



Koneru Lakshmaiah Education Foundation

(Category -1, Deemed to be University estd. u/s. 3 of the UGC Act, 1956)

Accredited by NAAC as 'A++' ♦ Approved by AICTE ♦ ISO 9001-2015 Certified

Campus: Green Fields, Vaddeswaram - 522 302, Guntur District, Andhra Pradesh, INDIA.

Phone No. 08645 - 350200; www.klef.ac.in; www.klef.edu.in; www.kluniversity.in

Admin Off: 29-36-38, Museum Road, Governorpet, Vijayawada - 520 002. Ph: +91 - 866 - 3500122, 2577715, 2576129.

Minutes of the Seventh BOS meeting, School of Architecture held on July 05, 2019, at Room E218 from 10:00 am to 5:00 pm.

AGENDA and RESOLUTIONS

AGENDA ITEM-1

Introduction of the new courses for admitted batch 2019-20 as the council of Architecture norm changes (MINIMUM STANDARDS OF ARCHITECTURAL EDUCATION REGULATIONS, 2017)	Approved and recommended to Academic council for approval
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Resolution:

The following courses have been introduced to the Y 2019 – 20 Curriculum as mentioned in the agenda 1:

1. 19AR3219 Building Services - III
2. 19AR4123 Building Services - IV
3. 19AR4149 Advanced Building Techniques
4. 19AR4122 Housing
5. 19AR3142 Interior Design Studio
6. 19AR3245 Landscape Design Studio
7. 19AR2213 Contemporary Indian Architecture
8. 19AR3116 Contemporary Western Architecture
9. 19AR3221A Appropriate Building Technologies
10. 19AR3221B Sustainable Architecture - II
11. 19AR4227A Behavioural Architecture
12. 19AR4227B Disaster Mitigation and Management
13. 19AR4251 Working Drawing – II
14. 19BB32C1 Human Resource Management
15. 19BB32C3 Innovation and Entrepreneurship


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Rationale for introduction of new courses:

- The new courses were added to the syllabus for batch 2019 as per the COA notification 2017.
- Based on the feedback from faculty and industry in DAC conducted on 21.06.2019, new courses suggested to be added to 2019-20 syllabus.
- 19AR2136 Computer Studio - I & 19AR2239 Computer Studio – II: feedback from Industry Personnel CH. Harshavardhan, Civilciti, Vijaywada: BIM can be included in curriculum.
- Introduction of more elective courses:
 - i) 19AR3117B Sustainable Architecture – I
 - ii) 19AR3221A Appropriate Building Technologies
 - iii) 19AR3221B Sustainable Architecture - II
 - iv) 19AR4227A Behavioural Architecture
 - v) 19AR4227B Disaster Mitigation and Management
 - vi) 19BB32C1 Human Resource Management
 - vii) 19BB32C3 Innovation and Entrepreneurship As per the feedback received from academic peers (Ar. Sirisha Mente, Vaishnavi School of Architecture, Vijaywada.): There should be more options for elective subjects.
- As suggested by Academic peer (Bikramjit Chakraborty, GCAD, Sonipat): 19BB32C1 Human Resource Management and 19BB32C3 Innovation and Entrepreneurship were added in the curriculum.


AGENDA ITEM-1A

Revision of the courses for admitted batch 2019-20 as the council of Architecture norm changes (MINIMUM STANDARDS OF ARCHITECTURAL EDUCATION REGULATIONS, 2017)	Approved and recommended to Academic council for approval
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Resolution:

The following courses have been revised to the Y 2019 – 20 Curriculum as mentioned in the agenda 1:

1. 19AR1101 Climatology
2. 19AR3117B Sustainable Architecture - I
3. 19AR2136 Computer Studio - I
4. 19AR2239 Computer Studio – II
5. Architectural Design Studio-I (Basic Design)


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6. Architectural Thesis

AGENDA ITEM-2

To discuss reframing of Architectural design curriculum for admitted batch 2019-20	BOS suggested to revise the syllabus for Design and construction subjects and recommended to Academic council for approval
1. 19AR1131 Architectural Design Studio -I (Basic Design)	
2. 19AR4253 Urban Design Studio	

- Based on the faculty feedback (Ar. Kiran Kumar: 5691), it is suggested to revise Architectural Design and Thesis new syllabus for the admitting batch 2019-20.

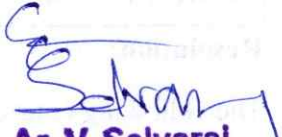
AGENDA ITEM-3

To discuss the curriculum for admitted batch 2018-19	Approved and recommended to Academic council for approval
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- Based on the feedback from faculty, industry and DAC conducted on 21.06.2019, no changes suggested for the existing syllabus of 2018-19.

AGENDA ITEM-4

To discuss the new credit system as per the Council of Architecture Guidelines	Approved and recommended to Academic council for approval
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BOS members Signed attendance sheet in the below format.

SL. NO	FULL NAME	DESIGNATION	ORGANIZATION	POSITION IN THE MEETING	SIGNATURE
1	Ar. Venkatesan Selvaraj	Principal and BOS Chairperson	KLU	Chairman	
2	Dr. Pranvir Satvat	Dean Academics	KLU	Invitee	
3	Ar. Ravi Shankar	Professor	KLU	Internal Member	
4	Ar. Priya	Associate Professor	KLU	Internal Member	
5	Ar. G. Vidya Sagar	Associate Professor	KLU	Internal Member	
6	Ar. Saleem A Qureshi	Practicing Architect	Designer's Group	External Members	
7	Ar. C. S. Prakash	Practicing Architect	Concepts, Vja	External Members	

Ar. V. Selvaraj

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PRINCIPAL-ARCI



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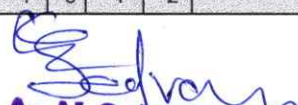
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Annexure 1

Y19 Course Structure with new courses

SNO	COURSE CODE	COURSE NAME	Type	L	T	P	S	CH	CR	Prerequisites
Semester I				10	8	14	0	32	29	
1	19AR1101	Climatology	BSAE	3	0	0	0	3	3	
2	19AR1103	Building Materials - I	BSAE	2	0	0	0	2	2	
3	19UC0009	Ecology & Environment	BSAE	2	0	0	0	2	2	
4	19AR1102	History of Architecture - I	PC	3	0	0	0	3	3	
5	19AR1130	Architectural Drawing - I	PC	0	0	6	0	6	3	
6	19AR1131	Architectural Design Studio -I (Basic Design)	PC	0	8	0	0	8	12	
7	19AR1129	Art and Visual Graphic Studio	SEC	0	0	4	0	4	2	
8	19UC1101	Basic English	HSS	0	0	4	0	4	2	
Semester II				8	8	14	0	30	27	
1	19AR1204	Mechanics of Structures - I	BSAE	3	0	0	0	3	3	
2	19AR1206	Building Materials - II	BSAE	2	0	0	0	2	2	
3	19AR1205	History of Architecture - II	PC	3	0	0	0	3	3	
4	19AR1232	Model Making Workshop	PC	0	0	4	0	4	2	
5	19AR1233	Architectural Drawing - II	PC	0	0	6	0	6	3	
6	19AR1234	Architectural Design Studio -II	PC	0	8	0	0	8	12	19AR1131
7	19UC1202	English Proficiency	HSS	0	0	4	0	4	2	
Semester III				7	12	10	4	33	30	
1	19AR2107	Mechanics of Structures - II	BSAE	3	0	0	0	3	3	
2	19AR2137	Building Construction - I	BSAE	0	4	0	0	4	6	
3	19AR2108	History of Architecture - III	PC	3	0	0	0	3	3	
4	19AR2138	Architectural Design Studio -III	PC	0	8	0	0	8	12	19AR1234
5	19AR2135	Surveying and Levelling	SEC	0	0	4	0	4	2	
6	19AR2136	Computer Studio - I	SEC	0	0	4	0	4	2	
7	19UC0008	Indian Constitution	OE	0	0	2	0	2	0	
Semester IV				11	12	4	4	31	32	
1	19AR2210	Design of Structures - I	BSAE	3	0	0	0	3	3	
2	19AR2211	Building Services - I	BSAE	3	0	0	0	3	3	
3	19AR2240	Building Construction - II	BSAE	0	4	0	0	4	6	
4	19AR2212	Site Analysis and Planning	PC	2	0	0	0	2	2	
5	19AR2241	Architectural Design Studio -IV	PC	0	8	0	0	8	12	19AR2138
6	19AR2213	Contemporary Indian Architecture	PC	2	0	0	0	2	2	
7	19AR2239	Computer Studio - II	SEC	0	0	4	0	4	2	
Semester V				10	12	4	0	26	30	
1	19AR3114	Design of Structures - II	BSAE	3	0	0	0	3	3	
2	19AR3115	Building Services - II	BSAE	3	0	0	0	3	3	
3	19AR3143	Building Construction - III	BSAE	0	4	0	0	4	6	
4	19AR3144	Architectural Design Studio -V	PC	0	8	0	0	8	12	19AR2241
5	19AR3116	Contemporary Western Architecture	PC	2	0	0	0	2	2	
6	19AR3142	Interior Design Studio	PE	0	0	4	0	4	2	


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7	19AR3117A	Vernacular Architecture	PE	2	0	0	0	2	2	
8	19AR3117B	Sustainable Architecture - I	PE							
Semester VI				12	12	4	0	28	32	
1	19AR3219	Building Services - III	BSAE	3	0	0	0	3	3	
2	19AR3246	Building Construction - IV	BSAE	0	4	0	0	4	6	
3	19AR3218	Specification, Estimation and Costing	PC	3	0	0	0	3	3	
4	19AR3220	Human Settlements and Planning	PC	2	0	0	0	2	2	
5	19AR3245	Landscape Design Studio	PC	0	0	4	0	4	2	
6	19AR3247	Architectural Design Studio -VI	PC	0	8	0	0	8	12	19AR3144
7	19AR3221A	Appropriate Building Technologies	PE	2	0	0	0	2	2	
8	19AR3221B	Sustainable Architecture - II	PE							
9	19BB32C1	Human Resource Management	OE	2	0	0	0	2	2	
10	19BB32C3	Innovation and Entrepreneurship	OE							
Semester VII				8	10	8	0	26	27	
1	19AR4123	Building Services - IV	BSAE	3	0	0	0	3	3	
2	19AR4149	Advanced Building Techniques	BSAE	0	0	4	0	4	2	
3	19AR4122	Housing	PC	2	0	0	0	2	2	
4	19AR4150	Architectural Design Studio -VII	PC	0	10	0	0	10	15	19AR3247
5	19AR4124A	Architectural Conservation	PE	3	0	0	0	3	3	
6	19AR4124B	Set Design	PE							
7	19AR4148	Working Drawing - I	SEC	0	0	4	0	4	2	
Semester VIII				8	12	4	0	24	28	
1	19AR4226	Building Construction and Management	PAECC	3	0	0	0	3	3	
2	19AR4252	Dissertation	PAECC	0	4	0	0	4	6	
3	19AR4225	Urban Design	PC	2	0	0	0	2	2	
4	19AR4253	Urban Design Studio	PC	0	8	0	0	8	12	19AR4150
5	19AR4251	Working Drawing - II	SEC	0	0	4	0	4	2	
6	19AR4227A	Behavioural Architecture	PE	3	0	0	0	3	3	
7	19AR4227B	Disaster Mitigation and Management	PE							
Semester IX				0	0	40	0	40	20	
1	19AR5154	Practical Training / Internship	PAECC	0	0	40	0	40	20	19AR4253
Semester X				3	12	0	0	15	21	
1	19AR5228	Architecture Professional Practice	PAECC	3	0	0	0	3	3	
2	19AR5255	Architectural Thesis	PC	0	12	0	0	12	18	19AR5154

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Reference Annexure for Program Structures and Syllabus Revision

1. Program structure (with all Courses) 2019-20

S. N O	COUR SE CODE	COURSE NAME	Type	L	T	P	S	CH	CR	Prere quisit es	New Course/ Revised Course/ Retained Course	Cha nges Prop osed by	Justification
1	19AR1103	Building Materials - I	BS AE	2	0	0	0	2	2	Nil	Retained Course	-	-
2	19AR1204	Mechanics of Structures - I	BS AE	3	0	0	0	3	3	Nil	Retained Course	-	-
3	19AR1206	Building Materials - II	BS AE	2	0	0	0	2	2	Nil	Retained Course	-	-
4	19AR2137	Building Construction - I	BS AE	0	4	0	0	4	6	Nil	Retained Course	-	-
5	19AR2107	Mechanics of Structures - II	BS AE	3	0	0	0	3	3	Nil	Retained Course	-	-
6	19AR2240	Building Construction - II	BS AE	0	4	0	0	4	6	Nil	Retained Course	-	-
7	19AR2210	Design of Structures - I	BS AE	3	0	0	0	3	3	Nil	Retained Course	-	-
8	19AR3143	Building Construction - III	BS AE	0	4	0	0	4	6	Nil	Retained Course	-	-
9	19AR3114	Design of Structures - II	BS AE	3	0	0	0	3	3	Nil	Retained Course	-	-
10	19AR2211	Building Services - I	BS AE	3	0	0	0	3	3	Nil	Retained Course	-	-
11	19AR3246	Building Construction - IV	BS AE	0	4	0	0	4	6	Nil	New Course	Faculty	To make the syllabus at per with the industry standards
12	19AR3115	Building Services - II	BS AE	3	0	0	0	3	3	Nil	Retained Course	-	-
13	19UC0009	Ecology & Environment	BS AE	2	0	0	0	2	2	Nil	Retained Course	-	-
14	19AR1101	Climatology	BS AE	3	0	0	0	3	3	Nil	New Course	Council of Architecture	As per the COA recommendation
15	19AR3219	Building Services - III	BS AE	3	0	0	0	3	3	Nil	New Course	Council of Architecture	As per the COA recommendation
16	19AR4123	Building Services - IV	BS AE	3	0	0	0	3	3	Nil	New Course	Council of Architecture	As per the COA recommendation


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17	L9AR4149	Advanced Building Techniques	BS AE	0	0	4	0	4	2	Nil	New Course	Council of Architecture	As per the COA recommendation
18	L9AR4226	Building Construction and Management	P AE CC	3	0	0	0	3	3	Nil	Retained Course	-	-
19	L9AR5154	Practical Training / Internship	P AE CC	0	0	40	0	40	20	19A R42 53	New Course	Council of Architecture	As per the COA recommendation
20	L9AR5228	Architecture Professional Practice	P AE CC	3	0	0	0	3	3	Nil	Revised Course	Industry	To be updated with industry
21	L9AR4252	Dissertation	P AE CC	0	4	0	0	4	6	Nil	Revised Course	Industry	-
22	L9AR1102	History of Architecture - I	PC	3	0	0	0	3	3	Nil	Retained Course	-	-
23	L9AR1130	Architectural Drawing - I	PC	0	0	4	0	4	2	Nil	Retained Course	-	-
24	L9AR1131	Architectural Design Studio -I (Basic Design)	PC	0	8	0	0	8	12	Nil	New Course	Faculty	To be updated with industry
25	L9AR1205	History of Architecture - II	PC	3	0	0	0	3	3	Nil	Retained Course	-	-
26	L9AR1233	Architectural Drawing - II	PC	0	0	4	0	4	2	Nil	Retained Course	-	-
27	L9AR1234	Architectural Design Studio -II	PC	0	8	0	0	8	12	19A R11 31	Retained Course	-	-
28	L9AR2108	History of Architecture - III	PC	3	0	0	0	3	3	Nil	Retained Course	-	-
29	L9AR2138	Architectural Design Studio -III	PC	0	8	0	0	8	12	19A R12 34	New Course	-	-
30	L9AR2212	Site Analysis and Planning	PC	2	0	0	0	2	2	Nil	Retained Course	-	-
31	L9AR2241	Architectural Design Studio -IV	PC	0	8	0	0	8	12	19A R21 38	New Course	-	-
32	L9AR3144	Architectural Design Studio -V	PC	0	8	0	0	8	12	19A R22 41	New Course	-	-

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33	19AR3220	Human Settlements and Planning	PC	2	0	0	0	2	2	Nil	Retained Course	-	-
34	19AR3247	Architectural Design Studio -VI	PC	0	8	0	0	8	12	19A R31 44	New Course	-	-
35	19AR4225	Urban Design	PC	2	0	0	0	3	2	Nil	Retained Course	-	-
36	19AR3218	Specification, Estimation and Costing	PC	3	0	0	0	3	3	Nil	Retained Course	-	-
37	19AR4150	Architectural Design Studio - VII	PC	0	10	0	0	10	15	19A R32 47	New Course	-	-
38	19AR4253	Urban Design Studio	PC	0	8	0	0	8	12	19A R41 50	New Course	-	-
39	19AR4122	Housing	PC	2	0	0	0	2	2	Nil	New Course	Council of Architecture	As per the COA recommendation
40	19AR3142	Interior Design Studio	PE	0	0	4	0	4	2	Nil	New Course	Council of Architecture	As per the COA recommendation
41	19AR3245	Landscape Design Studio	PC	0	0	4	0	4	2	Nil	New Course	Council of Architecture	As per the COA recommendation
42	19AR1232	Model Making Workshop	PC	0	0	6	0	6	3	Nil	Retained Course	-	-
43	19AR5255	Architectural Thesis	PC	0	12	0	0	12	18	19A R51 54	Revised Course	Faculty	-
44	19AR2213	Contemporary Indian Architecture	PC	2	0	0	0	2	2	Nil	New Course	Council of Architecture	As per the COA recommendation
45	19AR3116	Contemporary Western Architecture	PC	2	0	0	0	2	2	Nil	New Course	Council of Architecture	As per the COA recommendation
46	19AR4124B	Set Design	PE	3	0	0	0	3	3	Nil	Retained Course	-	-


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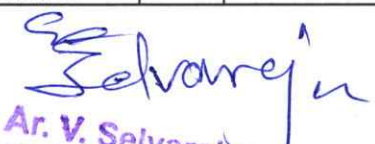
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47	L9AR311 7A	Vernacular Architecture	PE	2	0	0	0		2	Nil	Retained Course	-	-
48	L9AR412 4A	Architectural Conservation	PE	3	0	0	0	3	3	Nil	Retained Course	-	-
49	L9AR311 7B	Sustainable Architecture - I	PE	2	0	0	0	2	2	Nil	New Course	Council of Archite cture	As per the COA recommendati on
50	L9AR322 1A	Appropriate Building Technologies	PE	2	0	0	0	2	2	Nil	New Course	Council of Archite cture	As per the COA recommendati on
51	L9AR322 1B	Sustainable Architecture - II	PE	2	0	0	0	2	2	Nil	New Course	Council of Archite cture	As per the COA recommendati on
52	L9AR422 7A	Behavioural Architecture	PE	3	0	0	0	3	3	Nil	New Course	Council of Archite cture	As per the COA recommendati on
53	L9AR422 7B	Disaster Mitigation and Management	PE	3	0	0	0	3	3	Nil	New Course	Council of Archite cture	As per the COA recommendati on
54	L9AR112 9	Art and Visual Graphic Studio	SE C	0	0	6	0	6	3	Nil	Retained Course	-	-
55	L9AR213 6	Computer Studio - I	SE C	0	0	4	0	4	2	Nil	New Course	Industr y Person nel	To be updated with industry
56	L9AR414 8	Working Drawing - I	SE C	0	0	4	0	4	2	Nil	Retained Course	-	-
57	L9AR213 5	Surveying and Levelling	SE C	0	0	4	0	4	2	Nil	Retained Course	-	-
58	L9AR223 9	Computer Studio - II	SE C	0	0	4	0	4	2	Nil	New Course	Industr y Person nel	To be updated with industry
59	L9AR425 1	Working Drawing - II	SE C	0	0	4	0	4	2	Nil	New Course	Council of Archite cture	As per the COA recommendati on
60	L9UC110 1	Basic English	H SS	0	0	4	0	4	2	Nil	Retained Course	-	-


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S. N O	COUR SE CODE	COURSE NAME	Type	L	T	P	S	CH	CR	Pre requisit es	New Course/ Revised Course/ Retained Course	Cha nges Prop osed by	Justification
61	19UC1202	English Proficiency	HSS	0	0	4	0	4	2	Nil	Retained Course	-	-
62	19UC0008	Indian Constitution	OE	2	0	0	0	2	2	Nil	Retained Course	-	-
63	19BB32C1	Human Resource Management	OE	2	0	0	0	2	2	Nil	New Course	Academic Peers	For holistic development of student
64	19BB32C3	Innovation and Entrepreneurship	OE	2	0	0	0	2	2	Nil	New Course	Academic Peers	For holistic development of student

Percentage of Syllabus Revision = 36

Percentage of Courses focusing on Employability = 42

Percentage of Courses focusing on Entrepreneurship = 16

Percentage of Courses focusing on Skill Development = 42


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Course wise Syllabus revision of approved structure as mentioned in point 1 (Program structure (with all Courses) containing following categorization).

Course Code	Course Name	Course Category	Existing Syllabus (as per Annexure-3)	New Syllabus (as per Annexure-3)	Topics Added/Removed/Replaced	Change in Outcome	Justification for the Modification	*Overall Revision Percentage
19AR1101	Climatology	BSAE	<p>CO1: Climate and Human Comfort: Factors that determine climate of a place – Components of Climate – Climate classifications for building designers in tropics – Climate characteristics. Human body heat balance – Human body heat loss – Effects of climatic factors on human body heat loss – Effective temperature</p> <p>CO2: Design of Solar Shading Devices: Movement of sun – Locating the position of sun – Sun path diagram – Overhead period – Solar shading – Shadow angles – Design of appropriate shading devices Heat Flow Through Building</p> <p>CO3: Air Movement Due to Natural and Built Forms: The wind – The effects of topography on wind patterns – Air currents around the building – Air movement through the buildings.</p> <p>CO4: Climate and Design of Buildings: Design strategies in warm humid climates, hot humid climates, hot and dry climates, and cold climates – Climate responsive design exercises.)</p>	<p>CO1: Climate and Human Comfort: Factors that determine climate of a place – Components of Climate – Climate classifications for building designers in tropics – Climate characteristics. Human body heat balance – Human body heat loss – Effects of climatic factors on human body heat loss – Effective temperature</p> <p>CO2: Design Of Solar Shading Devices: Movement of sun – Locating the position of sun – Sun path diagram – Overhead period – Solar shading – Shadow angles – Design of appropriate shading devices Heat Flow Through Building Envelope Concepts: The transfer of heat through solids – Definitions – Conductivity, Resistivity, Specific heat, Conductance, Resistance and Thermal capacity – Surface resistance and air cavities – Air to air transmittance (U value) – Time lag and decrement – Types of envelopes with focus on glass.</p> <p>CO3: Air Movement Due to Natural and Built Forms: The wind – The effects of topography on wind patterns – Air currents around the building – Air movement through the buildings – The use of fans – Thermally induced air currents – Stack effect, Venturi effect – Use of courtyard.</p> <p>CO4: Climate and Design of Buildings: Design strategies in warm humid climates, hot humid climates, hot and dry climates, and cold climates – Climate responsive design exercises.)</p>	<p>CO1: – Human thermal comfort – Use of C. Mahony's tables.</p> <p>CO2: Envelope Concepts: The transfer of heat through solids – Definitions – Conductivity, Resistivity, Specific heat, Conductance, Resistance and Thermal capacity – Air to air transmittance (U value) – Time lag and decrement – Types of envelopes with focus on glass.</p> <p>CO3: The use of fans – Thermally induced air currents – Stack effect, Venturi effect – Use of courtyard.</p>	<p>CO1: 5% CO2: 10% CO3: 15%</p>	<p>To be updated with industry</p>	<p>30%</p>
19AR2136	Computer Studio 1	SEC	<p>CO1: Introduction To Computer and Image Editing: Technology of small computer system, computer terminology operation principles of P.C, introduction to application software, and graphic system, and use of printers, scanner, plotter, File management, etc.</p> <p>CO2: Understanding Bitmap images and Vector Graphics, Image size and Resolution. Basic Tools for Editing and Creating Graphics. Presentation And Analysis Tools: Introduction to</p>	<p>CO1: Introduction To Computer and Image Editing Technology of small computer system, computer terminology operation principles of P.C, introduction to application software, and graphic system, and use of printers, scanner, plotter, File management, etc.</p> <p>CO2: Understanding Bitmap images and Vector Graphics, Image size and Resolution. Basic Tools for Editing and Creating Graphics. Introduction to tools which help them create audio –</p>	<p>Removal from CO4 : Viewing The Building Model and Publishing: Introduction to basics of 3D settings and its interface. Layout settings, scales, view ports, plot/print settings. Editing Tools: Introduction to software's and system requirements, preferences, terminology, and editing tools. Selections, choosing foreground and background colour, visual editing of architectural plans.</p>	<p>CO4: 25%</p>	<p>Industry standard</p>	<p>25</p>

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Course Code	Course Name	Course Category	Existing Syllabus (as per Annexure-3)	New Syllabus (as per Annexure-3)	Topics Added/Removed/Replaced	Change in Outcome	Justification for the Modification	*Overall Revision Percentage
			<p>tools which help them create audio – visual presentations and architectural data analysis such as word processing package, spread sheets, multimedia presentations.</p> <p>CO3: Detail application of tools which enhance presentation and documentation skills – formatting text, inserting tables, pictures, creating charts, creating formulas, slide animations etc.</p> <p>CO4: The Basics of Building Modelling: Understanding the drawing unit's settings, templates, coordinate system, limits, drawing tools, drawing objects, object editing, text, and dimensioning. Layers, transparent overlays, hatching utilities, line type, line weight and colour. Multiline, Polyline, etc. Styles, blocks, and symbol library. Viewing The Building Model and Publishing: Introduction to basics of 3D settings and its interface. Layout settings, scales, view ports, plot/print settings. Editing Tools: Introduction to software's and system requirements, preferences, terminology, and editing tools. Selections, choosing foreground and background colour, visual editing of architectural plans, editing of images for presentations etc</p>	<p>visual presentations and architectural data analysis such as word processing package, spread sheets, multimedia presentations.</p> <p>CO3: Detail application of tools which enhance presentation and documentation skills – formatting text, inserting tables, pictures, creating charts, creating formulas, slide animations etc.</p> <p>CO4: Understanding the drawing unit's settings, templates, coordinate system, limits, drawing tools, drawing objects, object editing, text, and dimensioning. Layers, transparent overlays, hatching utilities, line type, line weight and colour. Multiline, Polyline, etc. Styles, blocks, and symbol library.</p>	<p>editing of images for presentations etc</p>			
19AR2239	COMPUTER STUDIO II	SEC	<p>CO1 - Introduction: Explain the uses of BIM (building information Modeling), touching upon the Concepts used in 2D Drawing and extending to 3D Modeling, Basic awareness on Interface, Setting up workspace.</p> <p>CO2 - Basic Modeling: 3D modeling using Walls – Windows – Doors – floors – Slabs – Staircase – Railing – Furniture.</p> <p>CO3 - Exporting 3D Model to Architectural 2D- Drawings (Plans – Elevations – Sections – Details.) Visualization: Introduction – Applying materials – Creating and Editing materials – Setting up Camera</p> <p>CO4 - Advanced Modeling: Curtain Walls – Columns – beams – Massing – working in collaboration</p>	<p>CO1 - Explain the uses of BIM (building information Modeling), touching upon the Concepts used in 2D Drawing and extending to 3D Modeling, Basic awareness on Interface, Setting up workspace.</p> <p>CO2- 3D modeling using Walls – Windows – Doors – floors – Slabs – Staircase – Railing – Furniture. Basic editing of components. Using Cross Sections Tool.</p> <p>CO3 - Exporting 3D Model to Architectural 2D- Drawings (Plans – Elevations – Sections – Details.). Introduction – Applying materials – Creating and Editing materials – Setting up Camera – Rendering settings – Enhancing final output using Image editing software.</p> <p>CO4 - Curtain Walls – Columns – beams – Massing – working in collaboration. Adding Architectural Elements – Creating components – Rendering in Cloud.</p>	<p>CO2- Basic editing of components. Using Cross Sections Tool.</p> <p>CO3 – Rendering settings – Enhancing final output using Image editing software.</p> <p>CO4 – Creating components – Rendering in Cloud.</p>	<p>CO1: ZERO CO2: 5 % CO3: 10 % CO4: 10%</p>	<p>To be updated with industry</p>	25
19AR3117B	Sustainable Architecture - I	PE	<p>CO1: Sustainable Design Methods & Material Optimization: Sustainable design strategies and</p>	<p>CO1: Concept of green building Introduction to green building concept, need for green buildings</p>	<p>CO2: Traditional methods and materials, techniques that were incorporated in</p>	<p>CO1: ZERO CO2: 25%</p>	<p>To be updated with industry</p>	75

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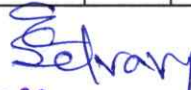
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Course Code	Course Name	Course Category	Existing Syllabus (as per Annexure-3)	New Syllabus (as per Annexure-3)	Topics Added/Removed/Replaced	Change in Outcome	Justification for the Modification	*Overall Revision Percentage
			<p>approaches, Sustainable design innovation, Systems design, Transdisciplinary collaboration in design, Life cycle design and life cycle assessment (LCA), Design for disassembly, Design for re-use Design for sustainable manufacturing and construction, Design for remanufacturing.</p> <p>CO2: Environmental & Social Considerations: Design for environment, Land use planning; smart growth and urban design; transportation policy and design; environmental site design; site assessment and selection; Brownfield redevelopment strategies and infill development, Eco-design. Socially responsible design, User-centered design, Design education and sustainability, Design ethics and sustainability. Energy & Water Usage Optimization: Optimizing Energy performance & designing with renewable and alternative energy systems including solar power, wind, geothermal, low-impact hydroelectric, photovoltaic, biomass & biogas with a view to achieving energy efficiency. Understanding water use/ demand water conservation, water quality and biological methods of wastewater treatment, use of recycled water and storm water drainage as they relate to the planning and design of urban communities and project sites. Planning and design for natural and impacted on-site water features. Fundamental water resources policy issues and hydrologic processes, as they apply to community planning and design situations.</p> <p>CO3: Biomimetics: Definition, replicating natural manufacturing methods as in the production of chemical compounds by plants and animals; Mimicking mechanisms found in nature, Imitating organizational principles from social behavior of organisms; Examples: Spider-silk as a substitute for steel, Lotus effect in self-cleansing glass, Dinosaur spine in bridge design, Lily pad structure, termite mound cooling system, swarm theory, aerodynamic structures etc. Case Studies of Sustainable Buildings: Introduction to the role of green building rating systems- E.g.: LEED.</p> <p>CO4: Study the architectural design of the following buildings to</p>	<p>today, statistics denoting the impact of built environment on our planet and its resources,</p> <p>CO2: Traditional methods and materials, techniques that were incorporated in preindustrial era, analysis of traditional knowledge and their relevance in today's context. Indian vernacular architecture concepts and analysis of spatial elements like courtyard houses, terraces, pavilions.</p> <p>CO3: Use of local materials and climate responsive techniques like jharokas, jaalis, chajjas etc., Climatic influence on buildings design consideration for built environment under different climatic conditions- thermal and visual comfort, thermal conductivity and heat transfer, strategic design to suit the local climatic conditions, physical and technological aspects of the building.</p> <p>CO4: Site Planning and Landscape Design- relation between site features and design requirements, site planning techniques and checklist and evaluating surface drainage, criteria for plant selection in different conditions.</p>	<p>preindustrial era, analysis of traditional knowledge and their relevance in today's context. Indian vernacular architecture concepts and analysis of spatial elements like courtyard houses, terraces, pavilions.</p> <p>CO3: Use of local materials and climate responsive techniques like jharokas, jaalis, chajjas etc., Climatic influence on buildings design consideration for built environment under different climatic conditions- thermal and visual comfort, thermal conductivity and heat transfer, strategic design to suit the local climatic conditions, physical and technological aspects of the building.</p> <p>CO4: Site Planning and Landscape Design- relation between site features and design requirements, site planning techniques and checklist and evaluating surface drainage, criteria for plant selection in different conditions.</p>	<p>CO3: 25%</p> <p>CO4: 25%</p>		


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Course Code	Course Name	Course Category	Existing Syllabus (as per Annexure-3)	New Syllabus (as per Annexure-3)	Topics Added/Removed/Replaced	Change in Outcome	Justification for the Modification	*Overall Revision Percentage
			explore the use of green building materials, energy, and water conservation, and creating safe, healthy indoor environments Indian: Gurgaon Development Centre-Wipro Ltd. Gurgaon; Technopolis, Kolkata; Grundfos Pumps India Pvt Ltd, Chennai; Olympia Technology Park, Chennai; World Bank Chennai Building Chennai; BPO Park At Chennai. others: the Chicago Center for Green Technology Chicago, USA; Green Operations Building White Rock, Canada. U.S. Courthouse, Orlando, USA.					
19AR1131:	Architectural Design Studio – 1 (Basic Design)	PC	<p>CO1: Introduction to Architectural Design through Basic Design – Elements of Design: Properties, qualities and characteristics of point, line, direction shape, form, colour and texture – Principles of Design: Scale, Proportion, Balance, Harmony, Rhythm, and Contrast. The course shall be conducted by giving several exercises in the form of design studios, seminars and creative workshops that are aimed at teaching the following:</p> <p>CO2: Elements and Principles of Visual Composition using point, line, shape. Exploring colour schemes and their application in a visual composition and in Architectural forms and spaces. Study of texture and schemes of texture both applied and stimulated and their application.</p> <p>CO3: Study of linear and Planar forms using simple material like Mount Board, metal foil, box boards, wire string, themocol etc. Study of Solids and voids to evolve sculptural forms and spaces and explore the play of light and shade and application of color.</p> <p>CO4: Study of fluid and plastic forms using easily mouldable materials like clay, plaster of paris etc. Analytical appraisal of building form in terms of visual character, play of light and shade, solids, and voids etc. Application of Basic design in Architectural Design through the manipulation of line, plane, solid and voids and application of texture colour, proportion etc.</p>	<p>Elements of Design: Properties, qualities and characteristics of point, line, direction, shape, form, colour, texture and Light. Extraction of basic forms from natural and manmade environment. Enquiry into form both geometric and non-geometric entities.</p> <p>CO2: Exercises on Visual Composition and Pattern making. Principles of Design: Understanding Architectural Aesthetics. Principles such as Balance, Symmetry, Asymmetry, Proportion, Scale, Harmony, Rhythm, and Contrast. Exercises on Visual Composition and Pattern making, Logo design, Collage, Abstraction. Composition using different types of Grids – Orthogonal, Radial, etc. Evolution of</p> <p>CO3: Forms and Spaces: Study of solids & voids to evolve sculptural forms & spaces; explore play of light & shade and application of colour. Introduction to external & internal forms, analytical appraisal of forms, their quality; Concept of space, interrelationship between space, volume, and order. Variations in forms with planer juxtapositions.</p> <p>CO4: Anthropometric Study and Ergonomics: Anthropometric study and ergonomics human figure (including differently able persons), dimensions of furniture-relationship with human anthropometrics with freehand drawing of human figures, vehicles, trees, buildings etc. to</p>	<p>CO1: ZERO CO2: 10% CO3: 25 % CO4: 25%</p>	To be updated with industry	As per faculty feedback	60

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				have a better understanding of proportion.				
19 AR5255:	Architectural Thesis	PC	<p>Objectives: All the architectural design courses offered since semester II culminate in the thesis Project to motivate students to involve in individual research and methodology. This is to train them in handling projects independently.</p> <p>Topics of Study: The main areas of study and research can include advanced architectural design, including contemporary design processes, urban design including urban-infill, environmental design, conservation and heritage precincts, housing etc. However, the specific thrust should be architectural design of built environment. Preparation of presentation drawings, working drawings, detailed drawings and study model are part of the requirements for submission.</p> <p>Method of Submission: The Thesis Project shall be submitted in the form of drawings, project report, models, slides, CDs, and reports.</p>	<p>Architectural Thesis: The Architectural Thesis is the culmination of the development of the student's knowledge, attitudes, and skills over the course of studies in architecture. It is an occasion for exercising conscious choices in the field, based on the student's personal abilities and inclinations, and for testing out his commitment. The student, in consultation with the faculty, is expected to demonstrate through an imaginative approach, his expertise in effecting positive changes in our built environment. Students can choose a topic of their choice in terms of design potential and/ or idea exploration to be taken up for completion. The topic could be project based with specific areas of study/ approach or study/ approach based leading to a project. If the latter, care should be taken to choose topics that can lead to sufficient architectural design component. Students should submit the topic for approval with a rough outline of the nature of the project, area of interest, study and design scope, challenges, possible case studies, methodology and outcome. Tentative topics to study: The areas of study/research/design can include any of the broad areas of the discipline – contemporary needs of society, history, theory, sustainability, structural or service oriented design, projects that involve complex planning and integration of several aspects, appropriate architecture, urban design, contemporary processes, social housing, urban oriented architectural design, conservation oriented architectural design, etc.</p> <p>Submission Requirements: The progress of work will be reviewed periodically throughout the semester. At the end of the semester, students should submit the final thesis project for the viva voce exam. The final submission will comprise of study sheets, optional study models, design approach sheets, optional design process models, design presentation sheets, final model, detailed drawings of an important part of the project, project report</p>	The areas of study/research/design can include any of the broad areas of the discipline – contemporary needs of society, history, theory, sustainability, structural or service-oriented design, projects that involve complex planning and integration of several aspects, appropriate architecture, urban design, contemporary processes, social housing, urban oriented architectural design, conservation oriented architectural design, etc.	50	Feedback from faculty	50


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Course Code	Course Name	Course Category	Existing Syllabus (as per Annexure-3)	New Syllabus (as per Annexure-3)	Topics Added/Removed/Replaced	Change in Outcome	Justification for the Modification	*Overall Revision Percentage
				summarizing the entire thesis work, and soft copy of all the work				

*Overall Revision Percentage= sum of percentage of Course Outcome revision. Any revision to the tune of 25% or above is considered as a new course. In all other cases the course code is changed, and the course is considered as a revised course.

ANNEXURE-6

Reference Structure and Syllabus Template

19AR1101: Climatology

L-T-P-S: 3-0-0-0

Credits: 3

Prerequisite: Nil

Mapping of Course outcomes (CO) with program outcomes (PO)

CO NO	Course Outcome	PO/PSO	BTL
CO1	An understanding of elements of climate, human comfort, and human body heat balance.	PO4	2
CO2	Understanding the concept of heat transfer in buildings, sun path diagrams and designing shading devices.	PO1	2
CO3	Understanding air movement for designing buildings accordingly.	PO4	2
CO4	Understanding climate responsive architecture through case studies.	PO5	2

Syllabus:

CO1:

CO1: Climate and Human Comfort: Factors that determine climate of a place – Components of Climate – Climate classifications for building designers in tropics – Climate characteristics. Human body heat balance – Human body heat loss – Effects of climatic factors on human body heat loss – Effective temperature – Human thermal comfort – Use of C. Mahony's tables.

CO2: Design Of Solar Shading Devices: Movement of sun – Locating the position of sun – Sun path diagram – Overhead period–Solar shading–Shadow angles – Design of appropriate shading devices Heat Flow Through Building Envelope Concepts: The transfer of heat through solids – Definitions – Conductivity, Resistivity, Specific heat, Conductance, Resistance and Thermal capacity – Surface resistance and air cavities – Air to air transmittance (U value) – Time lag and decrement – Types of envelopes with focus on glass.

CO3: Air Movement Due to Natural and Built Forms: The wind – The effects of topography on wind patterns – Air currents around the building – Air movement through the buildings – The use of fans – Thermally induced air currents – Stack effect, Venturi effect – Use of courtyard.

CO4: Climate and Design of Buildings: Design strategies in warm humid climates, hot humid climates, hot and dry climates, and cold climates – Climate responsive design exercises.)

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Textbook:

1. O.H. Koenigsberger and Others, 'Manual of Tropical Housing and Building- Climatic Design', Orient Longman, Madras, India, 2010
2. Bureau of Indian Standards IS 3792, 'Handbook on Functional Requirements of Buildings other than Industrial Buildings - Part I – IV', New Delhi, 1987

Reference books:

1. Narashimhan -An Introduction to Building Physics, Professional Pub Service, 2001.
2. M.Evans - Housing Climate & Comfort – Architectural Press, London, 1980.
3. Givoni, Man, Climate and Architecture, Applied Science, Banking Essex, 1992.

Donald Watson and Kenneth Labs; Climatic Design – McGraw Hill Book Company – New York – 1983

MOOCS/Web Links:

<https://www.my-mooc.com/en/mooc/the-un-s-sustainable-development-goals-course-futurelearn/>

19AR3219: Building Services – III

L-T-P-S: 3-0-0-0

Credits: 3

Prerequisite: Nil

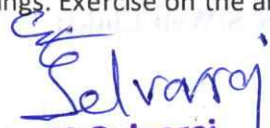
Mapping of Course outcomes (CO) with program outcomes (PO):

CO NO	Course Outcome	PO/PSO	BTL
CO1	Familiarity with different air conditioning systems, their context of use and basics of planning involved.	PO1	2
CO2	An understanding of fire safety, firefighting, fire prevention and installations in buildings.	PO2	2
CO3	An understanding of mechanical transportation systems in a building and their design requirements.	PO2	2
CO4	Ability to integrate services in buildings.	PO4	3

Syllabus:

CO1: Air Conditioning –Principles, Systems and Design Criteria: Thermodynamics. Transfer of heat. Refrigeration cycle components. Vapor compression cycle. Refrigerant, Compressor, condenser, evaporator, refrigerant control devices, electric motors, air handling units, cooling towers.

CO2: Air conditioning systems for buildings of different scales and their requirements - window type, split system, package unit, direct expansion system, chilled water system, fan coil unit, district cooling systems. Energy efficient systems, environmental aspects, and latest innovations. Design criteria for selection of air conditioning. Configuring/ sizing of mechanical equipment, equipment, and spaces for them. Horizontal and vertical distribution of services for large buildings. Exercise on the above through choice, calculations, layout, drawings.


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CO3: Fire and Safety: Causes of fire in buildings. Stages of fire and how it spreads. Fire drill. Heat/ fire/ smoke detection. Alarm and extinguisher systems. Fire safety standards. General guidelines for egress design for multi-storey buildings. Understanding all the above through product literature/ field visits. Exercise on design of fire safety systems for different building types through choice, calculations, layout, and drawings.

CO4: Mechanical Transportation Systems in Buildings: Lifts and escalators - types and applications. Round trip time for lifts. Design of lift lobby and vertical transportation core. Conveyors, travelators, dumb waiters. Standards for all. Latest technologies in vertical transport systems. Integration of lifts and escalators with building automation systems. Understanding all the above through product literature/ field visits. Design exercise on the above through choice, calculations, layout, and drawings. Integration of Services into Architectural Design: Principles of grouping and integrating horizontal and vertical distribution of all services in a multi- storeyed building/ large building. Services to include vertical transportation, electrical, communication, air conditioning and fire safety. Integrating service requirements into architectural design in an appropriate typology involving a simple scale project through sketches/ drawings

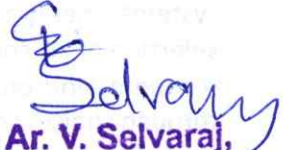
Textbooks:

1. William H. Severns and Julian R Fellows, 'Air conditioning and Refrigeration', John Wiley and Sons, London, 1988.
2. National Building Code -Bureau of Indian Standards.
3. 'ISHRAE Handbook for Refrigeration', 2015.
4. George R. Strakosch (Editor), Robert S. Caporale, 'The Vertical Transportation Handbook' 4th Edition, Wiley, and Sons, 2010.
5. David Lee Smith, 'Environmental Issues for Architecture', Wiley, 2011. David Lee Smith, 'Environmental Issues for Architecture', Wiley, 2011.
6. National Building Code -Bureau of Indian Standards.

Reference Books:

1. A.F.C. Sherratt, 'Air Conditioning and Energy Conservation', the Architectural Press, London, 1980.
2. Andrew H Buchanan; 'Structural Design for Fire Safety', Wiley, 2001.
3. Swenson S. Don, 'Heating, Ventilating and Air Conditioning', American Technical Publishers, 1995.
4. ISHRAE, 'All about AHUs- Air Handling Units'.
5. CIBSE Guide D, 'Transportation Systems in Buildings', 2010.
6. A.K.Mittal, 'Electrical and Mechanical Services in High Rise Building: Design and Estimation Manual', CBS, 2009.

MOOCS/Web Links:


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<https://www.udemy.com/course/building-services>

19AR4123: Building Services - IV

L-T-P-S: 3-0-0-0

Credits: 3

Prerequisite: Nil

Mapping of Course outcomes (CO) with program outcomes (PO):

CO NO	Course Outcomes	PO/PSO	BTL
CO1	To gain knowledge about different Building Automation Systems	PO1	2
CO2	To gain knowledge about different Communication and Security Systems	PO2	2
CO3	To gain knowledge on the various intelligent systems in Vertical Transportation	PO2	2
CO4	Ability to integrate the advanced services in Buildings	PO3	3

Syllabus:

CO1:

Building Automation Systems & Controls: Philosophy. Introduction to System configuration, system modules, distributed systems, communication protocol and on-line measurements. Fire protection, security, and energy management. Control objectives. Sensors, controllers, and actuators. Understanding the concept of Microprocessor based controllers & digital controls. Examples of sub-systems such as - Digital Addressable Lighting Interface (DALI) and how it's useful to Architects.

CO2: Communication and Security Systems: Voice communication systems, local area network, wireless LAN, Digital TV, CCTV, digital CCTV, teleconferencing, cellular phone system, and CABD. SMATV. Data networking. Short- and long-haul networks. Wideband network. Office automations. Public address/sound reinforcement systems. Digital public address system. Modern security systems.

CO3: Modern Intelligent Vertical Transportation Systems: Sky lobby, double-deck lifts, twin lifts, advanced call registration systems, large scale monitoring systems, applications of artificial intelligence in supervisory control, energy saving measures related to lift systems/escalator systems, other modern vertical transportation systems, such as: gondola systems, materials handling systems, etc.

CO4: Integration of Services into Architectural Design: Introduction to Smart Building concept. Integrating the technologies and systems, impact of information technology on buildings and people. Shared tenant services. Interaction and integration between building structure, systems, services, management, control, and information technology. Different Application & Design software available. Advanced Building Technique

Textbooks:

1. The Vertical Transportation Handbook' 4th Edition, Wiley, and Sons, 2010.
2. David Lee Smith, 'Environmental Issues for Architecture', Wiley, 2011. David Lee Smith, 'Environmental Issues for Architecture', Wiley, 2011.
3. National Building Code -Bureau of Indian Standards.

Reference Books:


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1. A.F.C. Sherratt, 'Air Conditioning and Energy Conservation', the Architectural Press, London, 1980.
2. Andrew H Buchanan; 'Structural Design for Fire Safety', Wiley, 2001.

MOOCS/Web Links:

<https://www.udemy.com/course/building-services>

19AR4149: Advanced Building Techniques

L-T-P-S: 0-0-4-0

Credits: 2

Prerequisite: Nil

Mapping of Course outcomes (CO) with program outcomes (PO):

CO NO	Course Outcome	PO/PSO	BTL
CO1	Familiarity with the advanced construction techniques in RCC and their adaptability to architecture.	PO2	2
CO2	Understand and apply various pre-engineered Concrete structures, adaptation in large span structures, pre-engineered Steel structures, adaptation in steel frames/space frames and their components.	PO2	2
CO3	Understand and apply different aspects and technologies involved in the construction of High-rise buildings	PO3	2
CO4	Introduction to advanced building materials and their application in the contemporary architectural practice	PO2	2

Syllabus:

CO1: Advanced construction method in RCC, prestressed concrete beams, slabs, frames, lift slab construction.

CO2: Post tensioning, multi storied building frames, circular slabs, and beams. Uses of rapid hardening cement, Ready mix concrete, light weight concrete. Folded plates like prismatic, V type, trough type, pyramidal, prismatic.

CO3: Shell structure, cyclonic shell, hyperbolic paraboloid. Construction techniques for erection of space frames, suspended roofs, membrane structure, cable structures. Studies on large span structures, multistoried buildings, marine structures, special application steel structures.

CO4: Advanced building materials, plastic, PVC, metals, synthetic boards, fireproof/ resistant boards/ tiles, acoustic materials, composite panels and their application, non-load bearing gypsum blocks, etc.

Textbooks:

1. Construction Technology by R. Chudley, Pearson, 2005
2. Building, Planning, and scheduling by Gurcharan Singh, Standard Publication, 2009

Reference Books:

1. Andrea Deplazes (Ed), Constructing Architecture: Materials processes structures- A Handbook Second Extended edition.
2. James Ambrose, Building Construction Enclosure System.

MOOCS/Web Links:


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<https://www.understandconstruction.com/online-courses-in-building-construction.html>

19AR4122: Housing

L-T-P-S: 2-0-0-0

Credits: 2

Prerequisite: Nil

Mapping of Course outcomes (CO) with program outcomes (PO)

CO NO	Course Outcome	PO/PSO	BTL
CO1	Understand housing and Housing issues	PO1, PO3	2
CO2	Understand Housing, 5-year plans specific to housing	PO1, PO5	2
CO3	Understand Critical Sources of Finance	PO3, PO4	2
CO4	Understand Planning: Physical, Administration, Socio-Cultural, Sustainable, Financial, Future forecasts, and Trends	PO3, PO4	2

Syllabus:

CO1: Concept of shelter, timeline, Dynamics of housing (users, need, demand & supply, terminologies), Migration, urbanization, scale, scope, types, and ownership. Housing issues – Significance in National development; statistics of housing, problems, Future Demands – slums, shortage etc.

CO2: Planning principles & Policies in Housing, 5-year plans specific to housing, Current scenario, Issues & Challenges. National & State policies; Development control regulations; Government & Private agencies, Schemes – Public Private Partnership, Slum rehabilitation Authority, Redevelopment etc. Study of International and Various countries policies in comparison to India.

CO3: Economics of Housing – Concepts, issues, valuation, rent, development cost; Low-cost housing, mass housing, Affordable Housing, Sources of Finance – Banks, Finance agencies. Case studies and exploration and analysis of housing schemes for Rural & Urban areas.

CO4: Study of user profiles, Planning – Physical, Administration, Socio-Cultural, Sustainable, Financial, Future forecasts, and Trends. Contemporary solutions for housing like Bunker houses, 3D printing, Tube houses, Container housing.

Textbooks:

1. Babur Mumtaz and Patweikly, Urban Housing Strategies, Pitman Publishing, London, 1976.
2. Geoffrey K. Payne, Low Income Housing in the Development World, John Wiley and Sons, Chichester, 1984.
3. John F.C. Turner, Housing by people, Marison Boyars, London, 1976.

Reference books:

1. Martin Evans, Housing, Climate and Ocmfort, Architectural Press, London, 1980.
2. Forbes Davidson and Geoff Payne, Urban Projects Manual, Liverpool University Press, Liverpool, 1983.

MOOCS/Web Links:

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<https://www.coursera.org/lecture/health-housing-educational-services/>

19 AR 3142: Interior Design Studio

L-T-P-S: 0-0-4-0

Credits: 2

Prerequisite: Nil

Mapping of Course outcomes (CO) with program outcomes (PO)

CO NO	Course Outcome	PO/ PSO	BTL
CO1	To understand the basic design acumen and anthropometry, ergonomics	PO1	2
CO2	To enhance their skills by applying design concept and theme for small spaces	PO3	2
CO3	Apply the skills in Planning of residential spaces with material usage understanding	PO4	4
CO4	Study and apply anthropometry in hospitality related environment.	PO5	4

Syllabus:

Area of focus/Concern: Introduction to parameters of design, anthropometrics and ergonomics, human activity and use interior spaces and furniture. Analysis of design to perceive elements which define the character of the environment. Analyze the design process and concept formation. Scale and complexity: The students are expected to learn and apply the concepts to design residential interior spaces less than 25sqm carpet area through detailed measured drawings and sketches. Typology: Bedroom/Kitchen/ Living/Dining. Explore their design knowledge in developing interior spaces for small retail spaces by understanding the usage of basic materials and construction. Typology: Retail Outlet/Garment Store/ Boutique.

Reference Books:

1. Karen Mark, Space Planning Basics, Van Nostrand Reinhold, New York 1992
2. Francis.D. Ching & Orky Bingelli, Interior Design Illustrated, Wiley Publishers,

MOOCS/Web Links:

https://www.academyofappliedarts.com/interiordesigncourseonline/?gad=1&gclid=Cj0KCCQjw6KunBhDxARIsAKFUGs8Rz0do-E2JkKSGDiUXWqRrTuWJp5yMnWyJBaw_8ljkUFpG1nfto7EaAlhiEALw_wcB

19AR3245: Landscape Design Studio

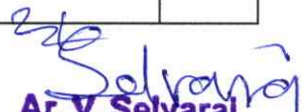
L-T-P-S: 0-0-4-0

Credits: 2

Prerequisite: Nil

Mapping of Course outcomes (CO) with program outcomes (PO):

CO NO	Course Outcome	PO/PSO	BTL
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CO1	To develop an understanding about space design at local level	PO6, PO7, PO8	2
CO2	To develop a skill to integrate various knowledge systems to arrive at a design proposal of an urban scale, the process used for the same	PO6, PO7, PO9	2
CO3	To make the students understand the area, scale, design, and implementation factors with the involvement of stakeholders	PO7, PO8	2
CO4	To make the students work on relatively large project for incorporating multidisciplinary domains in the projects for consideration of the same.	PO4, PO7, PO8, PO9	2

Syllabus:

Area of focus/Concern: Studio Project in Landscape Analysis, Landscape Design and Site Planning. Students are expected to incorporate the other subjects of the present semester to add value to the Studio outcome. Various materials which can be used at site for different components of the built form, may be explored through site visits and observatory studies. Design may be a cumulative result of an informed decisions of varied nature with due care to prevent Soil erosion, promote ground water recharge processes. Scale and complexity: small recreation or civic spaces at community level for medium sized area up to 2 Hectares. Typology/Project: Community gardens, Residential Garden. Exercise related to the application of ecological principles in a range of situations directed towards understanding and proposing design possibilities. Typology/Project: Urban open space systems, Rural Landscape, or Heritage and Cultural Landscape.

Reference Books:

1. C, H.T (n d) Landform Designs, P D A Publications
2. Micheal.L (n d) Landscape Detailing Vol I Enclosure
3. Stevens, D (n d) Ultimate Water Gardens Book.
4. Simons, J.O (n d) Landscape Architecture – A manual of site planning and Design

MOOCS/Web Links:

<https://alison.com/course/landscape-architecture-and-site-planning-introduction-to-landscape-design>

19AR2213: Contemporary Indian Architecture

L-T-P-S: 2-0-0-0

Credits: 2

Prerequisite: Nil

Mapping of Course outcomes (CO) with program outcomes (PO)

CO NO	Course Outcome	PO/PSO	BTL
CO1	Understand the Evolution of Dwellings as base of Traditional	PO1,	2

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	and Vernacular styles of India	PO3	
CO2	Understand the Architecture and Planning of various Cities during Medieval Age	PO1, PO5	2
CO3	Understand the Culture and Built Forms in Pre – Independence (Colonial Rule) and Post-Independence of India	PO3, PO4	2
CO4	Understand the Theories of current Architect practices and their applicability in meeting present day needs	PO3, PO5	2

Syllabus:

CO 1 - Identified Indian Architecture: Ancient Scriptures about Indian construction techniques. Influence of Culture, Tradition on Indian Architecture. Vernacular architecture of Various Zones of identified India, Climatic factors influence on construction style of Vernacular buildings. Traditional Buildings design in different regions of India. Indus Valley civilization and Vedic villages & their Architectural styles. Building Material usage change since medieval to known history of India. Indian Public & Residential Buildings designing.

CO2- Influenced Indian Architecture: Transformation of Indian traditional architecture due to influence of various Indian occupied rulers like Islamic, Mughal, Deccan kings, Vijayanagar empire, etc., Lessons from the public architecture (place designing like Market places, palaces, tombs, forts, public gathering places). Influence of Colonial architecture in transforming the building design and its elements.

CO3- Post Independent & Modern Architecture in India: Indo-Saracenic architecture. Modern architecture influence on Indian Architecture near to post- Independence times. New Delhi, Kolkata, Chennai, Princely states Architecture of India (colonial architecture). International trends like Brutalist architecture, Cubism, etc., influence on Indian architecture. Contributions of BV Doshi, Raj Rewal, Sirish Beri, Nari Gandhi, Achyut Kanvinde, Anantha Raje, Charles Correa, Laurie Baker, etc., to Indian Architecture. Contemporary Indian Architecture: Contemporary theories in Indian Architects like Minimalism, Expressive, Exposed Brick, Earthen Architecture, Sustainable Architecture, etc.

CO4 - The concepts of contemporary architects like Chitra Viswanath, Brinda Somayya, Sanjay Mohe, Jaisim, Bimal Patel, Sirish Beri, etc., Redefining Traditional, and Indian Vernacular styles. Change of Role of Courtyard, opening in the buildings, Natural lighting, Neighbourhood & High-rise Buildings designing. Contemporary public buildings study.

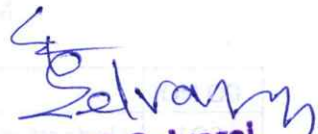
Textbooks:

1. Diane Ghirardo, "Architecture after Modernism", Thames & Hudson, London, 1990.
2. Miki Desai et. al., "Architecture and independence", Oxford University Press, 2000.
3. Christopher Alexander, "Pattern Language", Oxford University Press, Oxford, 1977.
4. Robert Venturi, "Complexity and Contradiction in Architecture", 1977.

References:

1. Jane Jacobs, "Deaths and Life of Great American Cities", Vintage, 2003.
2. James Steele, "Hassan Fathy", Academy Editions, 1985.
3. Kenneth Frampton ed, "Charles Correa", The Perennial Press, 1998.

MOOCS/Web Links:


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https://onlinecourses.nptel.ac.in/noc19_ar14/preview

19AR3116: Contemporary Western Architecture

L-T-P-S: 2-0-0-0

Credits: 2

Prerequisite: Nil

Mapping of Course outcomes (CO) with program outcomes (PO)

CO NO	Course Outcome	PO/PSO	BTL
CO1	Understand Cubism & Constructivism along with various Building styles of Early Modern Architects.	PO1, PO3	2
CO2	Understand Post Modernism and International Style along with Ideas and Works of Various Architects of that time.	PO1, PO5	2
CO3	Understand Critical Regionalism and other alternative practices along with Ideas and Works of Various Architects of that time.	PO3, PO4	2
CO4	Understand Deconstructivism along with Forms, Ideas and Concepts followed by Various Architects in their works.	PO3, PO4	2

Syllabus:

CO1: Early Modern Architecture: Study of various movements. Baroque-Rococo, Cubism, Constructivism, Brutalist Architecture, Neo-Classicism etc., Study of works of Architects: Philip Johnson, Robert Venturi, Frank Lloyd Wright, Mies Van Der Rohe, Oscar Niemeyer, Alvaro Siza, Le Corbusier, Louis Kahn, Richard Neutra, Richard Meier.

CO2 Later Modern Architecture: Post modernism, Various Design & Art schools, and their Philosophies like Bauhaus, Change of ideologies and conceptualization, and international style. Study of the ideas and works of Architects like Paul Rudolph, Robert Venturi, I.M. Pei, Kenzo Tange, Minoru Yamasaki, Kisho Kurokawa, Richard Meier, Toyo Ito.

CO3: Alternative Practices and Ideas: African Architecture, Critical regionalism, works and ideas of Hassan Fathy, Geoffrey Bawa, Tadao Ando, Laurie Baker and Paulo Soleri. 21st Century Architecture: Expressionism, Deconstructivism – Works of Zaha Hadid, Daniel Libeskind, Frank Gehry, Peter Eisenman, Santiago Calatrava and his structural concepts-

CO4: New forms and ideas of Norman Foster, Greg Lynn, Rem Koolhaas. Contemporary concepts of Earthships, Energy Efficiency, Sustainability, Floating Architecture, Biomimetic Architecture.

Textbooks:

1. Kenneth Frampton, "Modern Architecture: A Critical History", Thames & Hudson, London, 1994.
2. Diane Ghirardo, "Architecture after Modernism", Thames & Hudson, London, 1990.
3. Miki Desai et. al., "Architecture and independence", Oxford University Press, 2000.
4. Christopher Alexander, "Pattern Language", Oxford University Press, Oxford, 1977.
5. Robert Venturi, "Complexity and Contradiction in Architecture", 1977.

References:

1. Michael Hays ed., "Architecture Theory" since 1968, CBA, 1999.
2. Jane Jacobs, "Deaths and Life of Great American Cities", Vintage, 2003.


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3. James Steele, "Hassan Fathy", Academy Editions, 1985.
4. Kenneth Frampton ed, "Charles Correa", The Perennial Press, 1998.
5. William Jr. Curtis, "Balkrishna Doshi, An Architecture for India", Rizzoli, 1988

MOOCS/Web Links:

<https://www.conted.ox.ac.uk/courses/western-architecture-the-modern-era-online#:~:text=Using%20a%20specially%2Ddesigned%20virtual,%2C%20text%2Dbased%20forum%20discussions.>

19AR3117B: Sustainable Architecture - I

L-T-P-S: 2-0-0-0

Credits: 2

Prerequisite: Nil

Mapping of Course outcomes (CO) with program outcomes (PO)

CO NO	Course Outcome	PO/PSO	BTL
CO1	To understand the concept of green building need for it in today's context	PO7	1
CO2	To understand the traditional buildings under different climatic zones and the elements in vernacular buildings	PO8	2
CO3	Understanding the climatic influences on built environment	PO8	3
CO4	To understand the importance of site planning and energy efficient landscaping as an important tool in sustainable architecture	PO8, PSO2	3

Syllabus:

CO1: Concept of green building- Introduction to green building concept, need for green buildings today, statistics denoting the impact of built environment on our planet and its resources,

CO2: Traditional methods and materials, techniques that were incorporated in preindustrial era, analysis of traditional knowledge and their relevance in today's context. Indian vernacular architecture concepts and analysis of spatial elements like courtyard houses, terraces, pavilions.

CO3: Use of local materials and climate responsive techniques like jharokas, jaalis, chajjas etc., Climatic influence on buildings design consideration for built environment under different climatic conditions- thermal and visual comfort, thermal conductivity and heat transfer, strategic design to suit the local climatic conditions, physical and technological aspects of the building.

CO4: Site Planning and Landscape Design- relation between site features and design requirements, site planning techniques and checklist and evaluating surface drainage, criteria for plant selection in different conditions.

Textbooks:

1. Thomas, Randall & Fordham Max Sustainable urban design: an environmental approach" 2003.


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Admin Off: 29-36-38, Museum Road, Governorpet, Vijayawada - 520 002. Ph: +91 - 866 - 3500122, 2577715, 2576129.

2. Edwards, Brian and Hyett, Paul Rough guide to sustainability 2001.
3. Langston, Craig A. and Ding, Grace Sustainable practices in the built environment 2001.
4. Givoni Baruch, "Passive and Low Energy Cooling of Buildings", VNR, New York, 1994.
5. Mackenzie Dorothy, "Green design: design for the Environment", Laurence King, London, 1997.

Reference books:

1. Farmer John & Richardson Kenneth, "GreenShift: Changing attitudes in architecture to the Natural World", Architectural Press, Boston, 1999.
3. The European Commission, "A Green Vitruvius: Principles and Practices of Sustainable Architectural Design", James & James, London, 1999
4. Gray, O., Robinetle, "Landscape Planning for Energy Conservation", Van Nostrand Reinhold, New York, 1984.

MOOCS/Web Links:

<https://www.udemy.com/course/psychrometry-and-green-buildings/>

19AR3221A: Appropriate Construction Technologies

L-T-P-S: 2-0-0-0

Credits: 2

Prerequisite: Nil

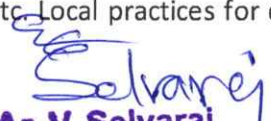
Mapping of Course outcomes (CO) with program outcomes (PO):

CO NO	Course Outcome	PO/PSO	BTL
CO1	Familiarity with the alternative building materials, applying cost effective materials and techniques to resolve environmental issues	PO2, PO3	2
CO2	Familiarity with the indigenous construction materials and techniques for building resilience and disaster mitigation	PO2, PO3	2
CO3	Familiarity with the material and techniques for energy efficient building construction	PO2, PO3	2
CO4	Introduction to Building Information Modelling and application of the same in modern construction industry	PO6	3

Syllabus:

CO1: Apply cost effective building materials and techniques in construction, Study of the availability of Materials, Comprehend the importance of Recycling used Materials, study about different Government departments researching on alternative building materials and techniques, Learning about current architectural practices on alternative building materials and techniques.

CO2: Identify Environmental Issues. Vernacular construction practices as the suitable techniques to make resilient buildings. Various types of construction details of foundations, soil stabilization, retaining wall, plinth fill, flooring, wall, opening, roof, parapets, boundary wall, staircase, etc. Local practices for disaster


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resistance and traditional regional responses.

CO3: Building resources: Passive energy system design, building envelope, Building orientation and components of building fabric, Curtain wall, sourcing, and recycling of building materials. Use of alternative building materials and technologies for making building energy efficient and less resource dependent. Dry construction technology for lesser use of water and other resources.

CO4: Introduction to Building Information Modelling and its application to the building construction industry. Building automation systems - approaches, application – lighting, security, fire detection, office automation, vertical transportation, surveillance. Smart construction, Autonomous equipment, Future Potential for AI in Construction.

Textbooks:

1. Alternative Building Materials and Technologies – By K S Jagadeesh, B V Venkatta Rama Reddy & K S Nanjunda Rao – New Age International Publishers
2. Non-conventional Energy Resources – By D S Chauhan and S K Sreevasthava – New Age International Publishers

Reference books:

1. Buildings How to Reduce Cost – Laurie Backer - Cost Ford
2. Handbook of Low-Cost Housing, A. K. LAL
3. "Automation Systems in Smart and Green Buildings (Modern Building Technology)" by V K Jain

MOOCS/Web Links:

https://www.nibmglobal.com/?gad=1&gclid=Cj0KCQjw6KunBhDxARIsAKFUGs_P9lbwMaEiZnp8PTNlbkGqj62vP-CBUvO8xPSvrwWxy9LfETj5WRoaApdMEALw_wcB

19AR3221B: Sustainable Architecture- II

L-T-P-S: 2-0-0-0

Credits: 2

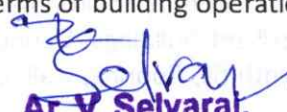
Prerequisite: Nil

Mapping of Course outcomes (CO) with program outcomes (PO):

CO NO	Course Outcome	PO/PSO	BTL
CO1	To understand the importance of energy efficiency in buildings and strategies involved.	PO1, PO4	2
CO2	To understand the importance of relevance of water in built environment	PO6	2
CO3	Introduction to green rating systems and building codes	PO3	2
CO4	Introduction to simulation and analysis software	PO9	2

Syllabus:

CO1: Energy Efficiency in buildings: General understanding of energy efficiency in thermal appliances, electrical appliances, HVAC systems, Energy performance assessment in terms of building operations, and embodied energy; BEE ratings for electrical appliances.


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CO2: Water in built environment: water crisis and increased misuse, water pollution and social implications. Groundwater and surface water management, site planning for efficient water management. Traditional water harvesting techniques in different climatic zones. Green rating systems:

CO3: Introduction to green rating systems like LEED, IGBC, GRIHA Criteria for rating and general understanding and comparison between various rating systems NBC and other national codes for green buildings.

CO4: Simulation Software: General introduction and application of Building Simulation software for various applications like thermal comfort, day lighting, artificial lighting, and HVAC systems.

Textbooks:

1. Energy conservation building code 2007
2. National building code – India
3. International building code

Reference Books:

1. Design for Water | Rainwater Harvesting, Storm water Catchment, and Alternate Water Reuse, Author: Heather Kinkade-Levario, Date of publication: June 2007, Publisher: New Society Publishers; 1 edition, ISBN 978-0865715806
2. Waterscapes | Planning, Building and Designing with Water, Author Editors: Herbert Dreiseitl, Dieter Grau, Karl H.C. Ludwig, Publisher: Birkhäuser Basel, Date of publication: April 2001, ISBN 978- 3764364106

MOOCS/Web Links:

<https://www.udemy.com/course/psychrometry-and-green-buildings/>

19AR4227A: Behavioral Architecture

L-T-P-S: 3-0-0-0

Credits: 3

Prerequisite: Nil

Mapping of Course outcomes (CO) with program outcomes (PO):

CO NO	Course Outcome	PO/PSO	BTL
CO1	To study the activity related to Age groups in public place planning.	PO1	2
CO2	To Understand the Behavioral Interface & Building systems in relation to this.	PO6	2
CO3	To Understand the Behavioral Design process and execution to create evaluation methods.	PO3	2
CO4	To study and Understand the Influence Behavioral Architecture on Urban Environment.	PO9	2

Syllabus:

CO1: Introduction to Behavioral Architecture: Designing for pattern and activities, Archetypal activities/Archetypal spaces: planning of public spaces with reference to age groups and activities.

CO2: Building Systems: Room use, geometry & meaning, hidden behavioural assumptions, adjacencies, vertical bypass & horizontal bypass, various stages in the design of building subsystems.

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CO3: Behavioural Design: Process organization chart, affinity matrices, pictograms: behavioral design process model, design context, activity/adjacency relationship, evaluation chart, Area use frequency program, simultaneous use, community utilization map, occupancy load profile, defensible space, EDRA etc.,

CO4: Urban Environment: Patterns of activity in time and space, the ecology of a neighborhood park and playground, cross-cultural issues, social & psychological issues in the planning of new towns, environmental perceptions and migration, awareness and sensitivity to open spaces, environmental cognition.

Textbooks:

1. Burnette, C. (1971). Architecture for human behaviour Philadelphia Chapter: AIA.
2. Canter, D. and Lee, T. (1974). Psychology and the built environment. New York: Halstead Press.
3. Christopher, A. et al. (1977). A pattern language. New York: Oxford University Press.
4. Clovis, H. (1977). Behavioural architecture. McGraw Hill.
5. Lynch, K. (1973). The image of a city. Cambridge:MIT.
6. Sanoff, H. (1991). Visual research methods in design. New York: John Wiley & Sons.
7. Zeisel, J. (1984). Enquiry by design: Tools for environment – behaviour research. Cambridge: Cambridge University Press.

MOOCS/Web Links:

<https://www.udemy.com/course/behavioral-design-user-experience/>

19AR4227B: Disaster Mitigation and Management

L-T-P-S: 3-0-0-0

Credits: 3

Prerequisite: Nil

Mapping of Course outcomes (CO) with program outcomes (PO):

CO NO	Course Outcome	PO/PSO	BTL
CO1	To Understand the necessity for disaster management and measures that are to be followed.	PO9	2
CO2	To Study the Disaster preparedness and Involving Design Considerations for buildings	PO3	2
CO3	To study the Design considerations for Disaster management and precautions.	PO3	2
CO4	To Understand the Relief & Rehabilitation for Disasters	PO4	2

Syllabus:

CO1: Introduction: Disaster Management & its necessity; Types, characteristics, causes & impacts; Natural disasters, Manmade disasters, Epidemics; Institutional & Legal arrangement; NDMA; Financial arrangement; Role of Architect at all stages of Disaster Management.

CO2: Disaster Prevention & Mitigation: Risk Assessment & Vulnerability Mapping; Long-term measures; Review & revision of building byelaws & codes; Hospital Preparedness; Retrofitting; Mitigation strategies, Trigger Mechanism; Capacity building; Awareness programs. Architectural Design considerations.

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CO3: Disaster Preparedness: Forecasting & Early Warning Systems: Plans of action for probable disasters; emergency, medical, casualty management systems; Resources needed; Training, Simulation & Mock Drills; Partnerships for Mitigation & Preparedness; Audit of buildings & infrastructure; Architectural. Design considerations. Response: Role of various agencies; Standard Operating Procedures (SOPs); Levels of Disasters; Incident Comm& System (ICS); First & Other Key Responders; Medical Response; Information & Media Partnership; Search & rescue; Architectural Design considerations.

CO4: Relief & Rehabilitation: Temporary Relief Camps; Management of Relief Supplies; Provision of Intermediate Shelters; Relocation & reconstruction, repair & retrofitting of buildings & infrastructure; Socio-cultural-economic considerations; Capacity building for self-help construction; training & awareness programs. Architectural Design considerations.

Textbooks:

1. Mary C Comerio; Disaster Hits Home, New policy for Urban Housing Recovery, Oxford University Press, London; 2001
2. Proceedings – Learning from practice- Joint US and Italy Workshop-October 18- 23; 1992; National Science Foundation; US
3. Earthquake Resistant Design and Construction of buildings- Code of Practice- Bureau of Indian Standards; 1993
4. Encyclopedia of Disaster Management Policy and Administration, Vol. I, S. L. Goel, Deep of Deep Publication Pvt. Ltd., New Delhi, India.

MOOCS/Web Links:

<https://nidm.gov.in/online.asp>

19AR2136: Computer Studio – I

L-T-P-S: 0-0-4-0

Credits: 2

Prerequisite: Nil

Mapping of Course outcomes (CO) with program outcomes (PO)

CO NO	Course Outcome	PO/PSO	BTL
CO1	To understand the basics of computer system and their supporting technologies.	PO1	2

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CO2	To create documentation reports, analysis reports, and audio-visual presentations.	PO1	2
CO3	To reciprocate the tools of 2D visualization to create architectural drawings.	PO1	2
CO4	To create layouts, plot/print to scale drawings, design and edit 2D graphic images.	PO1	2

Syllabus:

CO1: Introduction to Computer and Image Editing Technology of small computer system, computer terminology operation principles of P.C, introduction to application software, and graphic system, and use of printers, scanner, plotter, File management, etc.

CO2: Understanding Bitmap images and Vector Graphics, Image size and Resolution. Basic Tools for Editing and Creating Graphics. Introduction to tools which help them create audio – visual presentations and architectural data analysis such as word processing package, spread sheets, multimedia presentations.

CO3: Detail application of tools which enhance presentation and documentation skills – formatting text, inserting tables, pictures, creating charts, creating formulas, slide animations etc.

CO4: Understanding the drawing unit's settings, templates, coordinate system, limits, drawing tools, drawing objects, object editing, text, and dimensioning. Layers, transparent overlays, hatching utilities, line type, line weight and colour. Multiline, Polyline, etc. Styles, blocks, and symbol library.

Textbook:

1. Deke McClelland, "Photoshop 7 Bible Professional Edition", Wiley John & Son INC, New York, 2000.
2. Aouad, "Computer Aided Design guide for Architecture, Engineering and construction", Spon process, 2012.
3. Adobe Creative Team – Adobe Photoshop CS (Class Workbook).

Reference books:

1. Ralph Grabowski, "The Illustrated AutoCAD 2002 Quick Reference", 1st edition, Cengage Learning, 2001.
2. Shamtikoo, "AutoCAD 2000: A Problem-Solving Approach", DelmarCengage, 1999.
3. Fiorello. J. A., "CAD for Interiors beyond the basics", Wiley publications, 2011.

MOOCS/Web Links: <https://www.udemy.com/course/autocad-2020-for-designers-a-problem-solving-approach/>

19AR2239: Computer Studio – II


L-T-P-S: 0-0-4-0

Credits: 2

Prerequisite: Nil

Mapping of Course outcomes (CO) with program outcomes (PO)

CO NO	Course Outcome	PO/PSO	BTL
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CO1	To understand interface, workspace, and utilization of tools of 3D modeling software applies the required tools and components in building a 3D model.	PO1	2
CO2	To create documentation reports, analysis reports, and audio-visual presentations.	PO1	2
CO3	To understand, visualize the space and apply the tools of BIM software, identify the need of tools of BIM software.	PO2	2
CO4	To create a detailed 3D model by working in collaboration by application of advanced tools	PO2	2

Syllabus:

CO1 - Explain the uses of BIM (building information Modeling), touching upon the Concepts used in 2D Drawing and extending to 3D Modeling, Basic awareness on Interface, Setting up workspace.

CO2- 3D modeling using Walls – Windows – Doors– floors – Slabs – Staircase – Railing – Furniture. Basic editing of components. Using Cross Sections Tool.

CO3 - Exporting 3D Model to Architectural 2D- Drawings (Plans – Elevations – Sections – Details.). Introduction – Applying materials – Creating and Editing materials – Setting up Camera – Rendering settings – Enhancing final output using Image editing software.

CO4 - Curtain Walls – Columns – beams – Massing – working in collaboration. Adding Architectural Elements – Creating components – Rendering in Cloud.

Textbooks:

1. Ryan Duell, Tobias Hathorn, Tessa ReistHathorn, "Autodesk Revit Architecture 2016 Essentials: Autodesk Official Press", Sybex, First Edition, 2016.
2. Eric Wing, "Autodesk Revit 2017 for Architecture No Experience Required", Sybex, First Edition, 2016.

Reference books:

1. Marcus Kim, Lance Kirby, Eddy Krygiel, "Mastering Autodesk Revit 2017 for Architecture", Wiley India, 2016.
2. Prof Sham Tickoo Purdue Univ, "Exploring Autodesk Revit 2017 for Architecture", CAD/CIM, Technologies, 13th Edition, 2016.

MOOCS/Web Links:

<https://www.udemy.com/course/bim-training>

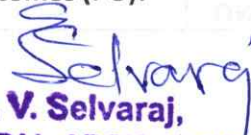
19AR4251: Working Drawing-II

L-T-P-S: 0-0-4-0

Credits: 2

Prerequisite: Nil

Mapping of Course outcomes (CO) with program outcomes (PO):


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CO NO	Course Outcome	PO/PSO	BTL
CO1	To train the students to prepare detailed Working drawings for effective execution at construction site.	PO7, PO8	2
CO2	To teach students the essential components of working drawings, notations, drawing standards,	PO3, PO9	2
CO3	To preparation of integrated services drawings and detailing for varioustypes of drawings and methods of transmittals and record keeping.	PO6, PO8	3
CO4	To update the latest materials knowledge with specifications	PO10	5

Syllabus:

An overview of site marking procedure, “techniques/thumb rules” to ensure effective translation from “working drawings” to actual site execution, and developing Site Plan, Site Marking Plan, Site Grading/ Levelling Plan. Integration with schedule of joinery, schedule of hardware, finishing materials, method of dimensioning, appropriate section line markings. Developing elevations, sections, part sections, wall sections integrated with finishing materials, etc. Construction details for lifts, dumb waiters, escalators, travelators. External Plumbing Layout and details. Details of Septic tank. An overview of “all service systems integrated drawings” and the effectiveness of “Building Information modeling – BIM” to achieve the same. “Working drawing titles”, drawing documentation/record keeping, drawing transmittals, revision updating / superseded drawings, and “as built drawings”.

Reference Books:

1. Building and Construction Authority. (2005). CONQUAS-22. Singapore: The BCA Construction Quality Assessment System.
2. Jefferis, A. and Madsen, D.A. (2005). Architectural Drafting and Design. 5th Ed. New York: Thomson Delmar Learning.
3. Jeong, K-Y. (2010) Architecture Annual. Seoul: Archiworld Co.
4. Joe, B. (Ed). (2002). Details in Architecture: Vol. I-V. Victoria: The Images Publishing group.
5. Osamu, A. W., Linde, R. M. and Bakhoum, N. R. (2011). The professional practice of architectural working drawings. 4th Ed. Hoboken: John Wiley & Sons.
6. Weston, R. (2004). Plans Sections Elevations – Key buildings of the twentieth century. London: Laurence King Publishing.

MOOCS/Web Links:

<https://www.udemy.com/course/complete-course-on-architectural-working-drawings/>

19AR5154: Practical Training

L-T-P-S: 0-0-40-0

Credits: 20

Prerequisite: 19AR4225

Mapping of Course outcomes (CO) with program outcomes (PO):

CO NO	Course Outcome	PO/PSO	BTL
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CO1	To make students familiar with the daily realities of an architectural practice through Practical Training	PO6	2
CO2	To facilitate an understanding of the evolution of an architectural project from design to execution.	PO6	2
CO3	To enable an orientation that would include the process of development of conceptual ideas, presentation skills.	PO6	2
CO4	Involvement in office discussions, client meetings, development of the concepts into working drawings, tendering procedure.	PO6	3
CO5	Site supervision during execution and coordination with the agencies involved in the construction process.	PO6	5

Syllabus:

Practical Training: Practical Training will be done in offices/ firms in India in which the principal architect is registered with the Council of Architecture. If students opt for offices/ firms abroad, they need to check that the Principal Architect is registered with the Country/ Region's Approving Authority. The students are expected to work on presentation/ working drawings, specifications, and quantity estimation. The students are also expected to familiarize themselves with coordination of structural and services drawing with architectural drawings. It is desired that the students undertake site visits and understand construction practices. The Progress of Practical Training: The progress of practical training will be assessed periodically internally through submission of logbooks along with work done by the students in terms of drawings, reports, etc., along with the regular progress report from the employers. The students are also required to submit a report describing various concepts learnt during training, experiences of site visit and estimation / costing activities etc.

19BB32C1: Human Resource Management

L-T-P-S: 3-0-0-0

Credits: 3

Prerequisite: Nil

Mapping of Course outcomes (CO) with program outcomes (PO):

CO	Course Outcomes	PO/PSO	BTL
CO 1	Integrated perspective on role of HRM in modern business. Ability to plan human resources and implement techniques of job design	PO5,	1,2
CO 2	Competency to recruit, train, and appraise the performance of employees	PO5,	2
CO 3	Rational design of compensation and salary administration	PO5,	2
CO4	Ability to handle employee issues and evaluate the new trends in HRM	PO5,	2

Syllabus:

CO1: Introduction: Importance and Functions, Scope of HRM, Human Resource Management in a changing environment; Manpower Planning: Manpower planning process, Job Description and Job specification, Job analysis and Job design; Techniques of Job design.


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CO2: HR Processes: Employee Selection and Development - Recruitment, Selection and Induction, Training and Development, Performance Appraisal. Compensation Planning- Employee Compensation, Job evaluation,

CO3: Employee Benefits and Welfare, Compensation and Salary Administration. Governance: Integration and Separation Employee Discipline, Suspension, Dismissal and Retrenchment; Employee Grievance Handling, Trade Unionism, Collective Bargaining, Industrial Democracy, Labour Laws.

CO4: New Trends in HRM: HRM in India, HRM in International Firms, talent management, HR Accounting, HR Audit, HRIS.

Textbooks:

1. Corporate Entrepreneurship: Building the Entrepreneurial Organization, Paul Burns Palgrave Macmillan.
2. Innovation and Entrepreneurship, Drucker F Peter, 1985. Heinemann, London.

MOOCS/Web Links:

<https://www.linkedin.com/learning/human-resources-foundations>

19BB32C3: Innovation and Entrepreneurship

L-T-P-S: 3-0-0-0

Credits: 3

Prerequisite: Nil

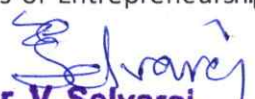
Mapping of Course outcomes (CO) with program outcomes (PO):

CO NO	Course Outcome	PO/PSO	BTL
CO1	Explain and apply the key terms, definitions, and concepts used in the study of Innovation and Entrepreneurship Development	PO5	2
CO2	Demonstrate how as an entrepreneur he can use the concepts of Innovation, to create new product, services, and business processes	PO5	2
CO3	Construct a well-structured business plan by including all the necessary elements of the business plan	PO5	2
CO4	Demonstrate how as an entrepreneur he can use the concepts of Entrepreneurship, to develop a new entrepreneurial organization	PO5	2

Syllabus:

CO1: Introduction to Innovation: Concept of innovation, Sources of innovation, Innovation Life cycles – leveraging market, technology, and S –curves, Disruptive innovations, Technology adaptation and diffusion, Intellectual Property – Patents, Trademarks, and copy rights. Innovations Management: Invention vs. Innovation; Innovation Strategies, Models; Concurrent Engineering; Process Innovation; Economics of Innovation.

CO2: Innovation Management process. The Entrepreneurial Development Perspective: Concepts of Entrepreneurship Development; Evolution of the concept of Entrepreneur; Drivers of Entrepreneurship:


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Attributes and Characteristics of a successful Entrepreneur; Role of Entrepreneur in Indian economy and developing economies with reference to Self-Employment Development; Entrepreneurial Culture; Women Entrepreneurship. Creating

CO3: Entrepreneurial Venture: Defining Business Idea; Techniques of generating business ideas, Opportunity assessment; Business Planning Process; Environmental Analysis - Search and Scanning; Identifying problems and opportunities; Basic Government Procedures to be complied with.

CO4: Entrepreneurship Development: Role of Central Government and State Government in promoting Entrepreneurship - Introduction to various incentives, subsidies, and grants - Export Oriented Units - Fiscal and Tax concessions available; Role of different agencies in the Entrepreneurship Development; Innovation and Entrepreneurship in different sectors in India.

Textbooks:

1. Corporate Entrepreneurship: Building the Entrepreneurial Organization, Paul Burns Palgrave Macmillan.
2. Innovation and Entrepreneurship, Drucker F Peter, 1985. Heinemann, London.

MOOCS/Web Links:

<https://www.udemy.com/course/innovation-entrepreneurship>

19AR1131: Architectural Design Studio – 1 (Basic Design)

L-T-P-S: 0-8-0-0

Credits: 8

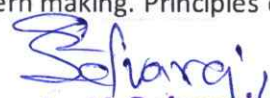
Prerequisite: Nil

Mapping of Course outcomes (CO) with program outcomes (PO):

CO NO	Course outcome	PO/PSO	BTL
CO1	An understanding of the qualities of different elements as well as their composite fusions	PO1, PSO2	2
CO2	An ability to engage and combine the elements of design in spontaneous as well as intentional ways to create desired qualities and effects	PO1, PSO2	2
CO3	Development of required skills – observation / analysis / abstractions / interpretation / representations / expressions through models and drawings	PO3, PSO2	2
CO4	Understanding of 3D Composition by involving students in a few exercises which will help generation of a form from a two dimensional / abstract idea.	PO3, PSO2	2

Syllabus:

Elements of Design: Properties, qualities and characteristics of point, line, direction, shape, form, colour, texture and Light. Extraction of basic forms from natural and manmade environment. Enquiry into form both geometric and non-geometric entities. Exercises on Visual Composition and Pattern making. Principles of


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Design: Understanding Architectural Aesthetics. Principles such as Balance, Symmetry, Asymmetry, Proportion, Scale, Harmony, Rhythm, and Contrast. Exercises on Visual Composition and Pattern making, Logo design, Collage, Abstraction. Composition using different types of Grids – Orthogonal, Radial, etc. Evolution of Forms and Spaces: Study of solids & voids to evolve sculptural forms & spaces; explore play of light & shade and application of colour. Introduction to external & internal forms, analytical appraisal of forms, their quality; Concept of space, interrelationship between space, volume, and order; Variations in forms with planer juxtapositions. Anthropometric Study and Ergonomics: Anthropometric study and ergonomics human figure (including differently able persons), dimensions of furniture - relationship with human anthropometrics with freehand drawing of human figures, vehicles, trees, buildings etc. to have a better understanding of proportion.

Textbooks:

1. Francis D. K. Ching - Architecture - Form Space and Order Van Nostrand Reinhold Co., (Canada), 1979.
2. Charles Wallschlagger & Cynthia Busic-Snyder, Basic Visual Concepts and Principles for Artists,

Reference books:

1. Architect: A Candid Guide to the Profession, by Roger K. Lewis
2. Understanding Architecture: Its Elements, History, and Meaning by Leland M. Roth, West view Press Place publication.
3. Elda Fezei, Henry Moore, Hamlyn, London, New York, Sydney, Toronto, 1972.
4. Lawrence Bunchy - Acrylic for Sculpture and Design, 450, West 33rd Street, New York, N.Y. 10001, 1972.
5. Exner. V, Pressel. D, Basics Spatial Design, Birkhanser, 2009.
6. Owen Cappleman & Michael Jack Jordon, Foundations in Architecture: An Annotated Anthology of Beginning Design Project, Van Nostrand Reinhold New York, 1993.

MOOCS/Web Links:

<https://www.coursera.org/learn/autodesk-revit-architectural-design>

19 AR5255: Architectural Thesis

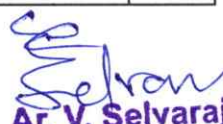
L-T-P-S: 0-12-0-0

Credits: 18

Prerequisite: 19AR5154

Mapping of Course outcomes (CO) with program outcomes (PO):

CO NO	Course Outcome	PO/PSO	BTL
CO1- CO5	Culmination of the development of the student's	PO7, PO8	5


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knowledge, attitudes, and skills over the course of studies in architecture.		
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Syllabus:

Architectural Thesis: The Architectural Thesis is the culmination of the development of the student's knowledge, attitudes, and skills over the course of studies in architecture. It is an occasion for exercising conscious choices in the field, based on the student's personal abilities and inclinations, and for testing out his commitment. The student, in consultation with the faculty, is expected to demonstrate through an imaginative approach, his expertise in effecting positive changes in our built environment. Students can choose a topic of their choice in terms of design potential and/ or idea exploration to be taken up for completion. The topic could be project based with specific areas of study/ approach or study/ approach based leading to a project. If the latter, care should be taken to choose topics that can lead to sufficient architectural design component. Students should submit the topic for approval with a rough outline of the nature of the project, area of interest, study and design scope, challenges, possible case studies, methodology and outcome. Tentative topics to study: The areas of study/research/design can include any of the broad areas of the discipline – contemporary needs of society, history, theory, sustainability, structural or service-oriented design, projects that involve complex planning and integration of several aspects, appropriate architecture, urban design, contemporary processes, social housing, urban oriented architectural design, conservation oriented architectural design, etc. Submission Requirements: The progress of work will be reviewed periodically throughout the semester. At the end of the semester, students should submit the final thesis project for the viva voce exam. The final submission will comprise of study sheets, optional study models, design approach sheets, optional design process models, design presentation sheets, final model, detailed drawings of an important part of the project, project report summarizing the entire thesis work, and soft copy of all the work.

Textbook:

1. Linda Grant and David Wang, "Architectural Research Methods", John Wiley Sons, 2002.

Reference Books:

1. Stephen A. Kliment, Editor 'Building Type Basics' Series, Wiley.
2. Igor Marjanović, Katerina Rüedi Ray, Lesley Naa Norle Lokko, 'The Portfolio – An Architecture Student's Handbook', Routledge, 2003.
3. Arvind Krishnan & Others, "Climate Responsive Architecture", A Design Handbook for Energy Efficient Buildings, TATA McGraw Hill Publishing Company Limited, New Delhi, 2007.


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