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Vishwavidyanilaya Karyasoudha
Crawford Hall, Mysuru- 570 005

(Re-accredited by NAAC at 'A')

(NIRF-2022 Ranked 33 in University Category & 54 in Overall Category)

No.: PMEB-1/Spl./28(11)/2021-22

Date: 03-11-2022

NOTIFICATION

Sub.: Syllabus and Examination pattern of **B.Des. (Hons.) (Architectural Design Construction)** course under Specialized Programmes from the academic year 2022-23-reg.

- Ref.: 1. Decision of the BOS Meeting held on 22-08-2022.
2. Decision of the Faculty of Science & Technology meeting held on 15-09-2022.
3. Decision of the Academic Council meeting held on 23-09-2022.

The Board of Studies in **B.Des. (Hons.) (Architectural Design Construction) (UG)** at its meeting held on 22-08-2022 has recommended approve the 4 years Syllabus of **B.Des. (Hons.) (Architectural Design Construction)** course in University of Mysore under specialized/specified programs from the academic year 2022-23 as per NEP-2020.

The Faculty of Science & Technology and the Academic Council at their meetings held on 15-09-2022 and 23-09-2022 respectively, have also approved the above said proposal and the same is hereby notified.

The syllabus of **B.Des. (Hons.) (Architectural Design Construction)** course may be downloaded from the University website <https://uni-mysore.ac.in/PMEB/>.

REGISTRAR
REGISTRAR

University of Mysore
MYSURU - 570 005

To;

1. The Registrar (Evaluation), University of Mysore, Mysuru.
2. The Dean, Faculty of Science & Technology, DoS in Earth Science, Manasagangothri, Mysuru.
3. Prof. B. Shankar, School of Planning and Architecture, UOM, Manasagangothri, Mysuru.
4. The Principal, BSD Cresta First Grade College, #182/145/C, Bannur Road, Alanahalli, Mysuru.
5. The Deputy Registrar/ Asst. Registrar/ Superintendent, Examination Branch, UOM, Mysuru.
6. The PA to Vice-Chancellor/Registrar/Registrar (Evaluation), University of Mysore, Mysuru.
7. Office Copy.

o/c

University of Mysore



Manasagangotri, Mysuru – 570 006

Mob:9845155757

Prof. B. Shankar

**Chairman, BoS in B. Des (Hons.) (Architectural Design Construction) &
Director, SPA & Dean Faculty of Engineering**

No. B.Des (Hon) / 02 /2022-22

Dated 5th Sept. 2022

To
The Registrar,
(Syndicate Section)
Crawford Hall
Mysuru

Sir,

Sub: Proceeding of the BoS in **B. Des (Hons.) (Architectural Design Construction) - Regulations, Scheme & Syllabus- reg**

With reference to the above subject, I am herewith enclosing **the Proceeding the Board of Studies in B. Des (Hons.) (Architectural Design Construction)** held on 22.08.2022 at 10.00 AM along with (1) **Regulations, Scheme and Syllabus** and (2) **Panel of Examiners of B. Des (Hons.) (Architectural Design Construction)** course to be offered under University of Mysore by BSD Cresta, Mysuru; both **hard and soft copies** are enclosed herewith.

Yours faithfully,

(Prof. B. Shankar)

**Chairman, BoS in B. Des (Hons.)
(Architectural Design Construction)**






CC to: The Director, PMEB, University Mysore, Mysore

Prof. B. SHANKAR
Professor of Urban and Regional Planning
School of Planning and Architecture
University of Mysore, Manasagangotri
MYSURU-570 006

Proceedings of the Board of Studies Meeting in B. Des (Hons.) (Architectural Design Construction) (UG) held on 22-08-2022 at 10.00 AM at the School of Planning and Architecture, Manasagangothri, Mysuru

Ref: 1. PMEB-1/20/BSD CRESTA/Spl./2021-22 dated 26-5-2022
2. UA2/281/2016-2017 dated 07-07-2022

With reference to the above cited, a meeting of the members of the Board of Studies in B. Des (Hons.) (Architectural Design Construction) has been conducted at the school of Planning and Architecture, Manasagangothri, Mysuru on Monday the 22-08-2022 at 10.00 AM. The following members have attended the meeting.

- | | | |
|------------------------|----------|--|
| 1. Prof. Shankar B | Chairman |  |
| 2. Dr Rakesh H M | Member |  |
| 3. Ar. Niharika Nigham | Member |  |
| 4. Mr. Ritesh L | Member |  |
| 5. Ar. Vaishali Jha | Member |  |

The Chairman welcomed the members present in the meeting. The importance of the meeting was presented along with the agenda of framing the syllabus of various courses to be offered as part of the proposed B. Des (Hons.) (Architectural Design Construction) UG program.

Agenda 1: Syllabus, Examination and Scheme for B. Des (Hons) (Architectural Design Construction)

The proposed scheme, curriculum, scheme of examination and syllabus of B. Des (Hons.) (Architectural Design Construction) UG program are placed before the members of the board for discussion and suggestions were sought. After detailed presentation and discussion among the members, the Board of Studies approved the B. Des (Hons.) (Architectural Design Construction) Syllabus, Scheme of Examination with the following observations:

1. The B. Des (Hons.) (Architectural Design Construction) programme has been devised under the common NEP regulations that is being followed by the university and shall also get changed from time to time by the University. The structure of NEP of the University of Mysore has been followed with titles of various courses and their respective syllabi offered under DSC, DSE and SEC. However, AECC and SEC shall be as per Science Stream of B. Sc (Hons) offered by University of Mysore.
2. The overall number of credits to be earned by the students and distribution of credits in each semester are exactly on par with the existing B. Sc (Hons) program of the university.
3. The scheme and titles of the various courses along with the credit patterns and the respective syllabi for the proposed program in B. Des (Hons.) (Architectural Design Construction) is given in ANNEXURE-I

Agenda: 2 Panel of Examiners for the B. Des (Hons.) (Architectural Design Construction) programme .

The Board of Studies prepared and approved Panel of Examiners and enclosed in the Annexure II

The meeting ended with a word of thanks


Chairman, B. Des (Hons.) (Architectural Design Construction)

Prof. B. SHANKAR
Professor of Urban and Regional Planning
School of Planning and Architecture
University of Mysore, Manasagangothri
MYSURU-570 006

UNIVERSITY OF MYSORE

Curriculum of

B. Des (Hons.) (Architectural Design Construction)

(Programme Offered by BSD CRESTA)

Regulations Governing the B. Des. (Hons.) Architectural Design Construction)

PREAMBLE:

The Bachelor of Design (Hons.) – Architectural Design Construction degree program prepares students for professional practice in the field of design.

Being an undergraduate program, it has bright scope, providing exposure to a variety of interests in this field and assisting students to discover their own directions for future development. There is increasing recognition today of Architectural Design as an intellectual discipline, both as art& science and as a profession.

Through architectural design, designer make vital contribution in defining and shaping our environment and future of society with the use of appropriate technologies and construction for a diverse range of projects. Considering the diverse Indian complexities in terms of social, cultural, geographical, climatic, economic and technical aspects, which are unique and typical of every region in our country, the task for profession of Architecture Design Construction becomes all the more challenging.

Making provision of most optimum and sustainable solutions/ options, to address the basic needs of people and surrounding to lead a productive and dignified life, demand appropriate skills, understanding, knowledge and a deep commitment to professed ideals.

OBJECTIVES OF THE PROGRAM

1. Understanding the basic philosophy and fundamental principles of the multi-dimensional aspects and multi-faceted nature of design.
2. Preparing the students to acquire and enhance creative problem-solving skills including critical thinking and assessment and developing design concepts and solutions and presentation of these skills.
3. Preparing the students to work effectively in a multi-disciplinary/inter-disciplinary team in the building industry, by providing complete knowledge about design.
4. Directing and focusing the thrust of design education to the needs and demands of society and its integration for social, economic, cultural, and environmental aspects of nation building.
5. Instilling receptiveness to new ideas and knowledge and infusing a sense of design research.
6. Developing the overall personality and professional confidence of the student towards all the stakeholders in the construction industries.

PROGRAM OUTCOME (POs)

1. Understanding the real-life situation in design practice and recognize the relationship between people and the built environment (especially with reference to their needs, values, behavioral norms, and social patterns)
2. Thrive in a rigorous intellectual climate which promotes inquiry through design research.
3. Work collaboratively toward design resolution which integrates an understanding of the requirements, contextual and environmental connections, technological systems and historical meaning with responsible approach to environmental, historical and cultural conservation.
4. Apply visual and verbal communication skills at various stages of the design and delivery process.
5. Produce professional quality graphic presentations and technical drawings/documents.
6. Work in a manner that is consistent with the accepted professional standards and ethical responsibilities.
7. Work in collaboration with and as an integral member of multi-disciplinary/inter-disciplinary design and execution teams in the building industry.
8. Conduct independent and directed research to gather information related to the problems in architecture and allied fields.

PEDAGOGY

1. Lecture, Interaction, Assignments and Presentations for tutorial
2. Participatory knowledge building through case study review and Analysis
3. Continuous internal assessment and external examination
4. Field Studies for Practical Gaining of Knowledge
5. Internship Training
6. Building working knowledge through internships
7. Project work of individual and group works for team building and project preparation
8. Thesis work of individual contribution project work

ELIGIBILITY FOR ADMISSION

The candidate seeking admission to degree programme in B. Des (Hons.) (Architectural Design Construction) shall have to take science stream in Pre-University examination and have passed 2nd PU/12th Standard from PU Board of Karnataka or two years Job Oriented Courses conducted by the Board of Vocational Education of any State Government or any other examination considered as equivalent 12th Standard, CBSE, ICSE by the respective boards with an aggregate of 40% marks and above.

Candidate with Diploma in Civil Engineering and any other examination considered as equivalent there to conducted by the Dept. of Technical Education, Govt. of Karnataka/other State / University/Government/Government of India/ Ministry of Skills of NSQF Level 6/National Skill development programs of NSQF level 6 are eligible for admission to the I Semester of the B. Des (Hons.) (Architectural Design Construction).

Lateral Entry

Candidate with Diploma in Architecture conducted by the Dept. of Technical Education, Govt. of Karnataka/other State Government/ National Skill development programs of NSQF level 6 are eligible for admission directly to the III Semester of the B. Des (Hons.) (Structural Civil Design).

A candidate who has passed or first year Bachelor's degree examination in stream of Architecture of University of Mysore or any other University considered as equivalent there to is eligible for admission to this programme as lateral entry.

ATTENDANCE

1. For the purpose of calculating attendance, each semester shall be taken as a Unit.
2. A student shall be considered to have satisfied the requirement of attendance for the semester, if he/she has attended not less than 75% in aggregate of the number of working periods in each of the subjects compulsorily.
3. A student who fails to complete the course in the manner stated above shall not be permitted to take the University Examination.

TEACHING AND EVALUATION

FACULTY QUALIFICATION

1st class in M.Arch/B. Arch/B.E/M. Tech (Civil) graduates will be eligible to teach and evaluate the B. Des (Hons.) (Architectural Design construction course) excluding Languages, Constitution of India, Environmental Studies, Health Wellness/Social and Emotional learning, Sports/NCC/NSS/Other.

SCHEME OF EXAMINATION

1. There shall be a University examination at the end of each semester. The maximum marks for the university examination in each theory paper shall be 60 marks for DSC, DSE, Vocational, SEC and OEC.
2. Continuous Internal Evaluation 40 marks for DSC, DSE, Vocational, SEC and OEC.
3. There shall be a University examination at the end of each semester. The maximum marks for the university examination in each Practical paper shall be 25 marks for DSC, DSE
4. Continuous Internal Evaluation in each Practical is 25 marks for DSC, DSE
5. The maximum marks for the university examination in only Practical paper shall be 100 marks for DSC, DSE
6. Continuous Internal Evaluation in only Practical is 50 marks for DSC, DSE

Guidelines for Continuous Internal Evaluation and Semester End Examination:

The CIE and SEE will carry 40% and 60% weightage each, to enable the course to be evaluated for a total of 100 marks, irrespective of its credits. The evaluation system of the course is comprehensive & continuous during the entire period of the Semester. For a course, the CIE and SEE evaluation will be on the following parameters:

Sl. No	Parameters for the Evaluation Theory Subjects	Marks
	Continuous Internal Evaluation (CIE)	
1	Continuous Assessment – (A)	20 Marks
2	Internal Assessment Tests (IAT) –(B)	20 Marks
	Total of CIE (A+B)	40 Marks
3	Semester End Examination (SEE) – (C)	60 Marks
	Total of CA and SEE (A + B + C)	100 Marks

a. Continuous & Comprehensive Evaluation (CCE): The CCE will carry a maximum of 20% weightage (20 marks) of total marks of a course. Before the start of the academic session in each semester, a faculty member should choose for his/her course, minimum of two of the following assessment methods with

- 1) Internal Assessment Test Marks: 20 marks
- 2) Following assessment can be given for the students: $2 \times 10 = 20$ Marks
 - i. Seminars/Classroom Presentations/ Quizzes
 - ii. Group Discussions /Class Discussion/ Group Assignments
 - iii. Case studies
 - iv. Participatory & Industry-Integrated Learning/ Industrial visits

Sl. No.	Parameters for the Evaluation Practical (Theory + Practical) Subjects	Marks
	Continuous Internal Evaluation (CIE)	
1	Continuous Assessment (CCE) – (A)	15 Marks
2	Internal Practical Tests (IAT) –(B)	10 Marks
	Total of CIE (A+B)	25 Marks
3	Semester End Practical Examination (SEE) – (C)	25 Marks
	Total of CA and SEE (A + B + C)	50 Marks

a. Continuous & Comprehensive Evaluation (CCE):

The following assessment methods with

Drawing Sheets/Experiments/Records -10 (marks)

- i. Any one of the below assessment $1 \times 5 = 05$ marks
 - Seminars/Class Room Presentations/ Quizzes
 - Group Discussions /Class Discussion/ Group Assignments
 - Case studies
 - Participatory & Industry-Integrated Learning/ Industrial visits

Sl. No.	Parameters for the Evaluation of only Practical Subjects	Marks
	Continuous Internal Evaluation (CIE)	
1	Continuous & Comprehensive Evaluation (CCE) – (A)	30 Marks
2	Internal Assessment Tests (IAT) –(B)	20 Marks
	Total of CIE (A+B)	50 Marks
3	Semester End Practical Examination (SEE) – (C)	100 Marks
	Total of CIE and SEE (A + B + C)	150 Marks

a. Continuous & Comprehensive Evaluation (CCE):

The following assessment methods with

- i. Drawing Sheet Works -20 (marks)
- ii. Any one of the below assessment 1 x 10 = 10 marks
 - Seminars/Class Room Presentations/ Quizzes
 - Group Discussions /Class Discussion/ Group Assignments
 - Case studies
 - Participatory & Industry-Integrated Learning/ Industrial visits

SEMESTER END EXAMINATION (SEE): THEORY SUBJECTS

The Semester End Examination for all the courses for which students who get registered during the semester shall be conducted. SEE of the course shall be conducted after fulfilling the minimum attendance requirement as per the University norms.

SEMESTER END EXAMINATION (SEE): PRACTICAL SUBJECTS

The Semester End Examination for all the courses for which students who get registered during the semester shall be conducted. SEE of the course shall be conducted after fulfilling the minimum attendance requirement as per the University norms.

SEMESTER END EXAMINATION (SEE): ONLY PRACTICAL SUBJECTS

The Semester End Examination for all the courses for which students who get registered during the semester shall be conducted. SEE of the course shall be conducted after fulfilling the minimum attendance requirement as per the University norms.

Semester End Examination (SEE) framework and the question paper pattern is presented below.

QUESTION PAPER PATTERN FOR INTERNAL TEST (THEORY)

TIME : 45 MINS

MARKS: 20

PART – A

Answer any FIVE of the following questions. Each question carries 2 marks.

5 X 2 = 10

- 1. -----
- 2. -----
- 3. -----
- 4. -----
- 5. -----
- 6. -----

PART – B

Answer any ONE of the following questions. Each question carries 4 Marks.

1X4=4

- 7. -----
- 8. -----

PART – C

Answer any ONE of the following questions. Each question carries 6 Marks

1X6=6

- 9. -----
- 10. -----

QUESTION PAPER PATTERN FOR EXTERNAL EXAMINATION (THEORY)

TIME : 2.5 HOURS

MARKS: 60

PART – A

Answer any TEN of the following questions. Each question carries 2 marks.

10 X 2 = 20

- 1. -----
- 2. -----
- 3. -----
- 4. -----
- 5. -----
- 6. -----
- 7. -----
- 8. -----
- 9. -----
- 10. -----
- 11. -----
- 12. -----

PART – B

Answer any FOUR of the following questions. Each question carries 4 Marks.

4X4=16

- 13. -----
- 14. -----
- 15. -----
- 16. -----
- 17. -----

PART – C

Answer any FOUR of the following questions. Each question carries 6 Marks

4X6=24

- 18. -----
- 19. -----
- 20. -----
- 21. -----
- 22. -----

QUESTION PAPER PATTERN FOR EXTERNAL EXAMINATION (PRACTICAL)

TIME : 3 HOURS

MARKS: 25

PART – A

Answer any ONE of the following questions. Each question carries 10 marks.

10 X 1 = 10

- 1. -----
- 2. -----

PART – B

- 3. Portfolio-----
- 4. Viva Voice-----

**10 marks
05 marks**

**QUESTION PAPER PATTERN FOR EXTERNAL EXAMINATION
(ONLY PRACTICAL)**

TIME : 3 HOURS

MARKS: 100

PART – A

Answer any ONE of the following questions. Each question carries 30 marks.

30 X 1 = 30

- 1.a) & b) -----
- 2.a) & b)-----

PART – B

- 3. Portfolio-----
- 4. Viva Voice-----

**50 marks
20 marks**

Minimum Marks for a Pass:

Candidates who have obtained a minimum of 35% marks in semester end examination and 40% in aggregate of Semester End Examination marks and Continuous Internal Evaluation .

Curriculum Structure for Undergraduate Programme

B.Des – (Hons.) Architectural Design Construction

COURSE DETAIL OF B.DES (Hons.) ARCHITECTURAL DESIGN CONSTRUCTION							
Sem	Category of Course	Theory/ Practical	Credits	Paper Title	Marks		
					EXAM	IA	TOTAL
1	DSC 1	Theory	3	Basic Design	60	40	100
		Practical	2		25	25	50
	DSC 2	Theory	3	Fundamentals of design -I	60	40	100
		Practical	2		25	25	50
	DSE 1	Theory	3	History of Architecture I	60	40	100
	OE 1	Theory	3	Open Elective	60	40	100
	AECC	Theory	3	Language 1	60	40	100
			3	Language 2	60	40	100
	SEC	Theory	2	Digital Fluency	25	25	50
	VB	Practical	1	Yoga		25	25
		1	Health and Wellness		25	25	
Total Credits			26				800

COURSE DETAIL OF B.DES (Hons.) ARCHITECTURAL DESIGN CONSTRUCTION							
Sem	Category of Course	Theory/ Practical	Credits	Paper Title	Marks		
					EXAM	IA	TOTAL
2	DSC 3	Theory	3	Technical communication for designers	60	40	100
		Practical	2		25	25	50
	DSC 4	Theory	3	Fundamentals of design -II	60	40	100
		Practical	2		25	25	50
	DSE 2	Theory	3	Building Materials & Application	60	40	100
	OE 2	Theory	3	Open Elective	60	40	100
	AECC	Theory	3	Language 1	60	40	100
			3	Language 2	60	40	100
	SEC	Theory	2	Environmental studies	25	25	50
	VB	Practical	1	Sports		25	25
		1	NSS		25	25	
Total Credits			26				800
Total Credits (1st + 2nd Sem)			52				

Exit Option with Certificate (with completion of courses equal to a minimum of 48 Credits)

COURSE DETAIL OF B.DES HONORS ARCHITECTURAL DESIGN CONSTRUCTION							
Sem	Category of Course	Theory/ Practical	Credits	Paper Title	Marks		
					EXAM	IA	TOTAL
3	DSC 5	Practical	5	Design Studio-1	100	50	150
	DSC 6	Theory	3	Computer Aided Design - CAD	60	40	100
		Practical	2		25	25	50
	DSE 3	Theory	3	Structures I	60	40	100
	OE 3	Theory	3	Open Elective	60	40	100
	AECC	Theory	3	Language 1	60	40	100
			3	Language 2	60	40	100
	SEC	Theory	2	Artificial Intelligence	25	25	50
	VB	Practical	1	Sports		25	25
		1	NSS		25	25	
Total Credits			26				800

COURSE DETAIL OF B.DES HONORS ARCHITECTURAL DESIGN CONSTRUCTION							
Sem	Category of Course	Theory/ Practical	Credits	Paper Title	Marks		
					EXAM	IA	TOTAL
4	DSC 7	Practical	5	Design Studio-II	100	50	150
	DSC 8	Theory	3	Building materials & detailing I	60	40	100
		Practical	2		25	25	50
	DSE 4	Theory	3	Building Services	60	40	100
	OE 4	Theory	3	Open Elective	60	40	100
	AECC	Theory	3	Language 1	60	40	100
			3	Language 2	60	40	100
	SEC	Theory	2	Constitution of India	25	25	50
	VB	Practical	1	Sports		25	25
		1	R & R		25	25	
Total Credits			26				800
Total Credits (1st+2nd+3rd+4th Sem)			104				

Exit Option with Diploma (with completion of courses equal to a minimum of 96 Credits)

COURSE DETAIL OF B.DES HONORS ARCHITECTURAL DESIGN CONSTRUCTION							
Sem	Category of Course	Theory/ Practical	Credits	Paper Title	Marks		
					EXAM	IA	TOTAL
5	DSC 9	Practical	5	Design Studio III	100	50	150
	DSC 10	Practical	5	Advanced AutoCAD	100	50	150
	DSE 5	Theory	2	Landscape Design	60	40	100
		Practical	1		25	25	50
	DSE 6	Theory	2	History of Architecture II	60	40	100
		Practical	1		25	25	50
	VC	Theory	3	Voc 1	60	40	100
	SEC	Theory	3	Cyber security	25	25	50
	VB	Practical	1	Sports		25	25
		1	NSS		25	25	
Total Credits			24				800

COURSE DETAIL OF B.DES HONORS ARCHITECTURAL DESIGN CONSTRUCTION							
Sem	Category of Course	Theory/P ractical	Credits	Paper Title	Marks		
					EXAM	IA	TOTAL
6	DSC 11	Practical	5	Design Studio IV	100	50	150
	DSC 12	Practical	5	Working drawing	100	50	150
	DSE 7	Theory	2	Structures II	60	40	100
		Practical	1		25	25	50
	DSE 8	Theory	2	Building materials & detailing II	60	40	100
		Practical	1		25	25	50
	VC	Theory	3	Voc 2	60	40	100
	SEC	Theory	3	Professional Communication	25	25	50
	VB	Practical	1	Sports		25	25
		1	Culture		25	25	
Total Credits			24				800
Total Credits (1st+2nd+3rd+4th+5th+6th Sem)			152				

Exit Option with Bachelors of Design (with completion of courses equal to a minimum of 140 Credits)

COURSE DETAIL OF B.DES HONORS ARCHITECTURAL DESIGN CONSTRUCTION							
Sem	Category of Course	Theory/ Practical	Credits	Paper Title	Marks		
					EXAM	IA	TOTAL
7	DSC 13	Theory	3	Climate responsive architecture	60	40	100
		Practical	2		25	25	50
	DSC 14	Theory	3	Estimation & Valuation	60	40	100
		Practical	2		25	25	50
	DSE 9	Theory	3	Disaster Resistant Architecture	60	40	100
	DSE 10		6	Internship Minimum of 60 days	150	50	200
	VC	Theory	3	Voc 3	60	40	100
	CC	Practical	3	Research Methodology	60	40	100
Total Credits			22				800

COURSE DETAIL OF B.DES HONORS ARCHITECTURAL DESIGN CONSTRUCTION							
Sem	Category of Course	Theory/ Practical	Credits	Paper Title	Marks		
					EXAM	IA	TOTAL
8	DSC 15	Theory	3	Sustainability & Green Architecture	60	40	100
		Practical	2		25	25	50
	DSE 11	Theory	5	Professional practice & Project Management	60	40	100
	CC				Practical	6	Research Project
	VC	Theory	3	Voc 4	60	40	100
	Total Credits			22			
Total Credits (1st+2nd+3rd+4th+5th+6th Sem+7th+8th)			196				

Exit Option with Bachelors of Design with honours (with completion of courses equal to a minimum of 180 Credits)

Open Electives	
Category	Subjects
OE-1	SOCIAL IMPACT OF ARCHITECTURE
OE-2	MATERIALS AND APPLICATIONS
OE-3	PROCESS OF SPATIAL PLANNING
OE-4	HOME INTERIORS
OE-5	BASIC BUILDING SYSTEM & SERVICES
OE-6	NEW CONCEPTS IN ARCHITECTURE

SUBJECT CODE	YEAR: 1	SEMESTER 1	DSC	BASIC DESIGN	CREDITS: 3
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CONTACT PERIOD	INTERNAL ASSESSMENT MARKS(IA): 40	THEORY MARKS: 60	DURATION OF EXAM: 3 HRS
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OBJECTIVES

- To understand the basics of design.
- To encourage creative thinking in students.
- To understand the difference between art and design, their contribution to the field.
- To understand different types of art forms in India with respect to state, their beliefs and methods.

UNIT 1	Hrs
Introduction to Basic design Definitions of creativity, understanding components of creativity, definitions of problem solving, theories of creativity, goals and objectives, value judgments, defining problems, information gathering, creative incubation, creative thinking and creative process and illustrations.	
UNIT 2 Thinking Technique Understanding Principles in generative, convergent, lateral, interactive, graphical thinking, check lists, analysis and synthesis simulation, action ability and implementations of intentions. Blocks in creative thinking.	
UNIT 3 Technique of Creativity Mind mapping, brain storming with related stimuli and unrelated stimuli, positive techniques for creativity, creative pause, Focus, Challenge, alternatives, concepts, sensitizing techniques, group or individual techniques. Brain writing with unrelated stimuli, idea mapping, random input, story boarding exercises, problem solving techniques –brain storming, lateral thinking of De Bono.	
UNIT 4 Art and Design Understanding the basic difference of art and design and their relationship. Understanding different art form and design styles through famous artist and designers. Different mediums of sketching and drawing.	
UNIT 5 Art Forms of India Understanding different art forms of different states of India, methods and technique involved in making those art forms.	

OUTCOME

- Students will understand the process of mind mapping.
- Students will be able to synthesis Visual elements in the surrounding.
- Students will analyze various art forms of India.

REFERENCES

- Drawing on the Right Side of the Brain - by Betty Edwards
- Keys to Drawing by Bert Dodson.
- Maureen Mitton, Interior Design Visual Presentation: A Guide to graphics, models and presentation techniques, 3rd edition, wiley publishers, 2007
- Mogali Delgade Yanes and Ernest Redondo Dominquez, Freehand drawing for Architects and Interior Designers, ww.Norton& co., 2005
- Francis D.Ching, Design Drawing, Wiley publishers CURRICULUM AND SYLLABUS B.Des (Interior Design) 14
- Moris, I.H.Geometrical Drawing for Art Students.
- Thoms, E.French. Graphics Science and Design, New York: MC Graw Hill.
- Shah, M.G., Kale, C.M. and Patki, S.Y. Building Drawing: with an integrated approach to built environment, 7th ed. Tata McGraw Hill Pub., Delhi, 2000.
- Bies, D.John. Architectural Drafting: Structure and Environment Bobbs – Merrill Educational Pub., Indianapolis.

SUBJECT CODE	YEAR: 1	SEMESTER 1	DSC	BASIC DESIGN	CREDITS: 2
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CONTACT PERIOD	INTERNAL ASSESSMENT MARKS(IA): 25	PRACTICAL MARKS: 25	DURATION OF EXAM: 3 HRS
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OBJECTIVES

- To familiarize students with the concepts of free hand sketching.
- To understand different medium used for drawing / sketching and how to use them.
- To upgrade the basic drawing skills of the students.

UNIT 1	Hrs
Free Hand Sketching Exercises of freehand pencil drawings, sketches of objects, solids, pattern, texture etc.	
UNIT 2	
Rendering Technique Exercises of rendering techniques using pencil, pen, charcoal, color pencil, poster color, soft pastel etc. of objects, solid, light, shade, shadow and textures.	

UNIT 3	
Nature Drawing Exercise of free hand sketching of nature, outdoor study of landscape elements. And understanding how to render them.	
UNIT 4	
Gesture Drawing Introduction to human figure drawing. To study the gestures and different poses of the human figure.	

OUTCOME

- Students will be able to draw free hand drawings.
- Students will acquire knowledge about different rendering medium.

REFERENCES

- Drawing on the Right Side of the Brain - by Betty Edwards
- Keys to Drawing by Bert Dodson.
- Maureen Mitton, Interior Design Visual Presentation: A Guide to graphics, models and presentation techniques, 3rd edition, wiley publishers, 2007
- Mogali Delgade Yanes and Ernest Redondo Dominquez, Freehand drawing for Architects and Interior Designers, ww.Norton& co., 2005
- Francis D.Ching, Design Drawing, Wiley publishers CURRICULUM AND SYLLABUS B.Des (Interior Design) 14
- Moris, I.H.Geometrical Drawing for Art Students.
- Thoms, E.French. Graphics Science and Design, New York: MC Graw Hill.
- Shah, M.G., Kale, C.M. and Patki, S.Y. Building Drawing: with an integrated approach to built environment, 7th ed. Tata McGraw Hill Pub., Delhi, 2000.
- Bies, D.John. Architectural Drafting: Structure and Environment Bobbs – Merrill Educational Pub., Indianapolis.

SUBJECT CODE	YEAR: 1	SEMESTER 2	DSC	Fundamentals of Design - I	CREDITS: 3
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CONTACT PERIOD	INTERNAL ASSESSMENT MARKS(IA): 40	THEORY MARKS: 60	DURATION OF EXAM: 3 HRS
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OBJECTIVES

- To understand types of design and its importance.
- To understand basic elements and principles of design with their impact on design and psychology.
- To understand Design Contextualism.

UNIT 1	Hrs
Introduction of design Introduction to design- importance and scope of design, Design –Definition, meaning, purpose, Types - Structural and decorative characteristics, classification of decorative design - Naturalistic, conventional, geometric, abstract, historic, biomorphic.	
UNIT 2 Basics of Compositions Understanding the basic concepts of composition 2d-3d and its application and impact in design.	
UNIT 3 Elements of Design Importance of Elements of design - Line and direction, form and shape, size, color, light, pattern, texture and space - application of elements to form designs and impact on psychology.	
UNIT 4 Color Concepts Introduction to Concept of color - significance of color in the interiors and exteriors- Dimensions of color –Hue, value, intensity, Effects of Hue, value and Intensity. Introduction to Color Schemes and types, Color harmonies-related and contrast, Advanced and receding factors considered in selecting color harmonies, Application of color in human psychology.	
UNIT 5 Principle of Design Principles of design –Balance, rhythm, emphasis, harmony, proportion - meaning and application of design. Development of design from motifs and application.	

OUTCOME

- Students will be able translate the basic principle and elements of design in drawings.
- Students will get knowledge colors and their impact on human psychology.

REFERENCES:

- Barnes, Susan B. An Introduction to Visual Communication: From Cave Art to Second Life, Peter Lang Publishing Inc, 2011
- Bergström, Bo. Essentials of Visual Communication, Laurence King Publishing, 2009
- Pratap R.M (1988), Interior Design principles and practice, standard publishers' distribution,
 - Delhi.
- Seetharaman, P and Pannu, P. Interior Design and Decoration, CBS publishers and Distributors, New Delhi
- McPhee, K., Design Theory and Software Design, Technical Report TR 96- 26, October 1996, Department of Computing Science, The University of Alberta, Canada, 1996.
- Lawson, B., How Designers Think, The Architectural Press Ltd., London, 1980.

SUBJECT CODE	YEAR: 1	SEMESTER 1	DSC	Fundamentals of Design - I	CREDITS: 2
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CONTACT PERIOD	INTERNAL ASSESSMENT MARKS(IA): 25	PRACTICAL MARKS: 25	DURATION OF EXAM: 3 HRS
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OBJECTIVES

- To implement concepts of Fundamentals of Design.
- To understand different Design Philosophies through the works done by eminent Designers.
- To understand Design Contextualism.

UNIT 1	Hrs
Types of Design Assignment on Naturalistic, conventional, geometric, abstract, historic, biomorphic with the help of sketches and sheets.	
UNIT 2	
Elements of Design Types of line and its application in design, form and shape, size, color, light, Pattern, Texture and Space - Application of elements to form designs with the help of sketches and mood board.	
UNIT 3	
Principle of Design Principles of design –Balance, rhythm, emphasis, harmony, proportion, Application of principle of with the help of sketches and models.	
UNIT 4	
Color Concepts Color wheel, Primary Color, Secondary Color, Tertiary Color, Complimentary color, Split Complimentary Color, types color contrast (7 types) Munsell, Parang System, Pantone etc.	

OUTCOME

- Students will be able translate the basic principle and elements of design in drawings.
- Students will get knowledge colors and their impact on human psychology.

REFERENCES

- Barnes, Susan B. An Introduction to Visual Communication: From Cave Art to Second Life, Peter Lang Publishing Inc, 2011
- Bergström, Bo. Essentials of Visual Communication, Laurence King Publishing, 2009
- Ahmed A Kasu, An Introduction to Art, Craft, Technique, Science & Profession of Interior Design, Ashish Book Centre, New Delhi, Pg: 701
- Caroline Clifton et. al., The complete Home Decorator, Portland House New York.

- Faulkner, S.-and Faulkner, (1987), Inside Today's Home, Rine hart publishing company, New York

SUBJECT CODE	YEAR: 1	SEMESTER 1	DSE	History of Architecture - I	CREDITS: 3
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CONTACT PERIOD	INTERNAL ASSESSMENT MARKS(IA): 40	THEORY MARKS: 60	DURATION OF EXAM: 3 HRS
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OBJECTIVES

- To understand the form-space relationships in ancient architecture.
- To learn impact of geographical, geological, climatic, historical, technological, social and religious factors influencing Architecture.
- To understand the architectural characters though timeline.

UNIT 1	Hrs
Pre- Historic Architecture Introduction to Ancient Civilization and their contribution to architecture and design. Egyptian Civilization and Indus Valley Civilization. (Pyramids, Mastabas etc.)	
UNIT 2	
Classical Architecture Understanding the development of style with respect to the social structure and changes. In detail study of the style with respect to architecture of Greek and Roman Architecture During – Classical age, the gothic period, the renaissance and the neo-classical period. (The Parthenon, Acropolis, Agora, Theater of Epidaurus, The Pantheon, Aqueducts, The Colosseum etc.)	
UNIT 3	
Byzantine, Romanesque and Gothic Byzantine – Introduction to Byzantine Architecture with respect to religious architecture, construction techniques. (Hagia Sophia, S. Mark, Venice etc.) Romanesque - Introduction to Romanesque Architecture with respect to religious architecture features and construction techniques. (Pisa Cathedral, S. Madeleine, Vezelay etc.) Gothic - Introduction to Gothic Architecture with respect to religious architecture, features and construction techniques. (Amiens Cathedral, Notre Dame etc.)	
UNIT 4	
Renaissance, Baroque, Rococo Introduction to Renaissance Architecture with respect to religious architecture, features and construction techniques. (St. Peter, Rome, Palaise du Louvre, Paris, St. Paul's Cathedral, London etc.)	
UNIT 5	
Beginning of Modernism	

Industrial Revolution and its impact on art, design and construction methods. The development of the aesthetic art movement – Arts and Crafts, Art Nouveau and Art Deco. The development of Bauhaus as a style and its contribution to the start of modernism. Mid-century modern style and its contributions to the field of architecture.	
UNIT 6	
Modernism Theory and philosophies of modernism and their characteristic features in Architecture.	

OUTCOME

- Students will get knowledge about historical features.
- Students will get knowledge about different architectural styles from pre-historic era to modernism.

REFERENCES

- Brown, P. (1983). Indian Architecture (Buddhist and Hindu Period). Bombay, Taraporevala and Sons.
- Fletcher, B., & Cruickshank, D. (1996). Sir Banister Fletcher's a history of architecture. Oxford: Architectural Press.
- Robertson, D. S. (1969). Greek and Roman architecture. London, Cambridge University Press.
- Roth, L. M. (2007). Understanding architecture: Its elements, history, and meaning. Boulder, Colo: Westview Press.
- Yarwood, D. (1988). A Chronology of Western Architecture. Dover Publications Inc.

SUBJECT CODE	YEAR: 1	SEMESTER 2	DSC	TECHNICAL COMMUNICATION FOR DESIGNER	CREDITS: 3
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CONTACT PERIOD	INTERNAL ASSESSMENT MARKS(IA): 40	THEORY MARKS: 60	DURATION OF EXAM: 3 HRS
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OBJECTIVES

- To understand the fundamentals of graphical representation in drawing.
- To learn various angles of viewing an object and representing it drawing.
- To learn the concepts of various types of projections.

- To develop skills of technical writing, proposal writing.

UNIT 1	Hrs
Orthographic Projections: Introduction to orthographic projections, line of sight, what is parallel projections, isometric projections. Understanding projection plane, principal plane, orthographic view and auxiliary plane. Convention orthographic view.	
UNIT 2 Isometric Projections Introduction to Isometric projections and methods to make projections, (Box and Offset method). Difference between Isometric view and Isometric Projections.	
UNIT 3 Perspective Drawings What is perspective drawing and importance of perspective drawing, understanding Picture Plane (P.P.), horizon line (H.P.) Ground plane (G.P.) Station Point (S.P.) Sight Line, Vanishing Point (V.P.) True object (T.P.)	
UNIT 4 Sciography What is Sciography, what is light source, light ray, sun angle, shade and shadow, shadow line and shade line.	
UNIT 5 Introduction to Technical Writing, Proposals Writing Introduction to technical writing process, understanding of writing process, how to write various technical reports. Types and elements of technical articles, journal articles and conference papers. Introduction to technical proposal writing, Purpose, importance, structure.	

OUTCOME

- Students will be able to understand symbolic representations and types of line.
- Students will get knowledge about geometric views, orthographic projections, perspective drawings, and Sciography which will enhance their visualization

REFERENCES

- Ching, F. (1943). Architectural graphics (6th ed.). New Jersey, John Wiley and Sons, Inc.
- Dinsmore, G. (1968). Analytical graphics. Princeton, D. Van Nostrand Co.
- Gill, R. (1991). Basic perspective. London, Thames and Hudson.
- Gill, R. (2006). Perspective (1st ed.). London, Thames and Hudson.
- Graphic-Sha Staff. (1987). Interiors: Perspectives in Architectural Design/Included, An Actual CG Perspective. Tokyo, Japan: Books Nippan.

SUBJECT CODE	YEAR: 1	SEMESTER 2	DSC	TECHNICAL COMMUNICATION FOR DESIGNER	CREDITS: 2
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CONTACT PERIOD	INTERNAL ASSESSMENT MARKS(IA): 25	PRACTICAL MARKS: 25	DURATION OF EXAM: 3 HRS
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OBJECTIVES

- To understand the fundamentals of graphical representation in architecture.
- To learn various angles of viewing an object and representing it architecturally.
- To learn the concepts of various types of projections.
- To develop skills of surface development and interpreting the illustration of architectural sections.

UNIT 1	Hrs
Graphical Codes, Symbols and Scales Styles of lettering, Types of lines, Types of Planes, Types of Scales.	
UNIT 2	
Orthographic projections 1 & 2 Dimensions - Points, Lines. 2 & 3 dimensions - Planes — Parallel, Perpendicular and inclined projections. Various solid and hollow geometrical objects — Parallel, Perpendicular and inclined projections.	
UNIT 3	
Geometric views and Projections Isometric views and projections, Axonometric views, Oblique views	
UNIT 4	
Perspective Drawings Two-point perspective of simple geometrical objects. One-point perspective of simple geometrical objects. Two-point perspective of complex geometrical objects and buildings. One-point perspective of complex geometrical objects and building interiors/ exteriors. Multiple point perspectives.	
UNIT 5	
Sciography Application on two dimensional objects in plans and elevations. Sciography of three-dimensional objects in plan, elevations and views. Sciography on Complex objects.	

OUTCOME

- Students will be able to understand symbolic representations and types of line.
- Students will get knowledge about geometric views, orthographic projections, perspective drawings, and Sciography which will enhance their architectural skills.

REFERENCES

- Ching, F. (1943). Architectural graphics (6th ed.). New Jersey, John Wiley and Sons, Inc.
- Dinsmore, G. (1968). Analytical graphics. Princeton, D. Van Nostrand Co.
- Gill, R. (1991). Basic perspective. London, Thames and Hudson.
- Gill, R. (2006). Perspective (1st ed.). London, Thames and Hudson.

SUBJECT CODE	YEAR: 1	SEMESTER 2	DSC	Fundamentals of Design - II	CREDITS: 3
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CONTACT PERIOD	INTERNAL ASSESSMENT MARKS(IA): 40	THEORY MARKS: 60	DURATION OF EXAM: 2 HRS
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OBJECTIVES

- To implement concepts of Fundamentals of Design.
- To understand different Design Philosophies through the works done by eminent Designers.
- To understand Design Contextualism.

UNIT 1	Hrs
Introduction to Design process Understanding the process of design and its importance. Factors that affect design Like Principle of Totality, Principle of Time, Principle of Value, Principle of Resources, Principle of Iterations, Principle of Synthesis, Principle of Change, Principle of Relationship, Principle of Competence, Principle of Service.	
UNIT 2 Process of Data Collection Importance of Data collection, Types of Data collection (Literature, Case study, Research papers and Books). Understanding criteria of selecting case study. How to get inferences and relationship between data collection and design process. Understanding the concepts of anthropometric and ergonomics.	
UNIT 3 Understanding Compositions in Design Importance composition in design through Golden Ration, Grid, Rule of Third etc. and discussing their examples.	
UNIT 4 Design Theories and Philosophies Understanding Organization theories, Gestalt's Laws and its application in design. Understanding less is more, God is in the details etc. Its application through case studies.	
UNIT 5 Understanding work of Famous designers Discussions on work of famous designers and their process and methods of designing.	

OUTCOME

- Students will be able to understand process of designing and types of data collections.
- Students will be able to understand theories and philosophies involved in design.
- Students will get knowledge about famous designers and their work.

REFERENCES:

- Barnes, Susan B. An Introduction to Visual Communication: From Cave Art to Second Life, Peter Lang Publishing Inc, 2011
- Bergström, Bo. Essentials of Visual Communication, Laurence King Publishing, 2009
- Pratap R.M (1988), Interior Design principles and practice, standard publishers' distribution,
 - Delhi.
- Seetharaman, P and Pannu, P. Interior Design and Decoration, CBS publishers and Distributors, New Delhi
- McPhee, K., Design Theory and Software Design, Technical Report TR 96- 26, October 1996, Department of Computing Science, The University of Alberta, Canada, 1996.
- Lawson, B., How Designers Think, The Architectural Press Ltd., London, 1980.

SUBJECT CODE	YEAR: 1	SEMESTER 2	DSC	Fundamentals of Design - II	CREDITS: 2
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CONTACT PERIOD	INTERNAL ASSESSMENT MARKS(IA): 25	PRACTICAL MARKS: 25	DURATION OF EXAM: 3 HRS
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OBJECTIVES

- To understand the basic concepts of solid and voids and their application.
- To understand the composition of 2d and 3d.

UNIT 1	Hrs
Surface Development Introduction to surface development for objects like prism, sphere, cuboid etc. and making different forms with the help of paper, compress board etc.	
UNIT 2	
Mass and Voids Assignments on concepts of solids and voids and its application with help of sketches, drawings and models. Concepts of addition and subtraction with the help of sketches, models. (Paper, compress board, etc.)	
UNIT 3	
Texture and Pattern Understanding the basic texture & patterns making with clay, pop, colours, etc and develop models, sculpture etc.	
UNIT 4	

Composition of 2d and 3d

Making Two-dimensional & three-dimensional composition using the guidelines of Golden Ration, Grid, Rule of Third etc.

OUTCOME

- Students will be able to understand process of surface development.
- Students will be able to apply concepts of mass and voids in forms and develop models for the same.
- Students will understand the basic of model making.

REFERENCES:

- Barnes, Susan B. An Introduction to Visual Communication: From Cave Art to Second Life, Peter Lang Publishing Inc, 2011
- Bergström, Bo. Essentials of Visual Communication, Laurence King Publishing, 2009
- Pratap R.M (1988), Interior Design principles and practice, standard publishers' distribution,
 - Delhi.
- Seetharaman, P and Pannu, P. Interior Design and Decoration, CBS publishers and Distributors, New Delhi
- McPhee, K., Design Theory and Software Design, Technical Report TR 96- 26, October 1996, Department of Computing Science, The University of Alberta, Canada, 1996.
- Lawson, B., How Designers Think, The Architectural Press Ltd., London, 1980.

SUBJECT CODE	YEAR: 1	SEMESTER 2	DSE	BUILDING MATERIALS AND APPLICATION	CREDITS: 3
CONTACT PERIOD	INTERNAL ASSESSMENT MARKS(IA): 40		THEORY MARKS: 60	DURATION OF EXAM: 2.5 HRS	

OBJECTIVES

- To give knowledge about the different building materials and their manufacturing process.
- To understand the advantages and disadvantages of the materials used for construction.

UNIT 1	Hrs
Clay and Clay Products Introduction to Clay products, ceramics, tiles, manufacturing process of tiles. Types of tiles, Characteristic of good tiles, and types of finishes.	

UNIT 2	
<p>Lime, Cement and Mortar</p> <p>Lime - Sources of lime, constitution of lime, classification of lime. Cement - Comparison of cement and lime, manufacturing process of cement, chemical and physical properties of cement, composition of ordinary cement. Comparison between fat lime and hydraulic lime, lime mortar precautions to be taken in handling lime. Uses and tests.</p>	
UNIT 3	
<p>Glass</p> <p>Introduction, types and application Glass – different types of glasses, and its uses in construction, Glass and glass products – Composition and fabrication of glass, classification, types of glass- wired glass, fiber glass, rock wool, laminated glass, glass concrete blocks - their properties and uses in buildings.</p>	
UNIT 4	
<p>Plastics and miscellaneous Materials</p> <p>Introduction and Properties Types of plastics, use of plastics in construction, fiber plastic, silicon and its usage. Adhesives – Natural and Synthetic, their varieties, thermoplastic and thermosetting adhesives, epoxy resin. Method of application, bond strength etc. Rubber – Natural rubber, Latex, Coagulation, Vulcanizing and synthetic rubber Properties and application.</p>	
UNIT 5	
<p>Paint</p> <p>Introduction, types and application. Characteristics of good paint – its ingredients. Method of proper application of paint and polishes – painting process. Types of paints –oil and water-based paints. Polishes, Different types of plasters</p>	
Unit 6	
<p>Ferrous and Non- Ferrous Metal</p> <p>Introduction to Ferrous and Non- Ferrous Metals, Iron- ores, Pig Iron, Manufacturing of Pig Iron, Manufacturing of pig iron, Blast Furnace, Properties of pig iron, Cast Iron, Types of Cast Iron. Introduction to Aluminium, manufacturing process of Aluminum, Properties of Aluminum, uses of Aluminium, Introduction to Cobalt, Manufacturing of Cobalt, Properties of Cobalt, Manufacturing of Copper, Properties of Copper,</p>	

REFERENCES

- Barry, R (1999). The Construction of Buildings Vol.2 5th Ed. New Delhi: East – West Press.
- Foster, J. and Mitchell, S. (1963). Building Construction: Elementary and Advanced, 17th Ed. London: B.T. Batsford Ltd.
- McKay, W.B. (2005). Building Construction Metric Vol, I-IV, 4th Ed. Mumbai: Orient Longman.

- Rangwala, S.C., (2019). Building Construction 33rd Ed. Anand: Charotar Publishing House Pvt. Ltd.
- Sushil – Kumar, T.B. (2003) Building Construction 19th Ed. Delhi: Standard Publications.
- Punmia, B.C. and Jain, A.K. (2016). Building Construction. 11th Ed. New Delhi: Laxmi Publications.

SUBJECT CODE	YEAR: 2	SEMESTER 3	DSC	Design Studio - I	CREDITS: 5
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CONTACT PERIOD	INTERNAL ASSESSMENT MARKS(IA): 50	PRACTICAL MARKS: 100	DURATION OF EXAM: 3 HRS
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OBJECTIVES

- To implement concepts of architectural principles in design
- To able to understand the concept development and contextualism.

Course Outline:	Hrs
<p>The course shall initiate with an Educational Visit accompanied by 1 teacher per 20 students (approx.) for understanding various Architectural Principles, Compositions and Contextualism. The lessons learnt from educational visit shall be submitted in form of Report and learning shall be implemented in further design problems. Students shall be encouraged to be critical and to look for alternate descriptions and explanations of architecture. They shall critically evaluate user, Context and combination of user and context and develop their own perceptions through discussions and writing. There shall be two design problems (Major Project and Minor Project) during this course to achieve the objectives stated hereabove. This may be done through designing small built-forms emphasizing on development of forms and interaction between Form and Space.</p> <p><u>The suggestive major design topics shall focus on spatial organization and exploring forms and include projects such as dispensary, primary health care center, creche, play school, kindergarten, post office, bank etc.</u></p> <p><u>Minor project shall focus on temporary structures and include projects such as night shelter, kiosk, bus – stop etc.</u></p> <p>Deliverable shall be in the form of Portfolio/Drawing/Models/Reports/Multimedia Presentation, etc.</p>	

REFERENCES

- Ching, F. D. (2014). Architecture: Form, space, and order. John Wiley & Sons.

- De Chiara, J. (2001). Time-saver standards for building types. McGraw-Hill Professional Publishing.
- Neufert, E., Neufert, P., & Kister, J. (2012). Architects' data. John Wiley & Sons

SUBJECT CODE	YEAR: 2	SEMESTER 3	DSC	COMPUTER AIDED DESIGN	CREDITS: 3
CONTACT PERIOD	INTERNAL ASSESSMENT MARKS(IA): 40		THEORY MARKS: 60	DURATION OF EXAM: 2.5HRS	

OBJECTIVES

- To enable students to understand the importance of AutoCAD in planning and detailing and learn the application of AutoCAD in design.

UNIT 1	Hrs
Introduction to CAD Importance and application of CAD in planning. Fundamentals of computers, file menu-saving closing files, importing and exporting files, saving files in different formats. Printing and publishing, undo/redo, matching properties & Its application.	
UNIT 2	
Introduction to object drawing, different types of lines - spline, construction lines, splines, multiline, types of objects, circles and curves arc, polygon, ellipse and its application and usage in drafting	
UNIT 3	
Introduction to drawing setting and types of setting drawing limits units, object selection, drafting, setting, polar tracking, grid and snap, its application advantages and uses. Introduction to hatch, dimensions, text, layer, point style creation, dimension, text, multiline, spline, editing, creating and inserting blocks, attributions, along with different types, application and Importance.	
UNIT 4	
Introduction to object editing, types in editing the drawing with different command trim, extend, stretch, erase delete, introduction to viewing, types of viewing – zoom, pan, holstering utility and its advantages and important, hatch boundary, hatch, editing, introduction to layers, types of layer creation and uses.	
UNIT 5	
Introduction to creation of solid, wireframe, objects, basic rendering skills, use of viewport command, different options of view command. Working on model space, paper space, setting the scale for drawings, different types, its application and importance.	

COURSE OUTCOME

- Able to use CAD 2D software in digital drafting.

- Digitally draft various interior details and spaces using CAD software.

REFERENCES

- Gopalakrishna, K. R., Sudhir, “A Text Book of Computer Aided Engineering Drawing”, Subhas Stores, Bangalore, 2013.
- Jin Feng, “Basic AutoCAD for Interior Designers”, Peachpit Press, 1999.
- Joseph A. Fiorello, “CAD for Interiors: Beyond the Basics”, John Wiley & Sons, 2010.
- Sham Tickoo, “Autocad2013 for Engineers and Designers”, Dreamtech Press, 2012.
- Strock, Cheryl R., “Advance AutoCAD”, BPB Publications, 2010.

SUBJECT CODE	YEAR: 2	SEMESTER 3	DSC	COMPUTER AIDED DESIGN	CREDITS: 2
CONTACT PERIOD	INTERNAL ASSESSMENT MARKS(IA): 25		PRACTICAL MARKS: 25	DURATION OF EXAM: 3 HRS	

OBJECTIVES

- To enable students to understand the importance of AutoCAD in planning and detailing and learn the application of AutoCAD in design.

Unit-1

Exercises on creating objects with types of lines, composition of lines, exercise on modifying Tools

Unit-2

Creating and editing the layer objects, hatching the objects, creating a text style, dimension styles, blocks, editing commands, drawing commands .

Unit-3

Drafting the plan and elevations of a structural components (Foundation, Frames and trusses)

Unit-4

Drafting the plan and elevation of the projects, working drawings with paper space, model space, printing with different plot styles (any three).

SUBJECT CODE	YEAR: 2	SEMESTER 3	DSE	STRUCTURE – 1	CREDITS: 3
CONTACT PERIOD		INTERNAL ASSESSMENT MARKS(IA): 40		THEORY MARKS: 60	DURATION OF EXAM: 2.5 HRS

OBJECTIVES

- To understand the basic of loads and types of loads.
- To get acquainted with the basic terminologies of structure.
- To understand the basic systems of structures and structural elements.

UNIT 1	Hrs
<p>The basics of structures and loads: Understanding structural systems and functions, basic concepts of various types of loads that results in determining the structural systems. The use of various materials that play a role in determining the structural systems.</p>	
<p>UNIT 2 Simple Stress and Strain Concept of stress and strain, types of stresses, types of strains, Elasticity, Hooke's law, Elastic Modulus, stress-strain diagrams for ductile and brittle materials, principle of superposition, bars of varying cross section, Saint Venant's principle, tapering bars of circular cross section, tapering bars of rectangular cross section of uniform thickness, compound bars. Elastic Constants.</p>	
<p>UNIT 3 Shear Force and Bending Moment Shear force, Bending moment, relation among loading, SF and BM, SFDs and BMDs for simply supported beam, cantilever beams and overhanging beams subjected to concentrated, uniformly distributed load, uniformly varying loads, moment and couple. Loading pattern and BMD form SFD</p>	
<p>UNIT 4 Compound stresses: Transformation of stresses in two-dimension, principle · stress, maximum shear stress and construction of Mohr's circle for stresses.</p>	
<p>UNIT 5 Structures and Design Consideration – semiotic relations. Role of structural systems in development of aesthetics in architecture. Role of aesthetics in architecture in development of structural systems. Types of Structural failures Reasons of Structural failures, Preventive Measures.</p>	

OUTCOME:

- Students will be able understand the elements of building and their importance.
- Students will be aware of the various structural design considerations.

REFERENCES

- Brown, P. (1983), Indian Architecture (Buddhist and Hindu Period), Taraporevala and Sons, Bombay, 1983.
- Levy, M., & Salvadori, M. (2002). Why buildings fall down: How structures fail. WW Norton & Company.
- National Building Code of India 2016 (2016 ed., Vol. 1, SP 7). (2016). New Delhi: Bureau of Indian Standards.
- Salvadori, M. (1990). Why buildings stand up: The strength of architecture. WW Norton & Company. Spiro Kostof - A History of Architecture - Setting and Rituals, Oxford University Press, London, 1985.

SUBJECT CODE	YEAR: 2	SEMESTER 4	DSC	Design Studio - II	CREDITS: 5
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CONTACT PERIOD	INTERNAL ASSESSMENT MARKS(IA): 50	PRACTICAL MARKS: 100	DURATION OF EXAM: 3 HRS
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OBJECTIVES

- To understand Cultural Influences in Architecture.
- To adapt lessons learnt from Architectural History in design development.
- To develop forms through space-making and their interrelationship.

Course Outline:	Hrs
Projects shall be dealt through collecting information, critical evaluation, and representation through literary and visual resources. There shall be at least two design problems (Major Project and Minor Project) during this course to achieve the objectives stated here above. The design shall encompass local contexts, handling site features.	
<i><u>The suggestive design topics shall include residential design such as bungalows, farm house, villas, office cum residence of professionals, small apartment complex. Minor project such as multi-purpose hall, hypermarket, gymnasium, salon etc.</u></i>	
Deliverable shall be in the form of Portfolio/Drawings/Models/Reports/Multimedia Presentation, etc.	

COURSE OUTCOME

- Students will be able to design on the basis of concepts.
- Students will come up with design creative solutions.

REFERENCES

- Ching, F. D. (2014). Architecture: Form, space, and order. John Wiley & Sons.
- De Chiara, J. (2001). Time-saver standards for building types. McGraw-Hill Professional Publishing.
- Neufert, E., Neufert, P., & Kister, J. (2012). Architects' data. John Wiley & Sons

SUBJECT CODE	YEAR: 2	SEMESTER 4	DSC	BUILDING MATERIALS AND DETAILING – I	CREDITS: 3
CONTACT PERIOD	INTERNAL ASSESSMENT MARKS(IA): 40		THEORY MARKS: 60	DURATION OF EXAM: 2.5 HRS	

OBJECTIVES

- The course focuses on elements of building along with brick and stone as building materials. Other associated building materials, with fixing details, required to explain the topics should be incorporated for comprehensive understanding.
- Emphasis should be given to on-site construction practices through measure drawings.
- Students will learn about fundamentals of building materials and their properties, application, components, fixing details and their construction techniques.
- The primary focus is on various building materials, latest trends in practice and usage of new technology/ materials.

UNIT 1	Hrs
Introduction to Super and Sub – Structure: Introduction to basic elements and components of building and their importance. Understanding step-wise process of building a structure. Introduction to types of soil and construction technique based on types of soil. Understanding basic section of a Building with its components.	
UNIT 2	
Brick Masonry:	

Introduction to brick and its types. Types of method for manufacturing of bricks. Testing of bricks, different class of bricks used in constructions. Types of brick arches and vaults. Materials used for making bonds.	
UNIT 3	
Stone Masonry Introduction to stone and its types. Stone foundation and threshold. Types of stone arches and vaults. Materials used for making bonds.	
UNIT 4	
Timber Introduction to timber as a construction material, types of wood, understanding seasoning, identifying defects and testing etc. Components made up of wood and wood composites.	
UNIT 5	
Foundation and R.C.C. Introduction to foundation, types of foundation material used for construction. Introduction to R.C.C. structure, Concrete – Types, mixes, properties, uses, ponding, curing, testing, faults, failures etc. Scaffolding – Types, uses, components, fixing details.	

COURSE OUTCOME

- Students will be able to identify different material used in construction.
- Students will get knowledge about the construction techniques used in architecture.

REFERENCES

- Barry, R (1999). The Construction of Buildings Vol.2 5th Ed. New Delhi: East – West Press.
- Foster, J. and Mitchell, S. (1963). Building Construction: Elementary and Advanced, 17th Ed. London: B.T. Batsford Ltd.
- McKay, W.B. (2005). Building Construction Metric Vol, I-IV, 4th Ed. Mumbai: Orient Longman.
- Rangwala, S.C., (2019). Building Construction 33rd Ed. Anand: Charotar Publishing House Pvt. Ltd.
- Sushil – Kumar, T.B. (2003) Building Construction 19th Ed. Delhi: Standard Publications.
- Punmia, B.C. and Jain, A.K. (2016). Building Construction. 11th Ed. New Delhi: Laxmi Publications.

SUBJECT CODE	YEAR: 2	SEMESTER 4	DSC	BUILDING MATERIALS AND DETAILING – I	CREDITS: 2
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CONTACT PERIOD	INTERNAL ASSESSMENT MARKS(IA): 25	PRACTICAL MARKS: 25	DURATION OF EXAM: 2 HRS
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UNIT 1	Hrs
Introduction to Super and Sub – Structure: Understanding structural elements with the help of section of a building	
UNIT 2	
Brick Masonry: Types of Bricks, types of bonds header, stretcher, english, flemish, rat-trap bond etc. Brick foundation, Piers and Threshold. Brick lintel and arches, Jointing, Pointing.	
UNIT 3	
Stone Masonry Types of stone masonry - rubble, random rubble, course etc. Stone foundation and threshold. Types of stone arches and Vaults.	
UNIT 4	
Timber Parts of timber, Section of timber, Partition wall etc.	
UNIT 5	
Foundation and R.C.C. Understanding types of Foundation Pier Foundation, Step Foundation, Combined Foundation.	

SUBJECT CODE	YEAR: 2	SEMESTER 4	DSE	BUILDING SERVICES	CREDITS: 3
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CONTACT PERIOD	INTERNAL ASSESSMENT MARKS(IA): 40	THEORY MARKS: 60	DURATION OF EXAM: 2.5 HRS
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OBJECTIVES

- To give the basic understanding to the students about building services involved in design
- To understand need and importance of water supply and sanitation along with components of various sewage system involved in designing.
- To understanding electrical supply and its distribution.
- To study water supply system in buildings. To understand components of various sewage systems.

UNIT 1	Hrs
<p>Water Supply and Distribution Introduction to Sources of water, Quantity and Quality of potable water. Water demand calculations, norms and standards. Water treatment for domestic purpose, etc. a. Run-off calculation, Rain water harvesting system, Recycling of water, etc. Understanding way to store water, overhead tank, sump, etc. Introduction to water distribution systems. Guidelines for laying of water supply lines. Water supply pipe materials, apparatus, joints, fixtures and valves., etc.</p>	
<p>UNIT 2</p> <p>Plumbing and Sanitation Basic principles and standards of sanitation. Modern plumbing system, types of pipe systems, types of traps and their uses. Types of sanitary systems and network, Gully trap, inspection chamber, intercepting trap, grease trap, man holes, etc. Calculation for Gradient and slope in sewage disposal. Various sanitary fixtures, fittings and its connections. Sewage disposal to septic tank, soak pit, etc. Connection of building/campus drainage to public sewer.</p>	
<p>UNIT 3</p> <p>Electrical and Lighting System Introduction to basic principle of electricity, demand calculation and illumination requirements, understanding norms and standards, electrical distribution system, elements of building wiring system, feeders, panel boards, circuit breaker, fuses, switches etc. Understanding earthing techniques, lighting conductors, low voltage supply, electrical fitting and fixtures and specifications.</p>	
<p>UNIT 4</p> <p>Heat Ventilation and Air Conditioning Basic introduction to air changes, air ducts, heating, ventilation, AHU'S etc. Air Conditioning systems – Methods equipment's, selection criteria, fittings, fixtures, accessories and components. Fundamental principles of psychometric and heat transfer. Understanding basic principle of ducting, layout schemes and placement of air- conditioning outlets in central air conditioning system. Emerging technologies – VRV, VRF, Heat Recovery System etc.</p>	
<p>UNIT 5</p> <p>Automation Introduction to types of Elevators, Escalators and Auto-walks. Designing Elevators no. of elevators, capacity, elevator bank, etc. Design and construction of pit, well and machine rooms for elevators.</p>	

COURSE OUTCOME

- Students will be able to understand the building services applied in architecture.
- Students will be able to apply building services in architectural design.

REFERENCES

- Birdie, G. S., & Birdie, J. S. (2013). Water Supply and Sanitary Engineering (including Environmental Engineering and Pollution control Acts).

- Manual of water supply & treatment, 2nd edition, CPHEEO, Ministry of works and housing, New Delhi 1977
- Manual on sewerage and sewerage treatment, CPHEEO – Ministry of works and housing, New Delhi, 1980.
- Modern Plumbing by E. Keith Blanker baker
- Rangwala, S. C., Rangwala, K. S., & Rangwala, P. S. (1990). Water supply and sanitary engineering. Charotar.
- Ananthanarayanan, P. N. (2013). Basic refrigeration and air conditioning. New Delhi: McGraw-Hill Education (India).
- Gupta, N. C. (2016). Comprehensive HVAC system design: A handbook on practical approach to air conditioning, heating and ventilation systems. London: MV Learning.
- Matthews, J. (1993). Introduction to the design and analysis of building electrical systems. Springer Science & Business Media.
- NATIONAL BUILDING CODE OF INDIA 2015
- Sclater, N., & Traister, J. E. (2003). Handbook of electrical design details. New York: McGraw-Hill

SUBJECT CODE	YEAR: 3	SEMESTER 5	DSC	DESIGN STUDIO III	CREDITS: 6
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CONTACT PERIOD	INTERNAL ASSESSMENT MARKS(IA): 50	MARKS: 100	DURATION OF EXAM: 3hrs.
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OBJECTIVES

- To incorporate and understand Site, Contours, Natural Features and Vernacular Practices.
- To incorporate Water Supply and Sanitation Services.
- To understand Spatial Organization and Order of Spaces.

OUTLINE

All courses learnt in this semester and in all previous semesters are subservient to Design studio III course. The course shall initiate with an Educational Visit accompanied by 1 teacher per 20 students (approx.) for understanding various Architectural Theories, Spatial Organization, Contour & natural features etc. The lessons learnt from educational visit shall be submitted in form of Report and learning shall be implemented in further design problems.

The students shall be encouraged to deal with architectural theories and their evolution over time. Critical evaluation shall be promoted to trace the changing modes of thought and their reflection in architectural thinking involving Spatial Organization, Order of Spaces and Development of Forms.

There shall be two design projects (major and minor) during this course to achieve the objectives stated hereabove. This may be done through designing built-forms emphasizing on water supply and sanitation services, contour designing, etc. The suggestive design topics shall include Campus designing as a major project with options such as Institution / Wellness center/ resort/Amusement Park accompanied by a minor project with options such as Auditorium / library /cafeteria/Food court etc.

Deliverables shall be in the form of Portfolio/drawings/Models/Reports/Multi-Media Presentation, etc.

OUTCOME

- Students will get to know the types of buildings & services provided with order of spaces.

REFERENCES

- Ching, F. D. (2014). Architecture: Form, space, and order. John Wiley & Sons.
- De Chiara, J. (2001). Time-saver standards for building types. McGraw-Hill Professional Publishing.
- National Building Code (NBC), 2016, GoI.

SUBJECT CODE	YEAR: 3	SEMESTER 5	DSC	ADVANCED AUTOCAD	CREDITS: 5
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CONTACT PERIOD	INTERNAL ASSESSMENT MARKS(IA): 50	PRACTICAL MARKS: 100	DURATION OF EXAM: 3 HRS
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OBJECTIVES

- . To enable the students to understand the skill of computer aided drafting and learn about REVIT and designing methods with application of rendering software

UNIT 1 INTRODUCTION TO FUNDAMENTALS	Hrs
Concept of Key concepts of BIM – reading and manipulating the software interface -navigating with views -selection methods -the importance of levels and grids -creating walls ,doors, windows & components -working with essential modification commands & load family .Creating floors ,ceiling & stairs – working with type & instance parameters -imported cad drawings – understanding the project browser & type properties palettes -adding sheets -inserting views on sheets – adding dimension and text to mode & plotting .	
UNIT 2 ADVANCED MODELLING – FAMILY TYPES & TOPOSURFACE MODELLING	

Creating curtain walls, schedules, details, a cushion family, and family types –“flex” a family with family type & works with reference planes -creating rooms & an area plan -tag components -customize existing wall styles .create & edit a topo surface ,add site & parking components -draw label contours -work with phasing - understand groups & links -works with stacked walls & learn the basic of rendering & create a project template .	
UNIT 3 RENDERING AND MATERIAL APPLICATION	
Choosing materials for building -creating custom walls, floors & roofs, keynoting -working with mass elements, enhancing rendering with lighting, producing customized materials, using sun & shadow settings, walkthrough techniques - adding decals, working with design options & work sets & calculating energy analysis.	
UNIT 4 MODELLING SOFTWARE	
Introducing “Sketch up” software for all 3D modelling works	
UNIT 5 RENDERING SOFTWARE	
Introducing Rendering software for 3D spaces, software used: Lumion/V Ray /Enscape	

OUTCOME

- Students will learn to use computers and digital media as tools to explore, develop, evaluate and present architectural ideas.

REFERENCES

- Website and training material of relevant Image/Graphics editing software
- Learning resources on Building Information Management (BIM).

SUBJECT CODE	YEAR: 3	SEMESTER 5	DSE	LANDSCAPE DESIGN - THEORY	CREDITS: 2
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CONTACT PERIOD	INTERNAL ASSESSMENT MARKS(IA): 40	THEORY MARKS: 60	DURATION OF EXAM: 2.5HRS
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OBJECTIVES

- These subject deals with an attractive and aesthetic arrangement of the Interior & exterior spaces. It comprises the outlook of a building complementing the surroundings.
- Design philosophies and contemporary approaches to landscape architecture and design are reviewed through various landscape design projects over time

UNIT 1 INTRODUCTION TO LANDSCAPE	Hrs
Scope and Importance in Architecture and landscape as a broad terminology, Natural and Man-modified landscapes, Brief history and the growth of landscape architecture as a design and planning profession from gardens to regional landscapes, Scope and nature of professional work in contemporary landscape architecture.	
UNIT 2 RELATING ARCHITECTURE & LANDSCAPE SITE ANALYSIS & PLANNING	
Study of architectural response to landscapes and understanding the relation between architecture and landscape through case examples, Site inventory and analysis: physical, biological, social contextual studies and layers of site analysis, site suitability analysis, inferences and response for architectural interventions. Indoor & outdoor trees, shrubs, groundcover.	
UNIT 3 ELEMENTS OF LANDSCAPE	
Primary landscape elements: Plant Materials: Types, Characteristics, etc. c. Properties and use of Plant Materials. Earthworks and Surveying. Secondary landscape elements: Street furniture, landscape walls, paving, inert ground covers, trellis, outdoor shading structures, embellishments, etc. Design considerations and their role in spatial design. Landscape Structures like Trellis, gazebos fencing, pergola, arborea, etc.	
UNIT 4 PRINCIPLES OF LANDSCAPE ARCHITECTURE	
Principles and design philosophy, Exposure to Historical Landscape (India, China, Japan, English, French, etc.). Examples of contemporary landscape projects: works of Martha Schwartz , Maya lin, Peter Walker & Partners, Hargreaves Associates, Sasaaki RavindraBhan, Shaheer Associates etc.	
UNIT 5 ADVANCEMENT IN LANDSCAPE DESIGNING	
Urban future in landscape, Features & Importance of Vertical Garden, Roof Garden, Interior Garden. Advanced growing techniques – hydroponic, aquaponics, aeroponics. Demonstration of an understanding of landscape design through simple and small design exercise as studio project. Clarity in design process, detail development and representation of the landscape design scheme is to be emphasized.	

OUTCOME

- Students will learn the discipline of landscape Architecture, which will help them to advance in analytical & planning skills for projects.

REFERENCES

- Plant Identification Terminology: An Illustrated Glossary Paperback – Import, 1 January 2001 by James G.Harris
- RHS Practical House Plant Book: Choose The Best, Display Creatively, Nurture and Care, 175 Plant Profiles Hardcover – 1 March 2018

- Motloch, J. Introduction to landscape design, John Wiley & Sons, 2001.
- LaGro, J. Site Analysis: Sustainable site planning and design, John Wiley & Sons. 2013.
- Garden plants flowers & trees in india Unknown Binding – 1 January 2014 by premnanda das/rupinder & reeta khullar (author)

SUBJECT CODE	YEAR: 3	SEMESTER 5	DSE	LANDSCAPE DESIGN - PRACTICAL	CREDITS: 3
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CONTACT PERIOD	INTERNAL ASSESSMENT MARKS(IA): 25	PRACTICAL MARKS: 25	DURATION OF EXAM: 3 HRS
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UNIT 1 - Sheetwork on introduction to landscape & its various features

UNIT 2 – Understanding & drafting of detailing used in landscape works

UNIT 3 - Sheetwork on landscape designing for any given space

UNIT 4 – Study about types of garden planning

UNIT 5 – Studio work for development of certain landscape space

SUBJECT CODE	YEAR: 3	SEMESTER 5	DSE	HISTORY OF ARCHITECTURE II -THEORY	CREDITS: 2
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CONTACT PERIOD	INTERNAL ASSESSMENT MARKS(IA): 40	THEORY MARKS: 60	DURATION OF EXAM: 2.5HRS
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OBJECTIVES

- To give students the exposure to the evolving cultures, art, craft, architecture and furniture histories of different parts of the world.
- To learn impact of ages relating to historical context, design movements and ideas etc

UNIT 1 NAGARA STYLE TEMPLE ARCHITECTURE	Hrs
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<p>Philosophical principles of Nagara style temples of India (North, west India) Examples of the temples (Kandariya Mahadeo temple, Khajuraho temples) Plans & elevations, design principles followed in the temple</p>	
UNIT 2 KALINGA STYLE ARCHITECTURE	
<p>Philosophical principles of Kalinga style temples of India (East, Central India) Examples of the temples (Mukteshwar temple, Lingaraj temple ,Bhubaneshwar & Sun Konark temple) Plans & elevations, design principles followed in the temple</p>	
UNIT 3 DRAVIDIAN STYLE ARCHITECTURE	
<p>Philosophical principles of Dravidian style temples of India (South India) Examples of the temples (Brihadeshwara Temple, Thanjavur, Meenakshi Temple, Madurai, Virupaksha Temple, Hampi) Plans & elevations, design principles followed in the temple</p>	
UNIT 4 INDO ISLAMIC STYLE ARCHITECTURE	
<p>Heritage Interiors & Principles of Islamic style buildings: Evolution of culture & buildings in different regions of India with examples. Heritage and identity at different spatial scales. Examples of the building (Jama Mosque, Champaner. Teen Darwaza (Three-Gate) entrance to Ahmedabad, Shalimar Gardens, Taj Mahal,Bibi ka Maqbara,and Humayun's Tomb.</p>	
UNIT 5 JAIN & BUDDHIST ARCHITECTURE	
<p>Heritage Interiors & Principles of Jain style temples & caves (Ellora Caves (Cave No. 30-35) – Maharashtra, Hathi-gumpha Cave- Odisha, Dilwara Temple) Heritage Interiors & Principles of Buddhist style buildings like the The Chaitya hall, The Vihara and The great stupa of Sanchi ,Sarnath)</p>	
UNIT 6 COLONIAL INFLUENCE IN INDIA	
<p>Colonial style Interiors & Principles of buildings: Introduction of various colonial influences, types of colonial style: Portuguese style, French style, Indo -Saracenic, British style. Examples: Mysore palace, Pondicherry residential colonies, Victoria Memorial, Indian Parliament, President’s Residence etc.</p>	

OUTCOME

- Students will learn the history of Indian origin & famous buildings & temples which will help them to advance in conceptual & planning skills for projects.

REFERENCES

- Fletcher, B., & Cruickshank, D. (1996). Sir Banister Fletcher's a history of architecture. Oxford: Architectural Press
- Pandya, Y. (2013). Concepts of Space in Traditional Indian Architecture. Grantha Corporation.
- Brown, P. (1983). Indian Architecture (Buddhist and Hindu Period). Bombay, Taraporevala and Sons
- Hardy, A. (2007). The Temple Architecture of India. John Wiley & Sons.
- The Great Ages of World Architecture (2018-2019) session by G.K Hiraskar

SUBJECT CODE	YEAR: 3	SEMESTER 5	DSE	HISTORY OF ARCHITECTURE II -PRACTICAL		CREDITS: 3
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CONTACT PERIOD	INTERNAL ASSESSMENT MARKS(IA): 25	PRACTICAL MARKS: 25	DURATION OF EXAM: 3 HRS
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UNIT 1 – Nagara style temple - Plan & Elevation, sketches of exterior

UNIT 2 - Kalinga style temple - Plan & Elevation, sketches of exterior

UNIT 3 – Dravidian style temple - Plan & Elevation, sketches of exterior

UNIT 4 – Sheet on principles of Islamic style, plan & elevation of famous buildings & Mughal Garden

UNIT 5 – Sheet on heritage, interior & principles of Buddhist & Jain style buildings

UNIT 6 - Visit to heritage structure of given architectural style can be planned for further value addition of the course.

SUBJECT CODE	YEAR: 3	SEMESTER 6	DSC	DESIGN STUDIO IV	CREDITS: 5
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CONTACT PERIOD	INTERNAL ASSESSMENT MARKS(IA): 50	PRACTICAL MARKS: 100	DURATION OF EXAM: 3 HRS
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OBJECTIVES

- To incorporate electrical and mechanical Services.
- To incorporate acoustics and illumination.
- To promote computer aided drawings.

OUTLINE

All courses learnt in this semester and in all previous semesters are subservient to Architectural Design-IV course. The students shall be encouraged to incorporate their understanding of Spatial Organization, Building Services (Electrical and Mechanical), Acoustics, Illumination, etc. Computer aided drawings shall be promoted to improve the skills of the students.

There shall be two design problems (major and minor) during this course to achieve the objectives stated hereabove. This may be done through designing the built forms emphasizing on electrical and mechanical services, acoustics and illumination, etc.

The suggestive design topics shall include Urban Insert as a major project having options such as shopping mall/transit hub /hospital/co work space/star rated hotel accompanied by a minor project (Interior detailing) with options such as reception lobby/ Suite room/waiting area etc. or (exterior detailing) with options such as Roof structure /Façade designing etc.

The deliverables shall be in form of Portfolio/drawings/Models/Reports/Multi-Media Presentation, etc

OUTCOME

- Students will get to know the types of buildings & services provided with order of spaces.

REFERENCES

- .Greeno, R. (2007). Building services handbook. London: Butterworth-Heinemann.
- Indian Standard Code of Practice for Acoustical Design of Auditoriums and Conference Halls (Ninth Ed.). (December 1998). Manak Bhavan, 9 Bahadur Shah Zafar Marg New Delhi 110002: Bureau of Indian Standards.
- National Building Code (NBC), 2016, GoI.

SUBJECT CODE	YEAR: 3	SEMESTER 6	DSC	WORKING DRAWING	CREDITS: 5	
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CONTACT PERIOD	INTERNAL ASSESSMENT MARKS(IA): 50	PRACTICAL MARKS: 100	DURATION OF EXAM: 3 HRS
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OBJECTIVES

- The course prepares students to generate technical presentation of working drawings Design at built form level & finishing level
- Coordination between Architectural, Structural, Services and other disciplines; Preparation of Architectural Working Drawings for a design project.

UNIT 1 INTRODUCTION TO WORKING DRAWING	Hrs
<p>Introduction: Overview of Working Drawings; consultants involved in preparation of working drawings, their role and scope.</p> <p>Drafting Conventions: Representation of materials, graphic symbols, line type conventions, grid lines, lettering, color codes, paper sizes, title blocks, office practices, standardization of details.</p> <p>Any small-scale architectural Design project such as Bungalow, Farmhouse, 3 BHK, etc. from previous semester, shall be taken up which includes their site plan, floor plans, sections, elevations.</p>	
UNIT 2 STRUCTURAL DRAWING	
Good for Construction (GFC) drawings for sub-structure and super-structure should incorporate details for Foundations, Columns, Beams, Slabs, etc. - Column layout, center line method, footing drawing, plinth beam drawing, lintel drawing, beam & Slab layout for all floors	
UNIT 3 SITE PLAN AND SET OUT PLAN	
Preparation of plans – Detailed site plan, Marking plan, Interior working drawing or setout plan at all levels & terrace plan.	
UNIT 4 BUILDING SECTIONS AND ELEVATIONS	
Sections and Elevations–Two Detailed cross sections passing through staircase & lift shaft, detailed elevations of all sides of the building with the required dimensions and specifications. Detailing of specific elevation element/feature (if any). Detailed plan & section of staircase & compound wall	
UNIT 5 SERVICES AND DETAILINGS	
Flooring layout, RCP layout (False ceiling & lighting), electrical layout, plumbing layout, toilet details, kitchen details, Door & windows detail drawing with schedule.	

OUTCOME

Students will be imparted skills related to the preparation of working drawings meant for execution on the site.

REFERENCE BOOKS

- Joe, B. (Ed). (2002). Details in Architecture: Vol. I-V. Victoria: The Images Publishing group.
- RIBA Working Drawings Handbook, Keith Styles, 2014,1893 (Part 1).
- Weston, R. (2004). Plans Sections Elevations – Key buildings of the twentieth century. London: Laurence King Publishing.

SUBJECT CODE	YEAR: 3	SEMESTER 6	DSE	STRUCTURES II -THEORY	CREDITS: 2
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CONTACT PERIOD	INTERNAL ASSESSMENT MARKS(IA): 40	THEORY MARKS: 60	DURATION OF EXAM: 2.5 HRS
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OBJECTIVES

- To study structures based on redundancy and indeterminacy.
- To outline the behavior of structural elements in buildings
- To understand the various methods used in the structural analyses.

UNIT 1 INTRODUCTION TO BEAM, COLOUMN & ITS PROPERTIES	Hrs
Beam – Types& properties, sign convention, moment area method, Deformation of beam, Centroid and Centre of Gravity, Moment of Inertia, Theorems of M.I. of Parallel and Perpendicular axes, Columns - Theory of columns, Types of end conditions, Equivalent length, Axial loads, Combined bending and axial loads, Indian Standard Code recommendations. Deflection of Beam	
UNIT 2 ARCHES & CABLES	
Three hinged circular & parabolic arches with supports at the same & different levels; determination of normal thrust, radial shear and bending moments; analysis of cables under point load and UDL; length of cables with supports at the same and different levels; stiffening trusses for suspension cables.	
UNIT 3 LOAD BEARING STRUCTURES	
Basic terminology, Design considerations, Scope, Materials, Supports and Stability. Effective dimension of wall, column, foundation and openings, Eccentricity and Slenderness ratio	

UNIT 4 FRAMED STRUCTURES	
Design consideration for barrel roof & folded plates. saddle roof, complex roof, shell and Dome Structure and Tensile Structure, etc.	
UNIT 5 TRUSS STRUCTURES	
Statically determinate plane trusses, Perfect and Imperfect frames, Deficient and Redundant frames. Analytical methods for finding out the forces, Method of joints and Method of sections, Deflection of Truss joints. Introduction about Tubular Structure, Portal Frames, Light Gauge Structures, etc.	

OUTCOME

- The students will get the knowledge about basic systems of structures and structural elements, column, arches & their applications.

REFERENCE BOOKS

- Duggal, S. K. (2000). Design of steel structures. Tata McGraw-Hill Education. ii. Negi, L. S. (1997). 2.Design of steel structures. Tata McGraw-Hill Education.
- Punmia, B. C., Jain, A. K., & Jain, A. K. (1998). Comprehensive design of steel structures. Firewall Media.
- Ramchandra, S., & Gehlot, V. (2007). Design of Steel Structures Vol. II. Standard Book House
- Standard, B. I. (2007). General construction in steel-code of practice. 3rd Revision, Bureau of Indian Standard, New Delhi, India, IS, 800-2007

SUBJECT CODE	YEAR: 3	SEMESTER 6	DSE	STRUCTURES II - PRACTICAL		CREDITS: 3
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CONTACT PERIOD	INTERNAL ASSESSMENT MARKS(IA): 25	PRACTICAL MARKS: 25	DURATION OF EXAM: 3 HRS
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UNIT 1 - Slope & deflection – Find slope & deflection for different kind of beams

UNIT 2 – Columns – Find slenderness ratio for short & long column with length of column

UNIT 3 - Portal frames - To find out Indeterminacy -static & kinematic for the portal frames

UNIT 4 – Truss structure – Finding out unknown forces or reaction by method of joint & sections

SUBJECT CODE	YEAR: 3	SEMESTER 6	DSE	BUILDING MATERIAL & DETAILING II - THEORY	CREDITS: 2
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CONTACT PERIOD	INTERNAL ASSESSMENT MARKS(IA): 40	THEORY MARKS: 60	DURATION OF EXAM: 2.5 HRS
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OBJECTIVES

- Students will learn about fundamentals of building materials and their properties, application, components, fixing details and their construction techniques.
- The primary focus is on various building materials, latest trends in practice and usage of new technology/ materials.

UNIT 1 DOOR AND WINDOWS	Hrs
Introduction to door and window with their types (rolling shutter, swing doors, pivoted,collapsible,revolving , shutters, frames and components, joinery details, fitting and fixtures. Introduction to louvres, ventilators and fan light. Veneered, UPVC, Fiberglass, hollow core doors etc. Types – revolving, glazed, louvered doors	
UNIT 2 METAL, GLASS & PVC AS BUILDING MATERIAL	
Introduction to Glass, Metal, P.V.C., Steel, Composite etc. their types, properties, uses (Door, Window, Glazing), Fixing detail etc. PVC as material – pipes, structures etc.	
UNIT 3 – ROOFING AND FLOORING	
Roofing – Introduction to roofing system, their types, properties, cross- section and reinforcement construction techniques etc, Complex slab – Flat Slab, Coffered Slab, Sunken Slab, Cantilever Slab etc. Waterproofing, Truss – Types of trusses, uses, joinery, detail etc. Purlin, Gutter, Rafters, Ridge, Eve, Covering material (Tile, Slate etc.) Flooring – Introduction to types of flooring, properties, cross- section, construction techniques etc. Granite, vinyl, concrete, engineered wood, cork floor etc.	
UNIT-4 WALL TREATMENT AND PANELING	
Introduction to wall treatment and paneling based on various building materials glass, aluminum, composite etc. Their components and finishes. Wall cladding materials – types based on various materials glass, aluminum, composite material etc. Curtain wall – Types, uses, components, fixing detail etc.	

UNIT-5 STAIRCASE	
Introduction to types of staircases, components of staircase use, waist slab, stringer, tread and riser, nosing, rise and going, cross-section, detail and fixtures. Spiral, bifurcated, winder, bent metal staircase	

OUTCOME

- The course focuses on elements of building such as door, window wall treatment and staircase. Other associated building materials, with fixing details, required to explain the topics should be incorporated for comprehensive understanding.
- Emphasis should be given to on-site construction practices through measure drawings.

REFERENCE

- Barry, R (1999). The Construction of Buildings Vol.2 5th Ed. New Delhi: East – West Press.
- Foster, J. and Mitchell, S. (1963). Building Construction: Elementary and Advanced, 17th Ed. London: B.T. Batsford Ltd.
- McKay, W.B. (2005). Building Construction Metric Vol, I-IV, 4th Ed. Mumbai: Orient Longman.
- Rangwala, S.C., (2019). Building Construction 33rd Ed. Anand: Charotar Publishing House Pvt. Ltd.
- Sushil – Kumar, T.B. (2003) Building Construction 19th Ed. Delhi: Standard Publications.
- Punmia, B.C. and Jain, A.K. (2016). Building Construction. 11th Ed. New Delhi: Laxmi Publications.

SUBJECT CODE	YEAR: 3	SEMESTER 6	DSE	BUILDING MATERIAL & DETAILING II - PRACTICAL		CREDITS: 3
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CONTACT PERIOD	INTERNAL ASSESSMENT MARKS(IA): 25	PRACTICAL MARKS: 25	DURATION OF EXAM: 3 HRS
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UNIT 1 - Drafting different types of doors with all the necessary details (any 4)

UNIT 2 - Drafting different types of windows with all the necessary details (any 4)

UNIT 3 – Case study about different metal & PVC components

UNIT 4 – Drafting of types of roofing & study on flooring varieties

UNIT 5 – Detailing of curtain walls, paneling & finishes

UNIT 6 - Drafting different types of staircases with all the necessary details

SUBJECT CODE	YEAR: 4	SEMESTER 7	DSC	CLIMATE RESPONSIVE ARCHITECTURE - THEORY	CREDITS: 3
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CONTACT PERIOD	INTERNAL ASSESSMENT MARKS(IA): 40	THEORY MARKS: 60	DURATION OF EXAM: 2.5 HRS
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OBJECTIVES

- To develop the knowledge required for understanding the influence of Climate on architecture including the environmental processes which affect buildings, such as thermal, lighting, etc.
- It teaches them how to design in response to the climatic conditions and environment.

UNIT 1 INTRODUCTION TO CLIMATE	Hrs
The Climate-built form interaction; some examples, Elements of climate, measurement and representations of climatic data. Classifications and Characteristics of tropical climates, Major climatic zones of India, Site Climate: Effect of landscape elements on site/micro climate.	
UNIT 2 THERMAL COMFORT	
Thermal balance of the human body, Thermal Comfort Indices (Effective temperature, corrected effective temperature, bioclimatic chart). Measuring indoor air movement: Kata-thermometer, and measuring indoor radiation: Globe thermometer. Sun path & design for orientation and use of solar charts in climatic design.	
UNIT 3 – THERMAL HEAT GAIN OR LOSS	
Calculation of Overheated and Under heated period (based on air temperature only) for locations in Climatic zones and their optimization in terms of solar heating and Passive cooling desired, Effect of thermo-physical properties of building materials and elements on indoor thermal environment. Convection, Radiation, concept of Sol-air temperature and Solar Gain factor, Steady state and periodic heat flow concepts, Conductivity, resistivity, diffusivity, thermal capacity, time lag and 'U' value.	
UNIT 4 THERMAL PERFORMANCE OF BUILDING ELEMENTS	
Construction techniques for improving thermal performance of walls and roofs. (Effect of density, Insulation, and Cavity).	

UNIT 5 CLIMATIC DESIGN CONSIDERATIONS	
<p>Shading devices: Optimizing Design of Shading devices effective for overheated periods while allowing solar radiation for under heated periods for different wall orientations.</p> <p>Natural ventilation: Functions of natural ventilation, Stack effect due to thermal force and wind velocity. Air movements around buildings, Design considerations and effects of openings and external features on internal air flow and Wind shadows.</p> <p>Day Lighting: Nature of natural light, its transmission, reflection, diffusion, glare. Advantages and limitations in different climatic zones, North light, Daylight factor, components of Daylight devices.</p>	

OUTCOME

- This course helps the students to envision their projects with a compass vision.
- To incorporate their simulations of the nature in harmony with their projects.

REFERENCE

- Koenigsberger, Manual of Tropical Housing & Buildings (Part-II), Orient Longman, Bombay, 1996.
- Donald Watson and Kenneth Labs; Climatic Building Design - Energy-Efficient Building Principles and Practice; McGraw-Hill Book Company, 1983.
- Energy Conservation Building Code (ECBC) 2007; Bureau of Energy Efficiency, Ministry of Power, Government of India.
- Mili Majumdar (Editor); Energy Efficient Buildings in India; The Energy and Resources Institute, TERI (28 February 2009)

SUBJECT CODE	YEAR: 4	SEMESTER 7	DSC	CLIMATE RESPONSIVE ARCHITECTURE - PRACTICAL	CREDITS: 2
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CONTACT PERIOD	INTERNAL ASSESSMENT MARKS(IA): 40	PRACTICAL MARKS: 60	DURATION OF EXAM: 3 HRS
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UNIT 1 INTRODUCTION TO CLIMATE

Assignments on examples of climate-built forms interaction and different climate zones

UNIT 2 THERMAL COMFORT

Assignment on using Sun path & design for orientation and use of solar charts in climatic design.

UNIT 3 THERMAL HEAT GAIN OR LOSS

Study of worlds summits to safeguard the environment like Climate Change Commission, Kyoto Protocol, etc.

National and international examples and awareness programs.

UNIT 4 THERMAL PERFORMANCE OF BUILDING ELEMENTS

Assignment /study/case study on different devices and provisions for thermal control of buildings

UNIT 5 CLIMATIC DESIGN CONSIDERATIONS

Literature study of relevant traditional and contemporary building examples.

Two Indian case studies and one international for each climatic zone

SUBJECT CODE	YEAR: 4	SEMESTER 7	DSC	ESTIMATION AND VALUATION - THEORY	CREDITS: 3
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CONTACT PERIOD	INTERNAL ASSESSMENT MARKS(IA): 40	THEORY MARKS: 60	DURATION OF EXAM: 2.5HRS
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OBJECTIVES

- This course deals with working out the different methods of making estimates for construction of a building with all specifications.
- It covers working out quantities of different materials and their costs to prepare an estimate of the project before execution.

UNIT 1 SPECIFICATIONS	Hrs
Definition, importance, and types. Use of Indian standard specification handbooks like PWD, CPWD, etc., Methods of specification writing and its influence on cost, Writing Standard clauses and instructions.	
UNIT 2 RATE ANALYSIS AND COSTING	
Introduction to Schedule of Rates and Market Rates. Rate analysis, overhead costs, cost of materials and labor for various items of work, measurement of work for interim and final certificates for payment to contractors, Preparing BOQs	
UNIT 3 ESTIMATION	

Terminologies and types, Methods of Estimation, Calculations for basic building materials like Concrete works, Brick works, Earthworks, etc., Quantity Surveying for various items.	
UNIT 4 REPORTS & TENDERS	
Estimation Reports, Administrative Approval, Expenditure Sanction, Technical sanction, Competent authority, etc., Issue rates, Payment on accounts, Suspense account, Security Deposit, Earnest Money Deposit, Performance Guarantee, Muster Roll, Measurement Book, etc.	
UNIT 5 VALUATION	
Terminologies and Types, Gross income, Net income, Depreciation Value, Capitalized value, Scrap Value, Salvage value, etc., Methods of Valuation and Valuation Reports, Rent Fixation, Mortgage, Lease, etc.	

OUTCOME

This course helps the students to understand the importance of cost in the project and to learn the technical language of writing an estimate.

REFERENCE

- Chakraborti, M. (1987). Estimating, Costing and Specification in Civil Engineering.
- Dutta, B. N., & Dutta, S. (1991). Estimating and Costing in Civil Engineering: Theory and Practice: including Specifications and Valuation. UBS.
- Rangwala, C. (2015). Estimating, Costing and Valuation.
- Singh, G. (2002). Estimating Costing and Valuation. Delhi: Standard Distributors.

SUBJECT CODE	YEAR: 4	SEMESTER 7	DSC	ESTIMATION AND VALUATION - PRACTICAL	CREDITS: 2
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CONTACT PERIOD	INTERNAL ASSESSMENT MARKS(IA): 40	PRACTICAL MARKS: 60	DURATION OF EXAM: 3 HRS
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UNIT 1 - Write specifications for a building (civil works -Foundation, RCC, brick works)

UNIT 2 – Prepare rate analysis for civil works for residence

UNIT 3 – Preparation of estimation of any 1 area Bed Room/Kitchen/Living/Bath

UNIT 4 – Preparation of estimation for the complete project (residential /commercial)

SUBJECT CODE	YEAR: 4	SEMESTER 7	DSE	DISASTER RESISTANT ARCHITECTURE - THEORY	CREDITS: 3
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CONTACT PERIOD	INTERNAL ASSESSMENT MARKS(IA): 40	THEORY MARKS: 60	DURATION OF EXAM: 3 HRS
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OBJECTIVES

- To make students able to prepare and equip the students in disaster preparedness, mitigation, and management.
- It helps students to develop the skills for building disaster resistant buildings

UNIT 1 INTRODUCTION	Hrs
Definition of disaster, hazard, risk, and vulnerability, Types of disaster, indicators, and related definitions, Disaster profile of India.	
UNIT 2 - UNDERSTANDING DISASTER MANAGEMENT	
Disaster management in phases (pre, during and post), Concerned authorities and stakeholders of the disaster management process, Preparedness and mitigation measures for various disasters, Post disaster relief & logistics management.	
UNIT 3 - DISASTER MANAGEMENT PLANS	
Disaster mapping and identifying the hazards and vulnerabilities, Introduction to various disaster management plans laid down by concerned ministries/ departments/organizations, Predictions, early warnings and safety measures of disaster, role of information technology, education communication, and training, role of government, etc.	
UNIT-4: DISASTER MANAGEMENT (PRE-DISASTER)	
Building safety standards for hazards, Design aspects and considerations for various types of buildings, Disaster resistant construction and their case studies.	
UNIT-5: DISASTER MANAGEMENT (POST DISASTER)	
Damage Assessment, Transitional Shelters and Fast Construction Techniques, Rehabilitation, Reconstruction and Recovery.	

OUTCOME

The course intent is the students to design spaces to mitigate disaster and much resistant to any damage

REFERENCE

- Bhandari, R. K. (2006). Disaster Management in India: A New Awakening. Disaster and Development, 1(1), 1-26.
- Collins, L. R. (2000). Disaster management and preparedness. CRC Press.

SUBJECT CODE	YEAR: 4	SEMESTER 7	DSE	INTERNSHIP	CREDITS: 6
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CONTACT PERIOD	INTERNAL ASSESSMENT MARKS(IA): 50	PRACTICAL MARKS: 150	DURATION OF EXAM: 3 HRS
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OBJECTIVES

- To expose the students to the world of professional industrial practice.
- To acquaint students with the knowledge of various domains of Architectural work & site visits.

OUTLINE

- The training should be under the guidance of any experienced Architect, registered with Council of Architecture, India. This training can also be undertaken in an organization involved in profession of Architecture provided that the training should be imparted by any experienced Architect registered with Council of Architecture, India.
- The students are expected to learn about the Architectural Design Process, Office Management, Site Visits, Contract Management, Construction Materials and Techniques, Advance Building Services, etc.
- The works may include working details, quantity survey, and any special work done during the training period. The students should also acquaint themselves with site supervision and practices including checking site measurements, preparation of bills, site instructions, checking of executed works etc.
- The student shall make a midterm and final presentation of the activities undertaken during the first 6 weeks and at the end of 12th week of internship respectively, to a panel comprising internship guide, a senior faculty from the department and head of the department. Each student should submit the internship report at the end of semester with internship certificate.
- Viva-Voce examination shall be conducted by a panel of examiners consisting of internship supervisor from industry or industry professional approved by university and internship guide from the institute. The students will present the following at the time of viva-voce examination:

- 1.Filled log sheet duly signed by the Office-Bearer
- 2.Training Certificate.
- 3.Confidential Report from the Trainer.
- 4.Copies of works done by the student during the training period.

- The College shall facilitate and monitor the student internship program.
- The internship should be completed during vacation after VI and VII semesters.

SUBJECT CODE	YEAR: 4	SEMESTER 8	DSC	SUSTAINABILTY & GREEN ARCHITECTURE - THEORY	CREDITS: 3
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CONTACT PERIOD	INTERNAL ASSESSMENT MARKS(IA): 40	THEORY MARKS: 60	DURATION OF EXAM: 2.5 HRS
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OBJECTIVES

- Student will get the knowledge and skills to develop sustainable cities and communities with the concept of green building design.

UNIT 1 INTRODUCTION TO SUSTAINABILTY & ITS PRACTICES	Hrs
Ideas, Issues, and Concepts of Sustainability in Architecture, Climate and Shelter, Sustainability Measures in Historic and Traditional Buildings	
UNIT 2 STUDY OF SUSTAINABLE PRACTICES	
Introduction to Solar Passive, Solar Active and Hybrid Techniques, Water Management, Landscape, Solid Waste Management, etc., Sustainable Materials and Design Guidelines for Different Climatic Zones.	
UNIT 3 ANALYSIS FOR SUSTAINABLE & ENERGY EFFICIENCY	
Factors to study: Building Envelopes, Light and Ventilation, Thermal Comfort, etc.	
UNIT 4 INTRODUCTION TO GREEN BUILDING & CERTIFICATION	
Concept and necessity of green building, Introduction to Certification, ECBC, Fire Certification, etc., Universal Design, Social Responsiveness, etc.	
UNIT 5 INDIAN & INTERNATIONAL GREEN BUILDING SYSTEM	
Indian green building rating system: Government Rating Systems like GRIHA, BEE, etc., Private Rating Systems like IGBC, LEED-India, etc.	

International Green Building Rating Systems: International Green Construction Code., Building Research Establishment Environmental Assessment Method (BREEAM). , Building Owners and Managers' Association (BOMA-360), WELL, etc.	
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OUTCOME

This course imparts the knowledge and skills to develop sustainable cities and communities.

REFERENCE

- 1.MNRE, T. (2010). GRIHA Manual, Volume 1: Introduction to National Rating System-GRIHA, An E-valuation Tool to Help Design, Build, Operate, and Maintain a Resource-efficient Built Environment. New Delhi, India.
- 2.Reeder, L. (2010). Guide to green building rating systems: understanding LEED, Green Globes, Energy Star, the National Green Building Standard, and more (Vol. 12). John Wiley & Sons.
- 3.Steinfeld, E., & Maisel, J. (2012). Universal design: Creating inclusive environments. John Wiley & Sons.
4. Yudelson, J. (2009). Green Building Through Integrated Design (Green Source Books). McGraw-Hill Education

SUBJECT CODE	YEAR: 4	SEMESTER 8	DSC	SUSTAINABILTY & GREEN ARCHITECTURE -PRACTICAL	CREDITS: 2
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CONTACT PERIOD	INTERNAL ASSESSMENT MARKS(IA): 25	PRACTICAL MARKS: 25	DURATION OF EXAM: 3 HRS
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UNIT 1 - Assignment on issues and sustainable practices followed in buildings.

UNIT 2 – Analyze an envelope of building for energy efficiency.

UNIT 3 - Design of a small building with an objective to integrate categories of green building rating.

UNIT 4 – Case study assignment for a green building.

SUBJECT CODE	YEAR: 4	SEMESTER 8	DSE	PROFESSIONAL PRACTICE & PROJECT MANAGEMENT - THEORY	CREDITS: 5
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CONTACT PERIOD	INTERNAL ASSESSMENT MARKS(IA): 40	THEORY MARKS: 60	DURATION OF EXAM: 3 HRS
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OBJECTIVES

- To make students able to understand the project process in construction and being able to manage large scale projects.
- It helps students to understand the legalities involved in Architectural Profession and to develop professionalism, integrity, and competency and learn the process of Tenders and Contracts.

UNIT 1 ARCHITECTURAL PROFESSION & ETHICS	Hrs
Ideas, Issues, and Concepts of Sustainability in Architecture, Climate and Shelter, Sustainability Measures in Historic and Traditional Buildings	
UNIT 2 UNIT 2 CONTRACTS AND TENDERS	
Introduction to Solar Passive, Solar Active and Hybrid Techniques, Water Management, Landscape, Solid Waste Management, etc., Sustainable Materials and Design Guidelines for Different Climatic Zones.	
UNIT 3 LEGAL PROCEDURE & LEGISLATION	
Articles of Agreement, Execution of Works, and Schedule of Payments, The Arbitration and Conciliation Act, 1996 with Amendments, Right of Easements- The Indian Act of Easements 1882 with Amendments.	
UNIT 4: INTRODUCTION TO PROJECT & CONSTRUCTION MANAGEMENT	
Terminologies, Objectives, Goals and Different Aspects of Management, Concepts (Traditional Management and Modern Management), Project Programming, Resource Balancing, Phasing of Activities, etc., Project Control, Reviewing, Updating and Monitoring. Contractual Relationships and Types of Contracts, Conditions of Contracts, Project Assessment and Project Cost Jobs Size.	
UNIT 5 : PROJECT SCHEDULING AND MONITORING	
Introduction to Operation Management, Time Estimates, Project Scheduling through Gantt's Chart, Bar Chart, Network Analysis, etc., Critical Path Method (CPM) and Optimization. Project Evaluation and Review Technique (PERT), Three Time Estimates, Probability of Completion of Projects, Project Reports, Progress Reports, Construction Financing Facilities, etc.	

OUTCOME

Students will learn to design according to bye-laws and deal with professional codes of conduct and ethics in architecture and preparation of schedule of charts for time and budget, to execute the project timely.

REFERENCE

- Chitkara, K. K. (2011). Construction Project Management-Planning, Scheduling and Controlling, Tata McGraw Hills.
- Loosemore, M. (2003). Essentials of construction project management, UNSW Press.
- Shrivastava, U. K. (2000). Construction Planning and Management
- Apte, V. S. (2008). Architectural Practice and Procedure. Pune: Padmaja Bhide.
- COA. (2020). Handbook of Professional Documents. Council of Architecture.
- Namavati, R. (1984). Professional practice. Mumbai: Lakhani Book Depot

SUBJECT CODE	YEAR: 4	SEMESTER 8	CC	RESEARCH PROJECT	CREDITS: 6
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CONTACT PERIOD	INTERNAL ASSESSMENT MARKS(IA): 100	PRACTICAL MARKS: 200	DURATION OF EXAM: 3 HRS
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OBJECTIVES

- To demonstrate design and/or research abilities through the knowledge acquired in the entire program.

OUTLINE

The students are expected to demonstrate their Design/Research abilities through an Architectural Thesis Project. The Design/Research development may be based on a certain 'theme' as the primary focus of study. The thesis project shall be done and assessed as per the 'Thesis Manual' prepared by the Department from time to time.

The process for Design Thesis, Project will include – Description, Case Study, Site Study- Analysis and Inferences, Development of specific Design Guidelines, Design Program and Area Requirements, Conceptual Development, Design Development, Final Design, Presentation, etc.

For Research/Study Thesis, it would be an in-depth analysis of various facets of architectural design and built environment. It may include system development, critique of design and trends in building industry, application of various new technologies, best practices, sustainable development, heritage management and conservation, etc.

REFERENCE

1. Bloomberg, L. D., & Volpe, M. (2018). Completing your qualitative dissertation: A road map from beginning to end.
2. Boote, D. N., & Beile, P. (2005). Scholars before researchers: On the centrality of the dissertation literature review in research preparation. Educational researcher, 34(6), 3-15.
3. Herr, K., & Anderson, G. L. (2014). The action research dissertation: A guide for students and faculty. Sage publications.
4. Rudestam, K. E., & Newton, R. R. (2014). Surviving your dissertation: A comprehensive guide to content and process

SUBJECT CODE	YEAR: 1 & 2	SEMESTER 1, 2,3,4,	OE	SOCIAL IMPACT OF ARCHITECTURE	CREDITS: 3
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CONTACT PERIOD	INTERNAL ASSESMENT MARKS(IA): 40	THEORY MARKS: 60	DURATION OF EXAM: 3 HRS
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OBJECTIVES

- To impart students' knowledge about importance of historical buildings
- To understand different materials used during different Eras
- To understand the implementation in contemporary buildings

UNIT 1 INTRODUCTION & DEVELOPMENT OF ARCHITECTURE	Hrs
Introduction to architecture spaces, need for designing spaces & houses, dwellings found in historical times, evolution of buildings from prehistoric times – caves, huts, stone walls etc.	
UNIT 2 ARCHITECTURE OF ANCIENT CIVILIZATION	
Introducing buildings & housing from prehistoric times, concept of planning of spaces, building examples of the following Era : Indus civilization dwellings, Roman ,Greek ,Sumerian ,Egyptian ,Mesopotamian etc. , materials & techniques used in the construction	
UNIT 3 RELIGIOUS INFLUENCES	

Built form of religious buildings like churches, Mosque, temples, concepts used in structure designing of the buildings, façade treatment, support structures, ceilings planning. Examples: Hagia Sophia, Notre-Dame de-Paris, colosseum	
UNIT 4 IMPACT OF INDUSTRIAL REVOLUTION	
Introduction of new building materials as cast iron, steel, and glass Examples: The house of parliament, London , The crystal palace, London , The Eiffel tower, Paris	
UNIT 5 SOCIAL & CULTURAL IMPACT	
Interrelationship from society , culture & architecture ,concepts taken from the ancient buildings , how to implement in contemporary buildings	

OUTCOME

- Students will be able to understand importance of historical buildings & their evolvement during time.

REFERENCES

- Brown, P. (1983). Indian Architecture (Buddhist and Hindu Period). Bombay, Taraporevala and Sons.
- Fletcher, B., & Cruickshank, D. (1996). Sir Banister Fletcher's a history of architecture. Oxford: Architectural Press.
- Robertson, D. S. (1969). Greek and Roman architecture. London, Cambridge University Press.

SUBJECT CODE	YEAR: 1 & 2	SEMESTER 1, 2,3,4,	OE	MATERIALS AND APPLICATIONS	CREDITS: 3
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CONTACT PERIOD	INTERNAL ASSESSMENT MARKS(IA): 40	THEORY MARKS: 60	DURATION OF EXAM: 2.5HRS
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OBJECTIVES

- The course will help students to have a better understanding of materials used in construction.
- The subject will also deal with application of material as well.

UNIT 1 – MATERIAL USED IN CONSTRUCTION	Hrs
Introduction to materials used in construction like stone, brick, R.C.C., aggregate. Their application in construction. Along with advance building materials.	
UNIT 2 – FENESTRATION	
Introduction to fenestration, types of fenestrations (Door, Window) along with elements and fixtures. Materials used for the construction of door and window like wood, metal, PVC. Etc.	
UNIT 3 – FLOOR TREATMENT	

Introduction to flooring material like tiles, carpet, stone available in the market and its application.	
UNIT 4 – WALL TREATMENT	
Introduction to wall treatments like wallpaper, paint, wall cladding materials available in the market and its application.	
UNIT 5 – STAIRCASE	
Introduction to staircase, importance of staircase, elements of staircase, and types of staircases in terms of materials and styles.	

OUTCOME

- Students will be aware of materials through case study and material study.
- Students will get knowledge about the application of different construction materials.

REFERENCE

- Barry, R (1999). The Construction of Buildings Vol.2 5th Ed. New Delhi: East – West Press.
- Foster, J. and Mitchell, S. (1963). Building Construction: Elementary and Advanced, 17th Ed. London: B.T. Batsford Ltd.
- McKay, W.B. (2005). Building Construction Metric Vol, I-IV, 4th Ed. Mumbai: Orient Longman.
- Rangwala, S.C., (2019). Building Construction 33rd Ed. Anand: Charotar Publishing House Pvt. Ltd.

SUBJECT CODE	YEAR: 1 & 2	SEMESTER 1, 2,3,4,	OE	PROCESS OF SPATIAL PLANNING	CREDITS: 3
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CONTACT PERIOD	INTERNAL ASSESMENT MARKS(IA): 40	THEORY MARKS: 60	DURATION OF EXAM: 3 HRS
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OBJECTIVES

- To develop the ability of students to use design in a given pattern, follow principles & basic norms

UNIT 1 INTRODUCTION TO DESIGN PROGRAM	Hrs
Introduction to design program, evaluating & analyzing the space space design, client brief & requirements	
UNIT 2 CONCEPT CREATION & DATA COLLECTION	
Introducing Concept building, mood board analysis, typical plan sketches, relationship diagram, bubble diagram, parti diagrams etc.	

data collection, analysis, synthesis - zonal and block diagram, adjacency matrix, stacking	
UNIT 3 INTRODUCTION TO SPACE DEVELOPMENT	
Introduction to space development, building conceptual concepts, present preliminaries, develop final plan, present final plan	
UNIT 4 DRAWINGS DEVELOPMENT	
Introduction to Presentation drawings & working drawings: layout plan, construction plans, flooring & electrical plans Basics of Elevational treatments & sections of spaces	
UNIT 5 COLLABORATING WITH CONSULTANTS	
Introduction to types of consultants - Acoustical consultant, lighting consultant, plumbing consultant, special consultant based on project needs, rain water harvesting, solar, green building, landscaping, terrace gardening. Developing time in schedule based on inputs by consultant	

COURSE OUTCOME

- Students will be able to understand the concept of designing & execution of drawings

REFERENCES

- Ernst and Peter Neufert, “Neufert Architect’s Data”, Wiley Blackwell Publication, United Kingdom, 2012 ISBN:9781 4051 9253 8
- Joseph De Chiara, Michael J Crosbie, “Time Savers Standards for Building Types”
- Joseph De Chiara, Julius Panero, “Standards for Interior Design and Space Planning”, McGrawHill Professional,

SUBJECT CODE	YEAR: 2	SEMESTER 3	OE 3	HOME INTERIORS	CREDITS: .3
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CONTACT PERIOD	INTERNAL ASSESSMENT MARKS(IA): 40	THEORY MARKS: 60	DURATION OF EXAM: 2.5HRS
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OBJECTIVES

- To give basic knowledge about interior design and accessories involved in interior designing.
- To make the students aware about different types of furnishings available with their applications.

UNIT 1 – ACCESSORIES	Hrs
Introduction to accessories, types, importance and its application in interiors. Wall hangings, lamps shades, vases, clocks, mirrors, display items, showpieces etc. Accessories on the basis of materials and different cultural origins.	
UNIT 2 – FURNISHINGS	
Introduction to Furnishing, types, importance and its application in Interior Design. Types including hard and soft furnishing. Factors to consider while furnishing a space.	
UNIT 3 – INDOOR LANDSCAPING	
Introduction to landscaping, advantages, factors to be considered for interior landscaping, evolution of interior landscaping. Types of indoor plants, function of indoor plants, classification of plants. Description of plants, pruning of plants, physiological effects of plants.	
UNIT 4 – FURNITURE	
Introduction to furniture used in interiors, furniture through ages, material used for making furniture, types of joinery used in making furniture.	
UNIT 5 – INTERIOR WALL TREATMENT	
Introduction to wall treatment (paneling, partition, wallpaper, paint etc.) and its importance, understanding types of wall treatment and its applications.	

OUTCOME

- Students will be able to identify materials available and their application
- Students will understand the importance of indoor landscapes.

REFERENCE

- Pile, John.F, “Interior Design”, Pearson; 4 edition (2007)
- Ching, Francis D.K., “Interior Design Illustrated”, John Wiley & Sons; 3 edition (2012)
- Panero, Julius and Zelnik, Martin, “Human Dimension and Interior Space: A Source Book of Design Reference Standards”, Watson-Guptill; New edition (1979)
- DeChiara, Joseph, Panero, Julius and Zelnik, Martin “Time Saver’s Standards for Interior Design”, McGraw-Hill Professional (2001)

SUBJECT CODE	YEAR: 1&2	SEMESTER 1,2,3,4	OE	BASIC BUILDING SYSTEM & SERVICES	CREDITS: .3
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CONTACT PERIOD	INTERNAL ASSESSMENT MARKS(IA): 40	THEORY MARKS: 60	DURATION OF EXAM: 2.5HRS
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OBJECTIVES

- To give the basic understanding to the students about building services involved in design.
- To understand need and importance of water supply, plumbing, lighting along with services & drawings of HVAC & firefighting involved in a building.

UNIT 1 WATER SUPPLY AND DISTRIBUTION	Hrs
Introduction to Sources of water, Supply & Quality of potable water. Water treatment for domestic purpose, etc. Rain water harvesting system, Recycling of water, etc. Storage : water, overhead tank, sump, etc. Introduction to water distribution systems. Water supply pipe materials, apparatus, joints, fixtures and valves., etc.	
UNIT 2 – PLUMBING & SANITARY FIXTURES	
Basic principles and standards of sanitation. Modern plumbing system, types of pipe systems, types of traps and their uses. Gully trap, inspection chamber, intercepting trap, grease trap, man holes, etc. Various sanitary fixtures: Sink, Basin, WC, Bathtub, Jacuzzi, shower cubicle etc.	
UNIT 3 – VENTILATION SYSTEM	
Basic introduction to ventilation, natural & mechanical, Different types of air-conditioning systems: Window, split, ducts, HVAC, etc Air Conditioning systems – Methods equipment's, selection criteria, fittings, fixtures, accessories and components., Supply, Return and Recirculation Ducts. Indoor air quality and Air Filters. Thermostats and Humidistat.	
UNIT 4 – LIGHTING FIXTURES	
Introduction to different light fixtures and its types, collecting pictures of different types of fixtures, market analysis of all the types of fixtures with brochure and costing, application of the lights in interiors .	
UNIT 5 – FIRE FIGHTING	
Classification of Fires & Extinguishers, Piping systems, Sprinkler & Drencher systems, Fire detection systems, Fire Lifts & Fire Escape Plan, Fire prevention, safety and security measures and regulations.	

OUTCOME

- Students will be able to understand the building services applied in architecture.
- It enables the student to calculate and estimate various services & provisions in an effective manner.

REFERENCE

- Handbook for Building Engineers in Metric systems (1968), NBC, New Delhi.
- William H. Severns and Julian R. Fellows. Air conditioning and refrigeration. John Wiley

- Birdie, G. S., & Birdie, J. S. (2013). Water Supply and Sanitary Engineering (including Environmental Engineering and Pollution control Acts).

SUBJECT CODE	YEAR: 1&2	SEMESTER 1,2,3,4	OE	NEW CONCEPTS IN ARCHITECTURE	CREDITS: .3
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CONTACT PERIOD	INTERNAL ASSESSMENT MARKS(IA): 40	THEORY MARKS: 60	DURATION OF EXAM: 2.5HRS
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OBJECTIVES

- To give the basic understanding to the students about new technologies & materials introduced in market
- To understand the contemporary trends of building & its architecture

UNIT 1 RESTORATION	Hrs
Introduction to Restoration – definition, importance Types of restoration in buildings, materials used , examples of restored buildings <i>re-use heritage buildings</i> , like palaces, medieval museums, colonial <i>buildings</i> .	
UNIT 2 – GREEN & SUSTAINABLE BUILDINGS	
Basic principles of green building, criteria involved in planning, limitations ,examples ,Introduction to sustainability , features involved ,material study , costing & pricing ,case studies .	
UNIT 3 – PARAMETRIC BUILDINGS	
Introducing parametricism, Principles involved in designing such structures, roof shells & façade building , software used in process, famous architects & their works :Museo Soumaya ,Beijing national aquatic centre ,Hyder Aliyev Centre	
UNIT 4 – 3D PRINTED BUILDINGS/PREFABRICATED BUILDINGS	
Introducing 3D building concepts, techniques involved, material used in 3D printing , case studies , study of other 3D printed structures Concept of Prefabrication, Building parts made in prefab materials, examples , fixation of prefab structure , joinery , case studies of famous building	
UNIT 5– MIXED USE BUILDINGS	
Introduction of mixed use buildings, types of mixed use cases, planning & criteria involved , estimated areas , case studies of different cases	

OUTCOME

- Students will be able to understand the new concepts introduced in architecture
- Contemporary uses of material , new research on materials for better building .

REFERENCE

- Handbook for Joseph De Chiara, Michael J Crosbie, “Time Savers Standards for Building Types”, 4 edition,
- McGraw Hill Education, 2014, ISBN: 9780070163874 Joseph De Chiara, Julius Panero, “Standards for Interior Design and Space Planning”,