters/ External Examiners" sections of this document.

**THIRD YEAR (SEMESTER – V)**

A A 3 0 5 1 L					Economics of Design											
Teaching Scheme					Internal Assessment						External Examination			TOTAL	D	
L	T	P	S	Credits	CP	CA-I	CA-II	CA-III	MT	IA TOTAL	T	J	V	EE TOTAL		MARKS
2	0	0	0	2	5	10	10	10	15	50	50			50	100	3
Pre-Requisite (s)					NIL											

COURSE OUTCOMES

After successful completion of this course, students shall be able to;

1. Get familiarized with the basic concepts of Economics and its influence on Architecture.
2. Understand the value of a building.
3. Minimize wastage and over-use thereby helping in Green Architecture practices.

COURSE CONTENTS**(30 Contact Periods)****Unit-I: Introduction And Laws****(10 Contact Periods)**

Lectures based on the definition of Economics, Economic laws, Economic goods, Utility, Value, Price and Wealth and Economic organization of the society. Consumption, wants, their characteristics and laws based upon them.

Unit-II: Land Values And Finance**(20 Contact Periods)**

Standard of living, market value, opportunity cost, the laws of diminishing, increasing and constant returns, urban land values, land utilization, factors involved in development of urban land, preliminary cost and cost indices for building. Concepts of life cycle costing with reference to buildings. Lectures based on the Time value of money – present worth and inflation, sources of finance for buildings.

NOTES:

For consulting books on the above-mentioned topics, kindly refer to the “Suggested Books” section of this document.

For important instructions, kindly refer to the “Note to Course Co-ordinator/ Faculty” and “Note to Paper Setters/ External Examiners” sections of this document.



THIRD YEAR (SEMESTER – V)

A A 3 0 5 2 L					Building Construction Technology - III											
Teaching Scheme					Internal Assessment						External Examination			TOTAL	D	
L	T	P	S	Credits	CP	CA-I	CA-II	CA-III	MT	IA TOTAL	T	J	V	EE TOTAL		MARKS
1	0	0	2	3	5	10	10	10	15	50	50			50	100	3
Pre-Requisite (s)					NIL											

COURSE OUTCOMES

After successful completion of this course, students shall be able to;

1. Understand the principles and techniques of architectural construction & detailing.
2. Represent construction materials, building components and their connections and assemblies.
3. Produce technically correct and proficient construction details.

COURSE CONTENTS

(45 Contact Periods)

Unit-I: R.C.C Framed Structures

(10 Contact Periods)

Construction of simply supported slab, construction of beam and column, Types of reinforcement, Cover to reinforcement in slabs, beams, columns and foundations, Fire resistance and protection of RCC column, RCC beam and RCC slab, Typical RCC Column detail^, Typical RCC Beam detail^ and Typical RCC Slab detail^.

Unit-II: Formwork For Construction

(05 Contact Periods)

Basic formwork and principles of formwork, Typical formwork details for Beams and Columns, Column clamps and yokes.

Unit-III: Structural Steelwork

(10 Contact Periods)

Standard Cold Rolled Steel sections and profiles, Standard Hot Rolled Steel sections and profiles, Common Compound Sections used in structural steel work, Open Web Beams and Lattice Beams, Structural steelwork connections^ like column to foundation, column to column, column to beam and beam to beam, column base connections, welded connections, bolted connections, Fire resistance and protection of steelwork.

Unit-IV: Roof Trusses And Roof Coverings

(10 Contact Periods)

Steel roof trusses up to 12m span, Roof sheet coverings – basic functions and materials, Typical Purlin Fixing Detail^, Typical Ridge Fixing Detail^, Typical Valley Gutter Detail^, Typical Eaves Gutter Detail^, Long span roofs, basic types of roof forms, Typical Northlight Ridge Detail^, Typical Northlight Valley Detail^, Construction of Space Deck, Space Frame and their connections, Roof lights, their types and construction, Typical Roof Light Fixing Detail^

Unit-V: Cladding And Structural Glazing

(10 Contact Periods)

Brickwork cladding support system, Infill panel walls, construction of Rain screen cladding, Concrete cladding, Typical Detail of Concrete Panel Cladding^, Structural glazing and Curtain walling, Typical Curtain Walling Detail^, Detail of Fixing Curtain Wall to Structure^.

^ The Faculty shall ensure that the students prepare at least two drawing sheets on the underlined topics.

NOTES:

For consulting books on the above-mentioned topics, kindly refer to the “Suggested Books” section of this document.
For important instructions, kindly refer to the “Note to Course Co-ordinator/ Faculty” and “Note to Paper Setters/ External Examiners” sections of this document.

**THIRD YEAR (SEMESTER – V)**

A L 3 0 5 3 L					Elective - I (Choice 1)											
Teaching Scheme					Internal Assessment						External Examination			TOTAL	D	
L	T	P	S	Credits	CP	CA-I	CA-II	CA-III	MT	IA TOTAL	T	J	V	EE TOTAL		MARKS
2	0	0	2	4	5	10	10	10	15	50	50			50	100	3
Pre-Requisite (s)					NIL											

COURSE OUTCOMES

After successful completion of this course, students shall be able to;

1. Appreciate the relevance and need of specialisation.
2. Learn the basics of the specialised field and take well informed decisions regarding career diversification in future.
3. Understand and appreciate the role of team members from other specialised fields working on a common design project.

COURSE CONTENTS*(60 Contact Periods)***Unit-I: FURNITURE DESIGN: Introduction And History** *(15 Contact Periods)*

Introduction and basic principles of furniture design, History of furniture design and modern movements, with focus on modern furniture design of the 19th and 20th century, with case studies on work of Gerrit Riet Weld, Breur, KaarKlint, Alvar Aalto, Mies Van Der Rohe, Le Corbusier, Eero Saarinen and Charles Eames.

Unit-II: Methodology And Materials *(15 Contact Periods)*

Methodology of furniture design and its relevance in world furniture market, role of furniture designer. Furniture materials, plain and moulded elements: standard and alternative.

Unit-III: Typology And Construction *(15 Contact Periods)*

Typology, terminology, ergonomics and construction principles of furniture like Sitting furniture, Table furniture, Bed furniture, Storage furniture (including in-built wardrobes and hall furniture) with focus on Kitchens, Bathrooms, Restaurants.

Unit-IV: Modern Concepts And Production *(15 Contact Periods)*

Creation of ergonomic and functional furniture, Modular concepts in furniture design, Mass production and fabrication, Codes and specifications and Eco- design furniture. Technology of furniture manufacturing

NOTES:

For consulting books on the above-mentioned topics, kindly refer to the "Suggested Books" section of this document.
For important instructions, kindly refer to the "Note to Course Co-ordinator/ Faculty" and "Note to Paper Setters/ External Examiners" sections of this document.

**THIRD YEAR (SEMESTER – V)**

A L 3 0 5 4 L					Elective - I (Choice 2)											
Teaching Scheme					Internal Assessment						External Examination			TOTAL	D	
L	T	P	S	Credits	CP	CA-I	CA-II	CA-III	MT	IA TOTAL	T	J	V	EE TOTAL		MARKS
2	0	0	2	4	5	10	10	10	15	50	50			50	100	3
Pre-Requisite (s)					NIL											

COURSE OUTCOMES

After successful completion of this course, students shall be able to;

1. Appreciate the relevance and need of specialisation.
2. Learn the basics of the specialised field and take well informed decisions regarding career diversification in future.
3. Understand and appreciate the role of team members from other specialised fields working on a common design project.

COURSE CONTENTS*(60 Contact Periods)***Unit I: INTERIOR DESIGN: Introduction***(10 Contact Periods)*

Definition of interior design, interior architectural design process; Vocabulary of terms of design principles and design elements; Introduction to the design of interior spaces as related to typologies and functions, themes and concepts - Study and design.

Unit II: History Of Interior Design*(10 Contact Periods)*

Brief study of the history of interior architectural design through the ages relating to historical context, design movements and ideas etc. Brief study of folk arts and crafts. (Vernacular design in India) with reference to interior design and decoration.

Unit III: Elements Of Interior Design – Enclosing Elements*(10 Contact Periods)*

Introduction to various elements of interiors like floors, ceilings, walls, staircases, openings, interior service elements, incidental elements etc., and various methods of their treatment involving use of materials and methods of construction in order to obtain certain specific functional, aesthetic and psychological effects.

Unit IV: Elements Of Interior Design – Accentuations*(10 Contact Periods)*

Study of interior lighting, different types of lighting their effects types of lighting fixtures. Other elements of interiors like accessories used for enhancement of interiors, paintings, objects-de-art, etc. Interior landscaping, elements like rocks, plants, water, flowers, fountains, paving, artefacts, etc. their physical properties, effects on spaces and design values.

Unit V: Space Programming*(20 Contact Periods)*

Study of the relationship between furniture and spaces, human movements & furniture design as related to human comfort. Function, materials and methods of construction, changing trends and lifestyles, innovations and design ideas. Study on furniture for specific types of interiors like office furniture, children's furniture, residential furniture, display systems, etc. Design Projects on Residential, Commercial and Office Interiors.

NOTES:

For consulting books on the above-mentioned topics, kindly refer to the “Suggested Books” section of this document.

For important instructions, kindly refer to the “Note to Course Co-ordinator/ Faculty” and “Note to Paper Setters/ External Examiners” sections of this document.

**THIRD YEAR (SEMESTER – V)**

A L 3 0 5 5 L					Elective - I (Choice 3)											TOTAL MARKS	D
Teaching Scheme					Internal Assessment						External Examination						
L	T	P	S	Credits	CP	CA-I	CA-II	CA-III	MT	IA TOTAL	T	J	V	EE TOTAL			
2	0	0	2	4	5	10	10	10	15	50	50			50	100	3	
Pre-Requisite (s)					NIL												

COURSE OUTCOMES

After successful completion of this course, students shall be able to;

1. Appreciate the relevance and need of specialisation.
2. Learn the basics of the specialised field and take well informed decisions regarding career diversification in future.
3. Understand and appreciate the role of team members from other specialised fields working on a common design project.

COURSE CONTENTS*(60 Contact Periods)***Unit I: BIM: Introduction***(06 Contact Periods)*

Introduction to Building Information Modelling (BIM), User-Interface, Introduction to real building elements, i.e. Walls, Doors, Windows, Floor Slabs, etc.

Unit II: Customisation And Site Design*(10 Contact Periods)*

Changing element properties, Applying materials, Insertion of components from library, Using BIM to create simple building form. Site design: Creating site, Contours, Applying materials, etc.

Unit III: Advanced BIM Commands*(12 Contact Periods)*

Complex modelling: Creating complex building forms by using masking i.e. blend mass, mass by extrusion, creating void in them. Roofs: Creating various types of roofs, i.e. Flat roof, Sloped roof, designing roof in elevation views, defining slope and creating openings in roof slab, insertion of layers in roof slab. Staircase: Creation of various types of staircase and ramp i.e. Straight, U-type, Spiral, etc. Designing and customisation of staircase as per requirement.

Unit IV: Scheduling*(10 Contact Periods)*

Creating various schedules for documentation purposes, Types of schedule i.e. door-window, wall, etc. Insertion of various fields in schedule i.e. Type, width, cost, etc. Formatting and calculating totals, Extracting information to external utilities like MS-EXCEL.

Unit V: Light And Energy Analysis*(10 Contact Periods)*

Using BIM for simple lighting and energy analysis, Insertion of various interior and exterior lights and its customisation, Creating sun-path and animation of solar study of a whole day.

Unit IV: Import-Export Options, Printing And Rendering*(12 Contact Periods)*

Import and export options: Importing and exporting the file into other formats i.e. JPEG, PDF, CAD, etc. for printing rendering and documentation purpose, Advance print option for setting paper size and orientation. Rendering: Applying various materials, scale, render quality, setting backgrounds, etc. Creating moving animation and saving it in various formats.

NOTES:

For consulting books on the above-mentioned topics, kindly refer to the "Suggested Books" section of this document.

For important instructions, kindly refer to the "Note to Course Co-ordinator/ Faculty" and "Note to Paper Setters/ External Examiners" sections of this document.

**THIRD YEAR (SEMESTER – V)**

A A 3 0 5 6 L					Building Codes & Regulations - I											D
Teaching Scheme					Internal Assessment						External Examination			TOTAL		
L	T	P	S	Credits	CP	CA-I	CA-II	CA-III	MT	IA TOTAL	T	J	V	EE TOTAL	MARKS	
2	0	0	0	2	5	10	10	10	15	50	50			50	100	
Pre-Requisite (s)					NIL											

COURSE OUTCOMES

After successful completion of this course, students shall be able to;

1. Understand the need and relevance of the Building Codes.
2. Understand the process of integration and application of these codes in design.
3. Apply these codes and regulations while designing the buildings.

COURSE CONTENTS**(30 Contact Periods)****Unit-I: Building Codes****(10 Contact Periods)**

Introduction to building codes, bye laws and regulations, their need and importance, basic terminologies, nature of building codes in special zones like heritage zones, environmentally sensitive zones, disaster prone zones, coastal zones, hilly zones, etc.

Unit-II: Building Regulations**(10 Contact Periods)**

Introduction to building regulations, their need and importance, general building requirements, building classifications and permissible uses, norms for setbacks and margins, norms for building projections in open spaces, FAR, FSI, Built-up Area, Carpet Area with calculation exercises, norms for open areas and green areas.

Unit-III: Access & Parking Laws**(10 Contact Periods)**

Lectures based on means of access, norms for access widths for various types of buildings, access to service areas, requirements of parking spaces, Equivalent Car Space (ECS) with calculation exercises, Standards for turning radius of various vehicles.

NOTES:

For consulting books on the above-mentioned topics, kindly refer to the "Suggested Books" section of this document.

For important instructions, kindly refer to the "Note to Course Co-ordinator/ Faculty" and "Note to Paper Setters/ External Examiners" sections of this document.

**THIRD YEAR (SEMESTER – V)**

A E 3 0 5 7 L					Environmental Design Procedures - I											
Teaching Scheme					Internal Assessment						External Examination			TOTAL	D	
L	T	P	S	Credits	CP	CA-I	CA-II	CA-III	MT	IA TOTAL	T	J	V	EE TOTAL		MARKS
2	0	0	0	2	5	10	10	10	15	50	50			50	100	3
Pre-Requisite (s)					NIL											

COURSE OUTCOMES

After successful completion of this course, students shall be able to;

1. Understand the critical relationship between climate and architecture.
2. Understand problems and methods of energy conservation through design of built forms.
3. Record, analyse and design using tools of simulation.

COURSE CONTENTS**(30 Contact Periods)****Unit-I: Introduction – Elements Of Climate****(04 Contact Periods)**

Introduction – elements of climate, measurement and representations of climatic data, Classification of tropical climates and major climatic zones of India.

Unit-II: Thermal Comfort**(06 Contact Periods)**

Thermal comfort – effect of climatic elements on thermal comfort environment, Body's heat exchange with surrounding environment, Thermal comfort indices viz., effective temperature, bio-climatic chart etc., and Kata-thermometer and globe thermometer.

Unit-III: Thermal Performance**(10 Contact Periods)**

Thermal performance of building elements: effect of thermo-physical properties of building materials and elements on indoor thermal environment, Thermal properties – conductivity, resistivity, diffusivity, thermal capacity and time lag and 'U' value.

Construction techniques for improving thermal performance of walls and roofs, Natural ventilation – functions of natural ventilation, design considerations, effects of openings and external features on internal air flow.

Unit-IV: Site Climate**(04 Contact Periods)**

Site Climate – Effect of landscape elements on site/ micro climate.

Day Lighting – Advantages and limitations, Day light factor, components of Day light factor, design considerations.

Unit-V: Shading Devices**(06 Contact Periods)**

Shading devices – Sun-path diagram, use of solar charts in climatic design, Types of shading Devices, Procedure of designing shading devices, Design considerations for buildings in tropical climates with special reference to hot-dry, warm-humid and composite climates.

NOTES:

For consulting books on the above-mentioned topics, kindly refer to the "Suggested Books" section of this document.

For important instructions, kindly refer to the "Note to Course Co-ordinator/ Faculty" and "Note to Paper Setters/ External Examiners" sections of this document.

**THIRD YEAR (SEMESTER – V)**

A A 3 0 5 2 P					Software Applications - IV											TOTAL MARKS	D
Teaching Scheme					Internal Assessment						External Examination						
L	T	P	S	Credits	CP	CA-I	CA-II	CA-III	MT	IA TOTAL	T	J	V	EE TOTAL			
2	0	2	0	3	5	10	10	10	15	50			50	50	100	3	
Pre-Requisite (s)					NIL												

COURSE OUTCOMES

After successful completion of this course, students shall be able to;

1. Learn the use of basic software and apply same skills in producing faster and accurate designs.
2. Get awareness about the field of digitalization and help students in pursuing further studies
3. Produce accurate architectural designs and drawings along with faster co-ordination with different teams.

COURSE CONTENTS*(60 Contact Periods)***Unit-I: PHOTOSHOP: Introduction And Basic Setup***(08 Contact Periods)*

Photoshop – Introduction to Photoshop, basic setup including page size, resolution, colour scheme (CMYK/ RGB), units, etc. introduction to basic rendering tools, selection tools like lasso, marquee, magic wand, brush and its customisation using option bar, paint bucket tool, gradient tool, text tool.

Unit-II: Layering*(06 Contact Periods)*

Photoshop – Creation of new layers, arranging/ merging of layers, applying effects using layers, i.e. colour, shadow, gradient, patterns, emboss, opacity, etc. Importing/ creating patterns for hatching.

Unit-III: Import And Export Options*(04 Contact Periods)*

Importing and exporting 2D and 3D models from various software in formats of JPEG, EPS, PDF, etc. Packaging and saving high resolution images and videos.

Unit-IV: Printing Methods*(04 Contact Periods)*

Page setup, page layout, image resolution, etc.

Practice Exercises*(36 Contact Periods)*

Photoshop – Practice exercises to develop proficiency in creating simple presentation of design projects.

Photoshop – Practice exercises to develop proficiency in creating detailed rendered presentation of design projects.

NOTES:

For consulting books on the above-mentioned topics, kindly refer to the “Suggested Books” section of this document.

For important instructions, kindly refer to the “Note to Course Co-ordinator/ Faculty” and “Note to Paper Setters/ External Examiners” sections of this document.



**LIST OF ELECTIVE COURSES
THIRD YEAR (SEMESTER – V)**

S.No.	Course Choice	Course Title
1	Choice 1	Furniture Design
2	Choice 2	Interior Design
3	Choice 3	Building Information Modelling

Elective course shall be offered to the students in view of faculty expertise and resources available subject to minimum number (50% of class strength) of students registering for a particular elective course.

Decision of offering or not offering any particular elective shall be taken by the Principal/ H.O.D. of the School.

**LIST OF OPEN ELECTIVE COURSE(S)
THIRD YEAR (SEMESTER – V)**

S.No.	Course Choice	Course Title
1	Choice 1	As approved by the Principal/ H.O.D.
2	Choice 2	As approved by the Principal/ H.O.D.
3	Choice 3	As approved by the Principal/ H.O.D.

Open Elective course(s) shall be taken up by the student independently. There shall be no classwork held in the School for such courses. Such course(s) shall have to be approved by the Principal/ HOD of the School. Decision of approving or not approving any particular open course shall be taken by the Principal/ H.O.D. of the School.



**NOTE TO COURSE CO-ORDINATOR/ FACULTY
THIRD YEAR (SEMESTER – V)**

S.No.	Course Code	Note to Course Co-ordinator/ Faculty
1	A A 3 0 5 1 S	<u>STUDIO</u> 1. Detailed teaching program/ lesson plan shall be made and circulated to the students at the commencement of the semester. 2. At least TWO (2) Time-problems and ONE (1) Final Design Problem shall be completed in the entire semester, covering the entire syllabus uniformly.
2	A A 3 0 5 1 L	<u>LECTURE</u>
3	A A 3 0 5 2 L	1. Detailed teaching program/ lesson plan shall be made and circulated to the students at the commencement of the semester.
4	A L 3 0 5 3 L	2. The Course Co-ordinator shall be free to collaborate with other subject faculty, engage an additional faculty for assistance, engage Industry experts for special lectures, take students for Field-work, Market surveys and/ or Construction sites, etc. wherever required. Permissions from Principal/ HOD shall be taken.
	A L 3 0 5 4 L	
	A L 3 0 5 5 L	
5	A A 3 0 5 6 L	3. Minimum THREE (3) class assignments shall be completed in the entire semester, covering the entire syllabus uniformly.
6	A E 3 0 5 7 L	
7	A A 3 0 5 2 P	<u>PRACTICAL</u> 1. Detailed teaching program/ lesson plan shall be prepared and circulated to the students at the commencement of the semester. 2. Software shall be taught with the version available at the School. 3. The classes shall be held in the Workshop/ Computer Lab/ On-Field.

**NOTE TO PAPER SETTERS/ EXTERNAL EXAMINERS
THIRD YEAR (SEMESTER – V)**

S.No.	Course Code	Note to External Examiners
1	A A 3 0 5 1 S	<u>JURY</u> 1. Exam shall be an Open Jury type. 2. Jury shall examine the displayed work done by the student in full semester. 3. The duration of the Jury shall be the time taken to examine all the students. 4. Minimum passing marks: Forty five percent.
2	A A 3 0 5 1 L	<u>THEORY PAPER</u> (Conducted by University)
3	A A 3 0 5 2 L	1. Question paper shall consist of THREE Sections; A, B and C.
4	A L 3 0 5 3 L	2. Section A shall consist of TEN MCQs of One (1) Mark each.
	A L 3 0 5 4 L	Student shall ATTEMPT ALL.
	A L 3 0 5 5 L	3. Section B shall consist of SIX SATQs of Five (5) Marks each.
5	A A 3 0 5 6 L	Student shall ATTEMPT ANY FOUR.
6	A E 3 0 5 7 L	4. Section C shall consist of THREE LATQs of Ten (10) Marks each. (These may be Sketching/ Drawing based) Student shall ATTEMPT ANY TWO. Minimum passing marks: Forty five percent.
7	A A 3 0 5 2 P	<u>VIVA-VOCE</u> 1. Exam shall be Viva-voce type. 2. Student shall be examined through Viva and/ or by spontaneous test exercises in Workshop/ Computer Lab/ On-Field. 3. The duration of the Viva-voce shall be the time taken to examine all the students. 4. Minimum passing marks: Forty five percent.



SUGGESTED BOOKS

THIRD YEAR (SEMESTER – V)

S.No.	Course Code	Book Title
1	A A 3 0 5 1 S	1 Architect's Data By Ernst Neufert, Peter Neufert, Johannes Kister. 2 Conditional Design: An Introduction To Elemental Architecture By Anthony Di Mari. 3 Operative Design: A Catalogue Of Spatial Verbs By Anthony Di Mari.
2	A A 3 0 5 1 L	1 Urban Economics By Warner Z Hirsch. 2 Publication Of CBRI, SERC, RRL, NBO, COSTFORD Etc.
3	A A 3 0 5 2 L	1 Construction Of Buildings, London, Vol. 1 To 5 By Barry R. 2 Fundamentals Of Building Construction: Materials & Methods By Edward Allen And Joseph Iano. 3 National Building Code, Sp 7, By Bureau Of Indian Standards. 4 Building Design And Construction Handbook By Frederick S. Merritt And Jonathan T. Ricketts.
4	A L 3 0 5 3 L	1 Furniture Design By Jerzy Smardzewski. 2 Furniture Design By Jim Postell.
	A L 3 0 5 4 L	1 Ching, Francis D. K. (1987) Interior Design Illustrated, Van Nostrand Reinhold, New York. 2 De Chiara, Joseph (1992) Time Savers Standard For Interior Design And Space Planning, Mcgraw Hill Publishing. 3 Jain, Shashi (1994) Creative Interiors, Management Publishing Company, New Delhi. 4 Korn, Ahmed A. (1992) Interior Design, Iquara Publication Limited, Bombay.
	A L 3 0 5 5 L	1 Bim Handbook: A Guide To Building Information Modeling For Owners, Managers By Chuck Eastman, Paul Teicholz, Rafael Sacks, Kathleen Liston. 2 Building Information Modeling By Karen M. Kensek.
5	A A 3 0 5 6 L	1 BIS (2005) National Building Code, SP: 7 (S & T), Bureau Of Indian Standard, New Delhi. 2 International Building Code, 2018, International Code Council. 3 Durga Prasad, M. V. (1997) Law Of Flats, Apartments And Buildings, 4th Edn Asia Law House, Hyderabad. 4 Scott, G. J. (1997) Architectural Building Codes, Van Nostrand Reinhold, NY.
6	A E 3 0 5 7 L	1 Bee (2007). Energy Conservation Building Code, Bureau Of Energy Efficiency, Ministry Of Power, Government Of India. 2 Bis (1987) Handbook Of Functional Requirements Of Buildings (Other Than Industrial Buildings) Sp:41 (S&T), Bureau Of Indian Standard, New Delhi. 3 Koeningsberger, Et. Al. (1975) Manual Of Tropical Housing And Building (Part-I), Climate Design, Orient Longman Ltd.
7	A A 3 0 5 2 P	1 Adobe Photoshop CS6 Classroom In A Book 1st Edition By Adobe Creative Team. 2 The Ultimate Crash Course To Start Using Photoshop Today By Brian Hicks.

**THIRD YEAR (SEMESTER – VI)**

A A 3 0 6 1 S					Architectural Design Studio - IV											
Teaching Scheme					Internal Assessment						External Examination			TOTAL	D	
L	T	P	S	Credits	CP	CA-I	CA-II	CA-III	MT	IA TOTAL	T	J	V	EE TOTAL		MARK
1	0	0	7	8	5	10	10	10	15	50		50		50	100	-
Pre-Requisite (s)					AA3051S											

COURSE OUTCOMES

After successful completion of this course, students shall be able to;

1. Develop spatial thinking and skills necessary for the analysis and design of architectural space and form.
2. Understand architectural enclosures as mediating between people and the outside world.
3. Understand and learn the integration of different aspects of design with an objective of bettering the design solution.
4. Gain exposure to design thinking processes including envisioning, planning and various forms of analysis all of which help shape a robust problem statement that forward design innovation.
5. Work cooperatively as part of a team and take a leadership role when required.
6. Demonstrate basic competence in architectural design.

COURSE CONTENTS*(120 Contact Periods)***Unit-I: Design With Building Codes And Regulations***(120 Contact Periods)*

The theme of the design studio sequence shall be building codes & regulations. The focus remains on building byelaws and international codes. Lectures include topics such as F.A.R and F.S.I with Lectures based on set-back, built-up area, carpet area, saleable area, common areas, etc.

Time problem exercises shall be based on Built-up & Carpet Area calculations/ Maximum Saleable Area calculations/ Budget Analysis.

Final design problem exercise shall be Apartment Building/ Row Housing/ Commercial Complex.

NOTES:

For consulting books on the above-mentioned topics, kindly refer to the "Suggested Books" section of this document.

For important instructions, kindly refer to the "Note to Course Co-ordinator/ Faculty" and "Note to Paper Setters/ External Examiners" sections of this document.

**THIRD YEAR (SEMESTER – VI)**

A E 3 0 6 1 L					Estimation Costing & Specifications											
Teaching Scheme					Internal Assessment						External Examination			TOTAL	D	
L	T	P	S	Credits	CP	CA-I	CA-II	CA-III	MT	IA TOTAL	T	J	V	EE TOTAL	MARK	D
2	1	0	0	3	5	10	10	10	15	50	50			50	100	3
Pre-Requisite (s)					NIL											

COURSE OUTCOMES

After successful completion of this course, students shall be able to;

1. Get familiarized with the basic concepts of estimation, costing and specifications.
2. Prepare preliminary estimates for design projects.
3. Write material specifications for design details of the project.

COURSE CONTENTS*(45 Contact Periods)***Unit-I: Estimation And Costing***(20 Contact Periods)*

Introduction to estimation, types of areas and types of estimates, methods of taking out quantities, modes of measurement, bill of quantities (BOQ), preliminary and detailed estimates, plinth area rates and cost indices, rates of labour and material, rate analysis, CPWD schedule of rates.

Unit-II: Specifications*(25 Contact Periods)*

Introduction to specifications & contracts, methods of specification writing, typical space for building works, implications of variations and incomplete specifications, impact on building costs, types of contracts, tenders, relative merits, general conditions and commercial terms, standard CPWD specifications, scheduled and non-scheduled items.

NOTES:

For consulting books on the above-mentioned topics, kindly refer to the "Suggested Books" section of this document.

For important instructions, kindly refer to the "Note to Course Co-ordinator/ Faculty" and "Note to Paper Setters/ External Examiners" sections of this document.

**THIRD YEAR (SEMESTER – VI)**

A A 3 0 6 2 L					Building Construction Technology - IV											
Teaching Scheme					Internal Assessment						External Examination				TOTAL MARK	D
L	T	P	S	Credits	CP	CA-I	CA-II	CA-III	MT	IA TOTAL	T	J	V	EE TOTAL	MARK	D
1	0	0	2	3	5	10	10	10	15	50	50			50	100	3
Pre-Requisite (s)					AA3052L											

COURSE OUTCOMES

After successful completion of this course, students shall be able to;

1. Understand the principles and techniques of architectural construction & detailing.
2. Represent construction materials, building components and their connections and assemblies.
3. Produce technically correct and proficient construction details.

COURSE CONTENTS*(45 Contact Periods)***Unit-I: Internal Walls And Partitions** (10 Contact Periods)

Internal walls – types of internal walls, Brick and Block walls, Construction joints and their location, Fire protection of internal walls, Party/ separating masonry walls.

Partitions – types of internal partitions, Typical Detail of Timber Stud Partition^, Typical Detail of Metal Stud Partition^, Fire protection of partitions, Plasters and plastering, Methods of applying plaster finish to walls, Dry lining techniques, Wall tiling ^.

Unit-II: Domestic Floors And Finishes (10 Contact Periods)

Types of floors – Solid Ground Floor, Suspended Ground Floor, Suspended Upper Floor, Typical Detail of Solid Ground Floor^, Typical Detail of Suspended Timber Ground Floor^, Typical Detail of Suspended Concrete Ground Floor^, RC Suspended Floors and types, Sound insulation in walls and floors, Domestic floor finishes like Carpet, PVC, Timber Boards and Strip.

Unit-III: Stairs (10 Contact Periods)

Construction of Timber Staircase, Concrete Staircase, Metal Staircase, Typical Detail of Timber Staircase Section^, Typical Detail of Concrete Staircase Section^, Typical Detail of Metal Staircase Section^.

Unit-IV: Ceilings (06 Contact Periods)

Construction of Plasterboard ceilings, Suspended ceilings, Classification of suspended ceilings, Typical Detail of Fixing of Suspended Ceiling^.

Unit-V: Millwork & Joinery (09 Contact Periods)

Construction Joinery production and Construction of Millwork items like counters and panelling, etc. Typical Millwork Detail of Reception Counter^, Typical Millwork Detail of Kitchen Counter^, Typical Millwork Detail of Wall Panelling^.

^ The Faculty shall ensure that the students prepare at least two drawing sheets on the underlined topics.

NOTES:

For consulting books on the above-mentioned topics, kindly refer to the “Suggested Books” section of this document.

For important instructions, kindly refer to the “Note to Course Co-ordinator/ Faculty” and “Note to Paper Setters/ External Examiners” sections of this document.

**THIRD YEAR (SEMESTER – VI)**

A L 3 0 6 3 L					Elective - II (Choice 1)											
Teaching Scheme					Internal Assessment						External Examination			TOTAL	D	
L	T	P	S	Credits	CP	CA-I	CA-II	CA-III	MT	IA TOTAL	T	J	V	EE TOTAL	MARK	
2	1	0	0	3	5	10	10	10	15	50	50			50	100	3
Pre-Requisite (s)					NIL											

COURSE OUTCOMES

After successful completion of this course, students shall be able to;

1. Appreciate the relevance and need of specialisation.
2. Learn the basics of the specialised field and take well informed decisions regarding career diversification in future.
3. Understand and appreciate the role of team members from other specialised fields working on a common design project.

COURSE CONTENTS*(45 Contact Periods)***Unit I: HIGH RISE BUILDINGS: Introduction***(10 Contact Periods)*

Definition – International & Indian concepts, history of tall buildings, need and criteria for development of tall buildings, economics, social conditions, psychological factors, geographical, political & other forces in development, socio-psychological factors effecting such development – analysis; studies & methodology to solution – users’ need and demand.

Unit II: Design Criteria*(15 Contact Periods)*

Design philosophy, static and dynamic approach, structural systems and concepts: effects of openings, large panel construction, foundation superstructure interaction, Gravity and lateral load resisting structural systems: high rise behaviour, rigid frames, braced frames, in-filled frames, shear walls, coupled shear walls, wall-frames, tubular, cores, steel-concrete composite floor systems, aluminium facades. Stability of tall buildings: overall bulking analysis of frames, wall frames, approximate methods.

Unit III: Impact, Construction And Site Management*(10 Contact Periods)*

Impact of tall buildings on urban development in terms of increased density, accessibility, transportation and parking; Ownership, management, and maintenance. Methods used for construction and site management for tall buildings. Constraints of material usage for tall buildings. Legislation aspects of tall buildings: fire safety, municipal codes, standardisation

Unit IV: Services And Maintenance*(10 Contact Periods)*

Buildings Services for tall buildings, Landscaping in tall buildings. Fire prevention and fire lighting systems for tall buildings. Disaster management in tall buildings; Intelligent building automation; Energy efficiency / Green Building Concepts: green skyscrapers

NOTES:

For consulting books on the above-mentioned topics, kindly refer to the “Suggested Books” section of this document.

For important instructions, kindly refer to the “Note to Course Co-ordinator/ Faculty” and “Note to Paper Setters/ External Examiners” sections of this document.

**THIRD YEAR (SEMESTER – VI)**

A L 3 0 6 4 L					Elective - II (Choice 2)											
Teaching Scheme					Internal Assessment						External Examination			TOTAL	D	
L	T	P	S	Credits	CP	CA-I	CA-II	CA-III	MT	IA TOTAL	T	J	V	EE TOTAL	MARK	
2	1	0	0	3	5	10	10	10	15	50	50			50	100	3
Pre-Requisite (s)					NIL											

COURSE OUTCOMES

After successful completion of this course, students shall be able to;

1. Appreciate the relevance and need of specialisation.
2. Learn the basics of the specialised field and take well informed decisions regarding career diversification in future.
3. Understand and appreciate the role of team members from other specialised fields working on a common design project.

COURSE CONTENTS*(45 Contact Periods)***Unit I: URBAN DESIGN: Introduction And Scope***(09 Contact Periods)*

Relationship between Architecture, Urban Design and Urban Planning; Brief review of the evolution of the urban design as a discipline, basic principles and theories. Broad understanding of urban forms and spaces at various spatial scales through examples from historic cities.

Unit II: Typologies And Procedures*(09 Contact Periods)*

Concepts of public and private realm; understanding different types and procedures of urban design interventions their scale relationships; constraints and challenges of urban design in democratic versus authoritarian settings.

Unit III: Elements Of Urban Design*(09 Contact Periods)*

Understanding the city as a three dimensional element; Urban form as determined by interplay of masses, voids, order, scale, harmony, symmetry, colour and texture; Organization of spaces and their articulation in the form of squares, streets, vistas and focal points; Concept of public open space; Image of the city and its components such as edges, paths, landmarks, street features.

Unit IV: Urban Design And Sustainability*(09 Contact Periods)*

Sustainability concept; Relationship of urban design with economic, environmental and social sustainability; Urban renewal and urban sprawl; Concepts of Transit Oriented Development, Compact City, Healthy City and Walkable City.

Unit V: Urban Design Implementation*(09 Contact Periods)*

Urban design and its control; Institutional arrangements for design and planning, their roles, powers and limitations; Types of planning instruments, structure plans, master plans and local area plans and zoning guidelines; Design communication and role of public participation.

NOTES:

For consulting books on the above-mentioned topics, kindly refer to the "Suggested Books" section of this document.

For important instructions, kindly refer to the "Note to Course Co-ordinator/ Faculty" and "Note to Paper Setters/ External Examiners" sections of this document.

**THIRD YEAR (SEMESTER – VI)**

A L 3 0 6 5 L					Elective - II (Choice 3)											
Teaching Scheme					Internal Assessment						External Examination			TOTAL	D	
L	T	P	S	Credits	CP	CA-I	CA-II	CA-III	MT	IA TOTAL	T	J	V	EE TOTAL	MARK	
2	1	0	0	3	5	10	10	10	15	50	50			50	100	3
Pre-Requisite (s)					NIL											

COURSE OUTCOMES

After successful completion of this course, students shall be able to;

1. Appreciate the relevance and need of specialisation.
2. Learn the basics of the specialised field and take well informed decisions regarding career diversification in future.
3. Understand and appreciate the role of team members from other specialised fields working on a common design project.

COURSE CONTENTS*(45 Contact Periods)***Unit I: HOUSING DESIGN: Introduction***(18 Contact Periods)*

Introduction to housing & human settlements, Housing policies and programs, settlements in the development of human civilization, role of Housing in social and economic development of the nation; Housing in five year plans & Social Housing plans, National housing Policy.

Unit II: Elements of Housing Policy*(09 Contact Periods)*

Major elements of housing policy: land, finance, material, technology & legislation. Development concepts and human settlement planning; Slum area development.

Unit III: Mass Housing: Design & Standards*(18 Contact Periods)*

Mass housing programs, housing design and standards; Rural Housing, housing design and standards; units of housing design form and structure of housing as shaped by socio economic and physical parameters, housing systems & sub systems. Partial and integrated environment quality; post occupancy evaluation, housing satisfaction, housing demand and policy analysis.

NOTES:

For consulting books on the above-mentioned topics, kindly refer to the "Suggested Books" section of this document.
For important instructions, kindly refer to the "Note to Course Co-ordinator/ Faculty" and "Note to Paper Setters/ External Examiners" sections of this document.

**THIRD YEAR (SEMESTER – VI)**

A A 3 0 6 6 L Building Codes & Regulations - II																
Teaching Scheme					Internal Assessment						External Examination				TOTAL	D
L	T	P	S	Credits	CP	CA-I	CA-II	CA-III	MT	IA TOTAL	T	J	V	EE TOTAL	MARK	
2	0	0	0	2	5	10	10	10	15	50	50			50	100	3
Pre-Requisite (s)					NIL											

COURSE OUTCOMES

After successful completion of this course, students shall be able to;

1. Understand the need and relevance of the Building Codes.
2. Understand the process of integration and application of these codes in design.
3. Apply these codes and regulations while designing the buildings.

COURSE CONTENTS*(30 Contact Periods)***Unit-I: Local Bye-Laws***(12 Contact Periods)*

Study of local planning bodies such as JMC, JDA and panchayats, procedures and methods of using bye-laws for submission drawings, building permits, provision of building services, regulations for super structures, building height regulations, regulations for multi-storied buildings etc.

Unit-II: National Codes*(09 Contact Periods)*

Lectures based on overview of the National Building Code (NBC) with special focus on Part-3 and Part-4.

Unit-III: International Codes*(09 Contact Periods)*

Lectures based on overview of the International Building Codes (IBC), ADA, LEED, IFC, etc.

NOTES:

For consulting books on the above-mentioned topics, kindly refer to the "Suggested Books" section of this document.

For important instructions, kindly refer to the "Note to Course Co-ordinator/ Faculty" and "Note to Paper Setters/ External Examiners" sections of this document.

**THIRD YEAR (SEMESTER – VI)**

A E 3 0 6 7 L Environmental Design Procedures - II																
Teaching Scheme					Internal Assessment						External Examination				TOTAL	D
L	T	P	S	Credits	CP	CA-I	CA-II	CA-III	MT	IA TOTAL	T	J	V	EE TOTAL	MARK	
2	0	0	0	2	5	10	10	10	15	50	50			50	100	3
Pre-Requisite (s)					NIL											

COURSE OUTCOMES

After successful completion of this course, students shall be able to;

1. Understand the critical relationship between climate and architecture.
2. Understand the importance and protection of our environment.
3. Understand problems and methods of energy conservation through design of built forms.

COURSE CONTENTS*(30 Contact Periods)***Unit-I: Natural Systems, Ecology And Ecosystem** *(04 Contact Periods)*

Natural systems; Complex relationships between the built and natural environments; Concept of Ecology and Ecosystem, Concepts of urban ecology and landscape urbanism; Resource analysis for various ecosystems, causes and factors for degradation.

Unit-II: Environmental Pollution And Climate Change *(06 Contact Periods)*

Pollution and its impact on natural and man-made environments; Causes, effects, control measures of Air, Water, Soil, Noise, Marine, Thermal, Nuclear and Light pollution. Causes, effects, control measures of urban and industrial waste. Climate change and its risks; Global warming and its risks

Unit-III: Design Strategies *(14 Contact Periods)*

Strategies to transform the built environment to meet the risks of climate change; Environmental modelling and climate data, creating a positive urban microclimate; Green corridors, maintenance of greenery and spaces between buildings; Effect of vegetation on energy consumption; Impact of vegetation in urban heat islands; Benefits of green roofs and green walls; Impact of vegetation on wind speeds; Vegetation as solar shading; Vegetation and noise buffering, Bio-mimicry: study of natural structures and processes, enabling design in helping to solve man-made problems.

Unit-IV: Integration Of Renewable Energy Systems *(06 Contact Periods)*

Integration of Renewable Energy Systems in built environment: Rainwater Harvesting System, Waste recycling and composting, Reclaimed, recycled materials, Green Roof Systems, Zero Carbon and Zero Carbon technologies.

NOTES:

For consulting books on the above-mentioned topics, kindly refer to the "Suggested Books" section of this document.

For important instructions, kindly refer to the "Note to Course Co-ordinator/ Faculty" and "Note to Paper Setters/ External Examiners" sections of this document.

**THIRD YEAR (SEMESTER – VI)**

A A 3 0 6 2 P Software Applications - V																
Teaching Scheme					Internal Assessment						External Examination			TOTAL	D	
L	T	P	S	Credits	CP	CA-I	CA-II	CA-III	MT	IA TOTAL	T	J	V	EE TOTAL		MARK
2	0	2	0	3	5	10	10	10	15	50			50	50	100	3
Pre-Requisite (s)					NIL											

COURSE OUTCOMES

After successful completion of this course, students shall be able to;

1. Learn the use of basic software and apply same skills in producing faster and accurate designs.
2. Get awareness about the field of digitalization and help students in pursuing further studies
3. Produce accurate architectural designs and drawings along with faster co-ordination with different teams.

COURSE CONTENTS*(60 Contact Periods)***Unit-I: 3DS MAX: Introduction And Basic Modelling***(10 Contact Periods)*

3D Studio MAX – Overview of 3DSMax, 3DSMax interface, Navigation techniques and tools, Using Viewports and view settings, Cameras, Three-button Mouse, Manipulation of objects using Transform tools, Basic modelling, Using Modifier stack, Modifiers like Bend, twist, taper, Noise.

Unit-II: Modelling Techniques*(15 Contact Periods)*

3D Studio MAX – Creating a Basic room using primitives, Using 2D Shapes, Converting 2D shapes to 2D models using Extrude and Bevel, Lofting techniques, Sub-object modelling, Using Box modelling technique Polygon Modelling and Product Models, Understanding proper modelling methods, Using Vertices, Faces and Edges, Adding edge loops. Creating realistic solid models Compound shapes, Using Compound Objects, Boolean and Scatter, Creating a 3D-Model using image planes.

Unit-III: Texture Mapping Techniques*(10 Contact Periods)*

Understanding texturing in 3DSMax, Using Material Editor, Shaders like Blinn, Phong and Anisotropy, Basic Lighting in 3DSMax, Using Point lights, Direct lights and Spotlights, Rendering using Scanline renderer, Raytracing, Shadows and reflections Intermediate texture mapping options, Basic UV unwrapping, UV editor, 2D Textures, Using Bitmaps as textures.

Unit-IV: Animation Techniques*(25 Contact Periods)*

Create a simple 3D Animation and Camera Animation. Work through 3D Product lighting and Mental Ray rendering for Product Presentation Pre-requisites, Animating in 3DSMax, Understanding Animation, Timeline and animation setup, Principles of animation - A Basic Introduction, Creating Key-frames and in-betweens, Graph Editor, Bouncing Ball exercise Lighting and rendering, Setting up the scene for Product presentation, Camera Setup and animation, 3 Point lighting setup. Using mental ray rendering, Mental ray render setup, Mental Ray Materials, Global Illumination, Final gather Rendering and output, Rendering in Layers, Ambient occlusion rendering, Compositing in Photoshop, Presenting the final 3D Animation

NOTES:

For consulting books on the above-mentioned topics, kindly refer to the “Suggested Books” section of this document.

For important instructions, kindly refer to the “Note to Course Co-ordinator/ Faculty” and “Note to Paper Setters/ External Examiners” sections of this document.



**LIST OF ELECTIVE COURSES
THIRD YEAR (SEMESTER – VI)**

S.No.	Course Choice	Course Title
1	Choice 1	High Rise Buildings
2	Choice 2	Urban Design
3	Choice 3	Housing Design

Elective course shall be offered to the students in view of faculty expertise and resources available subject to minimum number (50% of class strength) of students registering for a particular elective course.

Decision of offering or not offering any particular elective shall be taken by the Principal/ H.O.D. of the School.

**LIST OF OPEN ELECTIVE COURSE(S)
THIRD YEAR (SEMESTER – VI)**

S.No.	Course Choice	Course Title
1	Choice 1	As approved by the Principal/ H.O.D.
2	Choice 2	As approved by the Principal/ H.O.D.
3	Choice 3	As approved by the Principal/ H.O.D.

Open Elective course(s) shall be taken up by the student independently. There shall be no classwork held in the School for such courses. Such course(s) shall have to be approved by the Principal/ HOD of the School. Decision of approving or not approving any particular open course shall be taken by the Principal/ H.O.D. of the School.



**NOTE TO COURSE CO-ORDINATOR/ FACULTY
THIRD YEAR (SEMESTER – VI)**

S.No.	Course Code	Note to Course Co-ordinator/ Faculty
1	A A 3 0 6 1 S	<u>STUDIO</u> 1. Detailed teaching program/ lesson plan shall be made and circulated to the students at the commencement of the semester. 2. At least TWO (2) Time-problems and ONE (1) Final Design Problem shall be completed in the entire semester, covering the entire syllabus uniformly.
2	A E 3 0 6 1 L	<u>LECTURE</u>
3	A A 3 0 6 2 L	1. Detailed teaching program/ lesson plan shall be made and circulated to the students at the commencement of the semester.
4	A L 3 0 6 3 L	2. The Course Co-ordinator shall be free to collaborate with other subject faculty, engage an additional faculty for assistance, engage Industry experts for special
	A L 3 0 6 4 L	lectures, take students for Field-work, Market surveys and/ or Construction sites, etc. wherever required. Permissions from Principal/ HOD shall be taken.
	A L 3 0 6 5 L	3. Minimum THREE (3) class assignments shall be completed in the entire semester, covering the entire syllabus uniformly.
5	A A 3 0 6 6 L	
6	A E 3 0 6 7 L	
7	A A 3 0 6 2 P	<u>PRACTICAL</u> 1. Detailed teaching program/ lesson plan shall be prepared and circulated to the students at the commencement of the semester. 2. Software shall be taught with the version available at the School. 3. The classes shall be held in the Workshop/ Computer Lab/ On-Field.

**NOTE TO PAPER SETTERS/ EXTERNAL EXAMINERS
THIRD YEAR (SEMESTER – VI)**

S.No.	Course Code	Note to External Examiners
1	A A 3 0 6 1 S	<u>JURY</u> 1. Exam shall be an Open Jury type. 2. Jury shall examine the displayed work done by the student in full semester. 3. The duration of the Jury shall be the time taken to examine all the students. 4. Minimum passing marks: Forty five percent.
2	A E 3 0 6 1 L	<u>THEORY PAPER</u> (Conducted by University)
3	A A 3 0 6 2 L	1. Question paper shall consist of THREE Sections; A, B and C.
4	A L 3 0 6 3 L	2. Section A shall consist of TEN MCQs of One (1) Mark each. Student shall ATTEMPT ALL.
	A L 3 0 6 4 L	3. Section B shall consist of SIX SATQs of Five (5) Marks each.
	A L 3 0 6 5 L	Student shall ATTEMPT ANY FOUR.
5	A A 3 0 6 6 L	
6	A E 3 0 6 7 L	4. Section C shall consist of THREE LATQs of Ten (10) Marks each. (These may be Sketching/ Drawing based) Student shall ATTEMPT ANY TWO. Minimum passing marks: Forty five percent.
7	A A 3 0 6 2 P	<u>VIVA-VOCE</u> 1. Exam shall be Viva-voce type. 2. Student shall be examined through Viva and/ or by spontaneous test exercises in Workshop/ Computer Lab/ On-Field. 3. The duration of the Viva-voce shall be the time taken to examine all the students. 4. Minimum passing marks: Forty five percent.



SUGGESTED BOOKS

THIRD YEAR (SEMESTER – VI)

S.No.	Course Code	Book Title
1	A A 3 0 6 1 S	1 Architect's Data By Ernst Neufert, Peter Neufert, Johannes Kister. 2 Bis (2005) National Building Code, Sp: 7 (S & T), Bureau Of Indian Standard, New Delhi. 3 International Building Code, 2018, International Code Council. 4 Conditional Design: An Introduction To Elemental Architecture By Anthony Di Mari. 5 Operative Design: A Catalogue Of Spatial Verbs By Anthony Di Mari. 6 Basics Architectural Design By Bert Bielefeld. 7 Site Analysis: A Contextual Approach To Sustainable Land Planning And Site Design By James A. Lagro Jr.
2	A E 3 0 6 1 L	1 CPWD (1987) Schedule Of Rates, Government Of India Publications, New Delhi. 2 Dutta, B. N. (2002) Estimating And Costing (Ed.20), Sangam Books. 3 Publication Of CBRI, SERC, RRL, NBO, COSTFORD Etc. 4 Relevant I. S. Codes For Material Specifications.
3	A A 3 0 6 2 L	1 Construction Of Buildings, London, Vol. 1 To 5 By Barry R. 2 Fundamentals Of Building Construction: Materials & Methods By Edward Allen And Joseph Iano. 3 National Building Code, Sp 7, By Bureau Of Indian Standards. 4 Building Design And Construction Handbook By Frederick S. Merritt And Jonathan T. Ricketts.
4	A L 3 0 6 3 L	1 Beedle, Lynn S (1986) Advances In Tall Buildings, Van Nostrand Reinhold, New York. 2 Kowalezyk, Ryszard M. (1995) Structural Systems For Tall Buildings, Mc Graw Hill, New York.
	A L 3 0 6 4 L	1 Lynch, Kevin (2000) Image Of The City, Mit Press, London. 2 Spreiregen, P D (1965) Urban Design: The Architecture Of Towns And Cities, Mcgraw Hill Publishing Company. 3 Watson, Donald Et Al (2003) Time Saver Standards For Urban Design, Mcgraw Hill, New York.
	A L 3 0 6 5 L	1 Chiara Joseph De Et Al (1995). Time Saver Standards For Housing And Residential Development. Mcgraw Hill, New York. 2 Correa, C. (1999) Housing And Urbanization, Urban Design Research Institute, Mumbai.
5	A A 3 0 6 6 L	1 Bis (2005) National Building Code, Sp: 7 (S & T), Bureau Of Indian Standard, New Delhi. 2 International Building Code, 2018, International Code Council.
6	A E 3 0 6 7 L	1 Buchanan, P. (2005) Ten Shades Of Green: Architecture And The Natural World, The Architectural League Of New York. 2 Environmental Studies by Anubha Kaushik, C. P. kaushik, New Age International. 3 The Environmental Design Pocketbook by Sofie Pelsmakers.
7	A A 3 0 6 2 P	1 Autodesk 3ds Max 2016 Essentials By Dariush Derakhshani. 2 Architectural Rendering With 3ds Max And V-Ray: Photorealistic Visualization By Markus Kuhlo And Enrico Eggert.

UNIVERSITY OF JAMMU

(NAAC ACCREDITED A + GRADE UNIVERSITY)
Baba Sahib Ambedkar Road, Jammu-180006 (J&K)

NOTIFICATION (20/Jan/Adp56)

It is hereby notified for the information of all concerned that the Vice-Chancellor, in anticipation of the approval of the Competent Bodies, has been pleased to authorize the modification of the Scheme of Examination and Syllabus in the subject of Architecture (**B. Arch. Degree Programme**) for Semester I to IV (First Year & Second Year) for the Academic Batch 2017-18 and 2018-19 only and adoption of the Scheme of Examination and Syllabus for Semester V & VI Semester (Third Year) for the Academic Batch 2017-18 and 2018-19 only as per the details given in the ANNEXURE (Page 01 to 71)

The Scheme of Examination and Syllabus of Studies B.Arch. are available in the University Website: www.jammuuniversity.in.

Sd/-
DEAN ACADEMIC AFFAIRS

No. F.Acd/III/20/8/40-47

Dated: 17/02/2020

Copy for information & necessary action to:-

1. Special Secretary to the Vice-Chancellor, University of Jammu for the kind information of the worthy Vice-Chancellor please.
2. Sr. PA to the Dean Academic Affairs/Registrar/Controller of Examinations
3. Principal, GCET, Jammu
4. Deputy/Assistant Registrar (Exams/Confidential)
5. Section Officer (Confidential)
6. Incharge Website

Sunita Sharma
17/2/2020
Deputy Registrar (Academic)
17.2.2020



SCHOOL OF ARCHITECTURE **JAMMU**

BACHELOR OF ARCHITECTURE (Five-Year Full Time Degree Program) **SCHEME OF EXAMINATION** **AND SYLLABUS – 2017**

(APPLICABLE TO 2017-18 & 2018-19 BATCHES ONLY)

(Semester – I to Semester – VI)

(First Year to Third Year)



ABBREVIATIONS / CODES / NOMENCLATURE	
Course Code Convention	
TYSLC Example BS111COD1 ES448PAT AS5510ADT	T: Title of Study Code Y: Year Level (1, 2, 3, through 5 for years 1 to 5) SL: Semester Level (1, 2, 3, through 10 for semesters 1 to 10) C: Semester-wise Course Name Abbreviation (from List of Courses).
Title of Study Convention	
BS1	Basic Studies
FS2	Foundation Studies
ES3	Exploration Studies
ES4	Experimentation Studies
AS5	Application Studies
Course Pedagogy (Main) Convention	
A	Internship
L	Lecture
P	Practical
S	Studio
T	Thesis
Course Pedagogy (Additional) Convention	
D	Discussion Seminar
I	Independent Study/ Self Work
M	Make-up Tutorial
R	Research Seminar
W	Design Workshop
Teaching Scheme Convention	
L	Lecture
P	Practical
S	Studio
T	Tutorial
NA	Not Applicable
Examination Scheme Convention	
IA	Internal Assessment
EE	External Examination
CP	Class Presence
CA	Class Assignment
MT	Mid Term
T	Theory Paper
J	Jury
V	Viva-Voce
D	Duration of Examination in hours

**1. STUDY OF ACADEMIC PROGRAMME AND ITS DURATION**

- 1.1. The Bachelor of Architecture (B. Arch.) program shall be of minimum duration of five (5) academic years or ten (10) semesters of minimum fifteen (15) working weeks each, inclusive of one semester of practical training during 8th Semester.
- 1.2. The Bachelor of Architecture (B. Arch.) program shall have to complete in a maximum period of eight (8) years. However, in special circumstances a candidate be granted an extension of one (1) year by the School to complete the program. This extension shall be given only once to the student.

2. RULES OF ADMISSION

Rules of Admission shall be as per the prevalent rules of the University of Jammu along with the eligibility criteria as prescribed by the Council of Architecture (CoA).

3. PROGRAMME DESIGN AND INTENT

The five years of the program shall have to divide as given in Table 1 below:

Table 1: Division of Five Years of the Program

STAGE – I				
S. No.	Title of Study	Year	Semester	Intent/ Purpose
1	Basic Studies (BS)	Year I	Semester I	<ul style="list-style-type: none"> • Introduce students to the world of architecture. • Create interest in them regarding architecture. • Introduce the basic skills essential for understanding architecture.
			Semester II	
2	Foundation Studies (FS)	Year II	Semester III	<ul style="list-style-type: none"> • Lay the foundation of critical thinking in architecture. • Lay the foundation of holistic approach to design. • Gain technical knowledge of all the critical aspects of architecture like MEP/ BMS/ Waste management, etc. • Understand the building codes, regulations and other methodologies of construction of buildings.
			Semester IV	
3	Exploration Studies (ES)	Year III	Semester V	<ul style="list-style-type: none"> • Encourage students to delve deeper into the topics that they have learnt. • Inculcate into students the idea that architecture is limitless and that there is a tremendous scope for further exploration. • Train students to explore beyond the regular curriculum in order to achieve better solutions to the problems.
			Semester VI	



STAGE – II				
S. No.	Title of Study	Year	Semester	Intent/ Purpose
4	Experimentation Studies (ES)	Year IV	Semester VII	<ul style="list-style-type: none"> Train students to experiment fearlessly with their designs in order to make their solutions more apt and appropriate. Encourage the students to use different permutations and combinations of their skills and knowledge to better their solutions.
			Semester VIII	
5	Application Studies (AS)	Year V	Semester IX	<ul style="list-style-type: none"> Train students to apply whatever skills and knowledge they have acquired on to their projects. Encourage students to produce final design projects those are ready to build.
			Semester X	

4. **COURSE PEDAGOGY**

To achieve the desired intent, the school shall follow the course pedagogy as given below:

4.1. **Lecture (L)**

Lectures are the basic and primary mode of teaching to help understand the theory/ concepts. Faculty members shall deliver lectures to transfer the specific knowledge, theories, and concepts effectively to the students. These lectures shall have to be supplemented by regular tests to verify whether the concepts have had been understood.

4.2. **Practical (P)**

To develop a hands-on approach, students shall do small projects individually or in groups, both on and off campus in order to acquire skills in various materials and technologies. The technical workshops, educational workshops and community activity shall also form an integral part of Practical.

4.3. **Studio (S)**

In these studios, the students shall be confronted with real life situations and shall be coached to identify the problems first and then to resolve them by bringing up the best possible solutions. These studios shall be like laboratories where the creative idea is born. These studios shall help students to evolve and experiment with their ideas. The studios shall be the spaces that evoke and enhance the feeling of working in groups thereby teaching students the essence of teamwork and collaboration along with individual contribution.

4.4. **Internship (A)**

The student shall have to train as an intern under a practicing architect for a specified period. The Internship shall take care of the nuances of the profession, which the student cannot get in the academic environment. It shall help the student to bring finesse to knowledge and skills that the student has acquired. The internship shall also provide opportunity for the students to work with their role models and no one can replace that feeling of gratification to work under great masters.

4.5. **Thesis (T)**

The Faculty members shall coach and guide the individual students on one-to-one basis in conducting research and writing the results of a topic and/ or undertaking research on a design project and writing the results. Thesis is the most important aspect of the



student's academic journey. It is the final integration of all the knowledge and skills that student has acquired right from the first year through the fourth year. It is the time for implementation and application of that knowledge. It is the final justification and in way a proof that the student is ready to graduate and acquire the coveted title of an 'ARCHITECT'.

In addition to the above methods, the Faculty members may take up any other method(s) as given below:

4.6. **Discussion seminar (D)**

Discussion on pre-assigned topics, reading and/or brief lectures/ presentations shall have to be taken-up. Through this, the students shall learn how to facilitate/ moderate a discussion; put forward various points and how to formulate, articulate their arguments.

4.7. **Research seminar (R)**

The student shall go through the process of critical enquiry within a specified field and topic of his interest by way of reading other persons' work(s) to understand the arguments, form coherent connections based on his understanding and then communicate the hypothesis through writing, supported by valid arguments of his own.

4.8. **Design Workshop (W)**

The students shall confront with real life problems and be coached to build, develop, and evolve the best possible solutions through construction of prototypes. In a way, these shall be the fusion of Practical(s) & Studio(s). Design Workshops shall, help in development of necessary skills, enhance decision making and understanding the process of execution from design concepts.

4.9. **Independent Study (I)**

The students shall select a topic of interest, read certain book on that topic, and do an assignment based on that topic. The faculty member shall guide the students in this study and shall also supervise and approve the assignment undertaken.

4.10. **Makeup Tutorial (M)**

Such students who miss their classes for reasons whatsoever, if interested, shall engage the faculty member for one-to-one sessions to make up for missed classes subject to the availability of the concerned faculty member(s).

5. MODE OF ASSESSMENT

5.1. The students shall be assessed in each course by way of the following modes:

- i. **Internal Assessment (IA)**
- ii. **External Examination (EE)**

5.2. The courses, having Internal Assessment as the only mode of assessment be called as **Internal Only (IO)** courses, whereas the courses having both Internal Assessment and External Examination as the modes of assessment be called as **Internal External (IE)** courses.

**6. INTERNAL ASSESSMENT SCHEME**

6.1. The components of the Internal Assessment shall be as follows:

i. **Class Presence (CP)**, calculated as per the attendance of the student as per the Table 3 given below:

. Table 3: Calculation for CP of a student in each course

S. No.	Percentage of Attendance secured	No. of Marks awarded
1	Below 75%	0
2	Equal to or more than 75 % but less than 80%	2%
3	Equal to or more than 80 % but less than 85%	4%
4	Equal to or more than 85 % but less than 90%	6%
5	Equal to or more than 90 % but less than 95%	8%
6	more than 95 %	10%

ii. **Class Assignments (CA)**, which shall include all sorts of assignments (reading, writing and others) announced in the class. Studio courses shall also have design exercises as part of their class assignments. There shall be minimum **three (3)** class assignments for all lecture/ studio/ practical courses. All assignments shall be due at the time indicated. Late submissions not accepted without an officially documented excuse. Marks up to 10% shall deduct for late submission.

iii. **Mid-Term (MT)**, which shall include a test based on the Lectures/ Studio/ Practical conducted by the faculty. This test shall be in the form of Theory Paper or Jury or Viva-voce and shall be mandatory to all students. Absence in MT shall be marked zero.

6.2. The weightage of marks for the Internal Assessment Scheme shall be as given in Table 4 below:

Table 4: Weightage for Internal Assessment Scheme

S. No.	Mode of Assessment	Overall Weightage (OW)	Component	Component Weightage
1	Internal Assessment (IA)	50%	CP	10% of OW
			CA I	20% of OW
			CA II	20% of OW
			CA III	20% of OW
			MT	30% of OW

6.3. Any student not able to submit his assignment(s) on time and/ or not able to attend the scheduled Mid-Term shall be marked zero. However, in genuine cases, the decision of the Principal in writing shall be final and binding.

6.4. The Internal Assessment record of each student for each semester have to be maintained properly by the respective Subject Co-coordinators for the purpose of audit, conducted by the officer-in-charge, nominated by the University.



7. EXTERNAL EXAMINATION SCHEME

7.1. The components of the External Examination shall be as follows:

- i. **Theory Paper;** shall be conducted for all Lecture type courses.
- ii. **Jury;** shall be conducted for all Studio type courses.
- iii. **Viva-voce;** shall be conducted for all Practical type courses.

7.2. Theory Paper set by the external examiners shall consist of the following:

- i. **Multiple Choice Questions (MCQ)** based on the contents of the course with four possible answers out of which only one is correct.
- ii. **Short Answer Type Questions (SATQ)** based on the contents of the course, which shall have the descriptive answers of not more than 100-150 words.
- iii. **Long Answer Type Questions (LATQ)** based on the contents of the course, which shall have descriptive answers of not more than 250-300 words, in order to judge the ability to apply given knowledge and analyze given situation.

7.3. The Jury shall take place in a designated area of the School and the students shall display work (done in the entire semester) through digital/ print media on A0/ A1/ A2 sheets, along with detailed models and reports, if any.

7.4. The students shall display their work well before the scheduled time of Jury, conveyed to them in advance. Any student not able to attend the scheduled Jury shall be marked zero. However, in genuine cases, the decision of the Principal in writing shall be final and binding.

7.5. The weightage of marks for the External Examination Scheme shall be as given in Table 5 below:

Table 5: Weightage for External Examination Scheme

S. No.	Mode of Assessment	Overall Weightage (OW)	Component	Component Weightage
1	External Examination (EE)	50%	Theory Paper	100% of OW
			Jury	100% of OW
			Viva-voce	100% of OW

8. RULES OF EXAMINATION

Rules of Examination shall be, as approved by the Board of Studies in Architecture (BoSA) and as issued/ amended by Jammu University from time to time.

**SEMESTER-WISE TEACHING AND EXAMINATION SCHEME**

S.No.	Course Code	Course Title	Teaching Scheme				Examination Scheme			
			L	T	P	S	IA	EE	TOTAL	D
1	SEMESTER - I									
1	BS 1 1 1 COD1	Communication of Design - I	1	0	0	4	50	50	100	-
2	BS 1 1 1 TOA1	Theory of Architecture - I	2	1	0	0	50	50	100	-
3	BS 1 1 1 MMP1	Model Making Practices - I	0	0	4	0	50	50	100	-
4	BS 1 1 1 HOA1	History of Architecture - I	2	1	0	0	50	50	100	3
5	BS 1 1 1 OTA	Orientation to Architecture	2	0	0	2	50	50	100	3
6	BS 1 1 1 WSP1	Workshop Practices - I	0	0	4	0	50	50	100	3
TOTAL			7	2	8	6	300	300	600	9

2	SEMESTER - II									
1	BS 1 1 2 COD2	Communication of Design - II	1	0	0	4	50	50	100	-
2	BS 1 1 2 TOA2	Theory of Architecture - II	2	1	0	0	50	50	100	-
3	BS 1 1 2 MMP2	Model Making Practices - II	0	0	4	0	50	50	100	-
4	BS 1 1 2 HOA2	History of Architecture - II	2	1	0	0	50	50	100	3
5	BS 1 1 2 WSP2	Workshop Practices - II	0	0	4	0	50	50	100	3
6	BS 1 1 2 SSA1	Software Systems & Applications - I	2	0	2	0	50	50	100	3
7	BS 1 1 2 SLT	Surveying Levelling & Topography	2	0	2	0	50	50	100	3
TOTAL			9	2	12	4	350	350	700	12

3	SEMESTER - III									
1	FS 2 2 3 ADS1	Architectural Design Studio - I	1	0	0	4	50	50	100	-
2	FS 2 2 3 DOD1	Documentation of Design - I	1	0	0	2	50	50	100	-
3	FS 2 2 3 MMP3	Model Making Practices - III	0	0	4	0	50	50	100	-
4	FS 2 2 3 HOA3	History of Architecture - III	2	1	0	0	50	50	100	3
5	FS 2 2 3 BCT1	Building Construction & Technology - I	1	0	0	2	50	50	100	3
6	FS 2 2 3 BMT1	Building Materials & Technology- I	2	0	0	0	50	50	100	3
7	FS 2 2 3 BSM1	Building Systems & Management - I	2	0	0	0	50	50	100	3
8	FS 2 2 3 TOS1	Theory of Structures - I	2	1	0	0	50	50	100	3
9	FS 2 2 3 SSA2	Software Systems & Applications - II	2	0	2	0	50	50	100	3
TOTAL			13	2	6	8	450	450	900	18

In case of any discrepancy in Teaching or Examination Scheme across documents, please report the same to the Head of School for immediate review, consideration and decision.

**SEMESTER-WISE TEACHING AND EXAMINATION SCHEME**

S.No.	Course Code	Course Title	Teaching Scheme				Examination Scheme				
			L	T	P	S	IA	EE	TOTAL	D	
4	SEMESTER - IV										
1	FS 2 2 4 ADS2	Architectural Design Studio - II	1	0	0	4	50	50	100	-	
2	FS 2 2 4 DOD2	Documentation of Design - II	1	0	0	2	50	50	100	-	
3	FS 2 2 4 MMP4	Model Making Practices - IV	0	0	4	0	50	50	100	-	
4	FS 2 2 4 HOA4	History of Architecture - IV	2	1	0	0	50	50	100	3	
5	FS 2 2 4 BCT2	Building Construction & Technology - II	1	0	0	2	50	50	100	3	
6	FS 2 2 4 BMT2	Building Materials & Technology- II	2	0	0	0	50	50	100	3	
7	FS 2 2 4 BSM2	Building Systems & Management - II	2	0	0	0	50	50	100	3	
8	FS 2 2 4 TOS2	Theory of Structures - II	2	1	0	0	50	50	100	3	
9	FS 2 2 4 SSA3	Software Systems & Applications - III	2	0	2	0	50	50	100	3	
TOTAL			13	2	6	8	450	450	900	18	

5	SEMESTER - V										
1	ES 3 3 5 ADS3	Architectural Design Studio - III	1	0	0	7	50	50	100	-	
2	ES 3 3 5 EOD	Economics of Design	2	0	0	0	50	50	100	3	
3	ES 3 3 5 BCT3	Building Construction & Technology - III	1	0	0	2	50	50	100	3	
4	ES 3 3 5 EL11	Elective - I (Choice 1)	2	0	0	2	50	50	100	3	
	ES 3 3 5 EL12	Elective - I (Choice 2)	2	0	0	2	50	50	100	3	
	ES 3 3 5 EL13	Elective - I (Choice 3)	2	0	0	2	50	50	100	3	
5	ES 3 3 5 BCR1	Building Codes & Regulations - I	2	0	0	0	50	50	100	3	
6	ES 3 3 5 EDP1	Environmental Design Procedures - I	2	0	0	0	50	50	100	3	
7	ES 3 3 5 SSA4	Software Systems & Applications - IV	2	0	2	0	50	50	100	3	
TOTAL			12	0	2	11	350	350	700	18	

6	SEMESTER - VI										
1	ES 3 3 6 ADS4	Architectural Design Studio - IV	1	0	0	7	50	50	100	-	
2	ES 3 3 6 ECS	Estimation Costing & Specifications	2	1	0	0	50	50	100	3	
3	ES 3 3 6 BCT4	Building Construction & Technology - IV	1	0	0	2	50	50	100	3	
4	ES 3 3 6 EL21	Elective - II (Choice 1)	2	1	0	0	50	50	100	3	
	ES 3 3 6 EL22	Elective - II (Choice 2)	2	1	0	0	50	50	100	3	
	ES 3 3 6 EL23	Elective - II (Choice 3)	2	1	0	0	50	50	100	3	
5	ES 3 3 6 BCR2	Building Codes & Regulations - II	2	0	0	0	50	50	100	3	
6	ES 3 3 6 EDP2	Environmental Design Procedures - II	2	0	0	0	50	50	100	3	
7	ES 3 3 6 SSA5	Software Systems & Applications - V	2	0	2	0	50	50	100	3	
TOTAL			12	2	2	9	350	350	700	18	

In case of any discrepancy in Teaching or Examination Scheme across documents, please report the same to the Head of School for immediate review, consideration and decision.

**FIRST YEAR (SEMESTER – I)**

BS 1 1 1 COD1				Communication of Design - I											
Teaching Scheme				Internal Assessment						External Examination			TOTAL	D	
L	T	P	S	CP	CA-I	CA-II	CA-III	MT	IA TOTAL	T	J	V	EE TOTAL		MARKS
1	0	0	4	5	10	10	10	15	50		50		50	100	-
Pre-Requisite (s)				NIL											

COURSE OUTCOMES

After successful completion of this course, students shall be able to;

1. Introduce students to various ways and techniques of communication design ideas.
2. Get awareness about various tools and strategies available and shall learn how to use them effectively.
3. Turn abstract ideas into practical outcomes for intended users.

COURSE CONTENTS*(75 Contact Periods)***Unit-I: Line & Shape***(20 Contact Periods)*

Visual Art based concepts of line, types of lines, line direction, line quality, line as value, line as suggestion of form; shape, volume and mass, natural shapes, distorted shapes, abstracted shapes, pure shapes and forms, curvilinear shapes, rectilinear shapes and combinations, positive & negative shapes.

Unit-II: Pattern & Texture*(15 Contact Periods)*

Visual Art based concepts of pattern & texture, difference and similarities in pattern & texture, tactile and visual texture.

Unit-III: Illusion of Space & Motion*(20 Contact Periods)*

Visual Art based concepts of depth through perspectives; motion, ways of suggesting motion, optical (eye) movement.

Unit-IV: Value & Colour*(20 Contact Periods)*

Visual Art based concepts of value pattern, value as emphasis, techniques to create value; Colour, characteristics of colour, properties of colour, colour palettes, techniques of colour mixing, cool & warm colours, colour as a tool of emphasis, colour & balance, colour schemes and uses of colour, colour as a psychological tool.

NOTES:

For consulting books on the above-mentioned topics, kindly refer to the “Suggested Books” section of this document.

For important instructions, kindly refer to the “Note to Course Co-ordinator/ Faculty” and “Note to Paper Setters/ External Examiners” sections of this document.

**FIRST YEAR (SEMESTER – I)**

BS 1 1 1 TOA1				Theory of Architecture - I											
Teaching Scheme				Internal Assessment						External Examination			TOTAL	D	
L	T	P	S	CP	CA-I	CA-II	CA-III	MT	IA TOTAL	T	J	V	EE TOTAL		MARKS
2	1	0	0	5	10	10	10	15	50		50		50	100	-
Pre-Requisite (s)				NIL											

COURSE OUTCOMES

After successful completion of this course, students shall be able to;

1. Get introduced to the basic principles of architecture.
2. Get awareness of the many aspects of the practice of good architecture.
3. Formulate own design philosophies.

COURSE CONTENTS*(45 Contact Periods)***Unit-I: Basic principles of Architecture***(20 Contact Periods)*

Lectures based on Vitruvius and the three basic principles proposed by him, viz. Firmitas (strength), Utilitas (functionality) and Venustas (beauty).

Visual Art based exercises to reinforce the concepts of strength and stability (Firmitas), basic function and usage (Utilitas) and concept of scale and proportion for aesthetics (Venustas)

Unit-II: Ordering principles of Architecture*(25 Contact Periods)*

Lectures based on ordering principles namely, axis, symmetry, rhythm, datum, hierarchy and transformation.

Visual Art based exercises to reinforce the concepts of the same with respect to architecture.

NOTES:

For consulting books on the above-mentioned topics, kindly refer to the “Suggested Books” section of this document.

For important instructions, kindly refer to the “Note to Course Co-ordinator/ Faculty” and “Note to Paper Setters/ External Examiners” sections of this document.

**FIRST YEAR (SEMESTER – I)**

BS 1 1 1 MMP1					Model Making Practices - I										TOTAL MARKS	D
Teaching Scheme					Internal Assessment					External Examination						
L	T	P	S		CP	CA-I	CA-II	CA-III	MT	IA TOTAL	T	J	V	EE TOTAL		
0	0	4	0		5	10	10	10	15	50		50		50	100	-
Pre-Requisite (s)					NIL											

COURSE OUTCOMES

After successful completion of this course, students shall be able to;

1. Learn how to use architectural modelling equipment and tools properly.
2. Learn how to make architectural models and inculcate this habit right from the beginning.
3. Enhance the understanding of design by the technique of Learning by Doing.

COURSE CONTENTS*(60 Contact Periods)***Unit-I: Introduction To Model Making***(20 Contact Periods)*

Introduction to model making, its necessity and importance, tools & materials used for model making, surface development, scale, its importance and scale selection.

Studio exercises based on surface development of simple solids like cube, cuboid, cone, pyramid, and cylinder.

Unit-II: Form Development*(40 Contact Periods)*

Form development with the help of different additive and subtractive operations.

Studio exercises based on form development using Merging, Nesting, Offsetting, Carving, Compressing, Fracturing, Grading, Shifting, Notching, and Twisting.

NOTES:

For consulting books on the above-mentioned topics, kindly refer to the "Suggested Books" section of this document.

For important instructions, kindly refer to the "Note to Course Co-ordinator/ Faculty" and "Note to Paper Setters/ External Examiners" sections of this document.

**FIRST YEAR (SEMESTER – I)**

BS 1 1 1 HOA1					History of Architecture - I											
Teaching Scheme					Internal Assessment						External Examination			TOTAL	D	
L	T	P	S		CP	CA-I	CA-II	CA-III	MT	IA TOTAL	T	J	V	EE TOTAL	MARKS	
2	1	0	0		5	10	10	10	15	50	50			50	100	3
Pre-Requisite (s)					NIL											

COURSE OUTCOMES

After successful completion of this course, students shall be able to;

1. Know the historic background of different cultures and traditions in context to Indian architecture.
2. Get awareness about the technological advancements that significantly impacted the architectural development around India.
3. Analyse what was appropriate and what was inappropriate in context with the Indian architecture.

COURSE CONTENTS*(45 Contact Periods)***Unit-I: Architecture as a Measure of Man***(10 Contact Periods)*

Lectures based on fundamental principles underlying Indian architecture; architecture as the measure of man, the need for shelter focusing on the houses of Banni Kutch; ‘pols’ of Ahmedabad; Jaisalmer, Rajasthan; the squatter settlements of Mumbai; the urban shrines.

Unit-II: Architecture as a Model of Cosmos*(15 Contact Periods)*

Lectures based on architecture as a model of the cosmos, Vastupurusha mandala; architecture with special focus on Stupa at Sanchi, Madhya Pradesh; university at Nalanda, Bihar; temple architecture at Elephanta near Mumbai; Kailasa in Ellora; Srirangam, Tamil Nadu; Meenakshi temple at Madurai; Sun temple at Konark.

Lectures based on sub-terranean architecture with focus on the Adalaj.

Unit-III: Islamic Architecture*(10 Contact Periods)*

Lectures based on Islamic architecture with focus on the paradise garden; Humayun’s tomb; the Taj Mahal; the Qutub Minar with special attention to the materials, quality and finesse.

Unit-IV: Assimilation And Transformation In Architecture*(10 Contact Periods)*

Lectures based on the influence, assimilation and transformation in architecture with examples of Diwan-i-khas at Fatehpursikri; Jain temple at Ranakpur, Rajasthan; Padmanabhapuram temple complex in Kerala; the city planning of Jaipur.

NOTES:

For consulting books on the above-mentioned topics, kindly refer to the “Suggested Books” section of this document.

For important instructions, kindly refer to the “Note to Course Co-ordinator/ Faculty” and “Note to Paper Setters/ External Examiners” sections of this document.

**FIRST YEAR (SEMESTER – I)**

BS 1 1 1 OTA				Orientation to Architecture												
Teaching Scheme				Internal Assessment						External Examination				TOTAL	D	
L	T	P	S	CP	CA-I	CA-II	CA-III	MT	IA TOTAL	T	J	V	EE TOTAL	MARKS		
2	0	0	2	5	10	10	10	15	50	50			50	100	3	
Pre-Requisite (s)				NIL												

COURSE OUTCOMES

After successful completion of this course, students shall be able to;

1. Get introduced to the rigor of architectural education.
2. Get awareness of the many aspects of the profession of architecture.
3. Know whether he is interested in architecture as a career.

COURSE CONTENTS*(60 Contact Periods)***Unit-I: Introduction To Architecture***(10 Contact Periods)*

Lectures based on the architecture and its context; difference between architecture & building; definition of an architect; overview of design and design method.

Unit-II: Architecture Profession And Architecture Education *(20 Contact Periods)*

Lectures based on architecture as a profession and architectural projects delivery process; architecture in practice, role players and their importance; design process and its stages. Education of an architect with discussion on typical program curriculum, project based learning (PBL), design studio, student projects, presentations and jury.

Unit-III: Vocabulary Used In Architecture*(10 Contact Periods)*

Common terms and vocabulary used in architecture that a first year student should know.

Unit-IV: Famous architects – World and Indian*(20 Contact Periods)*

Renowned architects of the world with information on their most famous architectural projects.
Renowned architects of India with information on their most famous architectural projects.

NOTES:

For consulting books on the above-mentioned topics, kindly refer to the “Suggested Books” section of this document.

For important instructions, kindly refer to the “Note to Course Co-ordinator/ Faculty” and “Note to Paper Setters/ External Examiners” sections of this document.

**FIRST YEAR (SEMESTER – I)**

BS 1 1 1 WSP1				Workshop Practices - I											
Teaching Scheme				Internal Assessment						External Examination			TOTAL	D	
L	T	P	S	CP	CA-I	CA-II	CA-III	MT	IA TOTAL	T	J	V	EE TOTAL		MARKS
0	0	4	0	5	10	10	10	15	50			50	50	100	3
Pre-Requisite (s)				NIL											

COURSE OUTCOMES

After successful completion of this course, students shall be able to;

1. Learn how to use workshop equipment and tools properly.
2. Learn how to do fabrication jobs.
3. Enhance the understanding of design by the technique of Learning by Doing.

COURSE CONTENTS*(60 Contact Periods)***Unit-I: Introduction***(04 Contact Periods)*

Introduction to the Tools used in Carpentry and Fitting.

Unit-II: Trade Exercises*(48 Contact Periods)*

At least two exercises from each trade:

- A. Carpentry: Middle lap T joint, Cross lap joint, Mortise and Tenon T joint, Bridle T joint
 B. Fitting: Square joint, V joint, Half round joint, Dovetail joint

Unit-III: Demonstration*(08 Contact Periods)*

- A. Demonstration on Plumbing pipes, fittings and joints.
 B. Demonstration on Power tools in wood working.

NOTES:

For consulting books on the above-mentioned topics, kindly refer to the "Suggested Books" section of this document.
 For important instructions, kindly refer to the "Note to Course Co-ordinator/ Faculty" and "Note to Paper Setters/ External Examiners" sections of this document.



NOTE TO COURSE CO-ORDINATOR/ FACULTY FIRST YEAR (SEMESTER – I)

S.No.	Course Code	Note to Course Co-ordinator/ Faculty
1	BS 1 1 1 COD1	<u>STUDIO</u>
2	BS 1 1 1 TOA1	1. Detailed teaching program/ lesson plan shall be made and circulated to the students at the commencement of the semester.
3	BS 1 1 1 MMP1	2. At least TWO (2) Time-problems and ONE (1) Final Design Problem shall be completed in the entire semester, covering the entire syllabus uniformly.
4	BS 1 1 1 HOA1	<u>LECTURE</u>
5	BS 1 1 1 OTA	1. Detailed teaching program/ lesson plan shall be made and circulated to the students at the commencement of the semester. 2. The Course Co-ordinator shall be free to collaborate with other subject faculty, engage an additional faculty for assistance, engage Industry experts for special lectures, take students for Field-work, Market surveys and/ or Construction sites, etc. wherever required. Permissions from Principal/ HOD shall be taken. 3. Minimum THREE (3) class assignments shall be completed in the entire semester, covering the entire syllabus uniformly.
6	BS 1 1 1 WSP1	<u>PRACTICAL</u> 1. Detailed teaching program/ lesson plan shall be prepared and circulated to the students at the commencement of the semester. 2. Software shall be taught with the version available at the School. 3. The classes shall be held in the Workshop/ Computer Lab/ On-Field.

NOTE TO PAPER SETTERS/ EXTERNAL EXAMINERS FIRST YEAR (SEMESTER – I)

S.No.	Course Code	Note to External Examiners
1	BS 1 1 1 COD1	<u>JURY</u>
2	BS 1 1 1 TOA1	1. Exam shall be an Open Jury type.
3	BS 1 1 1 MMP1	2. Jury shall examine the displayed work done by the student in full semester. 3. The duration of the Jury shall be the time taken to examine all the students. 4. Minimum passing marks: Fifty percent.
4	BS 1 1 1 HOA1	<u>THEORY PAPER</u> (Conducted by University)
5	BS 1 1 1 OTA	1. Question paper shall consist of THREE Sections; A, B and C. 2. Section A shall consist of TEN MCQs of One (1) Mark each. Student shall ATTEMPT ALL. 3. Section B shall consist of SIX SATQs of Five (5) Marks each. Student shall ATTEMPT ANY FOUR. 4. Section C shall consist of THREE LATQs of Ten (10) Marks each. (These may be Sketching/ Drawing based) Student shall ATTEMPT ANY TWO. Minimum passing marks: Fifty percent.
6	BS 1 1 1 WSP1	<u>VIVA-VOCE</u> 1. Exam shall be Viva-voce type. 2. Student shall be examined through Viva and/ or by spontaneous test exercises in Workshop/ Computer Lab/ On-Field. 3. The duration of the Viva-voce shall be the time taken to examine all the students. 4. Minimum passing marks: Fifty percent.



SUGGESTED BOOKS

FIRST YEAR (SEMESTER – I)

S.No.	Course Code	Book Title
1	BS 1 1 1 COD1	1 Freehand Drawing And Discovery By Reekie, F, Viva Books. 2 Perspective From Basic To Creative By Robert Gill. 3 Sketching By Pratap Mullick. 4 Sketching And Drawing By Vasudev Kamath. 5 Water Colour Rendering By Hayashi Studio (1994), Graphic-Sha Publishing Co., Ltd. 6 Colour In Architectural Illustration By Rochan, Richard & Linton, Herald (1989).
2	BS 1 1 1 TOA1	1 Concepts Of Space In Traditional Indian Architecture By Yatin Pandya, 2005. 2 Design Fundamentals By Parmar V. S., (1990), Somaiya Publications Private Limited, New Delhi. 3 Space Form & Order By D. K. Ching. 4 Elements Of Space Making By Yatin Pandya. 5 A History Of Architecture: Settings And Rituals By Spiro Kostof.
3	BS 1 1 1 MMP1	1 Model Making By Megan Werner. 2 Studio Craft & Techniques For Architects By Miriam Delaney, Anne Gorman. 3 Operative Design: A Catalogue Of Spatial Verbs By Anthony Di Mari.
4	BS 1 1 1 HOA1	1 Indian Architecture: Buddhist And Hindu Periods By Percy Brown. 2 Indian Architecture: Islamic Period By Percy Brown. 3 History Of Architecture And Ancient Building Materials In India By Satish Chandra. 4 Encyclopedia Of Indian Architecture: Hindu Buddhist Jain And Islamic By Nagarch. 5 Concise History Of Modern Architecture In India By Lang,Jon. 6 Architecture In India Since 1990 By Rahul Mehrotra. 7 Vistara: The Architecture Of India, Edited By Carmen Kaigal.
5	BS 1 1 1 OTA	1 Beginner's Guide: How To Become An Architect By Ryan Hansanuwat. 2 Becoming An Architect: A Guide To Careers In Design By Lee W. Waldrep. 3 101 Things I Learned In Architecture School By Matthew Frederick. 4 Vitruvius: The Ten Books On Architecture By Vitruvius, Herbert Langford Warren. 5 10 X 10 (Architecture) By Editors Of Phaidon Press.
6	BS 1 1 1 WSP1	1 House Carpentry Simplified By Nelson Burbank, (1986), Mcgraw Hill Publications, NY. 2 Workshop Technology, Vol 1 By Hajra Choudhury (1998), Media Promoters & Publishers.

**FIRST YEAR (SEMESTER – II)**

BS 1 1 2 COD2														Communication of Design - II				
Teaching Scheme				Internal Assessment						External Examination				TOTAL MARKS	D			
L	T	P	S	CP	CA-I	CA-II	CA-III	MT	IA TOTAL	T	J	V	EE TOTAL	MARKS	D			
1	0	0	4	5	10	10	10	15	50		50		50	100	-			
Pre-Requisite (s)				BS111COD1														

COURSE OUTCOMES

After successful completion of this course, students shall be able to;

1. Introduce students to various ways and techniques of communication design ideas.
2. Get awareness about various tools and strategies available and to learn how to use them effectively.
3. Turn abstract ideas into practical outcomes for intended users.

COURSE CONTENTS*(75 Contact Periods)***Unit-I: Unity & Harmony***(20 Contact Periods)*

Visual Art based concepts of gestalt principle of perception, ways to achieve unity/ harmony, unity with variety, examples of harmony.

Unit-II: Emphasis & Focal Point*(20 Contact Periods)*

Visual Art based concepts of emphasis, ways to achieve emphasis, degree of emphasis.

Visual Art based concepts of focus, achieving focus, maintaining it, ways of creating focal point.

Unit-III: Scale & Proportion*(15 Contact Periods)*

Visual Art based concepts of scale, ways of manipulating scale.

Visual Art based concepts of proportion, human proportion, and golden proportion.

Unit-IV: Balance & Rhythm*(20 Contact Periods)*

Visual Art based concepts of imbalance, symmetrical balance, asymmetrical balance, radial balance.

Visual Art based concepts of rhythm & motion, alternating rhythm, progressive rhythm.

NOTES:

For consulting books on the above-mentioned topics, kindly refer to the “Suggested Books” section of this document.

For important instructions, kindly refer to the “Note to Course Co-ordinator/ Faculty” and “Note to Paper Setters/ External Examiners” sections of this document.

**FIRST YEAR (SEMESTER – II)**

BS 1 1 2 TOA2				Theory of Architecture - II											
Teaching Scheme				Internal Assessment						External Examination			TOTAL	D	
L	T	P	S	CP	CA-I	CA-II	CA-III	MT	IA TOTAL	T	J	V	EE TOTAL		MARKS
2	1	0	0	5	10	10	10	15	50		50		50	100	-
Pre-Requisite (s)				BS111TOA1											

COURSE OUTCOMES

After successful completion of this course, students shall be able to;

1. Get introduced to the basic principles of architecture.
2. Get awareness of the many aspects of the practice of good architecture.
3. Formulate own design philosophies.

COURSE CONTENTS*(45 Contact Periods)***Unit-I: Modern principles of architecture - I***(15 Contact Periods)*

Lectures based on modern principles namely, place, function & flexibility, structure, comfort, light. Visual Art/ Model based exercises to reinforce the concepts of place making, flexibility of space, structural stability, and usage of natural light in a space.

Unit-II: Modern principles of architecture - II*(30 Contact Periods)*

Lectures based on modern principles namely, sustainability, legibility, sound, surface, detail. Visual Art/ Model based exercises to reinforce the concepts of durability, longevity, simplicity and clarity, surface treatment and detailing.

NOTES:

For consulting books on the above-mentioned topics, kindly refer to the "Suggested Books" section of this document.
For important instructions, kindly refer to the "Note to Course Co-ordinator/ Faculty" and "Note to Paper Setters/ External Examiners" sections of this document.

**FIRST YEAR (SEMESTER – II)**

BS 1 1 2 MMP2													Model Making Practices - II				
Teaching Scheme					Internal Assessment						External Examination				TOTAL	D	
L	T	P	S		CP	CA-I	CA-II	CA-III	MT	IA TOTAL	T	J	V	EE TOTAL	MARKS		
0	0	4	0		5	10	10	10	15	50		50		50	100	-	
Pre-Requisite (s)					BS111MMP1												

COURSE OUTCOMES

After successful completion of this course, students shall be able to;

1. Learn how to use architectural modelling equipment and tools properly.
2. Learn how to make architectural models and inculcate this habit right from the beginning.
3. Enhance the understanding of design by the technique of Learning by Doing.

COURSE CONTENTS*(60 Contact Periods)***Unit-I: Architectural Model Making***(60 Contact Periods)*

During the entire semester, the student shall prepare scaled models with focus on usage of materials, detail and finesse. The following models shall be prepared:

- A. Model of a Chair;
- B. Model of a Structural Form/ Model of an Organic Form;
- D. Model of any famous building (Architectural Environment).

The design, materials and the scale of the model shall be discussed, finalized and approved by the Course-coordinator/ Faculty.

NOTES:

For consulting books on the above-mentioned topics, kindly refer to the "Suggested Books" section of this document. For important instructions, kindly refer to the "Note to Course Co-ordinator/ Faculty" and "Note to Paper Setters/ External Examiners" sections of this document.

**FIRST YEAR (SEMESTER – II)**

BS 1 1 2 HOA2														History of Architecture - II		
Teaching Scheme					Internal Assessment						External Examination			TOTAL	D	
L	T	P	S		CP	CA-I	CA-II	CA-III	MT	IA TOTAL	T	J	V	EE TOTAL	MARKS	
2	1	0	0		5	10	10	10	15	50	50			50	100	3
Pre-Requisite (s)					NIL											

COURSE OUTCOMES

After successful completion of this course, students shall be able to;

1. Know the historic background of different cultures and traditions in context to world architecture.
2. Get awareness about the technological advancements that significantly impacted the architectural development around the world.
3. Analyse what was appropriate and what was inappropriate in context with the world architecture.

COURSE CONTENTS*(45 Contact Periods)***Unit-I: Antiquity Architecture***(06 Contact Periods)*

Lectures based on Antiquity Architecture with focus on elements and construction style; Case studies on Giza Pyramids, Stone Henge, Petra and Abu Simbal Temple.

Unit-II: Greek And Roman Architecture*(15 Contact Periods)*

Lectures based on Greek Architecture and Roman Architecture with focus on elements and construction style; Case studies on Acropolis and Parthenon (Greek Architecture), Case studies on The Colosseum, Roman Aqueduct and Pantheon (Roman Architecture).

Unit-III: Early Christian And Byzantine Architecture*(06 Contact Periods)*

Lectures based on Early Christian & Byzantine Architecture with focus on the elements and construction style; Case studies on Hagia Sophia and St. Mark's Cathedral.

Unit-IV: Romanesque Architecture*(06 Contact Periods)*

Lectures based on Romanesque Architecture with focus on elements and construction style; Case studies on Pisa, Abbey Fontaney and Windsor Castle.

Unit-V: Islamic Architecture And Gothic Architecture*(12 Contact Periods)*

Lectures based on Islamic Architecture with focus on elements and construction style; Case studies on Dome of the Rock and Mecca.

Lectures based on Gothic Architecture with focus on elements and construction style; Case studies on Notre Dame Paris and Chartres Cathedral.

NOTES:

For consulting books on the above-mentioned topics, kindly refer to the "Suggested Books" section of this document.

For important instructions, kindly refer to the "Note to Course Co-ordinator/ Faculty" and "Note to Paper Setters/ External Examiners" sections of this document.

**FIRST YEAR (SEMESTER – II)**

BS 1 1 2 WSP2				Workshop Practices - II											
Teaching Scheme				Internal Assessment						External Examination			TOTAL	D	
L	T	P	S	CP	CA-I	CA-II	CA-III	MT	IA TOTAL	T	J	V	EE TOTAL	MARKS	
0	0	4	0	5	10	10	10	15	50			50	50	100	3
Pre-Requisite (s)				NIL											

COURSE OUTCOMES

After successful completion of this course, students shall be able to;

1. Learn how to use workshop equipment and tools properly.
2. Learn how to do fabrication jobs.
3. Enhance the understanding of design by the technique of Learning by Doing.

COURSE CONTENTS*(60 Contact Periods)***Unit-I: Introduction***(04 Contact Periods)*

Introduction to the Tools used in Tin-Smithy and Black-Smithy.

Unit-II: Trade Exercises*(48 Contact Periods)*

At least two exercises from each trade:

A. Tin-Smithy: Tray, Cylinder, Hopper, Funnel.

B. Black Smithy: operations such as upsetting, drawing down, punching, and bending.

Unit-III: Demonstration*(08 Contact Periods)*

A. Demonstration on Welding techniques and processes.

B. Demonstration on Power tools in construction, electrical engineering and mechanical engineering.

NOTES:

For consulting books on the above-mentioned topics, kindly refer to the "Suggested Books" section of this document.

For important instructions, kindly refer to the "Note to Course Co-ordinator/ Faculty" and "Note to Paper Setters/ External Examiners" sections of this document.

**FIRST YEAR (SEMESTER – II)**

BS 1 1 2 SSA1				Software Systems & Applications - I												
Teaching Scheme				Internal Assessment						External Examination				TOTAL	D	
L	T	P	S	CP	CA-I	CA-II	CA-III	MT	IA TOTAL	T	J	V	EE TOTAL	MARKS		
2	0	2	0	5	10	10	10	15	50			50	50	100	3	
Pre-Requisite (s)				NIL												

COURSE OUTCOMES

After successful completion of this course, students shall be able to;

1. Learn the use of basic software and apply same skills in producing faster and accurate designs.
2. Get awareness about the field of digitalization and help students in pursuing further studies
3. Produce accurate architectural designs and drawings along with faster co-ordination with different teams.

COURSE CONTENTS*(60 Contact Periods)***Unit-I: Introduction to Computers and Software***(02 Contact Periods)*

Introduction to computers, parts of a computer, setting up of a computer, creating folders, loading of software.

Unit-II: MS-Office – Word*(06 Contact Periods)*

MS-Office – Word: Introduction to MS-WORD-2007 or higher version, Text basics, Text formatting and saving file, Working with objects, Header and footer, Bullets and numbered lists, Tables, Styles and content, Merging documents, Sharing and maintaining document, Proofing the document, Printing.

Unit-III: MS-Office – Excel*(06 Contact Periods)*

MS-Office – Excel: Introduction to MS-EXCEL-2007 or higher version, Formatting excel workbook, Perform calculations with basic functions, Sort and filter data with excel, Create effective charts to present data visually, Protecting and sharing the workbook, Proofing and printing.

Unit-IV: MS-Office – PowerPoint*(06 Contact Periods)*

MS-Office – PowerPoint: Introduction to MS-POWERPOINT-2007 or higher version, Setting up Powerpoint environment, Creating slides and applying themes, Working with bullets and numbering, Working with objects, Hyperlinks and action buttons, Working with movies and sounds, Using SmartArt and tables, Animation and slide transition, Using slide master, Slide show option, Proofing and printing.

Practice Exercises*(40 Contact Periods)*

MS-Office – Practice exercises like writing letters in MS Word, tables and mathematical data entry in MS Excel, making presentations of the assignments in MS PowerPoint.

NOTES:

For consulting books on the above-mentioned topics, kindly refer to the “Suggested Books” section of this document.

For important instructions, kindly refer to the “Note to Course Co-ordinator/ Faculty” and “Note to Paper Setters/ External Examiners” sections of this document.

**FIRST YEAR (SEMESTER – II)**

BS 1 1 2 SLT				Surveying Levelling & Topography												
Teaching Scheme				Internal Assessment							External Examination				TOTAL	D
L	T	P	S	CP	CA-I	CA-II	CA-III	MT	IA TOTAL	T	J	V	EE TOTAL	MARKS		
2	0	2	0	5	10	10	10	15	50			50	50	100	3	
Pre-Requisite (s)				NIL												

COURSE OUTCOMES

After successful completion of this course, students shall be able to;

1. Learn the use of basic surveying tools and apply geometric and trigonometric principles to basic surveying calculations.
2. Get awareness about the field procedures in basic types of surveys and equip students to prepare accurate, legible and complete notes in a well-prepared field book.
3. Apply drawing techniques in the development of a topographic map and to create awareness about the limitations of the basic surveying instruments and the possible errors that could arise.

COURSE CONTENTS*(60 Contact Periods)***Unit-I: Introduction and Measurements***(12 Contact Periods)*

Lectures based on Measurements & Computations; Basic Mathematics for Surveying; Measuring Horizontal Distances and Vertical Distances; Measuring Angles and Directions with on-field exercises.

Unit-II: Field Surveys*(48 Contact Periods)*

Lectures based on Property Surveys; Topographic Surveys & Maps; Construction Surveys with on-field exercises.

NOTES:

For consulting books on the above-mentioned topics, kindly refer to the "Suggested Books" section of this document.
For important instructions, kindly refer to the "Note to Course Co-ordinator/ Faculty" and "Note to Paper Setters/ External Examiners" sections of this document.



NOTE TO COURSE CO-ORDINATOR/ FACULTY FIRST YEAR (SEMESTER – II)

S.No.	Course Code	Note to Course Co-ordinator/ Faculty
1	BS 1 1 2 COD2	<u>STUDIO</u>
2	BS 1 1 2 TOA2	1. Detailed teaching program/ lesson plan shall be made and circulated to the students at the commencement of the semester. 2. At least TWO (2) Time-problems and ONE (1) Final Design Problem shall be completed in the entire semester, covering the entire syllabus uniformly.
3	BS 1 1 2 MMP2	
4	BS 1 1 2 HOA2	<u>LECTURE</u> 1. Detailed teaching program/ lesson plan shall be made and circulated to the students at the commencement of the semester. 2. The Course Co-ordinator shall be free to collaborate with other subject faculty, engage an additional faculty for assistance, engage Industry experts for special lectures, take students for Field-work, Market surveys and/ or Construction sites, etc. wherever required. Permissions from Principal/ HOD shall be taken. 3. Minimum THREE (3) class assignments shall be completed in the entire semester, covering the entire syllabus uniformly.
5	BS 1 1 2 WSP2	<u>PRACTICAL</u>
6	BS 1 1 2 SSA1	1. Detailed teaching program/ lesson plan shall be prepared and circulated to the students at the commencement of the semester. 2. Software shall be taught with the version available at the School. 3. The classes shall be held in the Workshop/ Computer Lab/ On-Field.
7	BS 1 1 2 SLT	

NOTE TO PAPER SETTERS/ EXTERNAL EXAMINERS FIRST YEAR (SEMESTER – II)

S.No.	Course Code	Note to External Examiners
1	BS 1 1 2 COD2	<u>JURY</u>
2	BS 1 1 2 TOA2	1. Exam shall be an Open Jury type. 2. Jury shall examine the displayed work done by the student in full semester. 3. The duration of the Jury shall be the time taken to examine all the students. 4. Minimum passing marks: Fifty percent.
3	BS 1 1 2 MMP2	
4	BS 1 1 2 HOA2	
5	BS 1 1 2 WSP2	<u>VIVA-VOCE</u>
6	BS 1 1 2 SSA1	1. Exam shall be Viva-voce type. 2. Student shall be examined through Viva and/ or by spontaneous test exercises in Workshop/ Computer Lab/ On-Field. 3. The duration of the Viva-voce shall be the time taken to examine all the students. 4. Minimum passing marks: Fifty percent.
7	BS 1 1 2 SLT	



SUGGESTED BOOKS

FIRST YEAR (SEMESTER – II)

S.No.	Course Code	Book Title
1	BS 1 1 2 COD2	1 Freehand Drawing And Discovery By Reekie, F, Viva Books. 2 Perspective From Basic To Creative By Robert Gill. 3 Sketching By Pratap Mullick. 4 Sketching And Drawing By Vasudev Kamath. 5 Water Colour Rendering By Hayashi Studio (1994), Graphic-Sha Publishing Co., Ltd. 6 Colour In Architectural Illustration By Rochan, Richard & Linton, Herald (1989).
2	BS 1 1 2 TOA2	1 Concepts Of Space In Traditional Indian Architecture By Yatin Pandya, 2005. 2 Design Fundamentals By Parmar V. S., (1990), Somaiya Publications Private Limited, New Delhi. 3 Space Form & Order By D. K. Ching. 4 Elements Of Space Making By Yatin Pandya. 5 A History Of Architecture: Settings And Rituals By Spiro Kostof.
3	BS 1 1 2 MMP2	1 Model Making By Megan Werner. 2 Studio Craft & Techniques For Architects By Miriam Delaney, Anne Gorman. 3 Operative Design: A Catalogue Of Spatial Verbs By Anthony Di Mari.
4	BS 1 1 2 HOA2	1 Sir Banister Fletcher's A History Of Architecture By Banister Fletcher. 2 World History Of Architecture By Lawrence Wodehouse, Marian Moffett & Michael Fazio. 3 World Architecture: The Masterworks By Will Pryce. 4 The Phaidon Atlas Of Contemporary World Architecture By Phaidon. 5 Encyclopedia Of World Architecture By Henri Stierlin.
5	BS 1 1 2 WSP2	1 Workshop Technology, Vol 1 By Hajra Choudhury (1998), Media Promoters & Publishers.
6	BS 1 1 2 SSA1	1 MS-Office 2010 Training Guide By Prof. Satish Jain, M. Geetha. 2 Microsoft Office 2016 All-In-One For Dummies By Peter Weverka.
7	BS 1 1 2 SLT	1 Surveying Vol. I By K. R. Arora, (2000), Standard Book House, Delhi. 2 Textbook Of Surveying And Levelling By Agor, R. Khanna. 3 Advanced Surveying: Total Station, Gis And Remote Sensing By Satheeshgopi. 4 Surveying Vol 1 & 2 By B. C. Punmia.

**SECOND YEAR (SEMESTER – III)**

FS 2 2 3 ADS1					Architectural Design Studio - I											
Teaching Scheme					Internal Assessment						External Examination				TOTAL	D
L	T	P	S		CP	CA-I	CA-II	CA-III	MT	IA TOTAL	T	J	V	EE TOTAL	MARKS	
1	0	0	4		5	10	10	10	15	50		50		50	100	-
Pre-Requisite (s)					NIL											

COURSE OUTCOMES

After successful completion of this course, students shall be able to;

1. Develop spatial thinking and skills necessary for the analysis and design of architectural space and form.
2. Understand architectural enclosures as mediating between people and the outside world.
3. Understand and learn the integration of different aspects of design with an objective of bettering the design solution.
4. Gain exposure to design thinking processes including envisioning, planning and various forms of analysis all of which help shape a robust problem statement that forward design innovation.
5. Work cooperatively as part of a team and take a leadership role when required.
6. Demonstrate basic competence in architectural design.

COURSE CONTENTS*(75 Contact Periods)***Unit-I: Design With Human Context***(75 Contact Periods)*

The theme of the design studio sequence shall be USER (HUMAN) CONTEXT. The focus remains on Ergonomics and Anthropometry. Lectures include topics such as Ergonomics, Anthropometry and Behavioural aspects of design with Lectures based on layout patterns, circulation patterns, bubble-diagrams, relationships of different spaces and derivation of space-area program.

Time Problem exercises shall be based on the layout of Kitchen/ Toilet/ Bedroom/ Dining Room/ Living Room.

Final Design Problem exercise shall be based on Residence for a family of six/ Residence for a Doctor/ Residence for an Artist.

NOTES:

For consulting books on the above-mentioned topics, kindly refer to the "Suggested Books" section of this document.
For important instructions, kindly refer to the "Note to Course Co-ordinator/ Faculty" and "Note to Paper Setters/ External Examiners" sections of this document.

**SECOND YEAR (SEMESTER – III)**

FS 2 2 3 DOD1					Documentation of Design - I											
Teaching Scheme					Internal Assessment						External Examination			TOTAL	D	
L	T	P	S		CP	CA-I	CA-II	CA-III	MT	IA TOTAL	T	J	V	EE TOTAL		MARKS
1	0	0	2		5	10	10	10	15	50		50		50	100	-
Pre-Requisite (s)					NIL											

COURSE OUTCOMES

After successful completion of this course, students shall be able to;

1. Understand the documents required from conception to completion of a design project.
2. Prepare and comprehend the drawings and documents.
3. Prepare schedules and other documents.

COURSE CONTENTS*(45 Contact Periods)***Unit-I: Introduction and Equipment***(02 Contact Periods)*

Introduction, Drafting Equipment and its care, Drawing & Drafting Fundamentals; Drawing Classification Systems, Sheet sizes.

Unit-II: Line Drawing*(04 Contact Periods)*

Lines, Line-types, Line-weights, Line-patterns, Lettering, Hatching patterns, Title Blocks, Annotations, Dimensioning, Drafting Conventions and Symbols, Tags and Graphic symbols used in Design drawings.

Unit-III: Orthographic Projection Systems*(09 Contact Periods)*

Concept of Orthographic projection system, Drawing of Isometric Views of simple and complex objects.

Unit-IV: Perspective*(09 Contact Periods)*

Concept of Perspective, Drawing of One-point and Two-point Perspective of simple and complex objects.

Unit-V: Sciography*(09 Contact Periods)*

Concept of Sciography, Drawing of Sciography of simple and complex objects.

Unit-VI: Schematic Drawings*(12 Contact Periods)*

Preparation of architectural Schematic drawings of a small/ medium project including rendering and presentation techniques. Schematic drawings shall include Floor Plan(s), Roof Plan, Exterior Elevations, Interior Elevations, Sections and Site Plan.

NOTES:

For consulting books on the above-mentioned topics, kindly refer to the "Suggested Books" section of this document.
For important instructions, kindly refer to the "Note to Course Co-ordinator/ Faculty" and "Note to Paper Setters/ External Examiners" sections of this document.

**SECOND YEAR (SEMESTER – III)**

FS 2 2 3 MMP3					Model Making Practices - III											
Teaching Scheme					Internal Assessment						External Examination				TOTAL	D
L	T	P	S		CP	CA-I	CA-II	CA-III	MT	IA TOTAL	T	J	V	EE TOTAL	MARKS	
0	0	4	0		5	10	10	10	15	50		50		50	100	-
Pre-Requisite (s)					NIL											

COURSE OUTCOMES

After successful completion of this course, students shall be able to;

1. Learn how to use architectural modelling equipment and tools properly.
2. Learn how to make architectural models and inculcate this habit right from the beginning.
3. Enhance the understanding of design by the technique of Learning by Doing.

COURSE CONTENTS*(60 Contact Periods)***Unit-I: Architectural Model Making***(60 Contact Periods)*

During the entire semester, the student shall prepare the Study Models and Final Models of the projects undertaken in the respective Architectural Design Studio.

The design, materials and the scale of the model shall be discussed, finalized and approved by the Course-coordinator/ Faculty.

NOTES:

For consulting books on the above-mentioned topics, kindly refer to the “Suggested Books” section of this document. For important instructions, kindly refer to the “Note to Course Co-ordinator/ Faculty” and “Note to Paper Setters/ External Examiners” sections of this document.

**SECOND YEAR (SEMESTER – III)**

FS 2 2 3 HOA3				History of Architecture - III												
Teaching Scheme				Internal Assessment						External Examination				TOTAL	D	
L	T	P	S	CP	CA-I	CA-II	CA-III	MT	IA TOTAL	T	J	V	EE TOTAL	MARKS		
2	1	0	0	5	10	10	10	15	50	50			50	100	3	
Pre-Requisite (s)				NIL												

COURSE OUTCOMES

After successful completion of this course, students shall be able to;

1. Know the historic background of different cultures and traditions in context to Indian architecture.
2. Get awareness about the technological advancements that significantly impacted the architectural development around India.
3. Analyse what was appropriate and what was inappropriate in context with the Indian architecture.

COURSE CONTENTS*(45 Contact Periods)***Unit-I: Colonial Architecture***(12 Contact Periods)*

Lectures based on Colonial Architecture with backdrop of science and technology, commerce and urbanization during the Industrial Revolution in England, Case studies on Victoria Terminus, Raj Bhavan at Kolkata, the Rashtrapati Bhavan at New Delhi, the Gateway of India at Mumbai, Garrison Church of St. Martin at Delhi and Aurobindo Ashram at Pondicherry.

Unit-II: Contemporary Modern Architecture*(24 Contact Periods)*

Lectures based on Contemporary Modern Architecture with focus on the buildings of Chandigarh like the Secretariat, Assembly & High Court at Chandigarh, buildings at New Delhi like Sri Ram Center, Hall of Nations at Pragati Maidan, institutional buildings like the IIM Ahmedabad, IIM Bangalore, industrial buildings like R&D building of Semi-Conductor Complex at Chandigarh, Escorts at Faridabad, Canteen for Mill workers at Ahmedabad, high rise buildings like Kanchanjunga Apartments at Mumbai.

Unit-III: Cultural Resonance In Architecture*(09 Contact Periods)*

Lectures based on Cultural resonance in architecture with focus on Vidhan Bhavan at Bhopal, Gandhi Smarak Sangrahalaya at Ahmedabad, Sangath at Ahmedabad, Hotel Cida De Goa at Panjim and Asiad Village at Delhi.

NOTES:

For consulting books on the above-mentioned topics, kindly refer to the "Suggested Books" section of this document.

For important instructions, kindly refer to the "Note to Course Co-ordinator/ Faculty" and "Note to Paper Setters/ External Examiners" sections of this document.

**SECOND YEAR (SEMESTER – III)**

FS 2 2 3 BCT1				Building Construction & Technology - I												
Teaching Scheme				Internal Assessment						External Examination				TOTAL	D	
L	T	P	S	CP	CA-I	CA-II	CA-III	MT	IA TOTAL	T	J	V	EE TOTAL	MARKS		
1	0	0	2	5	10	10	10	15	50	50			50	100	3	
Pre-Requisite (s)				NIL												

COURSE OUTCOMES

After successful completion of this course, students shall be able to;

1. Understand the principles and techniques of architectural construction & detailing.
2. Represent construction materials, building components and their connections and assemblies.
3. Produce technically correct and proficient construction details.

COURSE CONTENTS*(45 Contact Periods)***Unit-I: Built Environment***(06 Contact Periods)*

Lectures based on built environment, structure and its elements along with their components and functions, construction activities, construction documents and construction drawings.

Unit-II: Site Works*(09 Contact Periods)*

Lectures based on site survey, soil investigation, considerations for site layout, security, lighting and electrical supply, site office and accommodation.

Unit-III: Material Storage & Public Utility Services*(06 Contact Periods)*

Lectures based on material storage, public utility services, setting out, levels and angles, overview of road construction.

Unit-IV: Working Methods and Systems*(15 Contact Periods)*

Lectures based on tubular scaffolding and scaffolding systems[^], shoring systems[^], demolition and its methods.

Unit-V: Construction Machinery & Equipment*(09 Contact Periods)*

General considerations of setting a plant; heavy machinery and equipment involved in construction like bulldozers, scrapers, graders, tractor shovels, excavators, transport vehicles, hoists, rubble chutes and skips, cranes, concreting plant.

[^] The Faculty shall ensure that the students prepare at least two drawing sheets on the underlined topics.

NOTES:

For consulting books on the above-mentioned topics, kindly refer to the "Suggested Books" section of this document. For important instructions, kindly refer to the "Note to Course Co-ordinator/ Faculty" and "Note to Paper Setters/ External Examiners" sections of this document.

**SECOND YEAR (SEMESTER – III)**

FS 2 2 3 BMT1				Building Materials & Technology- I												
Teaching Scheme				Internal Assessment							External Examination				TOTAL	D
L	T	P	S	CP	CA-I	CA-II	CA-III	MT	IA TOTAL	T	J	V	EE TOTAL	MARKS		
2	0	0	0	5	10	10	10	15	50	50			50	100	3	
Pre-Requisite (s)				NIL												

COURSE OUTCOMES

After successful completion of this course, students shall be able to;

1. Gain knowledge of different materials that can be used in building construction.
2. Understand the role of each material in achieving your design goals.
3. Apply gained knowledge in selecting the right materials for the right cause.

COURSE CONTENTS*(30 Contact Periods)***Unit-I: Cementitious Materials And Aggregates***(06 Contact Periods)*

Lectures based on Cementitious Materials, their types, properties, uses and applications.

Lectures based on Aggregates, their types, properties, uses and applications.

Unit-II: Mortars, Concretes And Admixtures*(06 Contact Periods)*

Lectures based on Mortars, their types, properties, uses and applications.

Lectures based on Concrete, their types, properties, uses and applications.

Lectures based on Chemical and Mineral Admixtures for concrete, their types, properties, uses and applications.

Unit-III: Burnt-Clay Units, Building Stones And Glass*(06 Contact Periods)*

Lectures based on Burnt-Clay Units, their types, properties, uses and applications.

Lectures based on Building Stones, their types, properties, uses and applications.

Lectures based on Glass and Glass Blocks, their types, properties, uses and applications.

Unit-IV: Gypsum Products, Wood And Wood Products*(06 Contact Periods)*

Lectures based on Gypsum Products, their types, properties, uses and applications.

Lectures based on Wood and Wood Products, their types, properties, uses and applications.

Unit-V: Iron, Steel And Steel Alloys*(06 Contact Periods)*

Lectures based on Iron, Steel and Steel Alloys, their types, properties, uses and applications.

NOTES:

For consulting books on the above-mentioned topics, kindly refer to the "Suggested Books" section of this document.

For important instructions, kindly refer to the "Note to Course Co-ordinator/ Faculty" and "Note to Paper Setters/ External Examiners" sections of this document.

**SECOND YEAR (SEMESTER – III)**

FS 2 2 3 BSM1				Building Systems & Management - I											
Teaching Scheme				Internal Assessment						External Examination				TOTAL	D
L	T	P	S	CP	CA-I	CA-II	CA-III	MT	IA TOTAL	T	J	V	EE TOTAL	MARKS	
2	0	0	0	5	10	10	10	15	50	50			50	100	3
Pre-Requisite (s)				NIL											

COURSE OUTCOMES

After successful completion of this course, students shall be able to;

1. Learn the fundamentals of different building systems like vertical transportation, HVAC, fire and life safety systems, etc.
2. Understand the role of each system in achieving the desired building performance.
3. Apply gained knowledge in integrating the systems into architectural design.

COURSE CONTENTS**(30 Contact Periods)****Unit-I: Vertical Circulation System****(09 Contact Periods)**

Lectures based on classification of vertical circulation systems like ramps, stairs, escalators, elevators, dumbwaiters and their types, planning considerations for passenger elevators.

Unit-II: HVAC System And Methods of Heating Buildings**(06 Contact Periods)**

Definitions of terms of heating, ventilation, and air conditioning (HVAC), heat and humidity, major factors in HVAC design, ventilation, movement of air with fans, duct design, heat losses, heat gains.

General procedure for sizing a heating plant, heating-load-calculation example, warm-air heating, hot-water heating systems, steam-heating systems, unit heaters, radiant heating, snow melting, radiators and convectors, heat pumps, solar heating.

Unit-III: Methods Of Cooling And Air Conditioning**(09 Contact Periods)**

General procedure for sizing an air-conditioning plant, refrigeration cycles, air-distribution temperature for cooling, condensers, compressor-motor units, cooling equipment-central plant packaged units, zoning, packaged air-conditioning units, absorption units for cooling, ducts for air conditioning, built-up air-conditioning units, variable-air-volume (VAV) systems, air-water systems, year-round air conditioning.

Unit-IV: Acoustic System**(06 Contact Periods)**

Lectures based on sound production and transmission, nomenclature for analysis of sound, sound characteristics and effects on hearing, measurement of sound, sound and vibration control, acoustical performance data, acoustical criteria, helpful hints for noise control.

NOTES:

For consulting books on the above-mentioned topics, kindly refer to the “Suggested Books” section of this document.

For important instructions, kindly refer to the “Note to Course Co-ordinator/ Faculty” and “Note to Paper Setters/ External Examiners” sections of this document.

**SECOND YEAR (SEMESTER – III)**

FS 2 2 3 TOS1					Theory of Structures - I											
Teaching Scheme					Internal Assessment						External Examination			TOTAL	D	
L	T	P	S		CP	CA-I	CA-II	CA-III	MT	IA TOTAL	T	J	V	EE TOTAL		MARKS
2	1	0	0		5	10	10	10	15	50	50			50	100	3
Pre-Requisite (s)					NIL											

COURSE OUTCOMES

After successful completion of this course, students shall be able to;

1. Learn about various structural systems and typologies.
2. Get aware of the performance and material consequences of various structural systems.
3. Integrate these structural systems and typologies into the architectural designs successfully.

COURSE CONTENTS*(45 Contact Periods)***Unit-I: Structure, Stability & Strength***(06 Contact Periods)*

Lectures based on structure and structural forms; natural and man-made.

Lectures based on definition and meaning of stability & strength, their co-relation.

Unit-II: Types of Loads, Reactions And Forces*(09 Contact Periods)*

Gravity loads, lateral loads, dynamic loads, impact loads, load paths.

Tension, compression, shear, torsion, bending.

Forces; applied and reactive, translational movement, rotational movement, levers, moment.

Unit-III: Equilibrium And Working With Forces*(15 Contact Periods)*

Translational equilibrium, rotational equilibrium, sign conventions, equilibrium equations, free body diagrams and familiar examples of equilibrium, introduction to bending in beams.

Force vectors and line of action, combining and resolving concurrent forces, familiar examples of concurrent forces.

Unit-IV: Supports, Reactions & Restraint Of Movement*(06 Contact Periods)*

Roller and frictionless – surface supports, pinned supports, fixed supports, hanger supports, familiar examples of support conditions – stable or unstable.

Unit-V: Load Distribution*(09 Contact Periods)*

Point loads, distributed loads, equivalent point loads, uniformly distributed loads, non – uniformly distributed loads.

NOTES:

For consulting books on the above-mentioned topics, kindly refer to the “Suggested Books” section of this document.

For important instructions, kindly refer to the “Note to Course Co-ordinator/ Faculty” and “Note to Paper Setters/ External Examiners” sections of this document.

**SECOND YEAR (SEMESTER – III)**

FS 2 2 3 SSA2				Software Systems & Applications - II												
Teaching Scheme				Internal Assessment							External Examination				TOTAL	D
L	T	P	S	CP	CA-I	CA-II	CA-III	MT	IA TOTAL	T	J	V	EE TOTAL	MARKS		
2	0	2	0	5	10	10	10	15	50			50	50	100	3	
Pre-Requisite (s)				NIL												

COURSE OUTCOMES

After successful completion of this course, students shall be able to;

1. Learn the use of basic software and apply same skills in producing faster and accurate designs.
2. Get awareness about the field of digitalization and help students in pursuing further studies
3. Produce accurate architectural designs and drawings along with faster co-ordination with different teams.

COURSE CONTENTS*(60 Contact Periods)***Unit-I: SKETCH-UP: Introduction And Basic Tools***(10 Contact Periods)*

Sketch Up – Introduction to Sketch Up, Zoom, Pan and Rotate, Understanding the XYZ axis, Selecting toolbars, applying templates, Drawing and using the Pencil tool, Drawing basic geometric shapes, Drawing with measurements, Drawing circles and arcs. Discovering Layers, Using shortcuts, Measuring items inside SketchUp, Moving and Move/ Copy, Array, Rotate, Scale.

Unit-II: Modelling Techniques*(10 Contact Periods)*

Sketch Up – Importing CAD Drawings into SketchUp, Information and database, Making Components, Making Groups, Saving and re-loading Components. Modelling Techniques using Push/ Pull, Follow Me, Intersecting geometry, Copy and Offset faces, edges and polygons, Paint Bucket, Material Editor, Textures and Bitmaps, Positioning Textures. Section Cuts.

Unit-III: Animation & Printing*(10 Contact Periods)*

Creating new Scenes, Creating new Styles, Saving scenes and styles. Overview of Animation, Dimensions inside SketchUp, Annotation inside SketchUp, Printing from SketchUp, Exporting 2D images or PDFs.

Practice Exercises*(30 Contact Periods)*

Sketch Up – Practice exercises like making models of simple objects, like box, sphere, cone, pyramid, etc.

Sketch Up – Practice exercises like making models of complex objects with detailed material applications and architectural presentations.

NOTES:

For consulting books on the above-mentioned topics, kindly refer to the “Suggested Books” section of this document.

For important instructions, kindly refer to the “Note to Course Co-ordinator/ Faculty” and “Note to Paper Setters/ External Examiners” sections of this document.



**NOTE TO COURSE CO-ORDINATOR/ FACULTY
SECOND YEAR (SEMESTER – III)**

S.No.	Course Code	Note to Course Co-ordinator/ Faculty
1	FS 2 2 3 ADS1	<u>STUDIO</u>
2	FS 2 2 3 DOD1	1. Detailed teaching program/ lesson plan shall be made and circulated to the students at the commencement of the semester. 2. At least TWO (2) Time-problems and ONE (1) Final Design Problem shall be completed in the entire semester, covering the entire syllabus uniformly.
3	FS 2 2 3 MMP3	
4	FS 2 2 3 HOA3	
5	FS 2 2 3 BCT1	<u>LECTURE</u>
6	FS 2 2 3 BMT1	1. Detailed teaching program/ lesson plan shall be made and circulated to the students at the commencement of the semester. 2. The Course Co-ordinator shall be free to collaborate with other subject faculty, engage an additional faculty for assistance, engage Industry experts for special lectures, take students for Field-work, Market surveys and/ or Construction sites, etc. wherever required. Permissions from Principal/ HOD shall be taken. 3. Minimum THREE (3) class assignments shall be completed in the entire semester, covering the entire syllabus uniformly.
7	FS 2 2 3 BSM1	
8	FS 2 2 3 TOS1	
9	FS 2 2 3 SSA2	
		<u>PRACTICAL</u>
		1. Detailed teaching program/ lesson plan shall be prepared and circulated to the students at the commencement of the semester. 2. Software shall be taught with the version available at the School. 3. The classes shall be held in the Workshop/ Computer Lab/ On-Field.

**NOTE TO PAPER SETTERS/ EXTERNAL EXAMINERS
SECOND YEAR (SEMESTER – III)**

S.No.	Course Code	Note to External Examiners
1	FS 2 2 3 ADS1	<u>JURY</u>
2	FS 2 2 3 DOD1	1. Exam shall be an Open Jury type. 2. Jury shall examine the displayed work done by the student in full semester. 3. The duration of the Jury shall be the time taken to examine all the students. 4. Minimum passing marks: Fifty percent.
3	FS 2 2 3 MMP3	
4	FS 2 2 3 HOA3	
5	FS 2 2 3 BCT1	<u>THEORY PAPER</u> (Conducted by University)
6	FS 2 2 3 BMT1	1. Question paper shall consist of THREE Sections; A, B and C. 2. Section A shall consist of TEN MCQs of One (1) Mark each. Student shall ATTEMPT ALL. 3. Section B shall consist of SIX SATQs of Five (5) Marks each. Student shall ATTEMPT ANY FOUR. 4. Section C shall consist of THREE LATQs of Ten (10) Marks each. (These may be Sketching/ Drawing based) Student shall ATTEMPT ANY TWO. Minimum passing marks: Fifty percent.
7	FS 2 2 3 BSM1	
8	FS 2 2 3 TOS1	
9	FS 2 2 3 SSA2	
		1. Exam shall be Viva-voce type. 2. Student shall be examined through Viva and/ or by spontaneous test exercises in Workshop/ Computer Lab/ On-Field. 3. The duration of the Viva-voce shall be the time taken to examine all the students. 4. Minimum passing marks: Fifty percent.



SUGGESTED BOOKS
SECOND YEAR (SEMESTER – III)

S.No.	Course Code	Book Title
1	FS 2 2 3 ADS1	1 Architect's Data By Ernst Neufert, Peter Neufert, Johannes Kister 2 Room And Furniture Layout Kit By Muncie Hendler. 3 Human Factors And Ergonomics Design Handbook, Third Edition By Barry Tillman, David J. Fitts, Rhonda Rose-Sundholm, Peggy Tillman.
2	FS 2 2 3 DOD1	1 Architectural Working Drawings By Ralph W. Liebing. 2 Architectural Drawing By David Derne. 3 Architectural Working Drawings: Residential & Commercial Buildings By William P. Spence. 4 Commercial Drafting & Detailing By Allen Jefferis & Kenneth D. Smith. 5 A Manual Of Construction Documentation By Glenn E. Wiggins.
3	FS 2 2 3 MMP3	1 Model Making By Megan Werner. 2 Studio Craft & Techniques For Architects By Miriam Delaney, Anne Gorman. 3 Operative Design: A Catalogue Of Spatial Verbs By Anthony Di Mari.
4	FS 2 2 3 HOA3	1 Indian Architecture: Buddhist And Hindu Periods By Percy Brown. 2 Indian Architecture: Islamic Period By Percy Brown. 3 Vistara: The Architecture Of India, Edited By Carmen Kaigal.
5	FS 2 2 3 BCT1	1 Construction Of Buildings, London, Vol. 1 To 5 By Barry R. 2 Fundamentals Of Building Construction: Materials & Methods By Edward Allen And Joseph Iano. 3 Building Construction Handbook, Seventh Edition By R. Chudley And R. Greeno. 4 Mitchell's Advanced Building Construction By Foster, Stroud. 5 Mckay's Building Construction By William Barr Mckay.
6	FS 2 2 3 BMT1	1 Construction Of Buildings, London, Vol. 1 To 5 By Barry R. 2 Fundamentals Of Building Construction: Materials & Methods By Edward Allen And Joseph Iano. 3 National Building Code, Sp 7, By Bureau Of Indian Standards. 4 Building Design And Construction Handbook By Frederick S. Merritt And Jonathan T. Ricketts. 5 Building Materials By P. C. Varghese. 6 Building Materials And Construction By Sushil Kumar.
7	FS 2 2 3 BSM1	1 Building Design And Construction Handbook By Frederick S. Merritt And J. T. Ricketts 2 Plumbing Design And Practice By S. G. Deolalikar. 3 Design Of Mechanical And Electrical Systems In Buildings By J. Trost, Ifte Choudhury.
8	FS 2 2 3 TOS1	1 Tony Hunt's Structure Notebook. 2 Understanding Structures By Fuller Moore. 3 Building Structures: Understanding The Basics By Malcolm Millais. 4 Structure & Architecture By Angus J. Macdonald. 5 Architect's Pocket Book By Charlotte Baden-Powell. 6 Architectural Structures By G. G. Schierle.
9	FS 2 2 3 SSA2	1 Introduction To Google Sketchup By Aidan Chopra. 2 The D'oh Book For Sketch Up By Rich O' Brien.

**SECOND YEAR (SEMESTER – IV)**

FS 2 2 4 ADS2					Architectural Design Studio - II											
Teaching Scheme					Internal Assessment						External Examination			TOTAL	D	
L	T	P	S		CP	CA-I	CA-II	CA-III	MT	IA TOTAL	T	J	V	EE TOTAL		MARKS
1	0	0	4		5	10	10	10	15	50		50		50	100	-
Pre-Requisite (s)					FS223ADS1											

COURSE OUTCOMES

After successful completion of this course, students shall be able to;

1. Develop spatial thinking and skills necessary for the analysis and design of architectural space and form.
2. Understand architectural enclosures as mediating between people and the outside world.
3. Understand and learn the integration of different aspects of design with an objective of bettering the design solution.
4. Gain exposure to design thinking processes including envisioning, planning and various forms of analysis all of which help shape a robust problem statement that forward design innovation.
5. Work cooperatively as part of a team and take a leadership role when required.
6. Demonstrate basic competence in architectural design.

COURSE CONTENTS*(75 Contact Periods)***Unit-I: Design With Site Analysis And Form***(75 Contact Periods)*

The theme of the design studio sequence shall be SITE ANALYSIS & FORM. The focus remains on site typology, building orientation and climatic aspects. Lectures include topics such as zoning and site circulation with Lectures based on pedestrian and vehicular movements, cluster-diagrams, zoning diagrams and site sections.

Time Problem exercises shall be based on Form Development/ Pedestrian Movement/ Vehicular Movement & Parking/ Zoning Techniques/ Orientation methods.

Final Design Problem exercise shall be Guest House/ Art Gallery/ Play School on a sloping site.

NOTES:

For consulting books on the above-mentioned topics, kindly refer to the "Suggested Books" section of this document.

For important instructions, kindly refer to the "Note to Course Co-ordinator/ Faculty" and "Note to Paper Setters/ External Examiners" sections of this document.

**SECOND YEAR (SEMESTER – IV)**

FS 2 2 4 DOD2				Documentation of Design - II											
Teaching Scheme				Internal Assessment						External Examination			TOTAL	D	
L	T	P	S	CP	CA-I	CA-II	CA-III	MT	IA TOTAL	T	J	V	EE TOTAL		MARKS
1	0	0	2	5	10	10	10	15	50		50		50	100	-
Pre-Requisite (s)				FS223DOD1											

COURSE OUTCOMES

After successful completion of this course, students shall be able to;

1. Understand the working drawings and documents required from conception to completion of a design project.
2. Prepare and comprehend the drawings and documents.
3. Prepare schedules and other documents.

COURSE CONTENTS*(45 Contact Periods)***Unit-I: Introduction To Working Drawings***(10 Contact Periods)*

Introduction to Types of drawings and Schedules to be prepared for building construction purposes, Introduction to various building components, List of drawings, details and their purposes/ function in a set of working drawings of a medium/ large project. Informing about the established practices of providing allied information/ notes on various types of drawings. Check list as a guide for preparation and checking of working drawings and details.

Unit-II: Drafting Conventions*(10 Contact Periods)*

Aspects of Architectural Drafting for Good For Construction (GFC) including Line-work, Grids, Lettering, Dimensioning, Annotations, Title Block(s), Office standards, Representation of different materials, Schedules/ Tables and Notes on GFC drawings, Drafting Conventions and Symbols, Types of Tags and Graphic Symbols used in GFC drawings, Method of representing various components, contents and specific information in working drawings/ details.

Unit-III: GFC Drawings*(25 Contact Periods)*

Preparation of architectural GFC drawings and details of a small/ medium project. Preparation of Structural, Electrical and Plumbing drawings of a small/ medium project. Specifications of building materials and simple construction as separate document or annotated on the working drawings.

^The Faculty shall ensure that the students prepare GFC drawings for at least one design project.

NOTES:

*For consulting books on the above-mentioned topics, kindly refer to the "Suggested Books" section of this document.
For important instructions, kindly refer to the "Note to Course Co-ordinator/ Faculty" and "Note to Paper Setters/ External Examiners" sections of this document.*

**SECOND YEAR (SEMESTER – IV)**

FS 2 2 4 MMP4				Model Making Practices - IV											
Teaching Scheme				Internal Assessment						External Examination			TOTAL	D	
L	T	P	S	CP	CA-I	CA-II	CA-III	MT	IA TOTAL	T	J	V	EE TOTAL		MARKS
0	0	4	0	5	10	10	10	15	50		50		50	100	-
Pre-Requisite (s)				FS223MMP3											

COURSE OUTCOMES

After successful completion of this course, students shall be able to;

1. Learn how to use architectural modelling equipment and tools properly.
2. Learn how to make architectural models and inculcate this habit right from the beginning.
3. Enhance the understanding of design by the technique of Learning by Doing.

COURSE CONTENTS*(60 Contact Periods)***Unit-I: Architectural Model Making***(60 Contact Periods)*

During the entire semester, the student shall prepare the Study Models and Final Models of the projects undertaken in the respective Architectural Design Studio.

The design, materials and the scale of the model shall be discussed, finalized and approved by the Course-coordinator/ Faculty.

NOTES:

For consulting books on the above-mentioned topics, kindly refer to the “Suggested Books” section of this document.

For important instructions, kindly refer to the “Note to Course Co-ordinator/ Faculty” and “Note to Paper Setters/ External Examiners” sections of this document.

**SECOND YEAR (SEMESTER – IV)**

FS 2 2 4 HOA4				History of Architecture - IV											
Teaching Scheme				Internal Assessment						External Examination			TOTAL	D	
L	T	P	S	CP	CA-I	CA-II	CA-III	MT	IA TOTAL	T	J	V	EE TOTAL	MARKS	
2	1	0	0	5	10	10	10	15	50	50			50	100	3
Pre-Requisite (s)				NIL											

COURSE OUTCOMES

After successful completion of this course, students shall be able to;

1. Know the historic background of different cultures and traditions in context to world architecture.
2. Get awareness about the technological advancements that significantly impacted the architectural development around the world.
3. Analyse what was appropriate and what was inappropriate in context with the world architecture.

COURSE CONTENTS*(45 Contact Periods)***Unit-I: Renaissance Architecture***(06 Contact Periods)*

Lectures based on Renaissance Architecture with focus on elements and construction style; Case studies on St. Maria Novella, Pazzi Chapel and Villa Rotunda.

Unit-II: Eclectic And Neo-Classical Architecture*(12 Contact Periods)*

Lectures based on Eclectic Architecture with focus on elements and construction style; Case studies on Parliament at London and St. Pancras Station at London.

Lectures based on Neo-Classical Architecture with focus on elements and construction style; Case studies on Pantheon of Paris and Stockholm Library.

Unit-III: Industrial Architecture*(09 Contact Periods)*

Lectures based on Industrial Architecture with focus on elements and construction style; Case studies on Eiffel Tower, Crystal Palace, Reliance Building at Chicago and Coal Brook Dale Bridge.

Unit-IV: Architecture Of The 20th Century*(12 Contact Periods)*

Lectures based on Architecture of the 20th Century with focus on elements and construction style; Case studies on Barcelona Pavilion, Villa Savoye, Falling water and Robie House.

One famous work of Renzo Piano, Mario Botta, Frank Gehry, Norman Foster, Santiago Calatrava, Peter Eisenman, SOM and HOK, Zaha Hadid.

Unit-V: Architecture Of The 21st Century*(06 Contact Periods)*

Lectures based on Architecture of the 21st Century with focus on elements and construction style. Case studies on one famous work of Heatherwick Studio, MAD Architects, BIG.

NOTES:

For consulting books on the above-mentioned topics, kindly refer to the "Suggested Books" section of this document.

For important instructions, kindly refer to the "Note to Course Co-ordinator/ Faculty" and "Note to Paper Setters/ External Examiners" sections of this document.

**SECOND YEAR (SEMESTER – IV)**

FS 2 2 4 BCT2				Building Construction & Technology - II												
Teaching Scheme				Internal Assessment						External Examination				TOTAL	D	
L	T	P	S	CP	CA-I	CA-II	CA-III	MT	IA TOTAL	T	J	V	EE TOTAL	MARKS		
1	0	0	2	5	10	10	10	15	50	50			50	100	3	
Pre-Requisite (s)				FS223BCT1												

COURSE OUTCOMES

After successful completion of this course, students shall be able to;

1. Understand the principles and techniques of architectural construction & detailing.
2. Represent construction materials, building components and their connections and assemblies.
3. Produce technically correct and proficient construction details.

COURSE CONTENTS*(45 Contact Periods)***Unit-I: Excavations And Foundations***(10 Contact Periods)*

Excavations – types and methods, Timbering[^] in firm soil and loose soil, Underpinning[^] - types of underpinning, ground water control, soil stabilisation and improvement. Foundations – function, materials and sizing; types of foundations; Typical Detail of Piled Foundation[^].

Unit-II: Basement Construction*(08 Contact Periods)*

Retaining walls – types and methods of construction, Typical Detail of Brick Retaining Wall[^], Typical Detail of Brick Faced Mass Concrete Retaining Wall[^], Gabions and Mattresses, Basement construction and its waterproofing, Typical Detail of Basement Waterproofing[^]

Unit-III: Walls, Wall Openings, Doors And Windows*(12 Contact Periods)*

Brick walls – principles of brick bonding and types of brick bonds, Typical Detail of English Bond Brick Wall[^], Typical Detail of Flemish Bond Brick Wall[^], jointing and pointing works, block walls and cavity walls, Typical Detail of Cavity Wall[^], parapet walls and fin-walls, Typical Detail of Parapet Wall[^], Arches and openings – basic formwork used and methods of construction, Doors and windows – basic types and construction with glazing, hardware and ironmongery, Typical Detail of Door/ Window Jamb[^], Typical Detail of Door/ Window Head[^], Typical Detail of Window Sill[^], Typical Detail of Door Threshold[^], Internal door, their types.

Unit-IV: Timber Framed Construction And Wall Cladding*(09 Contact Periods)*

Timber framed construction, its types and methods, its advantages and disadvantages, Wall cladding for external walls, Typical Detail of Vertical Tile Hanging[^], Typical Detail of Timber Weatherboarding[^].

Unit-V: Roof Construction*(06 Contact Periods)*

Roofs – basic forms; timber pitched roof and its types, single lap tiling, double lap tiling, slating; flat roofs, Typical Detail of Ridge[^] in single lap tiling, Typical Detail of Eaves[^] in single lap tiling, Typical Detail of Ridge[^] in double lap tiling, Typical Detail of Eaves[^] in double lap tiling, Typical Detail of Ridge[^] in slating, Typical Detail of Eaves[^] in slating.

[^]The Faculty shall ensure that the students prepare at least two drawing sheets on the underlined topics.

NOTES:

For consulting books on the above-mentioned topics, kindly refer to the “Suggested Books” section of this document.

For important instructions, kindly refer to the “Note to Course Co-ordinator/ Faculty” and “Note to Paper Setters/ External Examiners” sections of this document.

**SECOND YEAR (SEMESTER – IV)**

FS 2 2 4 BMT2														Building Materials & Technology- II			
Teaching Scheme				Internal Assessment						External Examination				TOTAL	D		
L	T	P	S	CP	CA-I	CA-II	CA-III	MT	IA TOTAL	T	J	V	EE TOTAL	MARKS			
2	0	0	0	5	10	10	10	15	50	50			50	100	3		
Pre-Requisite (s)				NIL													

COURSE OUTCOMES

After successful completion of this course, students shall be able to;

1. Gain knowledge of different materials that can be used in building construction.
2. Understand the role of each material in achieving your design goals.
3. Apply gained knowledge in selecting the right materials for the right cause.

COURSE CONTENTS*(30 Contact Periods)***Unit-I: Aluminium, Copper And Their Alloys***(06 Contact Periods)*

Lectures based on aluminium and aluminium-based alloys, their types, properties, uses and applications.

Lectures based on copper and copper-based alloys, their types, properties, uses and applications.

Unit-II: Lead, Nickel And Their Alloys*(06 Contact Periods)*

Lectures based on lead and lead-based alloys, their types, properties, uses and applications.

Lectures based on nickel and nickel-based alloys, their types, properties, uses and applications.

Unit-III: Plastics And Combination With Other Material*(06 Contact Periods)*

Lectures based on plastics and plastic products, their types, properties, uses and applications.

Lectures based on combination of plastics with other materials, their types, properties, uses and applications.

Unit-IV: Porcelain Products, Paints And Coatings*(06 Contact Periods)*

Lectures based on porcelain-enamelled products, their types, properties, uses and applications.

Lectures based on paints and coatings, their types, properties, uses and applications.

Unit-V: Asphalt And Bitumen, Joint Seals And Compounds*(06 Contact Periods)*

Lectures based on asphalt and bituminous products, their types, properties, uses and applications.

Lectures based on joint seals and compounds, their types, properties, uses and applications.

NOTES:

For consulting books on the above-mentioned topics, kindly refer to the "Suggested Books" section of this document.

For important instructions, kindly refer to the "Note to Course Co-ordinator/ Faculty" and "Note to Paper Setters/ External Examiners" sections of this document.

**SECOND YEAR (SEMESTER – IV)**

FS 2 2 4 BSM2 Building Systems & Management - II																
Teaching Scheme				Internal Assessment						External Examination				TOTAL	D	
L	T	P	S	CP	CA-I	CA-II	CA-III	MT	IA TOTAL	T	J	V	EE TOTAL	MARKS		
2	0	0	0	5	10	10	10	15	50	50			50	100	3	
Pre-Requisite (s)				NIL												

COURSE OUTCOMES

After successful completion of this course, students shall be able to;

1. Learn the fundamentals of different building systems like vertical transportation, HVAC, fire and life safety systems, etc.
2. Understand the role of each system in achieving the desired building performance.
3. Apply gained knowledge in integrating the systems into architectural design.

COURSE CONTENTS*(30 Contact Periods)***Unit-I: Plumbing System***(05 Contact Periods)*

Health requirements for plumbing, water quality, water treatment, water quantity and pressures, water distribution in buildings, plumbing fixtures and equipment, water demand and fixture units, water-pipe sizing.

Unit-II: Waste Water Piping And Gas Piping System*(06 Contact Periods)*

Wastewater disposal, sewers, wastewater-system elements, waste-pipe materials, layout of waste piping, interceptors, piping for indirect wastes, rainwater drainage, waste-pipe sizing, venting, plumbing-system inspection and tests.

Gas supply, Gas-pipe sizes, estimating gas consumption, Gas-pipe materials.

Unit-III: Sprinkler Systems*(05 Contact Periods)*

Sprinkler systems, automatic sprinklers, types of sprinkler systems, system design, standpipes, water supplies for sprinkler and standpipe systems, central station supervisory systems.

Unit-IV: Electrical Systems*(09 Contact Periods)*

Electrical power, direct-current systems, alternating-current systems, electrical loads, emergency power, electrical conductors and raceways, power system apparatus, electrical distribution in buildings, circuit and conductor calculations, light and sight, quality of light, colour rendering with lighting, quantity of light, lighting methods, daylight, characteristics of lamps, characteristics of lighting fixtures, systems design of lighting, special electrical systems.

Unit-V: Communication Systems*(05 Contact Periods)*

Glossary, grounding, communications room and communications closet layout, wiring diagrams, fibre-optic cable, fibre-optic connectors, horizontal cabling.

NOTES:

For consulting books on the above-mentioned topics, kindly refer to the “Suggested Books” section of this document.

For important instructions, kindly refer to the “Note to Course Co-ordinator/ Faculty” and “Note to Paper Setters/ External Examiners” sections of this document.

**SECOND YEAR (SEMESTER – IV)**

FS 2 2 4 TOS2				Theory of Structures - II											
Teaching Scheme				Internal Assessment					External Examination			TOTAL	D		
L	T	P	S	CP	CA-I	CA-II	CA-III	MT	IA TOTAL	T	J	V		EE TOTAL	MARKS
2	1	0	0	5	10	10	10	15	50	50			50	100	3
Pre-Requisite (s)				NIL											

COURSE OUTCOMES

After successful completion of this course, students shall be able to;

1. Learn about various structural systems and typologies.
2. Get aware of the performance and material consequences of various structural systems.
3. Integrate these structural systems and typologies into the architectural designs successfully.

COURSE CONTENTS*(45 Contact Periods)***Unit-I: Soil Mechanics***(06 Contact Periods)*

Earth's interior, earth's crust, natural soils, ground water, engineered fill, foundation settlement, soil bearing capacity and subsurface conditions.

Unit-II: Foundations, Structural Walls And Columns*(09 Contact Periods)*

Shallow Foundations, Deep Foundations, Loads and Deformational stresses, stresses and wall construction, retaining walls. Columns – compression and bending, column loading, column compression, column bending and column buckling.

Unit-III: Introduction To Beams, SMDs For Beams*(12 Contact Periods)*

Beams – beam types, deformation, deflection & beam behaviour, statically determinate beams, statically indeterminate beams, other considerations for beams.

Sign conventions, typical shear & moment diagrams, creating shear & moment diagrams, comparing “V” and “M” for uniformly distributed versus concentrated loading, summary of deformation, shear & moment relationships.

Unit-IV: Rigid Frames, Slab Systems And Stress – Strain*(09 Contact Periods)*

Triangular frames, Rectangular frames, making rectangular frames rigid, lateral resistance systems. One – way slab systems, Two – way slab and beam systems, Two – way slab, Two – way joist systems.

Stress, strain, stress versus strain, properties of materials, stress distribution diagrams.

Unit-V: Introduction To Trusses*(09 Contact Periods)*

Introduction to trusses, trusses as beams, types of trusses, design considerations, truss joints, truss loading, truss analysis.

NOTES:

For consulting books on the above-mentioned topics, kindly refer to the “Suggested Books” section of this document.

For important instructions, kindly refer to the “Note to Course Co-ordinator/ Faculty” and “Note to Paper Setters/ External Examiners” sections of this document.

**SECOND YEAR (SEMESTER – IV)**

FS 2 2 4 SSA3				Software Systems & Applications - III											
Teaching Scheme				Internal Assessment						External Examination				TOTAL	D
L	T	P	S	CP	CA-I	CA-II	CA-III	MT	IA TOTAL	T	J	V	EE TOTAL	MARKS	
2	0	2	0	5	10	10	10	15	50			50	50	100	3
Pre-Requisite (s)				NIL											

COURSE OUTCOMES

After successful completion of this course, students shall be able to;

1. Learn the use of basic software and apply same skills in producing faster and accurate designs.
2. Get awareness about the field of digitalization and help students in pursuing further studies
3. Produce accurate architectural designs and drawings along with faster co-ordination with different teams.

COURSE CONTENTS*(60 Contact Periods)***Unit-I: AUTOCAD: Introduction***(02 Contact Periods)*

AutoCAD – Introduction to AutoCAD, AutoCAD interface, Ribbons and Toolbars, Preliminary settings.

Unit-II: Drawing And Editing Tools*(05 Contact Periods)*

AutoCAD – Line and ‘Ortho’, Units, Coordinates and UCS, Offset, Selection window and delete, Trim and Extend, Fillet and Chamfer, Zoom and Zoom Tools, Regen drawing, Saving and opening files, Object Snap, Move, Copy, Rotate, Scale, Mirror, Stretch, Align, Undo and Redo.

Unit-III: Objects Of Design And Object Properties*(05 Contact Periods)*

Rectangle, Circle, Arc, Polygon, Ellipse, Donut, Point and Point Style, Divide and Measure, Polyline and Edit Polyline, Hatch, Edit Hatch and Explode.

Colour, Linetype, Linetype Scale, Line width, Layers, Properties, Match Properties.

Unit-IV: Adding Text And Dimensions*(05 Contact Periods)*

Text Style, Single Line Text, Multi-Line Text, Text Editing, Dimensioning, Linear Dimension, Aligned Dimension, Radius and Diameter, Angle, Dimension Style, Dimension Update, Edit Dimension Text, The ‘Distance’ command.

Unit-V: Printing And Advanced Functions For 2D*(03 Contact Periods)*

Print command, Plot Style, Printer Properties, Auto-save files path.

The Grip, Rectangular Array, Polar Array, Arraypath, Blocks, Layout, External References XREF, Inserting Images.

Practice Exercises*(40 Contact Periods)*

AutoCAD – Practice exercises to develop proficiency in creating simple drawings of design projects.

AutoCAD – Practice exercises to develop proficiency in creating detailed drawings of design projects.

NOTES:

For consulting books on the above-mentioned topics, kindly refer to the “Suggested Books” section of this document.

For important instructions, kindly refer to the “Note to Course Co-ordinator/ Faculty” and “Note to Paper Setters/ External Examiners” sections of this document.



NOTE TO COURSE CO-ORDINATOR/ FACULTY SECOND YEAR (SEMESTER – IV)

S.No.	Course Code	Note to Course Co-ordinator/ Faculty
1	FS 2 2 4 ADS2	<u>STUDIO</u>
2	FS 2 2 4 DOD2	1. Detailed teaching program/ lesson plan shall be made and circulated to the students at the commencement of the semester.
3	FS 2 2 4 MMP4	2. At least TWO (2) Time-problems and ONE (1) Final Design Problem shall be completed in the entire semester, covering the entire syllabus uniformly.
4	FS 2 2 4 HOA4	<u>LECTURE</u>
5	FS 2 2 4 BCT2	1. Detailed teaching program/ lesson plan shall be made and circulated to the students at the commencement of the semester.
6	FS 2 2 4 BMT2	2. The Course Co-ordinator shall be free to collaborate with other subject faculty, engage an additional faculty for assistance, engage Industry experts for special lectures, take students for Field-work, Market surveys and/ or Construction sites, etc. wherever required. Permissions from Principal/ HOD shall be taken.
7	FS 2 2 4 BSM2	3. Minimum THREE (3) class assignments shall be completed in the entire semester, covering the entire syllabus uniformly.
8	FS 2 2 4 TOS2	
9	FS 2 2 4 SSA3	<u>PRACTICAL</u>
		1. Detailed teaching program/ lesson plan shall be prepared and circulated to the students at the commencement of the semester.
		2. Software shall be taught with the version available at the School.
		3. The classes shall be held in the Workshop/ Computer Lab/ On-Field.

NOTE TO PAPER SETTERS/ EXTERNAL EXAMINERS SECOND YEAR (SEMESTER – IV)

S.No.	Course Code	Note to External Examiners
1	FS 2 2 4 ADS2	<u>JURY</u>
2	FS 2 2 4 DOD2	1. Exam shall be an Open Jury type.
3	FS 2 2 4 MMP4	2. Jury shall examine the displayed work done by the student in full semester.
		3. The duration of the Jury shall be the time taken to examine all the students.
		4. Minimum passing marks: Fifty percent.
4	FS 2 2 4 HOA4	<u>THEORY PAPER</u> (Conducted by University)
5	FS 2 2 4 BCT2	1. Question paper shall consist of THREE Sections; A, B and C.
6	FS 2 2 4 BMT2	2. Section A shall consist of TEN MCQs of One (1) Mark each.
7	FS 2 2 4 BSM2	Student shall ATTEMPT ALL.
8	FS 2 2 4 TOS2	3. Section B shall consist of SIX SATQs of Five (5) Marks each.
		Student shall ATTEMPT ANY FOUR.
		4. Section C shall consist of THREE LATQs of Ten (10) Marks each.
		(These may be Sketching/ Drawing based)
		Student shall ATTEMPT ANY TWO.
		Minimum passing marks: Fifty percent.
9	FS 2 2 4 SSA3	<u>VIVA-VOCE</u>
		1. Exam shall be Viva-voce type.
		2. Student shall be examined through Viva and/ or by spontaneous test exercises in Workshop/ Computer Lab/ On-Field.
		3. The duration of the Viva-voce shall be the time taken to examine all the students.
		4. Minimum passing marks: Fifty percent.



SUGGESTED BOOKS

SECOND YEAR (SEMESTER – IV)

S.No.	Course Code	Book Title
1	FS 2 2 4 ADS2	1 Architect's Data By Ernst Neufert, Peter Neufert, Johannes Kister. 2 Conditional Design: An Introduction To Elemental Architecture By Anthony Di Mari. 3 Site Analysis: A Contextual Approach To Sustainable Land Planning And Site Design By James A. Lagro Jr. 4 Basics Architectural Design By Bert Bielefeld. 5 Operative Design: A Catalogue Of Spatial Verbs By Anthony Di Mari.
2	FS 2 2 4 DOD2	1 Architectural Working Drawings By Ralph W. Liebing. 2 Architectural Drawing By David Derne. 3 Architectural Working Drawings: Residential & Commercial Buildings By William P. Spence. 4 Commercial Drafting & Detailing By Allen Jeffers & Kenneth D. Smith. 5 A Manual Of Construction Documentation By Glenn E. Wiggins.
3	FS 2 2 4 MMP4	1 Model Making By Megan Werner. 2 Studio Craft & Techniques For Architects By Miriam Delaney, Anne Gorman. 3 Operative Design: A Catalogue Of Spatial Verbs By Anthony Di Mari.
4	FS 2 2 4 HOA4	1 Sir Banister Fletcher's A History Of Architecture By Banister Fletcher. 2 World History Of Architecture By Lawrence Wodehouse, Marian Moffett & Michael Fazio. 3 World Architecture: The Masterworks By Will Pryce. 4 The Phaidon Atlas Of Contemporary World Architecture By Phaidon. 5 Encyclopedia Of World Architecture By Henri Stierlin.
5	FS 2 2 4 BCT2	1 Construction Of Buildings, London, Vol. 1 To 5 By Barry R. 2 Fundamentals Of Building Construction: Materials & Methods By Edward Allen And Joseph Iano. 3 Building Construction Handbook, Seventh Edition By R. Chudley And R. Greeno. 4 Mitchell's Advanced Building Construction By Foster, Stroud. 5 McKay's Building Construction By William Barr McKay.
6	FS 2 2 4 BMT2	1 Construction Of Buildings, London, Vol. 1 To 5 By Barry R. 2 Fundamentals Of Building Construction: Materials & Methods By Edward Allen And Joseph Iano. 3 National Building Code, Sp 7, By Bureau Of Indian Standards. 4 Building Design And Construction Handbook By Frederick S. Merritt And Jonathan T. Ricketts.
7	FS 2 2 4 BSM2	1 Building Services Handbook By Fred Hall. 2 Building Services By Moufak Zaher. 3 Building Design And Construction Handbook By Frederick S. Merritt And J. T. Ricketts. 4 Building Services Engineering By David V. Chadderton.
8	FS 2 2 4 TOS2	1 Structure & Architecture By Angus J. Macdonald. 2 Architect's Pocket Book By Charlotte Baden-Powell. 3 Architectural Structures By G. G. Schierle.
9	FS 2 2 4 SSA3	1 Managing Autocad In The Design Firm: A Manual For Architects And Interior By Karen Vagts. 2 Autocad Workbook For Architects And Engineers By Shannon R. Kyles. 3 Autodesk Manual For Autocad.

**THIRD YEAR (SEMESTER – V)**

ES 3 3 5 ADS3					Architectural Design Studio - III											
Teaching Scheme					Internal Assessment						External Examination				TOTAL	D
L	T	P	S		CP	CA-I	CA-II	CA-III	MT	IA TOTAL	T	J	V	EE TOTAL	MARKS	
1	0	0	7		5	10	10	10	15	50		50		50	100	-
Pre-Requisite (s)					NIL											

COURSE OUTCOMES

After successful completion of this course, students shall be able to;

1. Develop spatial thinking and skills necessary for the analysis and design of architectural space and form.
2. Understand architectural enclosures as mediating between people and the outside world.
3. Understand and learn the integration of different aspects of design with an objective of bettering the design solution.
4. Gain exposure to design thinking processes including envisioning, planning and various forms of analysis all of which help shape a robust problem statement that forward design innovation.
5. Work cooperatively as part of a team and take a leadership role when required.
6. Demonstrate basic competence in architectural design.

COURSE CONTENTS*(120 Contact Periods)***Unit-I: Design With Building Services***(120 Contact Periods)*

The theme of the design studio sequence shall be BUILDING SERVICES. The focus remains on building services and utilities. Lectures include topics such as vertical circulation, HVAC, MEP services with Lectures based on lifts, staircases, air conditioning, plumbing, firefighting, acoustics, daylighting, etc.

Time Problem exercises shall be based on Functional Work-flow/ Human Comfort/ Security/ Emergency requirements.

Final Design Problem exercise shall be Motel/ Primary Health Care Centre/ High-Rise Building.

NOTES:

For consulting books on the above-mentioned topics, kindly refer to the “Suggested Books” section of this document.
For important instructions, kindly refer to the “Note to Course Co-ordinator/ Faculty” and “Note to Paper Setters/ External Examiners” sections of this document.

**THIRD YEAR (SEMESTER – V)**

ES 3 3 5 EOD				Economics of Design												
Teaching Scheme				Internal Assessment							External Examination			TOTAL	D	
L	T	P	S	CP	CA-I	CA-II	CA-III	MT	IA TOTAL	T	J	V	EE TOTAL	MARKS		
2	0	0	0	5	10	10	10	15	50	50			50	100	3	
Pre-Requisite (s)				NIL												

COURSE OUTCOMES

After successful completion of this course, students shall be able to;

1. Get familiarized with the basic concepts of Economics and its influence on Architecture.
2. Understand the value of a building.
3. Minimize wastage and over-use thereby helping in Green Architecture practices.

COURSE CONTENTS**(30 Contact Periods)****Unit-I: Introduction And Laws****(10 Contact Periods)**

Lectures based on the definition of Economics, Economic laws, Economic goods, Utility, Value, Price and Wealth and Economic organization of the society. Consumption, wants, their characteristics and laws based upon them.

Unit-II: Land Values And Finance**(20 Contact Periods)**

Standard of living, market value, opportunity cost, the laws of diminishing, increasing and constant returns, urban land values, land utilization, factors involved in development of urban land, preliminary cost and cost indices for building. Concepts of life cycle costing with reference to buildings. Lectures based on the Time value of money – present worth and inflation, sources of finance for buildings.

NOTES:

For consulting books on the above-mentioned topics, kindly refer to the “Suggested Books” section of this document.
For important instructions, kindly refer to the “Note to Course Co-ordinator/ Faculty” and “Note to Paper Setters/ External Examiners” sections of this document.

**THIRD YEAR (SEMESTER – V)**

ES 3 3 5 BCT3				Building Construction & Technology - III											
Teaching Scheme				Internal Assessment						External Examination				TOTAL	D
L	T	P	S	CP	CA-I	CA-II	CA-III	MT	IA TOTAL	T	J	V	EE TOTAL	MARKS	
1	0	0	2	5	10	10	10	15	50	50			50	100	3
Pre-Requisite (s)				NIL											

COURSE OUTCOMES

After successful completion of this course, students shall be able to;

1. Understand the principles and techniques of architectural construction & detailing.
2. Represent construction materials, building components and their connections and assemblies.
3. Produce technically correct and proficient construction details.

COURSE CONTENTS*(45 Contact Periods)***Unit-I: R.C.C Framed Structures***(10 Contact Periods)*

Construction of simply supported slab, construction of beam and column, Types of reinforcement, Cover to reinforcement in slabs, beams, columns and foundations, Fire resistance and protection of RCC column, RCC beam and RCC slab, Typical RCC Column detail^, Typical RCC Beam detail^ and Typical RCC Slab detail^.

Unit-II: Formwork For Construction*(05 Contact Periods)*

Basic formwork and principles of formwork, Typical formwork details for Beams and Columns, Column clamps and yokes.

Unit-III: Structural Steelwork*(10 Contact Periods)*

Standard Cold Rolled Steel sections and profiles, Standard Hot Rolled Steel sections and profiles, Common Compound Sections used in structural steel work, Open Web Beams and Lattice Beams, Structural steelwork connections^ like column to foundation, column to column, column to beam and beam to beam, column base connections, welded connections, bolted connections, Fire resistance and protection of steelwork.

Unit-IV: Roof Trusses And Roof Coverings*(10 Contact Periods)*

Steel roof trusses up to 12m span, Roof sheet coverings – basic functions and materials, Typical Purlin Fixing Detail^, Typical Ridge Fixing Detail^, Typical Valley Gutter Detail^, Typical Eaves Gutter Detail^, Long span roofs, basic types of roof forms, Typical Northlight Ridge Detail^, Typical Northlight Valley Detail^, Construction of Space Deck, Space Frame and their connections, Roof lights, their types and construction, Typical Roof Light Fixing Detail^

Unit-V: Cladding And Structural Glazing*(10 Contact Periods)*

Brickwork cladding support system, Infill panel walls, construction of Rain screen cladding, Concrete cladding, Typical Detail of Concrete Panel Cladding^, Structural glazing and Curtain walling, Typical Curtain Walling Detail^, Detail of Fixing Curtain Wall to Structure^.

^ The Faculty shall ensure that the students prepare at least two drawing sheets on the underlined topics.

NOTES:

For consulting books on the above-mentioned topics, kindly refer to the “Suggested Books” section of this document.

For important instructions, kindly refer to the “Note to Course Co-ordinator/ Faculty” and “Note to Paper Setters/ External Examiners” sections of this document.

**THIRD YEAR (SEMESTER – V)**

ES 3 3 5 EL11					Elective - I (Choice 1)											
Teaching Scheme					Internal Assessment						External Examination			TOTAL	D	
L	T	P	S		CP	CA-I	CA-II	CA-III	MT	IA TOTAL	T	J	V	EE TOTAL		MARKS
2	0	0	2		5	10	10	10	15	50	50			50	100	3
Pre-Requisite (s)					NIL											

COURSE OUTCOMES

After successful completion of this course, students shall be able to;

1. Appreciate the relevance and need of specialisation.
2. Learn the basics of the specialised field and take well informed decisions regarding career diversification in future.
3. Understand and appreciate the role of team members from other specialised fields working on a common design project.

COURSE CONTENTS*(60 Contact Periods)***Unit-I: FURNITURE DESIGN: Introduction And History** *(15 Contact Periods)*

Introduction and basic principles of furniture design, History of furniture design and modern movements, with focus on modern furniture design of the 19th and 20th century, with case studies on work of Gerrit Rietveld, Breur, KaarKlint, Alvar Aalto, Mies Van Der Rohe, Le Corbusier, Eero Saarinen and Charles Eames.

Unit-II: Methodology And Materials *(15 Contact Periods)*

Methodology of furniture design and its relevance in world furniture market, role of furniture designer. Furniture materials, plain and moulded elements: standard and alternative.

Unit-III: Typology And Construction *(15 Contact Periods)*

Typology, terminology, ergonomics and construction principles of furniture like Sitting furniture, Table furniture, Bed furniture, Storage furniture (including in-built wardrobes and hall furniture) with focus on Kitchens, Bathrooms, Restaurants.

Unit-IV: Modern Concepts And Production *(15 Contact Periods)*

Creation of ergonomic and functional furniture, Modular concepts in furniture design, Mass production and fabrication, Codes and specifications and Eco- design furniture. Technology of furniture manufacturing

NOTES:

For consulting books on the above-mentioned topics, kindly refer to the “Suggested Books” section of this document.

For important instructions, kindly refer to the “Note to Course Co-ordinator/ Faculty” and “Note to Paper Setters/ External Examiners” sections of this document.

**THIRD YEAR (SEMESTER – V)**

ES 3 3 5 EL12				Elective - I (Choice 2)												
Teaching Scheme				Internal Assessment							External Examination			TOTAL	D	
L	T	P	S	CP	CA-I	CA-II	CA-III	MT	IA TOTAL	T	J	V	EE TOTAL	MARKS		
2	0	0	2	5	10	10	10	15	50	50			50	100	3	
Pre-Requisite (s)				NIL												

COURSE OUTCOMES

After successful completion of this course, students shall be able to;

1. Appreciate the relevance and need of specialisation.
2. Learn the basics of the specialised field and take well informed decisions regarding career diversification in future.
3. Understand and appreciate the role of team members from other specialised fields working on a common design project.

COURSE CONTENTS*(60 Contact Periods)***Unit I: INTERIOR DESIGN: Introduction***(10 Contact Periods)*

Definition of interior design, interior architectural design process; Vocabulary of terms of design principles and design elements; Introduction to the design of interior spaces as related to typologies and functions, themes and concepts - Study and design.

Unit II: History Of Interior Design*(10 Contact Periods)*

Brief study of the history of interior architectural design through the ages relating to historical context, design movements and ideas etc. Brief study of folk arts and crafts. (Vernacular design in India) with reference to interior design and decoration.

Unit III: Elements Of Interior Design – Enclosing Elements*(10 Contact Periods)*

Introduction to various elements of interiors like floors, ceilings, walls, staircases, openings, interior service elements, incidental elements etc., and various methods of their treatment involving use of materials and methods of construction in order to obtain certain specific functional, aesthetic and psychological effects.

Unit IV: Elements Of Interior Design – Accentuations*(10 Contact Periods)*

Study of interior lighting, different types of lighting their effects types of lighting fixtures. Other elements of interiors like accessories used for enhancement of interiors, paintings, objects-de-art, etc. Interior landscaping, elements like rocks, plants, water, flowers, fountains, paving, artefacts, etc. their physical properties, effects on spaces and design values.

Unit V: Space Programming*(20 Contact Periods)*

Study of the relationship between furniture and spaces, human movements & furniture design as related to human comfort. Function, materials and methods of construction, changing trends and lifestyles, innovations and design ideas. Study on furniture for specific types of interiors like office furniture, children's furniture, residential furniture, display systems, etc. Design Projects on Residential, Commercial and Office Interiors.

NOTES:

For consulting books on the above-mentioned topics, kindly refer to the “Suggested Books” section of this document.

For important instructions, kindly refer to the “Note to Course Co-ordinator/ Faculty” and “Note to Paper Setters/ External Examiners” sections of this document.

**THIRD YEAR (SEMESTER – V)**

ES 3 3 5 EL13				Elective - I (Choice 3)											
Teaching Scheme				Internal Assessment						External Examination				TOTAL	D
L	T	P	S	CP	CA-I	CA-II	CA-III	MT	IA TOTAL	T	J	V	EE TOTAL	MARKS	
2	0	0	2	5	10	10	10	15	50	50			50	100	3
Pre-Requisite (s)				NIL											

COURSE OUTCOMES

After successful completion of this course, students shall be able to;

1. Appreciate the relevance and need of specialisation.
2. Learn the basics of the specialised field and take well informed decisions regarding career diversification in future.
3. Understand and appreciate the role of team members from other specialised fields working on a common design project.

COURSE CONTENTS*(60 Contact Periods)***Unit I: BIM: Introduction***(06 Contact Periods)*

Introduction to Building Information Modelling (BIM), User-Interface, Introduction to real building elements, i.e. Walls, Doors, Windows, Floor Slabs, etc.

Unit II: Customisation And Site Design*(10 Contact Periods)*

Changing element properties, Applying materials, Insertion of components from library, Using BIM to create simple building form. Site design: Creating site, Contours, Applying materials, etc.

Unit III: Advanced BIM Commands*(12 Contact Periods)*

Complex modelling: Creating complex building forms by using masking i.e. blend mass, mass by extrusion, creating void in them. Roofs: Creating various types of roofs, i.e. Flat roof, Sloped roof, designing roof in elevation views, defining slope and creating openings in roof slab, insertion of layers in roof slab. Staircase: Creation of various types of staircase and ramp i.e. Straight, U-type, Spiral, etc. Designing and customisation of staircase as per requirement.

Unit IV: Scheduling*(10 Contact Periods)*

Creating various schedules for documentation purposes, Types of schedule i.e. door-window, wall, etc. Insertion of various fields in schedule i.e. Type, width, cost, etc. Formatting and calculating totals, Extracting information to external utilities like MS-EXCEL.

Unit V: Light And Energy Analysis*(10 Contact Periods)*

Using BIM for simple lighting and energy analysis, Insertion of various interior and exterior lights and its customisation, Creating sun-path and animation of solar study of a whole day.

Unit IV: Import-Export Options, Printing And Rendering*(12 Contact Periods)*

Import and export options: Importing and exporting the file into other formats i.e. JPEG, PDF, CAD, etc. for printing rendering and documentation purpose, Advance print option for setting paper size and orientation. Rendering: Applying various materials, scale, render quality, setting backgrounds, etc. Creating moving animation and saving it in various formats.

NOTES:

For consulting books on the above-mentioned topics, kindly refer to the "Suggested Books" section of this document.

For important instructions, kindly refer to the "Note to Course Co-ordinator/ Faculty" and "Note to Paper Setters/ External Examiners" sections of this document.

**THIRD YEAR (SEMESTER – V)**

ES 3 3 5 BCR1					Building Codes & Regulations - I											
Teaching Scheme					Internal Assessment						External Examination				TOTAL	D
L	T	P	S		CP	CA-I	CA-II	CA-III	MT	IA TOTAL	T	J	V	EE TOTAL	MARKS	
2	0	0	0		5	10	10	10	15	50	50			50	100	3
Pre-Requisite (s)					NIL											

COURSE OUTCOMES

After successful completion of this course, students shall be able to;

1. Understand the need and relevance of the Building Codes.
2. Understand the process of integration and application of these codes in design.
3. Apply these codes and regulations while designing the buildings.

COURSE CONTENTS**(30 Contact Periods)****Unit-I: Building Codes****(10 Contact Periods)**

Introduction to building codes, bye laws and regulations, their need and importance, basic terminologies, nature of building codes in special zones like heritage zones, environmentally sensitive zones, disaster prone zones, coastal zones, hilly zones, etc.

Unit-II: Building Regulations**(10 Contact Periods)**

Introduction to building regulations, their need and importance, general building requirements, building classifications and permissible uses, norms for setbacks and margins, norms for building projections in open spaces, FAR, FSI, Built-up Area, Carpet Area with calculation exercises, norms for open areas and green areas.

Unit-III: Access & Parking Laws**(10 Contact Periods)**

Lectures based on means of access, norms for access widths for various types of buildings, access to service areas, requirements of parking spaces, Equivalent Car Space (ECS) with calculation exercises, Standards for turning radius of various vehicles.

NOTES:

For consulting books on the above-mentioned topics, kindly refer to the “Suggested Books” section of this document.

For important instructions, kindly refer to the “Note to Course Co-ordinator/ Faculty” and “Note to Paper Setters/ External Examiners” sections of this document.

**THIRD YEAR (SEMESTER – V)**

ES 3 3 5 EDP1					Environmental Design Procedures - I											
Teaching Scheme					Internal Assessment						External Examination				TOTAL	D
L	T	P	S		CP	CA-I	CA-II	CA-III	MT	IA TOTAL	T	J	V	EE TOTAL	MARKS	
2	0	0	0		5	10	10	10	15	50	50			50	100	3
Pre-Requisite (s)					NIL											

COURSE OUTCOMES

After successful completion of this course, students shall be able to;

1. Understand the critical relationship between climate and architecture.
2. Understand problems and methods of energy conservation through design of built forms.
3. Record, analyse and design using tools of simulation.

COURSE CONTENTS**(30 Contact Periods)****Unit-I: Introduction – Elements Of Climate****(04 Contact Periods)**

Introduction – elements of climate, measurement and representations of climatic data, Classification of tropical climates and major climatic zones of India.

Unit-II: Thermal Comfort**(06 Contact Periods)**

Thermal comfort – effect of climatic elements on thermal comfort environment, Body's heat exchange with surrounding environment, Thermal comfort indices viz., effective temperature, bio-climatic chart etc., and Kata-thermometer and globe thermometer.

Unit-III: Thermal Performance**(10 Contact Periods)**

Thermal performance of building elements: effect of thermo-physical properties of building materials and elements on indoor thermal environment, Thermal properties – conductivity, resistivity, diffusivity, thermal capacity and time lag and 'U' value.

Construction techniques for improving thermal performance of walls and roofs, Natural ventilation – functions of natural ventilation, design considerations, effects of openings and external features on internal air flow.

Unit-IV: Site Climate**(04 Contact Periods)**

Site Climate – Effect of landscape elements on site/ micro climate.

Day Lighting – Advantages and limitations, Day light factor, components of Day light factor, design considerations.

Unit-V: Shading Devices**(06 Contact Periods)**

Shading devices – Sun-path diagram, use of solar charts in climatic design, Types of shading Devices, Procedure of designing shading devices, Design considerations for buildings in tropical climates with special reference to hot-dry, warm-humid and composite climates.

NOTES:

For consulting books on the above-mentioned topics, kindly refer to the "Suggested Books" section of this document.

For important instructions, kindly refer to the "Note to Course Co-ordinator/ Faculty" and "Note to Paper Setters/ External Examiners" sections of this document.

**THIRD YEAR (SEMESTER – V)**

ES 3 3 5 SSA4				Software Systems & Applications - IV												
Teaching Scheme				Internal Assessment							External Examination				TOTAL	D
L	T	P	S	CP	CA-I	CA-II	CA-III	MT	IA TOTAL	T	J	V	EE TOTAL	MARKS		
2	0	2	0	5	10	10	10	15	50			50	50	100	3	
Pre-Requisite (s)				NIL												

COURSE OUTCOMES

After successful completion of this course, students shall be able to;

1. Learn the use of basic software and apply same skills in producing faster and accurate designs.
2. Get awareness about the field of digitalization and help students in pursuing further studies
3. Produce accurate architectural designs and drawings along with faster co-ordination with different teams.

COURSE CONTENTS*(60 Contact Periods)***Unit-I: PHOTOSHOP: Introduction And Basic Setup***(08 Contact Periods)*

Photoshop – Introduction to Photoshop, basic setup including page size, resolution, colour scheme (CMYK/ RGB), units, etc. introduction to basic rendering tools, selection tools like lasso, marquee, magic wand, brush and its customisation using option bar, paint bucket tool, gradient tool, text tool.

Unit-II: Layering*(06 Contact Periods)*

Photoshop – Creation of new layers, arranging/ merging of layers, applying effects using layers, i.e. colour, shadow, gradient, patterns, emboss, opacity, etc. Importing/ creating patterns for hatching.

Unit-III: Import And Export Options*(04 Contact Periods)*

Importing and exporting 2D and 3D models from various software in formats of JPEG, EPS, PDF, etc. Packaging and saving high resolution images and videos.

Unit-IV: Printing Methods*(04 Contact Periods)*

Page setup, page layout, image resolution, etc.

Practice Exercises*(36 Contact Periods)*

Photoshop – Practice exercises to develop proficiency in creating simple presentation of design projects.

Photoshop – Practice exercises to develop proficiency in creating detailed rendered presentation of design projects.

NOTES:

For consulting books on the above-mentioned topics, kindly refer to the “Suggested Books” section of this document.

For important instructions, kindly refer to the “Note to Course Co-ordinator/ Faculty” and “Note to Paper Setters/ External Examiners” sections of this document.



**LIST OF ELECTIVE COURSES
THIRD YEAR (SEMESTER – V)**

S.No.	Course Choice	Course Title
1	Choice 1	Furniture Design
2	Choice 2	Interior Design
3	Choice 3	Building Information Modelling

Elective course shall be offered to the students in view of faculty expertise and resources available subject to minimum number (50% of class strength) of students registering for a particular elective course.

Decision of offering or not offering any particular elective shall be taken by the Principal/ H.O.D. of the School.

**LIST OF OPEN ELECTIVE COURSE(S)
THIRD YEAR (SEMESTER – V)**

S.No.	Course Choice	Course Title
1	Choice 1	As approved by the Principal/ H.O.D.
2	Choice 2	As approved by the Principal/ H.O.D.
3	Choice 3	As approved by the Principal/ H.O.D.

Open Elective course(s) shall be taken up by the student independently. There shall be no classwork held in the School for such courses. Such course(s) shall have to be approved by the Principal/ HOD of the School. Decision of approving or not approving any particular open course shall be taken by the Principal/ H.O.D. of the School.



NOTE TO COURSE CO-ORDINATOR/ FACULTY THIRD YEAR (SEMESTER – V)

S.No.	Course Code	Note to Course Co-ordinator/ Faculty
1	ES 3 3 5 ADS3	<u>STUDIO</u> 1. Detailed teaching program/ lesson plan shall be made and circulated to the students at the commencement of the semester. 2. At least TWO (2) Time-problems and ONE (1) Final Design Problem shall be completed in the entire semester, covering the entire syllabus uniformly.
2	ES 3 3 5 EOD	<u>LECTURE</u>
3	ES 3 3 5 BCT3	1. Detailed teaching program/ lesson plan shall be made and circulated to the students at the commencement of the semester.
4	ES 3 3 5 EL11	2. The Course Co-ordinator shall be free to collaborate with other subject faculty, engage an additional faculty for assistance, engage Industry experts for special lectures, take students for Field-work, Market surveys and/ or Construction sites, etc. wherever required. Permissions from Principal/ HOD shall be taken.
	ES 3 3 5 EL12	3. Minimum THREE (3) class assignments shall be completed in the entire semester, covering the entire syllabus uniformly.
	ES 3 3 5 EL13	
5	ES 3 3 5 BCR1	
6	ES 3 3 5 EDP1	
7	ES 3 3 5 SSA4	<u>PRACTICAL</u> 1. Detailed teaching program/ lesson plan shall be prepared and circulated to the students at the commencement of the semester. 2. Software shall be taught with the version available at the School. 3. The classes shall be held in the Workshop/ Computer Lab/ On-Field.

NOTE TO PAPER SETTERS/ EXTERNAL EXAMINERS SECOND YEAR (SEMESTER – V)

S.No.	Course Code	Note to External Examiners
1	ES 3 3 5 ADS3	<u>JURY</u> 1. Exam shall be an Open Jury type. 2. Jury shall examine the displayed work done by the student in full semester. 3. The duration of the Jury shall be the time taken to examine all the students. 4. Minimum passing marks: Fifty percent.
2	ES 3 3 5 EOD	<u>THEORY PAPER</u> (Conducted by University)
3	ES 3 3 5 BCT3	1. Question paper shall consist of THREE Sections; A, B and C.
4	ES 3 3 5 EL11	2. Section A shall consist of TEN MCQs of One (1) Mark each.
	ES 3 3 5 EL12	Student shall ATTEMPT ALL.
	ES 3 3 5 EL13	3. Section B shall consist of SIX SATQs of Five (5) Marks each.
5	ES 3 3 5 BCR1	Student shall ATTEMPT ANY FOUR.
6	ES 3 3 5 EDP1	4. Section C shall consist of THREE LATQs of Ten (10) Marks each. (These may be Sketching/ Drawing based) Student shall ATTEMPT ANY TWO. Minimum passing marks: Fifty percent.
7	ES 3 3 5 SSA4	<u>VIVA-VOCE</u> 1. Exam shall be Viva-voce type. 2. Student shall be examined through Viva and/ or by spontaneous test exercises in Workshop/ Computer Lab/ On-Field. 3. The duration of the Viva-voce shall be the time taken to examine all the students. 4. Minimum passing marks: Fifty percent.



SUGGESTED BOOKS

THIRD YEAR (SEMESTER – V)

S.No.	Course Code	Book Title
1	ES 3 3 5 ADS3	1 Architect's Data By Ernst Neufert, Peter Neufert, Johannes Kister. 2 Conditional Design: An Introduction To Elemental Architecture By Anthony Di Mari. 3 Operative Design: A Catalogue Of Spatial Verbs By Anthony Di Mari.
2	ES 3 3 5 EOD	1 Urban Economics By Warner Z Hirsch. 2 Publication Of CBRI, SERC, RRL, NBO, COSTFORD Etc.
3	ES 3 3 5 BCT3	1 Construction Of Buildings, London, Vol. 1 To 5 By Barry R. 2 Fundamentals Of Building Construction: Materials & Methods By Edward Allen And Joseph Iano. 3 National Building Code, Sp 7, By Bureau Of Indian Standards. 4 Building Design And Construction Handbook By Frederick S. Merritt And Jonathan T. Ricketts.
4	ES 3 3 5 EL11	1 Furniture Design By Jerzy Smardzewski. 2 Furniture Design By Jim Postell.
	ES 3 3 5 EL12	1 Ching, Francis D. K. (1987) Interior Design Illustrated, Van Nostrand Reinhold, New York. 2 De Chiara, Joseph (1992) Time Savers Standard For Interior Design And Space Planning, Mcgraw Hill Publishing. 3 Jain, Shashi (1994) Creative Interiors, Management Publishing Company, New Delhi. 4 Korn, Ahmed A. (1992) Interior Design, Iquara Publication Limited, Bombay.
	ES 3 3 5 EL13	1 Bim Handbook: A Guide To Building Information Modeling For Owners, Managers By Chuck Eastman, Paul Teicholz, Rafael Sacks, Kathleen Liston. 2 Building Information Modeling By Karen M. Kensek.
5	ES 3 3 5 BCR1	1 BIS (2005) National Building Code, SP: 7 (S & T), Bureau Of Indian Standard, New Delhi. 2 International Building Code, 2018, International Code Council. 3 Scott, G. J. (1997) Architectural Building Codes, Van Nostrand Reinhold, NY. 4 Durga Prasad, M. V. (1997) Law Of Flats, Apartments And Buildings, 4th Edn Asia Law House, Hyderabad.
6	ES 3 3 5 EDP1	1 Bee (2007). Energy Conservation Building Code, Bureau Of Energy Efficiency, Ministry Of Power, Government Of India. 2 Bis (1987) Handbook Of Functional Requirements Of Buildings (Other Than Industrial Buildings) Sp:41 (S&T), Bureau Of Indian Standard, New Delhi. 3 Koenigsberger, Et. Al. (1975) Manual Of Tropical Housing And Building (Part-Ii), Climate Design, Orient Longman Ltd.
7	ES 3 3 5 SSA4	1 Adobe Photoshop CS6 Classroom In A Book 1st Edition By Adobe Creative Team. 2 The Ultimate Crash Course To Start Using Photoshop Today By Brian Hicks.

**THIRD YEAR (SEMESTER – VI)**

ES 3 3 6 ADS4				Architectural Design Studio - IV												
Teaching Scheme				Internal Assessment						External Examination				TOTAL MARKS	D	
L	T	P	S	CP	CA-I	CA-II	CA-III	MT	IA TOTAL	T	J	V	EE TOTAL	MARKS	D	
1	0	0	7	5	10	10	10	15	50		50		50	100	-	
Pre-Requisite (s)				ES335ADS3												

COURSE OUTCOMES

After successful completion of this course, students shall be able to;

1. Develop spatial thinking and skills necessary for the analysis and design of architectural space and form.
2. Understand architectural enclosures as mediating between people and the outside world.
3. Understand and learn the integration of different aspects of design with an objective of bettering the design solution.
4. Gain exposure to design thinking processes including envisioning, planning and various forms of analysis all of which help shape a robust problem statement that forward design innovation.
5. Work cooperatively as part of a team and take a leadership role when required.
6. Demonstrate basic competence in architectural design.

COURSE CONTENTS*(120 Contact Periods)***Unit-I: Design With Building Codes And Regulations***(120 Contact Periods)*

The theme of the design studio sequence shall be building codes & regulations. The focus remains on building byelaws and international codes. Lectures include topics such as F.A.R and F.S.I with Lectures based on set-back, built-up area, carpet area, saleable area, common areas, etc.

Time problem exercises shall be based on Built-up & Carpet Area calculations/ Maximum Saleable Area calculations/ Budget Analysis.

Final design problem exercise shall be Apartment Building/ Row Housing/ Commercial Complex.

NOTES:

For consulting books on the above-mentioned topics, kindly refer to the "Suggested Books" section of this document.

For important instructions, kindly refer to the "Note to Course Co-ordinator/ Faculty" and "Note to Paper Setters/ External Examiners" sections of this document.

**THIRD YEAR (SEMESTER – VI)**

ES 3 3 6 ECS				Estimation Costing & Specifications											
Teaching Scheme				Internal Assessment						External Examination				TOTAL	D
L	T	P	S	CP	CA-I	CA-II	CA-III	MT	IA TOTAL	T	J	V	EE TOTAL	MARKS	
2	1	0	0	5	10	10	10	15	50	50			50	100	3
Pre-Requisite (s)				NIL											

COURSE OUTCOMES

After successful completion of this course, students shall be able to;

1. Get familiarized with the basic concepts of estimation, costing and specifications.
2. Prepare preliminary estimates for design projects.
3. Write material specifications for design details of the project.

COURSE CONTENTS*(45 Contact Periods)***Unit-I: Estimation And Costing***(20 Contact Periods)*

Introduction to estimation, types of areas and types of estimates, methods of taking out quantities, modes of measurement, bill of quantities (BOQ), preliminary and detailed estimates, plinth area rates and cost indices, rates of labour and material, rate analysis, CPWD schedule of rates.

Unit-II: Specifications*(25 Contact Periods)*

Introduction to specifications & contracts, methods of specification writing, typical space for building works, implications of variations and incomplete specifications, impact on building costs, types of contracts, tenders, relative merits, general conditions and commercial terms, standard CPWD specifications, scheduled and non-scheduled items.

NOTES:

For consulting books on the above-mentioned topics, kindly refer to the "Suggested Books" section of this document.
For important instructions, kindly refer to the "Note to Course Co-ordinator/ Faculty" and "Note to Paper Setters/ External Examiners" sections of this document.

**THIRD YEAR (SEMESTER – VI)**

ES 3 3 6 BCT4				Building Construction & Technology - IV												
Teaching Scheme				Internal Assessment						External Examination				TOTAL	D	
L	T	P	S	CP	CA-I	CA-II	CA-III	MT	IA TOTAL	T	J	V	EE TOTAL	MARKS		
1	0	0	2	5	10	10	10	15	50	50			50	100	3	
Pre-Requisite (s)				ES335BCT3												

COURSE OUTCOMES

After successful completion of this course, students shall be able to;

1. Understand the principles and techniques of architectural construction & detailing.
2. Represent construction materials, building components and their connections and assemblies.
3. Produce technically correct and proficient construction details.

COURSE CONTENTS*(45 Contact Periods)***Unit-I: Internal Walls And Partitions***(10 Contact Periods)*

Internal walls – types of internal walls, Brick and Block walls, Construction joints and their location, Fire protection of internal walls, Party/ separating masonry walls.

Partitions – types of internal partitions, Typical Detail of Timber Stud Partition[^], Typical Detail of Metal Stud Partition[^], Fire protection of partitions, Plasters and plastering, Methods of applying plaster finish to walls, Dry lining techniques, Wall tiling [^].

Unit-II: Domestic Floors And Finishes*(10 Contact Periods)*

Types of floors – Solid Ground Floor, Suspended Ground Floor, Suspended Upper Floor, Typical Detail of Solid Ground Floor[^], Typical Detail of Suspended Timber Ground Floor[^], Typical Detail of Suspended Concrete Ground Floor[^], RC Suspended Floors and types, Sound insulation in walls and floors, Domestic floor finishes like Carpet, PVC, Timber Boards and Strip.

Unit-III: Stairs*(10 Contact Periods)*

Construction of Timber Staircase, Concrete Staircase, Metal Staircase, Typical Detail of Timber Staircase Section[^], Typical Detail of Concrete Staircase Section[^], Typical Detail of Metal Staircase Section[^].

Unit-IV: Ceilings*(06 Contact Periods)*

Construction of Plasterboard ceilings, Suspended ceilings, Classification of suspended ceilings, Typical Detail of Fixing of Suspended Ceiling[^].

Unit-V: Millwork & Joinery*(09 Contact Periods)*

Construction Joinery production and Construction of Millwork items like counters and panelling, etc. Typical Millwork Detail of Reception Counter[^], Typical Millwork Detail of Kitchen Counter[^], Typical Millwork Detail of Wall Panelling[^].

[^] The Faculty shall ensure that the students prepare at least two drawing sheets on the underlined topics.

NOTES:

For consulting books on the above-mentioned topics, kindly refer to the “Suggested Books” section of this document.

For important instructions, kindly refer to the “Note to Course Co-ordinator/ Faculty” and “Note to Paper Setters/ External Examiners” sections of this document.

**THIRD YEAR (SEMESTER – VI)**

ES 3 3 6 EL21				Elective - II (Choice 1)											TOTAL MARKS	D
Teaching Scheme				Internal Assessment						External Examination						
L	T	P	S	CP	CA-I	CA-II	CA-III	MT	IA TOTAL	T	J	V	EE TOTAL			
2	1	0	0	5	10	10	10	15	50	50			50	100	3	
Pre-Requisite (s)				NIL												

COURSE OUTCOMES

After successful completion of this course, students shall be able to;

1. Appreciate the relevance and need of specialisation.
2. Learn the basics of the specialised field and take well informed decisions regarding career diversification in future.
3. Understand and appreciate the role of team members from other specialised fields working on a common design project.

COURSE CONTENTS*(45 Contact Periods)***Unit I: HIGH RISE BUILDINGS: Introduction***(10 Contact Periods)*

Definition – International & Indian concepts, history of tall buildings, need and criteria for development of tall buildings, economics, social conditions, psychological factors, geographical, political & other forces in development, socio-psychological factors effecting such development – analysis; studies & methodology to solution – users’ need and demand.

Unit II: Design Criteria*(15 Contact Periods)*

Design philosophy, static and dynamic approach, structural systems and concepts: effects of openings, large panel construction, foundation superstructure interaction, Gravity and lateral load resisting structural systems: high rise behaviour, rigid frames, braced frames, in-filled frames, shear walls, coupled shear walls, wall-frames, tubular, cores, steel-concrete composite floor systems, aluminium facades. Stability of tall buildings: overall bulking analysis of frames, wall frames, approximate methods.

Unit III: Impact, Construction And Site Management*(10 Contact Periods)*

Impact of tall buildings on urban development in terms of increased density, accessibility, transportation and parking; Ownership, management, and maintenance. Methods used for construction and site management for tall buildings. Constraints of material usage for tall buildings. Legislation aspects of tall buildings: fire safety, municipal codes, standardisation

Unit IV: Services And Maintenance*(10 Contact Periods)*

Buildings Services for tall buildings, Landscaping in tall buildings. Fire prevention and fire lighting systems for tall buildings. Disaster management in tall buildings; Intelligent building automation; Energy efficiency / Green Building Concepts: green skyscrapers

NOTES:

For consulting books on the above-mentioned topics, kindly refer to the “Suggested Books” section of this document.

For important instructions, kindly refer to the “Note to Course Co-ordinator/ Faculty” and “Note to Paper Setters/ External Examiners” sections of this document.

**THIRD YEAR (SEMESTER – VI)**

ES 3 3 6 EL22				Elective - II (Choice 2)											TOTAL MARKS	D
Teaching Scheme				Internal Assessment						External Examination						
L	T	P	S	CP	CA-I	CA-II	CA-III	MT	IA TOTAL	T	J	V	EE TOTAL			
2	1	0	0	5	10	10	10	15	50	50			50	100	3	
Pre-Requisite (s)				NIL												

COURSE OUTCOMES

After successful completion of this course, students shall be able to;

1. Appreciate the relevance and need of specialisation.
2. Learn the basics of the specialised field and take well informed decisions regarding career diversification in future.
3. Understand and appreciate the role of team members from other specialised fields working on a common design project.

COURSE CONTENTS*(45 Contact Periods)***Unit I: URBAN DESIGN: Introduction And Scope***(09 Contact Periods)*

Relationship between Architecture, Urban Design and Urban Planning; Brief review of the evolution of the urban design as a discipline, basic principles and theories. Broad understanding of urban forms and spaces at various spatial scales through examples from historic cities.

Unit II: Typologies And Procedures*(09 Contact Periods)*

Concepts of public and private realm; understanding different types and procedures of urban design interventions their scale relationships; constraints and challenges of urban design in democratic versus authoritarian settings.

Unit III: Elements Of Urban Design*(09 Contact Periods)*

Understanding the city as a three dimensional element; Urban form as determined by interplay of masses, voids, order, scale, harmony, symmetry, colour and texture; Organization of spaces and their articulation in the form of squares, streets, vistas and focal points; Concept of public open space; Image of the city and its components such as edges, paths, landmarks, street features.

Unit IV: Urban Design And Sustainability*(09 Contact Periods)*

Sustainability concept; Relationship of urban design with economic, environmental and social sustainability; Urban renewal and urban sprawl; Concepts of Transit Oriented Development, Compact City, Healthy City and Walkable City.

Unit V: Urban Design Implementation*(09 Contact Periods)*

Urban design and its control; Institutional arrangements for design and planning, their roles, powers and limitations; Types of planning instruments, structure plans, master plans and local area plans and zoning guidelines; Design communication and role of public participation.

NOTES:

For consulting books on the above-mentioned topics, kindly refer to the "Suggested Books" section of this document.

For important instructions, kindly refer to the "Note to Course Co-ordinator/ Faculty" and "Note to Paper Setters/ External Examiners" sections of this document.

**THIRD YEAR (SEMESTER – VI)**

ES 3 3 6 EL23				Elective - II (Choice 3)												
Teaching Scheme				Internal Assessment						External Examination				TOTAL	D	
L	T	P	S	CP	CA-I	CA-II	CA-III	MT	IA TOTAL	T	J	V	EE TOTAL	MARKS		
2	1	0	0	5	10	10	10	15	50	50			50	100	3	
Pre-Requisite (s)																

COURSE OUTCOMES

After successful completion of this course, students shall be able to;

1. Appreciate the relevance and need of specialisation.
2. Learn the basics of the specialised field and take well informed decisions regarding career diversification in future.
3. Understand and appreciate the role of team members from other specialised fields working on a common design project.

COURSE CONTENTS*(45 Contact Periods)***Unit I: HOUSING DESIGN: Introduction***(18 Contact Periods)*

Introduction to housing & human settlements, Housing policies and programs, settlements in the development of human civilization, role of Housing in social and economic development of the nation; Housing in five year plans & Social Housing plans, National housing Policy.

Unit II: Elements of Housing Policy*(09 Contact Periods)*

Major elements of housing policy: land, finance, material, technology & legislation. Development concepts and human settlement planning; Slum area development.

Unit III: Mass Housing: Design & Standards*(18 Contact Periods)*

Mass housing programs, housing design and standards; Rural Housing, housing design and standards; units of housing design form and structure of housing as shaped by socio economic and physical parameters, housing systems & sub systems. Partial and integrated environment quality; post occupancy evaluation, housing satisfaction, housing demand and policy analysis.

NOTES:

For consulting books on the above-mentioned topics, kindly refer to the “Suggested Books” section of this document.
For important instructions, kindly refer to the “Note to Course Co-ordinator/ Faculty” and “Note to Paper Setters/ External Examiners” sections of this document.

**THIRD YEAR (SEMESTER – VI)**

ES 3 3 6 BCR2					Building Codes & Regulations - II											
Teaching Scheme					Internal Assessment						External Examination				TOTAL	D
L	T	P	S		CP	CA-I	CA-II	CA-III	MT	IA TOTAL	T	J	V	EE TOTAL	MARKS	
2	0	0	0		5	10	10	10	15	50	50			50	100	3
Pre-Requisite (s)					NIL											

COURSE OUTCOMES

After successful completion of this course, students shall be able to;

1. Understand the need and relevance of the Building Codes.
2. Understand the process of integration and application of these codes in design.
3. Apply these codes and regulations while designing the buildings.

COURSE CONTENTS*(30 Contact Periods)***Unit-I: Local Bye-Laws***(12 Contact Periods)*

Study of local planning bodies such as JMC, JDA and panchayats, procedures and methods of using bye-laws for submission drawings, building permits, provision of building services, regulations for super structures, building height regulations, regulations for multi-storied buildings etc.

Unit-II: National Codes*(09 Contact Periods)*

Lectures based on overview of the National Building Code (NBC) with special focus on Part-3 and Part-4.

Unit-III: International Codes*(09 Contact Periods)*

Lectures based on overview of the International Building Codes (IBC), ADA, LEED, IFC, etc.

NOTES:

For consulting books on the above-mentioned topics, kindly refer to the “Suggested Books” section of this document.

For important instructions, kindly refer to the “Note to Course Co-ordinator/ Faculty” and “Note to Paper Setters/ External Examiners” sections of this document.

**THIRD YEAR (SEMESTER – VI)**

ES 3 3 6 EDP2					Environmental Design Procedures - II										TOTAL MARKS	D
Teaching Scheme					Internal Assessment					External Examination						
L	T	P	S		CP	CA-I	CA-II	CA-III	MT	IA TOTAL	T	J	V	EE TOTAL		
2	0	0	0		5	10	10	10	15	50	50			50	100	3
Pre-Requisite (s)					NIL											

COURSE OUTCOMES

After successful completion of this course, students shall be able to;

1. Understand the critical relationship between climate and architecture.
2. Understand problems and methods of energy conservation through design of built forms.
3. Record, analyse and design using tools of simulation.

COURSE CONTENTS**(30 Contact Periods)****Unit-I: Natural Systems, Ecology And Ecosystem** *(04 Contact Periods)*

Natural systems; Complex relationships between the built and natural environments; Concept of Ecology and Ecosystem, Concepts of urban ecology and landscape urbanism; Resource analysis for various ecosystems, causes and factors for degradation.

Unit-II: Environmental Pollution And Climate Change *(06 Contact Periods)*

Pollution and its impact on natural and man-made environments; Causes, effects, control measures of Air, Water, Soil, Noise, Marine, Thermal, Nuclear and Light pollution. Causes, effects, control measures of urban and industrial waste. Climate change and its risks; Global warming and its risks

Unit-III: Design Strategies *(14 Contact Periods)*

Strategies to transform the built environment to meet the risks of climate change; Environmental modelling and climate data, creating a positive urban microclimate; Green corridors, maintenance of greenery and spaces between buildings; Effect of vegetation on energy consumption; Impact of vegetation in urban heat islands; Benefits of green roofs and green walls; Impact of vegetation on wind speeds; Vegetation as solar shading; Vegetation and noise buffering, Bio-mimicry: study of natural structures and processes, enabling design in helping to solve man-made problems.

Unit-IV: Integration Of Renewable Energy Systems *(06 Contact Periods)*

Integration of Renewable Energy Systems in built environment: Rainwater Harvesting System, Waste recycling and composting, Reclaimed, recycled materials, Green Roof Systems, Zero Carbon and Zero Carbon technologies.

NOTES:

For consulting books on the above-mentioned topics, kindly refer to the "Suggested Books" section of this document.

For important instructions, kindly refer to the "Note to Course Co-ordinator/ Faculty" and "Note to Paper Setters/ External Examiners" sections of this document.

**THIRD YEAR (SEMESTER – VI)**

ES 3 3 6 SSA5				Software Systems & Applications - V												
Teaching Scheme				Internal Assessment						External Examination				TOTAL	D	
L	T	P	S	CP	CA-I	CA-II	CA-III	MT	IA TOTAL	T	J	V	EE TOTAL	MARKS		
2	0	2	0	5	10	10	10	15	50			50	50	100	3	
Pre-Requisite (s)				NIL												

COURSE OUTCOMES

After successful completion of this course, students shall be able to;

1. Learn the use of basic software and apply same skills in producing faster and accurate designs.
2. Get awareness about the field of digitalization and help students in pursuing further studies
3. Produce accurate architectural designs and drawings along with faster co-ordination with different teams.

COURSE CONTENTS*(60 Contact Periods)***Unit-I: 3DS MAX: Introduction And Basic Modelling***(10 Contact Periods)*

3D Studio MAX – Overview of 3DSMax, 3DSMax interface, Navigation techniques and tools, Using Viewports and view settings, Cameras, Three-button Mouse, Manipulation of objects using Transform tools, Basic modelling, Using Modifier stack, Modifiers like Bend, twist, taper, Noise.

Unit-II: Modelling Techniques*(15 Contact Periods)*

3D Studio MAX – Creating a Basic room using primitives, Using 2D Shapes, Converting 2D shapes to 2D models using Extrude and Bevel, Lofting techniques, Sub-object modelling, Using Box modelling technique Polygon Modelling and Product Models, Understanding proper modelling methods, Using Vertices, Faces and Edges, Adding edge loops. Creating realistic solid models Compound shapes, Using Compound Objects, Boolean and Scatter, Creating a 3D-Model using image planes.

Unit-III: Texture Mapping Techniques*(10 Contact Periods)*

Understanding texturing in 3DSMax, Using Material Editor, Shaders like Blinn, Phong and Anisotropy, Basic Lighting in 3DSMax, Using Point lights, Direct lights and Spotlights, Rendering using Scanline renderer, Raytracing, Shadows and reflections Intermediate texture mapping options, Basic UV unwrapping, UV editor, 2D Textures, Using Bitmaps as textures.

Unit-IV: Animation Techniques*(25 Contact Periods)*

Create a simple 3D Animation and Camera Animation. Work through 3D Product lighting and Mental Ray rendering for Product Presentation Pre-requisites, Animating in 3DSMax, Understanding Animation, Timeline and animation setup, Principles of animation - A Basic Introduction, Creating Key-frames and in-betweens, Graph Editor, Bouncing Ball exercise Lighting and rendering, Setting up the scene for Product presentation, Camera Setup and animation, 3 Point lighting setup. Using mental ray rendering, Mental ray render setup, Mental Ray Materials, Global Illumination, Final gather Rendering and output, Rendering in Layers, Ambient occlusion rendering, Compositing in Photoshop, Presenting the final 3D Animation

NOTES:

For consulting books on the above-mentioned topics, kindly refer to the “Suggested Books” section of this document.

For important instructions, kindly refer to the “Note to Course Co-ordinator/ Faculty” and “Note to Paper Setters/ External Examiners” sections of this document.



**LIST OF ELECTIVE COURSES
THIRD YEAR (SEMESTER – VI)**

S.No.	Course Choice	Course Title
1	Choice 1	High Rise Buildings
2	Choice 2	Urban Design
3	Choice 3	Housing Design

Elective course shall be offered to the students in view of faculty expertise and resources available subject to minimum number (50% of class strength) of students registering for a particular elective course.

Decision of offering or not offering any particular elective shall be taken by the Principal/ H.O.D. of the School.

**LIST OF OPEN ELECTIVE COURSE(S)
THIRD YEAR (SEMESTER – VI)**

S.No.	Course Choice	Course Title
1	Choice 1	As approved by the Principal/ H.O.D.
2	Choice 2	As approved by the Principal/ H.O.D.
3	Choice 3	As approved by the Principal/ H.O.D.

Open Elective course(s) shall be taken up by the student independently. There shall be no classwork held in the School for such courses. Such course(s) shall have to be approved by the Principal/ HOD of the School. Decision of approving or not approving any particular open course shall be taken by the Principal/ H.O.D. of the School.



**NOTE TO COURSE CO-ORDINATOR/ FACULTY
THIRD YEAR (SEMESTER – VI)**

S.No.	Course Code	Note to Course Co-ordinator/ Faculty
1	ES 3 3 6 ADS4	<u>STUDIO</u> 1. Detailed teaching program/ lesson plan shall be made and circulated to the students at the commencement of the semester. 2. At least TWO (2) Time-problems and ONE (1) Final Design Problem shall be completed in the entire semester, covering the entire syllabus uniformly.
2	ES 3 3 6 ECS	<u>LECTURE</u>
3	ES 3 3 6 BCT4	1. Detailed teaching program/ lesson plan shall be made and circulated to the students at the commencement of the semester.
4	ES 3 3 6 EL21	2. The Course Co-ordinator shall be free to collaborate with other subject faculty, engage an additional faculty for assistance, engage Industry experts for special lectures, take students for Field-work, Market surveys and/ or Construction sites, etc. wherever required. Permissions from Principal/ HOD shall be taken.
	ES 3 3 6 EL22	
	ES 3 3 6 EL23	
5	ES 3 3 6 BCR2	3. Minimum THREE (3) class assignments shall be completed in the entire semester, covering the entire syllabus uniformly.
6	ES 3 3 6 EDP2	
7	ES 3 3 6 SSA5	<u>PRACTICAL</u> 1. Detailed teaching program/ lesson plan shall be prepared and circulated to the students at the commencement of the semester. 2. Software shall be taught with the version available at the School. 3. The classes shall be held in the Workshop/ Computer Lab/ On-Field.

**NOTE TO PAPER SETTERS/ EXTERNAL EXAMINERS
SECOND YEAR (SEMESTER – VI)**

S.No.	Course Code	Note to External Examiners
1	ES 3 3 6 ADS4	<u>JURY</u> 1. Exam shall be an Open Jury type. 2. Jury shall examine the displayed work done by the student in full semester. 3. The duration of the Jury shall be the time taken to examine all the students. 4. Minimum passing marks: Fifty percent.
2	ES 3 3 6 ECS	<u>THEORY PAPER</u> (Conducted by University)
3	ES 3 3 6 BCT4	1. Question paper shall consist of THREE Sections; A, B and C.
4	ES 3 3 6 EL21	2. Section A shall consist of TEN MCQs of One (1) Mark each. Student shall ATTEMPT ALL.
	ES 3 3 6 EL22	
	ES 3 3 6 EL23	3. Section B shall consist of SIX SATQs of Five (5) Marks each. Student shall ATTEMPT ANY FOUR.
5	ES 3 3 6 BCR2	
6	ES 3 3 6 EDP2	4. Section C shall consist of THREE LATQs of Ten (10) Marks each. (These may be Sketching/ Drawing based) Student shall ATTEMPT ANY TWO. Minimum passing marks: Fifty percent.
7	ES 3 3 6 SSA5	<u>VIVA-VOCE</u> 1. Exam shall be Viva-voce type. 2. Student shall be examined through Viva and/ or by spontaneous test exercises in Workshop/ Computer Lab/ On-Field. 3. The duration of the Viva-voce shall be the time taken to examine all the students. 4. Minimum passing marks: Fifty percent.



SUGGESTED BOOKS

THIRD YEAR (SEMESTER – VI)

S.No.	Course Code	Book Title
1	ES 3 3 6 ADS4	1 Architect's Data By Ernst Neufert, Peter Neufert, Johannes Kister. 2 Bis (2005) National Building Code, Sp: 7 (S & T), Bureau Of Indian Standard, New Delhi. 3 International Building Code, 2018, International Code Council. 4 Conditional Design: An Introduction To Elemental Architecture By Anthony Di Mari. 5 Operative Design: A Catalogue Of Spatial Verbs By Anthony Di Mari. 6 Basics Architectural Design By Bert Bielefeld. 7 Site Analysis: A Contextual Approach To Sustainable Land Planning And Site Design By James A. Lagro Jr.
2	ES 3 3 6 ECS	1 CPWD (1987) Schedule Of Rates, Government Of India Publications, New Delhi. 2 Dutta, B. N. (2002) Estimating And Costing (Ed.20), Sangam Books. 3 Publication Of CBRI, SERC, RRL, NBO, COSTFORD Etc. 4 Relevant I. S. Codes For Material Specifications.
3	ES 3 3 6 BCT4	1 Construction Of Buildings, London, Vol. 1 To 5 By Barry R. 2 Fundamentals Of Building Construction: Materials & Methods By Edward Allen And Joseph Iano. 3 National Building Code, Sp 7, By Bureau Of Indian Standards. 4 Building Design And Construction Handbook By Frederick S. Merritt And Jonathan T. Ricketts.
4	ES 3 3 6 EL21	1 Beedle, Lynn S (1986) Advances In Tall Buildings, Van Nostrand Reinhold, New York. 2 Kowalezyk, Ryszard M. (1995) Structural Systems For Tall Buildings, Mc Graw Hill, New York.
	ES 3 3 6 EL22	1 Lynch, Kevin (2000) Image Of The City, Mit Press, London. 2 Spreiregen, P D (1965) Urban Design: The Architecture Of Towns And Cities, Mcgraw Hill Publishing. 3 Watson, Donald Et Al (2003) Time Saver Standards For Urban Design, Mcgraw Hill, New York.
	ES 3 3 6 EL23	1 Chiara Joseph De Et Al (1995). Time Saver Standards For Housing And Residential Development. Mcgraw Hill, New York. 2 Correa, C. (1999) Housing And Urbanization, Urban Design Research Institute, Mumbai.
5	ES 3 3 6 BCR2	1 Bis (2005) National Building Code, Sp: 7 (S & T), Bureau Of Indian Standard, New Delhi. 2 International Building Code, 2018, International Code Council.
6	ES 3 3 6 EDP2	1 Buchanan, P. (2005) Ten Shades Of Green: Architecture And The Natural World, The Architectural League Of New York. 2 Environmental Studies by Anubha Kaushik, C. P. kaushik, New Age International. 3 The Environmental Design Pocketbook by Sofie Pelsmakers.
7	ES 3 3 6 SSA5	1 Autodesk 3ds Max 2016 Essentials By Dariush Derakhshani. 2 Architectural Rendering With 3ds Max And V-Ray: Photorealistic Visualization By Markus Kuhlo And Enrico Eggert.