School of Architecture,
KLE Technological University,
BVBCET Campus, Vidyanagar, Hubli.

CURRICULUM SCHEME & SYLLABUS OF

III Semester - IV Semester

(Year of introduction-2015, Faculty-A, Architecture-AT, Core course-C, Humanities-H, Lab-L, Elective-E, internship-I, Practice-p, W-Project)

Semester: III (2020-21)

Sr.No	Course code	Course Title	Period			Evaluation scheme			Credit (L+T+P)	Hours
			L	T	P	ISA	ESA	Sub total		
1	18AATC201	Architectural Design III	0	6	0	50	50	100	6	9
2	18AATC202	Building Const & Materials III	0	4	0	50	50	100	4	6
3	18AATC203	Services – I (w s & sanitation)	2	0	0	50	50	100	2	2
4	18AATC204	Climatology	2	0	0	50	50	100	2	2
5	18AATC205	History of Architecture II	2	0	0	50	50	100	2	2
6	18AATC206	Measure Drawing	0	2	0	50	50	100	2	4
7	18AATC207	Structures – III	3	0	0	50	50	100	3	3
8	18AATP201	Digital Tool-II	0	0	1	50	50	100	1	2
TOTAL			9	12	1	400	400	800	22	30

ISA: In-semester Assessment **ESA**: End Semester Assessment **L**: Lecture **T**: Tutorials **P**: Practical

Credit	Lecture Hours	Studio Hours	Practical Hours
1	**1**	**1.5**	**2**

Program Head

Signature of Dean (Academic Affairs)

Semester: IV (2020-21)

Sr.No	Course code	Course Title	Period			Evaluation scheme			Credit (L+T+P)	Hours
			L	T	P	ISA	ESA	Sub total		
1	18AATC208	Architectural Design IV	0	6	0	50	50	100	6	9
2	18AATC209	Building Const & Materials IV	0	4	0	50	50	100	4	6
3	18AATC210	Services II (Electricity & Illumination)	2	0	0	50	50	100	2	2
4	18AATC211	History of Architecture III	2	0	0	50	50	100	2	2
5	18AATC212	Theory of Architecture	2	0	0	50	50	100	2	2
6	18AATC213	Quantity survey & specification	2	0	0	50	50	100	2	4
7	18AATC214	Structures – IV	3	0	0	50	50	100	3	3
8	18AATE201 TO 206	Elective-I	0	1	0	50	50	100	1	2
TOTAL			11	11	0	400	400	800	22	30

ISA: In-semester Assessment **ESA**: End Semester Assessment **L**: Lecture **T**: Tutorials **P**: Practical

Credit	Lecture Hours	Studio Hours	Practical Hours
1	**1**	**1.5**	**2**

Program Head

Signature of Dean (Academic Affairs)

III- SEMESTER

Program : Architecture		
Course Title: ARCHITECTURAL DESIGN – III		Course Code: 18AATC201
L-S-P: 0-6-0	Credits: 6	Contact Hours: 9
ISA Marks: 50	ESA Marks: 50	Total Marks: 100
Teaching Hours: 126	Examination Duration: NA	

Course contents:

To develop skills for comprehensive understanding and dealing with Socio Cultural aspects of Architecture. To develop the ability to create spaces and corresponding form. Provide skills for designing multi-user and multi level spaces.

The design issues to be addressed are Socio Cultural Aspects of smaller scale community .

- Contextual Based Design
- Multi user and multi level space formation
- Integration of material and form.
- Develop skills to correlate the materials and the resulting form.

The list of suggested spaces to be covered as design projects: Architectural Exhibition / display spaces, museums, cultural centers, higher level academic spaces, multi activity Recreational spaces, NeighborhoodCommunity spaces, Healthcare Centers etc.

Necessary theoretical inputs to be given highlighting the norms and design issues. At least one major exercise and one minor design/ time problem should be given.

Scheme for Internal semester assessment (ISA)

Regular assignments , Models , Reviews.

Term work: Evaluation of Portfolio and assignments by internal examiner.

Scheme for End Semester Assessment (ESA)

Term work: Evaluation of Portfolio and assignments by internal and external examiners/Viva

Mode of assessment: Portfolio, Physical models ,manual hand drafted drawings.

Text Books: NIL

Reference Books:

1. Time Saver Standard for Architectural Data by John Hancock.
2. Architectural Graphic Standards by Ramsey and Sleeper.
3. Magazines and Design related books
4. Architecture: Form, Space and Order, Ching, Francis DK
5. Design and Form: The basic course at the Bauhaus, Itten, Johannes.
6. Elements of space forming, Yatin Pandya.
7. Architectural Composition, Krier, Rob

Program : Architecture		
Course Title: BUILDING CONSTRUCTION&MATERIALS- III		Course Code: 18AATC202
L-S-P: 0-4-0	Credits: 4	Contact Hours: 6
ISA Marks: 50	ESA Marks: 50	Total Marks: 100
Teaching Hours: 84	Examination Duration: 3 hrs	

Course contents

UNIT I:

RCC foundation, columns and beams

shallow foundation- Types, with reinforcement arrangements for i) isolated ii) combined

iii) Combined with strap beam iv) eccentric v) raft, etc.

Deep foundation- Introduction to and study of pile, grouping of piles & pile cap.

Materials, formwork, stairs

Reinforcement - Types, properties & uses of plain, ribbed, twisted, TMT, weld mesh, HT wires etc.

Concrete- Ingredients, grades of concrete, properties of concrete, proportioning, mixing, transporting, placing, compaction & curing.

Special concrete - RMC, concreting under water, light and heavy weight, dense, etc

Form-work- Purpose of form work in concrete works. Various materials used, precautions to be taken and removal time

RCC COLUMNS - Various shapes of columns and types of reinforcement arrangements.

BEAMS – Reinforcement arrangement for i) simply supported ii) continuous iii) cantilever iv) brackets.

UNIT II:

Stairs - Introduction to, types & calculation of stairs. Study of stairs in 1) RCC. Construction details for timber, fabricated steel & RCC, including fixing of handrail in various materials

UNIT III:

Joints in RCC.

Study, necessity & construction details of construction joint and expansion joints

Scheme for Internal semester assessment (ISA)

Regular Assignments, models.

Term work: Evaluation of Portfolio, assignments by internal examiner

Scheme for End Semester Assessment (ESA)

External examination-3 hrs

Mode of assessment:

Portfolio&Theory Exam.

Text Books: NIL

Reference Books:

1. McKay J.K Building Construction Metric Vol 1-4, 4th edi Orient Longman Pvt. Ltd, Mumbai,2002
2. "Construction Technology" volume-I by R Chudley, ELBS & Longman group Ltd.
3. Barry R, "The construction of buildings" , Vol-2, 5th Edi, East West Press, New Delhi 1999.
4. Bindra S.P and Arora S.P, Building Construction-Planning Techniques and Method of Construction, 19th edi, Dhanpat Rai Pub ,NewDelhi, 2000
5. "Building Construction" by Janardhan Jha, Khanna New-Delhi.
6. Rangawal S.C ,"Building Construction" 22nd Edi, charotar Publishing house, Anand, 2004
7. "Engineering Materials" by Surendra Singh, Vikas Delhi.
8. "Building Materials" by S K Duggal, IBH New Delhi.
9. Sushil Kumar T.B of Building Construction 19th edi, Standard Pub House, NewDelhi, 2003.
10. Chowdhary K.P. Engineering Materials used in India, 7th Edi, Oxford and IBH Pub ltd New Delhi, 1990.
11. Building Construction Hand book : By R Chudly & R Greeno, Bullerworth Heinemann, New-Delhi.

Scheme for End Semester Assessment (ESA)

Sl.No	8 Questions to be set of 20 Marks Each	Chapter Number	Instructions
I	Q.No.-1, Q.No.-2,	1, 2	Solve Any **1** out of **2**
II	Q.No.-3, Q.NO – 4,	3, 4	Solve Any **1** out of **2**
III	Q.No.-5, Q.No.-6	4,5	Solve Any **1** out of **2**

Program : Architecture		
Course Title: SERVICES – I (WATER SUPPLY & SANITATION)		**Course Code: 18AATC203**
L-S-P: 2-0-0	**Credits: 2**	**Contact Hours: 2**
ISA Marks:50	**ESA Marks: 50**	**Total Marks: 100**
Teaching Hours: 28	**Examination Duration: 3HOURS**	

Course contents

UNIT I:

1: Sources and purification of water

Surface and underground sources of water supply, pollution and preventive measures.

Purification ----filtration, disinfection, softening, miscellaneous methods of water treatment.

2: Domestic water supply

Water requirement for different types of buildings, pipes, valves, wash basins, sink, bath tubs, flushing cisterns, showers, jets, faucets. Cold and hot water supply for ground and multi-storied buildings. Provision for fire fighting, solar heating systems, geysers.

UNIT II:

3: Sanitation

Importance of sanitation, definitions, types of refuse, collection and disposal systems. Rural sanitation. Types of fixtures and materials. Sanitary requirements for various types of buildings.

4: Drainage systems

Principles, location of sanitary units, separate and combined systems, septic tanks, aqua privy. Drainage system for ground and multistoried buildings including. storm water drainage, rain water harvesting.

UNIT III:

5:Recycling

Sewage pumping stations, waste water treatment, oxidation. recycling of sewage water.

6: Site planning

Roads and pavements, drainage of roads, drainage on sloping sites, sub soil drainage. Site planning from drainage and water supply point of view.

Scheme for Internal semester assessment (ISA)

Regular Assignments.

Scheme for End Semester Assessment (ESA)

External examination-3 hrs

Mode of assessment: Portfolio& Theory Exam.

Text Books:NIL

Reference Books:

1. Husain, S. K. T. B. of water Supply and Sanitary Engineering, 3rd ed. Oxford and IBH Pub. Ltd. New Delhi, 1994.

2. Kshirsagar,S.R. Water Supply Engineering, 6th ed. Roorkee Pub, Roorkee, 1980.
3. Rangawala, S.C. Water Supply and Sanitary Engineering ; Environmental Engineering, 19th ed. Charotar Pub. House, Anand, 2004.
4. S.C. Rangawala, fundamentals of water supply and sanitary engineering. Charotar Pub. House, Anand,
5. Iussain S. K. water supply and sanitary engineering, Dhanapat Rai and Sons, Delhi Relevant I.S. Codes
6. Basic Plumbing techniques, Orthobooks, Chevron Chemical Company, Consumer products Div., Box 5047, San Ramon, CA 94583
7. G.M. Fair, J.C. Geyer and D.A. Oku, Water and Waste Water Enineering, vol.II, John Wiley and Sons, Inc. New York, 1968
8. Manual of water Supply and Treatment , 2nd edition , CPHEEO, Ministry of works And HOUSING New DELHI , 1980
9. Manual ON sewage Treatment , CPHEEO, Ministry of works And HOUSING New DELHI , 1977

Scheme for End Semester Assessment (ESA)

Sl.No	8 Questions to be set of 20 Marks Each	Chapter Number	Instructions
I	Q.No.-1, Q.No.-2,	1, 2	Solve Any **1** out of **2**
II	Q.No.-3, Q.NO – 4,	3, 4	Solve Any **1** out of **2**
III	Q.No.-5, Q.No.-6	4,5	Solve Any **1** out of **2**

Program : Architecture		
Course Title: CLIMATOLOGY		**Course Code: 18AATC204**
L-S-P: 2-0-0	**Credits: 2**	**Contact Hours: 2**
ISA Marks: 50	**ESA Marks: 50**	**Total Marks: 100**
Teaching Hours: 28	**Examination Duration: 3hrs**	

UNIT I:

Introduction – Elements of Climate, Enumerating and representing climatic data. Classification of Climate, major Climatic Zones of the World, tropical Climate further Classification.Climatic Zones of India, Classifications, case study of one city within each Zone.

UNIT II:

Thermal Comfort, effect of Climatic Elements on thermal Comfort, Heat Exchange Process, Effective Temperature

Natural Ventilation, effect of openings in internal and external features, Design Considerations etc. Effect of Landscape elements and site topography, reading climate data, climate analysis and data validation through climate consultant software.

UNIT III:

Bioclimatic chart, Design Consideration for various climatic zones of INDIA, with respect to Shading devices, Day Lighting Factors, Components of day light factor and its design considerations, Rainfall considerations etc.

Construction Techniques for Improving Thermal Performance of Walls and roofs at various climatic Zones in India. Climate data representation through flow design and ecotect software. Design project of not more than 500sqm. built up incorporating all the components of climate responsive architecture.

Scheme for Internal semester assessment (ISA)
Regular Assignments, Architectural models, rendered sheets and photos

Scheme for End Semester Assessment (ESA)
External examination-3 hrs

Mode of assessment :
Portfolio& Theory Exam.

Reference Books : NIL

Text Books:

1. Arvind Kishan , Baker & Szokolay, Climate Responsive Architecture.
2. Manual of Tropical Housing & Buildings (PartII)" Koenigsberger.
3. Buildings in the tropics by Maxwell Fry
4. Housing , Climate and Comfort by Martin Evans

Scheme for End Semester Assessment (ESA)

Sl.No	8 Questions to be set of 20 Marks Each	Chapter Number	Instructions
I	Q.No.-1, Q.No.-2,	1, 2	Solve Any **1** out of **2**
II	Q.No.-3, Q.NO – 4,	3, 4	Solve Any **1** out of **2**
III	Q.No.-5, Q.No.-6	4,5	Solve Any **1** out of **2**

Program : Architecture		
Course Title: HISTORY OF ARCHITECTURE - II		Course Code: 18AATC205
L-S-P: 2-0-0	Credits: 2	Contact Hours: 2
ISA Marks: 50	ESA Marks: 50	Total Marks: 100
Teaching Hours: 32	Examination Duration: 3 Hrs	

Course contents

UNIT I:

1:Evolution of Buddhist Architecture

Characteristic features of Buddhist Architecture, Sanchi Stupa, Viharas and Chaitya Halls

2:Introduction to temple architecture

Essential characteristics of Indian temple,different types of temple architecture

Evolution of Hindu Temple

Temples at Udayagiri, Tigawa, ,Bhitargoah

3. Evolution of Indo Aryan Temples

Orissa Group of Temples - The Sun temple of Konark , The Lingraja Temple at Bhubaneswar ,

Khajuraho Group of Temples - Kandariya Mahadev Temple, Laksmanan Temple

UNIT II:

4 -Early Chalukyan Architecture –

Aihole , Pattadakal and Badami

5 : Rastrakuta Architecture

Rockcut Temple, Elephanta , Kailasa Temple Ellora

6: Evolution of Pallava , Cholla and Pandya style

Pallava Style - Rathas at Mamallapuram , Shore temple, Kailasanath temple

Kanchipuram , Vaikunthaperumal temple at Kanchipuram,

Chola Style – Brihadeshwar Temple & Gangaikondacholapuram Temple

Pallava Style – Characteristics, Gopuram

UNIT III:

7-Later Chalukyan or Hoyasala style

Chennakeshwa Temple, Belur, Hpysaleshwar Temple, Halebidu and Keshava Temple, Somnathpur

8- Evolution of later Dravidian Temples

Vijaynagar Architecture - Vithala temple complex at Vijaynagar , Hazara Ram Temple

Meenakshi Temple at Madurai. Srirangam Temple

Scheme for Internal semester assessment (ISA)

Regular Assignments, models.

Term work: Evaluation of Portfolio, assignments by internal examiner

Scheme for End Semester Assessment (ESA)

External examination-3 hrs

Mode of assessment :
Portfolio& Theory Exam

Text Books:NIL

Reference Books:

1. Satish Grover: The Architecture of India
2. Percy Brown : Indian Architecture(Buddhist and Hindu Period0
3. Tadgell Christopher:The History of Architecture in India
4. Rowl Benjamin. Art and Architecture of India
5. Vistara . The Architecture of India
6. Yatin Pandya: Concept of space making in Indian traditional Architecture

Scheme for End Semester Assessment (ESA)

Sl.No	8 Questions to be set of 20 Marks Each	Chapter Number	Instructions
I	Q.No.-1, Q.No.-2, Q.No.-3	1, 2,3	Solve Any 2 out of 3
II	Q.No.-4, Q.NO – 5 Q.No.-6,	4, 5,6	Solve Any 2 out of 3
III	Q.No.-7, Q.No.-8	7,8	Solve Any 1 out of 2

Program : Architecture		
Course Title: MEASURE DRAWING		**Course Code: 18AATC206**
L-S-P: 0-2-0	**Credits: 2**	**Contact Hours: 4**
ISA: 50	**ESA: 50**	**Total Marks: 100**
Teaching Hours: 32	**Examination Duration: NA**	

Course contents

The students can study vernacular, regional buildings and document, measured drawing to be prepared. The site visits/documentation could be carried out during vacation, weekends. The assignment may be given as group work.

UNIT I:

Detailed plans with all measurements to be compiled and submitted including site plan. The report comprising of historic evolution, climatic influence, construction techniques, materials applications to be prepared along with drawings.

UNIT II:

Detailed sectional drawings, elevation drawings along with details of individual elements to be submitted. Study the construction techniques

UNIT III:

Digital documentation in the form of photography, videography & analysis of the entire project.

Scheme for Internal semester assessment (ISA)

Regular Assignments, Architectural models, rendered sheets and photos

Scheme for End Semester Assessment (ESA)

Term work: Evaluation of Portfolio, assignments by internal and external examiners

Mode of assessment :

Portfolio

Text Books : NIL

Reference Books : NIL

Program : Architecture		
Course Title: STRUCTURES - III		**Course Code: 18AATC207**
L-S-P: 3-0-0	**Credits: 3**	**Contact Hours: 03**
ISA Marks: 50	**ESA Marks: 50**	**Total Marks: 100**
Teaching Hours: 48	**Examination Duration: 3 HOURS**	

Course contents

UNIT I:

1.Reinforced cement concrete, grades of concrete, water cement ratio and its effect on strength of concrete, admixtures, retarders and use of high strength concrete in building structures.

2. Introduction to working stress method, assumptions, theory of singly reinforced sections.Moment of resistance and design of a section for flexure. Related elementary numerical.

UNIT II:

3. Design philosophy of limit state method. Limit state for collapse for flexure.

4. Analysis of continuous beam by using IS 456-2000 and design by using SP16.

5.Design of beams by using SP 16

6. Analysis of one way continuous slabs by using IS 456-2000and design by using SP16.

7.Design of columns axial load and axial load plus uniaxial moment by using SP 16

UNIT III:

8. Case study of ongoing RC building structuresto correlate knowledge to on site during construction.

9. Typical reinforcement detail for beams isolated column with footing, slabs (one way and two way), staircases.

Scheme for Internal semester assessment (ISA)

Regular Assignments.

Scheme for End Semester Assessment (ESA)

External examination-3 hrs

Mode of assessment : Portfolio& Theory Exam.

Text Books:

1. A.K. Jain, Reinforced concrete: Limit state design, 5th edition, New Chand and brothers, Roorkee.
2. S.N. Sinha, Reinforced concrete design, Tata McGraw Hill Publications, New Delhi.

Reference Books

1. Karve S. R. and Shah V. L: .Limit state Theory and design of Reinforced Concrete, Structures Publishers, Pune

2. S.N. Sinha, Reinforced Concrete Tata Mc.Graw Hill Companies. Second Revised Edition.

3.Ashok Kumar Jain, Arun kumar Jain, Reinforced Concrete Structures Laxmi Publications Pvt. Ltd. New Delhi

4. Ashok K. Jain. Reinforced Concrete Limit State Nemchand & Bros.Roorkee

Scheme for End Semester Assessment (ESA)

Sl.No	8 Questions to be set of 20 Marks Each	Chapter Number	Instructions
I	Q.No.-1, Q.No.-2, Q.No.-3	1, 2,	Solve Any 2 out of 3
II	Q.No.-4, Q.NO – 5 Q.No.-6,	3,4, 5,6,7	Solve Any 2 out of 3
III	Q.No.-7, Q.No.-8	8,9	Solve Any 1 out of 2

Program : Architecture		
Course Title: DIGITAL TOOL - II		**Course Code: 18AATP201**
L-S-P: 0-0-1	**Credits: 1**	**Contact Hours: 2**
ISA Marks:50	**ESA Marks: 50**	**Total Marks: 100**
Teaching Hours: 32	**Examination Duration: NA**	

Course contents

UNIT I: Introduction to SketchUp:

File formats, Page setups, User interface, Types of tools

Drawing and editing tools in SkecthUp

Basic drawing and editing tools to develop the basic forms

UNIT II:

Dimensioning tools and navigation.

Measuring, Dimensioning , Lettering, Navigation tools, etc

Introduction to Advance Sketch up

Advance tools for developing and creating architectural design using advanced features, shadows, Sand box tools , etc

UNIT III:

Rendering techniques with Sketch Up.Setting up Lights, camera, foreground and background, adding landscaping elements like trees, human figures, introduction to rendering and animation. Importing and exporting to other software. Explore Plug-in like V Ray, etc

Scheme for Internal semester assessment (ISA)

Regular Assignmentsby internal examiner.

Scheme for End Semester Assessment (ESA)

Evaluation of Assignments in form of soft copy & hard copy worked during the course by internal and external examiners.

Mode of assessment : Portfolio

Text Books : NIL

Reference Books:Online SketchUp Manual.

IV SEMESTER

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Program : Architecture		
Course Title: Architectural Design – IV		**Course Code: 18AATC208**
L-S-P:0-6-0	**Credits: 6**	**Contact Hours:9**
ISA Marks: 50	**ESA Marks: 50**	**Total Marks: 100**
Teaching Hours: 126	**Examination Duration: NA**	

Course contents:

To develop skills for comprehensive understanding and dealing with Climate Responsive Architecture. Provide skills for designing multi-user and multi level spaces.

The design issues to be addressed are

- Climate Responsive
- Integration of environment & built form.
- Integration the horizontal and vertical circulation
- Correlation of the materials and the resulting form.

The list of suggested spaces to be covered as design Public Libraries, Public and Semipublic Office Spaces, Resorts, Recreational Clubs, Automobile Showrooms etc.

Necessary theoretical inputs to be given highlighting the norms and design issues. At least one major exercise and one minor design/ time problem should be given. The topics covered as design projects will have to be covered by the studio faculty members through lecture/slide show session and site visits.

Scheme for Internal semester assessment (ISA)

The Portfolio covering the given topics and the study models shall be presented.

The evaluation shall be through periodic internal reviews.

The students have to present the entire semester work for assessment along with Models.

Regular Assignments, Architectural models, rendered sheets and photos

Scheme for Semester End Assessment (ESA)

Term work: Evaluation of Portfolio, assignments by internal and external examiners/ Viva

Mode of assessment :

Portfolio

Text Books: NIL

Reference Books:

1. Joseph De Chiara & John Hancock Calendar, Time Saver Standards for Building Types
2. Various books and magazines about architectural design
3. Architecture: Form, Space and Order, Ching, Francis DK

Program : Architecture		
Course Title: BUILDING CONSTRUCTION & MATERIALS - IV		**Course Code: 18AATC209**
L-S-P: 0-4-0	**Credits: 4**	**Contact Hours: 6**
ISA Marks: 50	**ESA Marks: 50**	**Total Marks: 100**
Teaching Hours: 84	**Examination Duration: 3 Hrs**	

Course contents

UNIT I:

RCC SLABS

Introduction to, types & selection criteria of slabs like i) spanned in one direction ii) spanned in both directions i.e. iii) continuous iv) cantilever v) slope vi) ribbed vii) coffered vii) filler, showing construction & reinforcement arrangements

UNIT II:

RCC FLAT SLAB, VAULTS & DOMES AND RETAINING WALLS

Flat slab- Introduction to, advantages over regular slabs, including construction details & reinforcement arrangements for i) solid slab ii) drop panel iii) flared column top.

Vaults and domes - Introduction to, types, construction details with reinforcement arrangement.

Retaining walls – Introduction to and study of walls for retaining earth & water, with i) brick masonry ii) stone masonry iii) RCC. Construction details & reinforcement arrangements there in.

UNIT III:

FLOOR FINISHES

Various types, method of laying & maintenance for floor finishes using,Naturally available - i) clay &Murom ii) stone slab & tiles iii) timber: Timber products - i) parquet tiles ii) plywood/ block board & engineered wood (plain & laminated) etc.Cement concrete - i) rough and rendered (IPS, oxide, epoxy) surface ii) VDC (vacuum de-watered concrete)Cement concrete products - marble mosaic, terrazzo, designer tiles & in-situ work Mineral products – clay, ceramic & vitrified tiles. Other products – i) metal ii) glass . paving - Various types, preparation of base, method of laying using i) burnt bricks ii) flag stone iii) stone slabs iv) cobbles v) in-situ concrete vi) precast concrete slabs vii)concrete designer tiles viii) interlocking blocks etc

Note – The Portfolio covering the above topics shall be presented for Term work. Site visits shall be arranged by studio teacher. Study of material application shall be submitted in the form notes, sketches and photo brief as a part of portfolio

Scheme for Internal semester assessment (ISA)

Regular Assignments, models.

Term work: Evaluation of Portfolio, assignments by internal examiner

Scheme for Semester End Assessment (ESA) External examination-3 hrs
Mode of assessment: Portfolio& Theory exam.

Text Books:

1. McKay J.K Building Construction Metric Vol 1-4, 4th edi Orient Longman Pvt. Ltd, Mumbai,2002
2. "Construction Technology" volume-I by R Chudley, ELBS & Longman group Ltd.
3. Barry R, "The construction of buildings" , Vol-2, 5th Edi, East West Press, New Delhi 1999.
4. Bindra S.P and Arora S.P, Building Construction-Planning Techniques and Method of Construction, 19th edi, Dhanpat Rai Pub ,NewDelhi, 2000
5. "Building Construction" by Janardhan Jha, Khanna New-Delhi.
6. Rangawal S.C ,"Building Construction" 22nd Edi, charotar Publishing house, Anand, 2004
7. "Engineering Materials" by Surendra Singh, Vikas Delhi.
8. "Building Materials" by S K Duggal, IBH New Delhi.
9. Sushil Kumar T.B of Building Construction 19th edi, Standard Pub House, NewDelhi, 2003.
10. Chowdhary K.P. Engineering Materials used in India, 7th Edi, Oxford and IBH Pub ltd New Delhi, 1990.
11. Building Construction Hand book : By R Chudly & R Greeno, Bullerworth Heinemann, New-Delhi.

Scheme for End Semester Assessment (ESA)

Sl.No	8 Questions to be set of 20 Marks Each	Chapter Number	Instructions
I	Q.No.-1, Q.No.-2, Q.No.-3	1, 2,3	Solve Any **2** out of **3**
II	Q.No.-4, Q.NO – 5 Q.No.-6,	4,5, 6	Solve Any **2** out of **3**
III	Q.No.-7, Q.No.-8	7,8	Solve Any **1** out of **2**

Program : Architecture		
Course Title: SERVICES – II (ELECTRICITY & ILLUMINATION)		Course Code: 18AATC210
L-S-P:2-0-0	Credits: 2	Contact Hours: 3
ISA Marks:50	ESA Marks: 50	Total Marks: 100
Teaching Hours: 48	Examination Duration: 3 hrs	

Course contents

UNIT I:

1. Brief Introduction to electricity, its uses in everyday life and as an architectural application.Terminology used in electricity.

2. Supply and distribution of electricity to the end user (consumer) - generators and overhead and underground distribution systems, high tension and low tension cables, substations, transformers, service connections, panel board, energy meter. Internal supply and distribution.

3. Systems of wiring in building and their merits. Types of conduits, wires and cables. Accessories used in wiring. Branch circuits, calculation of electrical load for a residential building.

UNIT II:

4. Various devices used to protect shock, over loading, leakages and short circuits.(Fuses-definition and types, ELCB, Earthing-definition and its types, MCB'S) . Electrical symbols and Indian electricity rules-relevant codes of practice (NBC).

5. Electrical layout for different buildings.

6. Alternative sources of electricity and its implementation in building. Ways and methods of saving electricity in buildings.

UNIT III:

7. Introduction and terminologies, quality and quantity of light. Necessity of artificial lighting, combination of day light and artificial lighting.Methods of lighting- accent, ambient and task lighting.

8. Various types (incandescent, fluorescent/CFL, HID's, neon lamps) and selection criteria considering their temperament for residential, commercial, industrial, public buildings, for street and landscape lighting.Criteria's for selecting lamps for different occupancies.

9. Lighting design for different types of occupancies - landscape, parking areas, different tasks, street lighting, commercial building, residence.

Scheme for Internal semester assessment (ISA)

Regular Assignments, models.

Term work: Evaluation of Portfolio, assignments by internal examiner

Scheme for End Semester Assessment (ESA)

External examination-3 hrs

Mode of assessment: Portfolio& Theory exam.

Reference books:

1. H Cotton, Electrical Technology
2. L. Uppal, Electrical wiring, Estimating & Costing
3. Anwari., Electrical Engg.
4. M.S.N. Swamy, Lighting, MSN Marketing, Bangalore.
5. Torquil Barker,Concepts in Practice lighting, 1997, B.T. Batsford Ltd, 583,fullham Road, London.
6. Dr. Frith Abnwos and others. Electrical Engineering handbook.
7. S.L.Uppal and G.C. Garg. Electrical wiring (Estimating & Costing), Khanna Publishers,New Delhi.
8. Manufacturers catalogues and journals.

Scheme for End Semester Assessment (ESA)

Sl.No	8 Questions to be set of 20 Marks Each	Chapter Number	Instructions
I	Q.No.-1, Q.No.-2, Q.No.-3	1, 2,3	Solve Any **2** out of **3**
II	Q.No.-4, Q.NO – 5 Q.No.-6,	4,5, 6	Solve Any **2** out of **3**
III	Q.No.-7, Q.No.-8	7,8	Solve Any **1** out of **2**

Program: Architecture		
Course Title: HISTORY OF ARCHITECTURE - III		**Course Code: 18AATC211**
L-S-P: 2-0-0	**Credits: 2**	**Contact Hours: 2**
ISA Marks:50	**ESA Marks: 50**	**Total Marks: 100**
Teaching Hours: 32	**Examination Duration: 3 HOURS**	

Course contents

UNIT I:

Evolution of Imperial Indian Islamic Architecture in the following dynastic rule of Imperial style (Slave, Khilji, Tughlaq, Sayyid and Lodi) – E.g.Quwwat-ul-Islam Mosque, Qutub-Minar, Enlargement of Quwwat-ul-Islam Mosque by Iltutmish, Tomb of Iltutmish, Enlargement of Quwwat-ul-Islam Mosque by Ala-ud-din Khilji and Alai Darwaza, Tomb of Ghiyas-ud-din Tughlaq, Khirki Masjid, Shish Gumbad, Tomb of Mubarak Shah Sayyid and Tomb of Sikandar Lodi.Provincial Style –I (Bengal and Jaunpur) -– E.g. Adina Masjid, Pandua and Eklakhi Tomb, Pandua; Atala Masjid, Jaunpur and Jami Masjid, Jaunpur.Provincial Style -II (Gujarat and Malwa) E.g. Jami Masjid, Ahmedabad and Teen Darwaza, Ahmedabad , Jahaz Mahal, Mandu, Hindola Mahal, Mandu.

UNIT II:

Evolution of provincial Indian Islamic Architecture in the following provinces of Provincial Style –III (Bijapur)- E.g. GolGumbaz, Ibrahim Rauza and Jami Masjid, BijapurMughal Architecture-Phase I - E.g. Humayun's Tomb, Delhi; Fatehpur Sikri (Layout and Diwan-i-khas, Jodhabai Palace, Jami Masjid, Tomb of Salim Chisti and Buland Darwaza)Mughal Architecture-Phase II - E.g. Akbar's tomb, Sikandra, TajMahal, Agra - Layout of the Tomb and the concept of Charbagh

UNIT III:

Evolution of Indian British Colonial architecture in the dynastic rule of Early British Colonial Style - E.g. St Paul's Cathedral, Calcutta, Victoria Memorial, Calcutta, Bombay Town Hall, Bombay.

Late British Colonial Style - E.g. Layout of New Delhi, Rashtrapati Bhavan and Parliament House.

Scheme for Internal semester assessment (ISA)

Tests, Quiz, Assignments by internal examiner

Scheme for Semester End Assessment (ESA)

External examination-3 hrs

Mode of assessment: Portfolio& Theory exam.

Text Books: NIL

Reference Books:

1. Tadgell Christopher, The History of Architecture in India from the Dawn of civilization to the end of the Raj; Phaidon Press, London, U.K. Ltd., 2002 onwards.
2. Brown Percy, Indian Architecture (Islamic Period) Vol II; DB Taraporevala and Sons Co.Pvt. Ltd., Bombay, 1983 and subsequent publications.
3. Grover Satish, Islamic Architecture in India, Galgotia Publications, India, 1996 onwards.
   Stierlin Henri, Stierlin Anne, Islamic Art and Architecture, Thames & Hudson, 2002 onwards.
4. Ferguson, J.A., Encyclopedia of World Architecture (Islamic Architecture), Aryan books, 1998 onwards.
   Fletchers Banister, A History of Architecture, C.B.S.Publishers, 1996 onwards.
5. Tillotson, G.H.R. , The Tradition of Indian Architecture: Continuity, Change and the Politics of Style since 1850, Oxford University Press, Delhi, 1989 onwards.
   Tomory Edith, A History Of Fine Arts In India And The West, Orient Blackswan Pvt Ltd.-(New Delhi), 2009 onwards.
6. Asher Catherine B., Architecture of Mughal India, Cambridge, 1995 onwards

Scheme for End Semester Assessment (ESA)

Sl.No	8 Questions to be set of 20 Marks Each	Chapter Number	Instructions
I	Q.No.-1, Q.No.-2, Q.No.-3	1, 2,3	Solve Any **2** out of **3**
II	Q.No.-4, Q.NO – 5 Q.No.-6,	4,5, 6	Solve Any **2** out of **3**
III	Q.No.-7, Q.No.-8	7,8	Solve Any **1** out of **2**

Program : Architecture		
Course Title: THEORY OF ARCHITECTURE		Course Code: 18AATC212
L-S-P: 2-0-0	Credits: 2	Contact Hours: 2
ISA Marks: 50	ESA Marks: 50	Total Marks: 100
Teaching Hours: 32	Examination Duration: 3 HOURS	

UNIT I: 8 hours

1. Underlying Organizing Principles: Linear, centralized, radial, Clustered, Grid.
2. Underlying Spatial Organizing Principles: Space within space, Adjacent space and Interlocked space

.

UNIT II: 20 hours

1. Theory in Antiquity of Vitruvius
2. Theory in Renaissance of Leon Alberti and Andrea Palladio.
3. Theory in 18th century Violet-le-Duc , Gottfreied Semper
4.

UNIT III: 4 hours

1. Theories on built environment.
2. Architectural Criticism.

Text Books:

NIL

Reference Books:

1. Francis D K Ching, Form Space and Order
2. Parmar V S, Design Fundamental in Architecture
3. J.M.Zunde ,Design Procedures – level 4
4. Vitruvious :Ten Books on Architecture
5. Alberti Leon: Ten Books on Architecture
6. Christian Norberg Shulz, Genius Locii
7. William: Modern Architecture since 19th century
8. Alexander Christopher: Timeless way of Building
9. Rappoport Amos: House Form and Culture
10. Rappoport Amos: Meaning of the built environment
11. Geoffrey Broadbent: Design in Architecture
12. Geoffrey Baker: Design strategies in architecture: An approach to analysis of form
13. Attoe Wayne: Architectural and critical imagination
14. Lynch Kevin:City Sense
15. Lynch Kevin: Image of the City
16. Alexander Christopher ;Urban Pattern

17. Alexander Christopher: New Theory of Urban Design
18. Alexander Christopher: Nature of Order,vol.1,2,3
19. Alexander Christopher: Synthesis of Form
20. Alexander Christopher: City is not a Tree
21. Rappoport Amos: Human Aspect of Urban Form
22. Rappoport Amos: History and Precedent of Environmental Design
23. Bernard Rudofsky,Architecture without Architects .a short introduction to Non-Pedigreed Architecture. Academy Edition London
24. Alberti Leon: Ten Books on Architecture
25. Sociologic of space
26. Attoe Wayne: Architectural and critical imagination
27. Hale A Jonathan: Building Ideas, An introduction to Architectural Theory

Program : Architecture		
Course Title: Quantity survey and specifications.		**Course Code: 18AATC213**
L-S-P: 2-0-0	**Credits: 2**	**Contact Hours: 4**
ISA Marks: 50	**ESA Marks: 50**	**Total Marks: 100**
Teaching Hours: 56	**Examination Duration: 3 Hours**	

Course contents

Unit - I

1)Types of Estimates

2) Detailed estimates for load bearing buildings.

Unit - II

3) Detailed estimates for R C C frame structure buildings.

4) Introduction to Schedule of Rates.

5) Rate analysis.

Unit – III

6) Abstract Specifications for building constructions.

7)Schedule of rates.

Scheme for Internal semester assessment (ISA)

Term work: Evaluation of Portfolio, assignments by internal examiner

Scheme for End Semester Assessment (ESA)

External examination-3 hrs

Mode of assessment :

Portfolio& Theory exam.

Text Books: NIL

Reference Books:

1. Datta B N

Scheme for Semester End Examination (ESA)

Sl.No	8 Questions to be set of 20 Marks Each	Unit Number	Instructions
1	**Question Numbers 1, 2 & 3**	I	Solve Any **2** out of **3**
2	**Question Numbers 3, 5 & 6**	II	Solve Any **2** out of **3**
3	**Question Numbers 7 & 8**	III	Solve Any **1** out of **2**

Program : Architecture		
Course Title: STRUCTURES - IV		**Course Code: 18AATC214**
L-S-P: 3-0-0	**Credits: 3**	**Contact Hours: 3**
ISA Marks: 50	**ESA Marks: 50**	**Total Marks: 100**
Teaching Hours: 48	**Examination Duration: 3 HOURS**	

Course contents

UNIT I:

Structural steel properties, available steel grades in India, loads on steel structures as per IS 875- 1987 (Part I and II) and standers rolled steel sections.

Fasteners – welded, bolt and nut connections in steel structures, to find the strength of a joint may subjected to axial load and eccentric load. Merits and demerits as compared to each other.

UNIT II:

3. Design of roof truss elements strut and tie.

4. Design of elements of braced steel structural system, compression members of single and built up sections. Design of compression members using SP 6 part I.

5.Design of slab base and foundation subjected to axial load.

UNIT III:

6.Design of laterally restrained beams.

7.Moment resisting frames, comparison with braced frames, different types, composite structures.

8.Case study of steel building structures.

Scheme for Internal semester assessment (ISA)

Regular assignments by internal examiner

Scheme for End Semester Assessment (ESA)

External examination-3 hrs

Mode of assessment :

Portfolio& Theory exam.

Text Books:

1. *Ram Chandra Design of Steel Structures Vol I Standard Publishers New Delhi*

Reference Books:

1. P Dayaratnam Design of Steel Structures S Chand Publications New Delhi . !999
2. Vaziranzi & Ratwani Design of Steel Structures Khanna Publications New Delhi. !998
3. Duggal. Design of Steel Structures Tata McGraw Hill Publications New Delhi . !999
4. I.S.875-1978
5. S.P.6 (6)
6. IS 800 - 1984

Scheme for End Semester Assessment (ESA)

Sl.No	8 Questions to be set of 20 Marks Each	Chapter Number	Instructions
I	Q.No.-1, Q.No.-2, Q.No.-3	1, 2	Solve Any **2** out of **3**
II	Q.No.-4, Q.NO – 5 Q.No.-6,	3, 4, 5	Solve Any **2** out of **3**
III	Q.No.-7, Q.No.-8	6, 7, 8	Solve Any **1** out of **2**

Program : Architecture		
Course Title: Elective – Space, Culture & Architecture		**Course Code: 18AATE201**
L-S-P: 0-1-0	**Credits: 1**	**Contact Hours: 2**
ISA Marks: 50	**ESA Marks: 50**	**Total Marks: 100**
Teaching Hours: 28	**Examination Duration: NA**	

Course contents

UNIT I:

Introduction to Space, Culture & Architecture Sociological theories and cultural theories in relation to architecture

Critical thinking – its basis and intent

UNIT II:

Study and analysis of few Important Architectural Spaces of Cultural Significance Study and Documentation of Cultural Landscape.

UNIT III:

Research Paper on Space, Culture & Architecture

Scheme for Internal semester assessment (ISA)

Field work Ideation, Concept design, Final Design Periodic reviews presentations of finding , concerns, Development stage of product and justification

Scheme for End Semester Assessment (ESA)

Final Report Prototype design

Mode of assessment :

Field work attendance

Assignment

Text Books:NIL

Reference Books:

1) J Habraken *Sociologic of space*
2) Rappoport Amos*: House Form and Culture*

Program : Architecture		
Course Title: Elective – Human Centered Design - I		**Course Code: 18AATE202**
L-S-P: 0-1-0	**Credits: 1**	**Contact Hours: 2**
ISA Marks: 50	**ESA Marks: 50**	**Total Marks: 100**
Teaching Hours: 28	**Examination Duration: NA**	

Course contents

Understanding Design as a very old human capability that has been forgotten by the mainstream educational system and traditionalist alike. A modern human activity that can help the products, services and policies of the future within the constraints of our contexts.

UNIT I:

What is Design? Multiple Dimensions of Design, Processes and Applications What is Human Centered Design? 1 Looking: Observing Human Experience 2 Understanding: Analyzing challenges and opportunities 3 Making: Envisioning Future Possibilities

UNIT II:

HCD to identify problem.

UNIT III:

Field Work, Define, Ideate, Prototype (Concept design, Detailed Design) ,Test, Feedback

Scheme for Internal semester assessment (ISA)

Field work Ideation, Concept design, Final Design Periodic reviews presentations of finding , concerns, Development stage of product and justification

Scheme for End Semester Assessment (ESA)

Final Report Prototype design

Mode of assessment :

Field work attendance

Assignment

Text Books:NIL

Reference Books:

1. Harold Nelson: The Design Way Intensions /Compositions/Value
2. John Heskett :Toothpics and Logos Objects/Communication/Environments/Identities/Systems/Contexts/Future
3. Klaus Krippendorff:The Semantic Turn ,Meaning of Artifact in :Use/Language/Life Cycle/Ecology

Program : Architecture		
Course Title: Elective – Biomimicry in Architecture		**Course Code: 18AATE203**
L-S-P: 0-1-0	**Credits: 1**	**Contact Hours: 2**
ISA Marks: 50	**ESA Marks: 50**	**Total Marks: 100**
Teaching Hours: 28	**Examination Duration: NA**	

Course contents:

Unit-I:

Introduction, History, characteristics, Types and approaches to Biomimicry.

UNIT II:

Introduction of Biomimicry principles and Technology towards sustainable development in architecture, Case studies.

UNIT III:

Application of Biomimicry Principles in Architecture

Scheme for Internal semester assessment (ISA)

Field work Ideation, Concept design, Final Design Periodic reviews presentations of finding , concerns, Development stage of product and justification

Term work: Evaluation of Portfolio, assignments by internal examiner

Scheme for End Semester Assessment (ESA)

Final Report Prototype design

Evaluation of Portfolio, assignments by internal and external examiners

Mode of assessment :

Field work attendance

Assignment

Text Books:NIL

Reference Books:

1. Michael Pawlyn, “Biomimicry in Architecture”,Riba Publishing, 2nd Edition, 2016
2. Janine M Benyus ,Biomimicry: Innovation Inspired by Nature, ISR Journal,

Program : Architecture		
Course Title: Elective – Digital Rendering		**Course Code: 18AATE204**
L-S-P: 0-1-0	**Credits: 1**	**Contact Hours: 2**
ISA Marks: 50	**ESA Marks: 50**	**Total Marks: 100**
Teaching Hours: 28	**Examination Duration: NA**	

Course contents:

Unit-I:

Digital Rendering Techniques
Rendering techniques of plans, elevations&sections using digital tool.

Unit-II

Detail Rendering
Adding details like human figures, furniture, trees, vehicles etc.

Unit-III

Publish to various media
Various print and web file formats

Sessional Work (Internal semester assessment)
Regula Assignments and Rendered Drawings

Scheme for Semester End Assessment (ESA)
Term work: Evaluation of Portfolio, assignments by internal and external examiners

Mode of assessment: Soft copy and printed version.

References :

Course contents:
Unit-I:

Digital Rendering Techniques
Rendering techniques of plans, elevations&sections using digital tool.

School of Architecture,
KLE Technological University,
BVBCET Campus, Vidyanagar, Hubli.

CURRICULUM SCHEME & SYLLABUS OF

V Semester – VI Semester

(Year of introduction-2015, Faculty-A, Architecture-AT, Core course-C, Humanities-H, Lab-L, Elective-E, internship-I, Practice-p, W-Project)

Semester: V (2019-20)

Sr.No	Course code	Course Title	Period			Evaluation scheme			Credit (L+T+P)	Hours
			L	T	P	ISA	ESA	Sub total		
1	18AATC301	Architectural Design V	0	6	0	50	50	100	6	9
2	18AATC302	Building Construction& Materials V	0	4	0	50	50	100	4	6
3	18AATC303	Services III (HVAC)	2	0	0	50	50	100	2	2
4	18AATC304	Modern Architecture	2	0	0	50	50	100	2	2
5	18AATC305	Working Drawing	0	2	0	50	50	100	2	4
6	18AATC306	Landscape Design	0	2	0	50	50	100	2	2
7	18AATC307	Structures – V	3	0	0	50	50	100	3	3
8	18AATE301 -304	Elective- II	0	1	0	50	50	100	1	2
TOTAL			7	15	0	400	400	800	22	30

ISA: In-semester Assessment **ESA**: End Semester Assessment **L**: Lecture **T**: Tutorials **P**: Practical

Credit	Lecture Hours	Studio Hours	Practical Hours
1	**1**	**1.5**	**2**

Program Head

Signature of Dean (Academic Affairs)

Semester: VI (2019-20)

Sr.No	Course code	Course Title	Period			Evaluation scheme			Credit (L+T+P)	Hours
			L	T	P	ISA	ESA	Sub total		
1	18AATC308	Architectural Design VI	0	6	0	50	50	100	6	10
2	18AATC309	Building Const & Materials VI	0	4	0	50	50	100	4	6
3	18AATC310	Services IV (Acoustic)	2	0	0	50	50	100	2	2
4	18AATC311	Contemporary Architecture	2	0	0	50	50	100	2	2
5	18AATC312	Settlement Planning	2	0	0	50	50	100	2	2
6	18AATC313	Interior Design	0	2	0	50	50	100	2	3
7	18AATC314	Structures – VI	3	0	0	50	50	100	3	3
8	18AATE308 TO 312	Elective- III	0	1	0	50	50	100	1	2
TOTAL			9	13	0	400	400	800	22	30

ISA: In-semester Assessment **ESA**: End Semester Assessment **L**: Lecture **T**: Tutorials **P**: Practical

Credit	Lecture Hours	Studio Hours	Practical Hours
1	**1**	**1.5**	**2**

Program Head

Signature of Dean (Academic Affairs)

V SEMESTER

Program: Architecture		
Course Title: Architectural Design – V		**Course Code: 18AATC301**
L-T-P – 0-6-0	**Credits: 6**	**Contact Hours: 9 Hrs**
ISA Marks: 50	**ESA Marks: 50**	**Total Marks: 100**
Teaching Hours:126 Hrs	**Examination Duration: NA**	

Course contents:

To develop skills for comprehensive understanding and dealing with Architecture and to provide skills for designing multi-user and multi-level spaces. To emphasize upon the role of construction in evolving expression. To focus on design detail as vital part of architectural expression in the urban context. To integrate building systems and effective communication of legible drawings.

The design issues to be addressed are

- Multi user and multi-level space formation
- The integration of design, structure, services, etc
- Integrate the horizontal and vertical circulation.
- Develop skills to correlate the materials and the resulting form.
- Integration of material, form and the appropriate building envelope.
- The architectural details of the building materials and assemblies.
- Details pertaining to the disabled, aged people and children.

The list of suggested spaces to be covered as design problems: Architectural Exhibition / display spaces Multi level Accommodation spaces, higher level academic spaces, multi activity Recreational spaces, Neighbor hood Community spaces, Healthcare Centers etc.

Necessary theoretical inputs to be given highlighting the norms and design issues. At least one major exercise and one minor design/ time problem should be given. The topics covered as design problems will have to be covered by the studio faculty members through lecture/slide show session and site visits.

Unit I

Design Analysis : Research of the given design project, Analysis of precedents

Site analysis / Concept Development: Site plan, Site analysis, site synthesis and zoning, Metaphors in design process and formulation of design brief, conceptual sketches, design development.

Preliminary Design Development stage : Schematic drawings of plans with furniture Layout, sections, elevations and study models. Parametricism for form finding, by changing the variables. 3D modeling and various types of surface modeling.

Unit II

Secondary Design Development stage : Development of detail plans, elevations and sectional details,

Models, Development of Three dimensional massing with corresponding fenestrations, etc. through visual programming language (VPL) Grasshopper that is a plug-in running within Rhinoceros 3D modeling software.

Unit III

Finalization of design : Presentation (computer aided) and rendering

Esquissee : Given design topic to be completed within the time limit.

Model Making : Final three dimensional model/views Parametric design with the powerful visual programming languages. Grasshopper that is a plug-in running within Rhinoceros.

Text Books: NIL

Reference Books:

1. Time Saver Standard for Architectural Data by John Hancock.
2. Architectural Graphic Standards by Ramsey and Sleeper.
3. Magazines and Design related books
4. Architecture: Form, Space and Order, Ching, Francis DK
5. Design and Form: The basic course at the Bauhaus, Itten, Johannes.
6. Elements of space forming, Yatin Pandya.
7. Architectural Composition, Krier, Rob
8 .Le Corbusier- An analysis of form. Geoffrey Baker.
9. Design Thinking process and methods. Rob Curedale.

Scheme for Semester End Examination (ESA)

Evaluation of Portfolio, assignments by internal and external examiners

The students have to present the entire semester work for assessment along with Models.

A viva-voce (Approximate 15 minutes /student) shall be conducted by a jury comprising of an external examiner and an internal examiner. The drawings, models and shall be presented by the student.

Semester: Vth Sem-B.Arch

Course name: Building Construction and Materials-V

Credits: 4 **Teaching hrs/week: 6 hours**

Course Overview: To Familiarise Students with the Various types of RCC Slabs with reinforcement details, Flat Slab, Vaults & Domes, Various Types of Staircases with Details, Composite Construction technology & details, Vierendiel RCC Girders.

Chapters No	Course Objectives	Existing Content	Proposed Content	%age Change in the Content
Unit-I				
Chapter-1	➢ Analyze the basic principles and appropriate application and performance of building envelope materials and	**Doors for large openings**: Sliding and folding doors in timber, Sliding door using standard aluminum and PVC sections. Definition, Characteristics, Comparison, Design and Construction details.	➢ **RCC Slabs**:Introduction to types & selection criteria of slabs like i) spanned in one direction ii) spanned in both directions i.e. iii) continuous iv)	100%

	assemblies and to assess, select in to building design ➢ Ability to select & make appropriate application of construction materials, products,components, assemblies including their environmental impact and reuse. ➢ Ability to represent the materials & details graphically.		cantilever v) slope vi) ribbed vii) coffered vii) filler, showing construction & reinforcement arrangements.	
Chapter-2		**Doors for large openings:** Metal doors like rolling shutter, fabricated door, grilled door Definition, Characteristics, Comparison, Design and Construction details.		
Unit-II				
Chapter-3		**Metal and PVC windows:** Windows fabricated with standard Z and pressed sheet metal, aluminium section windows fabricated with standard PVC sections.	➢ **FLAT SLAB:** Introduction to, advantages over regular slabs, including construction details & reinforcement arrangements for i) solid slab ii) drop panel iii) flared column top.	100%
Chapter-4		**Partitions** Partitions using various materials and their combinations like : timber, metals, PVC, plywood, glass, gyp board etc.	➢ **VAULTS & DOMES:** Introduction to types, Construction Details & Futuristic Revival.	100%
Chapter-5		**False Ceiling** False ceiling using various materials and their combinations for frame work and panels like :timber, metals, PVC, POP, plywood, glass, polystyrene etc.	➢ **STAIRCASE:** Types, Geometry of the Components, Sketches giving details of Geometry and Reinforcement for Waste slab Stair, Stringer Beam Stair,	100%
Chapter-6		**False floor** False floor using various		

		materials and their combinations for framework & panels like: timber, metals, plywood, glass etc.	Cantilever Step Stair, and Folded Plate Stair for Dog Legged, Open Newell, Quarter Turn and Spiral Stairs.	
Unit-III				
Chapter-7		**Wall panelling** Wall panelling using various materials like stone slabs, timber, plywood, metal, composite boards PVC etc.	➢ **Composite Constructions**: Concepts, Different types of the Composite Constructions, Sketches showing details & Construction Methods.	100%
Chapter-8		**Materials** Materials like glass & glass products, plastics, rubber. Their manufacturing in brief, properties & Architectural Application.	➢ **Veirendiel Girders** in R.C.C., Beams of Varying Cross- Sections & Applications.	100%

Chapter No.'s	Existing Evaluation Methods	Proposed Evaluation Methods	Mode of Assignments
Unit-I			
Chapter-1	Submissions / Assignments	Submissions (30%) / Assignments (20%) / Examinations (50%).	Submissions / Assignments / Examinations
Chapter-2	Submissions / Assignments	Submissions (30%) / Assignments (20%) / Examinations (50%).	Submissions / Assignments / Examinations
Unit-II			
Chapter-3	Submissions / Assignments	Submissions (30%) / Assignments (20%) / Examinations (50%).	Submissions / Assignments / Examinations
Chapter-4	Submissions / Assignments	Submissions (30%) / Assignments (20%) / Examinations (50%).	Submissions / Assignments / Examinations
Chapter-5	Submissions / Assignments	Submissions (30%) / Assignments (20%) / Examinations (50%).	Submissions / Assignments / Examinations
Chapter-6	Submissions / Assignments	Submissions (30%) / Assignments (20%) / Examinations (50%).	Submissions / Assignments / Examinations
Unit-III			

Chapter-7	Submissions / Assignments	Submissions (30%) / Assignments (20%) / Examinations (50%).	Submissions / Assignments / Examinations
Chapter-8	Submissions / Assignments	Submissions (30%) / Assignments (20%) / Examinations (50%).	Submissions / Assignments / Examinations

Teaching / Learning Methodology	**Course Outcomes**		
	1	**2**	**3**
Lectures / Tutorials	**Yes**	**Yes**	**Yes**
Assignments	**Yes**	**Yes**	**Yes**
3d Models / Projects	**Yes**	**Yes**	**Yes**

Program : Architecture		
Course Title: BUILDING CONSTRUCTION&MATERIALS- V		**Course Code: 18AATC302**
L-S-P: 0-4 -0	**Credits: 4**	**Contact Hours: 6**
ISA Marks: 50	**ESA Marks: 50**	**Total Marks: 100**
Teaching Hours: 84	**Examination Duration: NA**	

UNIT I: DOORS FOR LARGER OPENINGS

Folding Door in Timber. Sliding Door in Aluminum and PVC

Various types of Doors in steel viz Rolling shutter, fabricated in Pressed M.S. Sheet panel.

UNIT II: METAL AND PVC WINDOWS

Various types of Windows in steel fabricated pressed metal (box) sections.

Sliding windows in Aluminum and UPVC including safety arrangement.

UNIT III: PARTITIONS AND FALSE CEILINGS

Partition systems using various materials like Timber, metal, UPVC, various boards, glass etc.

False ceiling system with Timber, metal framing and various panel materials.

False flooring systems.

Materials:-

Properties, types, manufacturing in brief and architectural uses of glass, and glass products and Plastics.

Note – The Portfolio covering the above topics shall be presented for Term work. Site visits shall be arranged by studio teacher. Study of material application shall be submitted in the form of notes, sketches and photo brief as a part of portfolio.

Text Books: NIL

Reference Books:

- McKay J.K Building Construction Metric Vol 1-4, 4thedi Orient Longman Pvt. Ltd, Mumbai,2002
- "Construction Technology" volume-I by R Chudley, ELBS & Longman group Ltd.
- Barry R, "The construction of buildings", Vol-2, 5th Edi, East West Press, New Delhi 1999.
- Bindra S.P and Arora S.P, Building Construction-Planning Techniques and Method of Construction, 19thedi, Dhanpat Rai Pub ,New Delhi, 2000
- "Building Construction" by JanardhanJha, Khanna New-Delhi.
- Rangawal S.C ,"Building Construction" 22nd Edi, charotar Publishing house, Anand, 2004
- "Engineering Materials" by Surendra Singh, Vikas Delhi.
- "Building Materials" by S K Duggal, IBH New Delhi.
- Sushil Kumar T.B of Building Construction 19thedi, Standard Pub House, New Delhi, 2003.
- Chowdhary K.P. Engineering Materials used in India, 7th Edi, Oxford and IBH Pub ltd New Delhi, 1990.

Building Construction Hand book : By R Chudly& R Greeno, Bullerworth Heinemann, New-Delhi

Program: Architecture		
Course Title: SERVICES – III (HVAC)		**Course Code:** 18AATC303
L-T-P: 2 – 0 - 0	**Credits:2**	**Contact Hours: 2 Hrs**
ISA Marks: 50	**ESA Marks: 50**	**Total Marks: 100**
Teaching Hours: 28 Hrs	**Examination Duration: 3 Hours**	

Unit I

Introduction to Passive and Mechanical ventilation:

1. **Passive & Mechanical ventilation** - Need for mechanical ventilation in buildings, Applications in different

situations. Air conditioning – Definition, Refrigeration cycle, Compressor, Condenser, Evaporator in Air-Conditioning system.

2. **Different types of Air Conditioning system** – Ductable and non ductable air conditioners, Location analysis of different equipments in different types of buildings. Air distribution systems- ducts, diffusers etc.
3. Factors responsible for calculation of air conditioning load. Application of appropriate AC system for different types of occupancies like Residential, commercial, industrial etc.

Unit II

4. **Elevators**: Introduction, different types of elevators like traction, hydraulic, double deck elevators, sky lobby, structure and interiors of lifts. Passenger handling capacity, space and physical requirement and layout. Locational analysis of elevators, grouping of elevators.
5. **Escalators**: Definition, structure and different parts of escalator, application, Location and arrangement in different types of buildings.

Unit III

6. **Fire safety of buildings:**Safety Measures against fire role of architect in providing fire safety to buildings and fire resisting materials. Passive fire protection in different categories of buildings. Importance of fire hazards, fire load, fire precaution andfire prevention. Provision of smoke detectors and fire alarms. Difference between firefighting and fire prevention.
7. **Active fire protection:**Extinguishers, sprinklers, firefighting lobby etc; Systems adopted in various buildings against fire. Case studies: Case studies of some fire disasters and their reasons: Fire Norms by NBC, Calculation of Occupant load and min. doorway width, Calculation of Fire exits, Concept of Pressurization, Fire lifts and Fire Staircases regulations etc as per bye-law.

Reference Books:

1). P. N. Anant Narayana., *Refrigeration and Air conditioning,* Third edition, Tata McGraw-Hill publishing Company Ltd, New Delhi.

2). Manohar Prasad., *Air conditioning and Refrigeration Data Hand book*.

3). Blue star ltd*: Blue star Guide to Comfort Air conditioning*. India Published by Packaged Air conditioning division.

4). Roy J Dosat., *Principles of Refrigeration*.

5). Dagostino, F. R:(1982) *"Mechanical and Electrical systems in Building"* Varginia, Reston Publishing Co.

Scheme for Semester End Examination (ESA)

UNIT	8 Questions to be set of 20 Marks Each	Chapter numbers	Instructions
I	Question Numbers 1, 2 & 3	I	Solve Any **2** out of **3**
II	Question Numbers 3, 5 & 6	II	Solve Any **2** out of **3**

III	**Assignment**	III	Design application Solve **1** OUT OF **1**

Program : Architecture		
Course Title: Modern Architecture		**Course Code:** 18AATC304
L-S-P: 2-0-0	**Credits: 02**	**Contact Hours: 02 Hrs**
ISA Marks: 50	**ESA Marks: 50**	**Total Marks: 100**
Teaching Hours: 28 Hrs	**Examination Duration: 3 Hrs**	

UNIT I:

- Transitional period and Revival architecture
- Early Industrial buildings.
- The Chicago school and Italian Futurism

UNIT II:

- De Style and Bauhaus
- Ideas and Works of Frank Llyod wright and Mies Van Der Rohe,
- Ideas and Works of Le Corbusier and Louise Kahn in India.

UNIT III:

Post-independence Modern Architecture in India.

- Ideas and Works of architects Achyut Kanvinde, B. V. Doshi and Charles Correa
- Ideas and Works of architects Raj Rewal, Uttam Jain and Laurie Baker.

NOTE:

The architects and ideas mentioned above are indicative only

The course teacher may choose the ideas and works of architects to explain modern architecture.

Text Books: Nil

Reference Books:

1. Kenneth Frampton, Modern Architecture- A critical History
2. Bannister Fletcher, History of Architecture William Curtis, Modern Architecture since 1900
3. William Curtis, Modern Architecture since 1900
4. Bannister Fletcher, History of Architecture

Scheme for Semester End Examination (ESA)

Sl.No	8 Questions to be set of 20 Marks Each	Unit Number	Instructions
1	**Question Numbers 1, 2 & 3**	I	Solve Any **2** out of **3**
2	**Question Numbers 3, 5 & 6**	II	Solve Any **2** out of **3**
3I	**Question Numbers 7 & 8**	III	Solve Any **1** out of **2**

Program : Architecture		
Course Title: Working Drawing		**Course Code: 18AATC305**
L-S-P: 0-2-0	**Credits: 2**	**Contact Hours: 4 Hrs**
ISA Marks: 50	**ESA Marks: 50**	**Total Marks: 100**

Teaching Hours: 56Hrs	Examination Duration: NA	

UNIT I:

Introduction and importance of detailed working drawings in architectural practice. Creating working details for a residential / commercial project starting with foundation/footing and wall details

UNIT II:

Introduction to creating working details of doors, windows, staircase and floors

UNIT III:

Introduction to creating working details of interior, bathrooms, electrical & plumbing.

Text Books:NIL

Reference Books:

Architectural Working Drawings: Residential and Commercial Buildings by William P. Spence Publisher: Wiley; ISBN-10: 0471574880 ISBN-13: 978-0471574880

Architectural Drawing: A Visual Compendium of Types and Methods (3rd edition) by Rendow Yee Publisher: Wiley; 3 edition (July 20, 2008) ISBN-10: 0471793663 ISBN-13: 978-0471793663

AutoCAD 2008 For Dummies. by David Byrnes, Mark Middle brook.

Publisher: For Dummies; Revised edition (May 8, 2006)

ISBN-10: 0471786497, ISBN-13: 978-0471786498

Scheme for Semester End Examination (ESA)

Assignments, Checking of Portfolio of Term Work / Viva.

Program : Architecture		
Course Title: STRUCTURES – V		Course Code: 18AATC307
L-S-P: 3-0-0	Credits: 3	Contact Hours: 3
ISA Marks: 50	ESA Marks: 50	Total Marks: 100

Teaching Hours: 42	Examination Duration: 3 HOURS	

UNIT I:

1. Introduction to the structural design project: Design of airport terminal building of dimension 50m X 100m as horizontal structural system.

2. Structural analysis and design: Determining the loads on structure as per IS 875-1984.Design of roofing system

3. Analysis and Design of continuous beams and slabs using IS:456-2000. Design of column and isolated foundation for axial load.

UNIT II:

4. Structural behavior, classification and application of folded plates, shells, domes, pneumatic structures and tensile structures.
5. Study of typical reinforcement details of RCfolded plates, shells and domes.
6. Long span industrial building: Triangular and vierendeel roof truss structural system, general configuration of industrial building, spacing of trusses and design. Dead load, live load and wind load as per IS 875:1984
7. Cable and suspension structures: Design of long span system using cable and suspension system

UNIT III:

8. Concept of pre stressed concrete; merits and demerits of PSC as compared to the RCC. Need of high strength concrete and steel for PSC. pre stressing systems, materials, behaviour of pre stressed concrete beams and losses in pre stress

9. Analysis of pre stressed concrete for self-weight, concentric tendons, eccentric tendon.

Text Books:

Reference Books:

1. S.R. Karve and V. L. Shah, Limit state theory and design of reinforced concrete structures publications Pune
2. Pre stressed concrete by Krishnaraju

Program : Architecture		
Course Title: Vernacular Architecture (Elective)		Course Code: 18AATE301
L-T-P – 0 – 1 – 0	Credits: 1	Contact Hours: 2 Hrs
ISA Marks: 50	ESA Marks: 50	Total Marks: 100
Teaching Hours: 28 Hrs	Examination Duration: NA	
Unit I		

Introduction to Vernacular Architecture.

Definitions and theories, Categories, Contextual responsiveness: Climatic, Geographical, Anthropological and Cultural influences, Environment and Materials, Typical building materials, Built form & elements, Construction techniques & environmental performance.

Regional Variations in Built Form

Tribal Architecture Settlement Pattern, Dwelling Typology, Symbolism, Typical features, Construction materials and techniques. Illustrated case studies of vernacular settlements/building typology from various regions in India and abroad

Unit II

Documentation and Analysis of Vernacular built form

Documentation of Regional vernacular typology. Analysis of typology w.r.t Climate, Building materials & construction techniques, Geography, Anthropology, culture, etc

Unit III

Adaptations in Contemporary Architecture

Sustainable building materials and construction techniques, Works of Laurie Baker, Hasan Fathy, Gerard Da Cunha, etc

Internal semester assessment (ISA)

Field work Ideation, Concept design, Final Design

Periodic reviews presentations of finding , concerns, Development stage of product and justification

Text Books: Nill

Reference Books:

1. Paul Oliver (Ed), Encyclopedia of Vernacular Architecture of the world, vol 1,2,3, , Cambridge University Press, Cambridge, 2001
2. Paul Oliver, Dwellings; The vernacular House worldwide, Cambridge University press, Cambridge, 2003
3. Bernard Rudofsky , Architecture without architects, Great British, 1981
4. Jain K,Jain M, Mud architecture of Indian desert, 2000
5. Asquith l and Vellinga M, Vernacular Architecture in the Twenty first century , Taylor and Francis Oxon, 2006
6. Tipnis Aishwarya, Vernacular traditions in contemporary architecture, Teri Press New Delhi, 2012
7. Udamale. s., Architecture for Kutch, English Edition, Mumbai, 2003
8. Brunskill, R. W. (1987). Illustrated Handbook of Vernacular Architecture. Castle Rock : Faber & Faber.
9. Carmen, K. (1986). VISTARA – The Architecture of India. The Festival of India Publications.
10. Cooper, I and Dawson, B. (1998). Traditional buildings of India. London : Thames & Hudson.
11. Kenneth, F. (1983). Towards a Critical Regionalism: Six points for an architecture of resistance, In The Anti-Aesthetic: Essays on Postmodern Culture. (Ed.) Hal, F. Seattle : Bay Press.
12. Muthiah, S., Meyappan, M., Ramswamy, V. and Muthuraman, V. (2000). The Chettiar Heritage. Chennai : Chettiar Heritage.
13. Pramar, V. S. (1989). Haveli-Wooden Houses and Mansions of Gujarat, Ahmadabad : Mapin Publishing.
14. Rapoport, Amos. (1969). House, Form & Culture. Eaglewood: Prentice Hall Inc.

Tillotsum, G. H. R. (1989). The tradition of Indian Architecture: Continuity, Controversy and Change since 1850. Delhi: Oxford University Press.

Program : Architecture		
Course Title: Bio-inspired Architecture		**Course Code:** 18AATE302
L-S-P: 0-1-0	**Credits:** 01	**Contact Hours:** 2 Hrs

ISA Marks: 50	**ESA Marks:** 50	**Total Marks:** 100
Teaching Hours: 28 Hrs	**Examination Duration:** NA	

Course contents:

Unit-I: What is bio-inspired architecture

Unit-II: How bio-inspired architecturecan solve design problems
Examples of bio-inspired architecture

Unit-III: How bio-inspiration can lead to sustainable architecture

Sessional Work (Internal semester assessment)
Evaluation of assignments in three stages

Scheme for Semester End Assessment (ESA)

Evaluation of assignments

Mode of assessment :

Evaluation of Portfolio, assignments by internal and external examiners

References : Architectural design books, periodicals & websites

VI SEMESTER

Semester: VIth Sem-B.Arch

Course name: Building Construction and Materials-VI

Credits: 4 **Teaching hrs/week: 6 Hours**

Course Overview: To Familiarise Students with various types of Ferrous Metals, Various Steel Structures, Joints, Foundations, Splicing of Steel Members, Flextural Components, Roofing Components & Materials, Framed Steel Structures & Composite Construction with Protection to various Metals.

Chapters No	Course Objectives	Existing Content	Proposed Content	%age Change in the Content
Unit-I				
Chapter-1	➢ Analyze and evaluate the structural steel construction concepts and apply them in the design projects. ➢ Apply principles of structural behavior in withstanding gravity and lateral forces along with the evolution, range, and appropriate selection of contemporary structural systems. ➢ Assess, select, and conceptually integrate steel structural systems into building design. ➢ Make technically precise drawings and write outline specification for column foundation, beams, roof, portal frame & connections therein, in steel.	**Steel structures:** Various structural steel sections and its use as single or composite for vertical & horizontal members. Methods of connecting steel sections.	➢ **Ferrous Metals**: Types, Properties & Application in Architecture. CI, MS & WI, Different Steels. ➢ **Steel Structures**: Standard & Built up Sections, Various Types of Joints, Bolted & Welded Connections for Components & Brackets (Lap, Butt, Lozenzo's, Concentric & Eccentric Joints) Shear, Moment & Both Shear-Moment Types.	15%
Chapter-2		**Steel grillage & cement concrete foundation:** Steel grillage and pedestal foundation for steel columns.	➢ **Foundation & Bearing Units for Steel Structures**: ➢ For Columns – Flexible & Rigid, Slab based, Gusset based, Rocker Bearing & Roller Bearing. ➢ For Beams – Pin / Hinged / Fixed / Rocker & Roller.	10%
Chapter-3		**Steel member splicing and connections:** Column to column, beam to column, beam to beam	➢ **Splicing for Steel Members**: Columns, Beams & Frames. Different Types with Joinery.	Nil
Unit-II				

Chapter-4		**Steel Beams and Girders** Standard section, castellated beam, plate girder, lattice girder, vierendel girders	➢ **Flextural Components for Steel Structures**: Purlins, Beams, Girders, Castellated Beam, Vierendeel Girder & Lattice Girder. Joinery, Components & Erection.	15%
Chapter-5		**Steel roof trusses** Various types of steel trusses for small, medium, large span trusses. North light roof truss	➢ **Roofing System for Steel Structures**: Types, Forms & Components like Girders, Trusses, Purlins Braces, Eaves, Storm Water Drains, Ridge, Hip, Valley & Roofing Materials.	20%
Chapter-6		**Steel portal frame and PEB.** Concept of PEB. Various components used in PEB. Application criteria	➢ **Framed Steel Structures**: Portal Frames, Concept of Pre-Engineered Buildings. Types of Frames, Components & Spans.	10%
Unit-III				
Chapter-7		**Weather proofing materials** Building components that requires weather proofing. Materials & method of application as pre and post treatment.	➢ **Composite Constructions**: Concepts, Different types of the Composite Constructions, Sketches showing details & Construction Methods.	100%
Chapter-8		**Ferrous and non-ferrous metals** Properties & architectural application of C.I., W.I., M.S.,S.S., H.T.S., copper, brass, bronze, lead, aluminium etc	➢ **Protection of Ferrous & Non Ferrous Metals**: Pre & Post Treatments, Anti Corrosive Paints, Powder Coating & Anodising.	Nil

Chapter No.'s	Existing Evaluation Methods	Proposed Evaluation Methods	Mode of Assignments
Unit-I			

Chapter-1	Submissions / Assignments	Submissions (30%) / Assignments (20%) / Examinations (50%).	Submissions / Assignments / Examinations
Chapter-2	Submissions / Assignments	Submissions (30%) / Assignments (20%) / Examinations (50%).	Submissions / Assignments / Examinations
Chapter-3	Submissions / Assignments	Submissions (30%) / Assignments (20%) / Examinations (50%).	Submissions / Assignments / Examinations
Unit-II			
Chapter-4	Submissions / Assignments	Submissions (30%) / Assignments (20%) / Examinations (50%).	Submissions / Assignments / Examinations
Chapter-5	Submissions / Assignments	Submissions (30%) / Assignments (20%) / Examinations (50%).	Submissions / Assignments / Examinations
Chapter-6	Submissions / Assignments	Submissions (30%) / Assignments (20%) / Examinations (50%).	Submissions / Assignments / Examinations
Unit-III			
Chapter-7	Submissions / Assignments	Submissions (30%) / Assignments (20%) / Examinations (50%).	Submissions / Assignments / Examinations
Chapter-8	Submissions / Assignments	Submissions (30%) / Assignments (20%) / Examinations (50%).	Submissions / Assignments / Examinations

Teaching / Learning Methodology	**Course Outcomes**			
	1	**2**	**3**	**4**
Lectures / Tutorials	**Yes**	**Yes**	**Yes**	**Yes**
Assignments	**Yes**	**Yes**	**Yes**	**Yes**
3d Models / Projects	**Yes**	**Yes**	**Yes**	**Yes**

Program: Architecture		
Course Title: Architectural Design VI (Housing)		**Course Code:** 18AATC308
L-T-P : 0 -6-0	**Credits:6**	**Contact Hours:**9 Hrs
ISA Marks: 50	**ESA Marks: 50**	**Total Marks: 100**
Teaching Hours: 126 Hrs	**Examination Duration: 60min**	

Course contents:

Housing Studio aligns with state and national policy for housing for all, which is inclusive in nature. Mass housing, Issues related to housing shortages, incremental housing, sites and service schemes, slums and squatter settlements. Design in a climate responsive and environment friendly way while planning medium sized housing complexes. Apply the appropriate technology for Low cost housing, self-help housing, Co-operative housing, Housing based on income groups, density patterns and arrangement of units, temporary housing for disaster mitigation, rehabilitation housing, slum upgradation.

Studio project can also make decisions towards low-rise high-density housing or high-rise high density housing project. While designing socio-economic determinants, regulatory and technological alternatives shall be studied in detail. Exercises in simulation and conceptual modeling shall be conducted. Application of concepts of project phasing, financing and construction planning are to be applied in low-rise high-density housing or high-rise high

density housing. The design shall be sensitive to the needs of disabled, aged people and children

The students are expected to carry out detailed site analysis, documenting physical features, vegetation, land forms soil characteristics, slope analysis and natural drainage patters. Site planning exercise should depict understanding of vehicular and pedestrian movement patterns, land grading and conservation of ecologically sensitive features.

They are also expected to be conscious about the need for energy conservation through passive design. They will apply advanced simulation and modeling techniques to orient their buildings and decide energy performance parameters. Sample quantity estimates and specifications are to be prepared.

Housing projects can be attempted with added complexities for example, dense context, occupation based, traditional urban fabric, social status and prevalent social strata. Details from the dwelling cell to immediate shared space to communal space shall be emphasized and worked out. Socio cultural layer of the occupants shall form a strong fabric in the ultimate weave of the design. Projects shall aim at developing a sensitive attitude towards micro level human habitation and role of architecture in enhancing or curbing the quality of living.

Unit I

Design Analysis :
Research of the given design project, Analysis of precedents.
Site analysis / Concept Development:
Site plan, Site analysis, site synthesis and zoning,
Formulation of design brief ,conceptual sketches,
Design development.
Preliminary Design Development stage:
Schematic drawings of Master Plan
sections , elevations and study models

Unit II

Design of Prototype to ensure interrelationship between the building codes, efficiency metrics, urban design issues and architectural approaches.

Development of detail plans, elevations and sectional details, Models, Development of Three dimensional massing with corresponding fenestrations, details of services and structural system. Detailing of Public/open spaces and amenities.

UNIT III: Finalization of design:
Report and portfolio in computer aided Architectural Presentation and rendered drawings

Text Books

Reference Books:

1. Brooks, R. G. (1988). Site Planning: Environment, Process and Development. Michigan.

2. Clapham, D., Clark, W. A. V. and Gibbs, K. (2012). The Sage Handbook of Housing Studies. London : Sage Publications.

3. Correa, C. (2010). A Place in the Shade: The New Landscape and Other Essays. New Delhi : Penguin Books.

4. Ferre, A. and Tihamer, S. H. (2010). Total Housing: Alternatives to Urban Sprawl. New York : ACTAR Publishers.

5. Greater London Council. (1978). An Introduction to Housing Layout: A GLC Study. London.

6. Lee, K. E. (1984). Time Saver Standards for Site Planning. McGraw-Hill Ryerson.

7. Levitt, D. and Levitt, B. (2010). The Housing Design Handbook. New York : Routledge.

8. Root, B. J. (1985). Fundamentals of landscaping and site planning. AVI Publications.

9. Untermann, R. and Small, R. (1977). Site Planning for Cluster Housing. Van Nostrand Reinhold

10. HUDCO publications: Housing for Low income, Sector Model.

11. “Saxena A.K., Sociological Dimensions of Urban Housing and Development” Wealth publications. 2004

12. Leuris S, Front to Back: “A design Agenda for Urban Housing”, Architectural Press, 2006.

13. Richard Kintermann and Robert Small, “Site Planning for Cluster Housing”, Van Nastrand Reinhold company, Jondon/ New York 1977.

Scheme for Semester End Examination (ESA)

Evaluation of Portfolio, assignments by internal and external examiners

The students have to present the entire semester work for assessment along with Models. A viva-voce (Approximate 15 minutes /student) shall be conducted by a jury comprising of an external examiner and an internal examiner.

Program : Architecture		
Course Title: BUILDING CONSTRUCTION & MATERIALS - VI		Course Code: 18AATC309
L-S-P: 0-4-0	Credits: 4	Contact Hours: 6 Hrs
ISA Marks: 50	ESA Marks: 50	Total Marks: 100
Teaching Hours: 84 Hrs	Examination Duration: NA	

UNIT I:

a) **Ferrous & Non Ferrous Metals:** Types, Properties & Application in Architecture. CI, MS & WI, Different Steels, Alloys (Brass & Bronze). (Sheet – 1no.)

b) **Steel Structures:** Standard & Built up Sections, Various Types of Joints & Brackets (Lap, Butt, Lozenzo's, Concentric & Eccentric Joints) Shear, Moment & both Shear-Moment Types. Bolted & Welded Connections for Components. (Sheet – 2 nos.)

c) **Foundation & Bearing Units for Steel Structures:**
For Columns – Flexible & Rigid, Slab based, Gusset based, Rocker Bearing & Roller Bearing.
For Beams – For Columns, Beams, Frames. Pin / Hinged / Fixed / Rocker & Roller. (Sheet – 1no.)

d) **Splicing for Steel Members:** Columns / Beams / Frames. Different Types with Joinery. (Sheet – 1no.)

UNIT II:

a) **Flextural Components for Steel Structures**: Purlins, Beams, Girders, Castellated Beam, Vierendeel Girder & Lattice Girder. Joinery Components & Erection. (Sheet – 2no.)

b) **Roofing System for Steel Structures**: Types, Forms & Components like Girders, Trusses, Purlins Braces, Eaves, Storm Water Drains, Ridge, Hip, Valley & Roofing Materials.(Sheet – 2no.)

c) **Protection of Ferrous & Non Ferrous Metals**: Pre & Post Treatments, Anti Corrosive Paints. Powder Coating & Anodising. (Sheet – 1no.)

UNIT III:

a) **Framed & Steel Structures**: Portal Frames, Concept of Pre-Engineered Buildings. Types of Frames / Components / Spans. (Sheet – 2nos.)

Note – The Portfolio covering the above topics shall be presented for Term work. Site visits shall be arranged by studio teacher. Study of material application shall be submitted in the form notes, sketches and photo brief as a part of portfolio

Text Books:

- McKay J.K Building Construction Metric Vol 1-4, 4thedi Orient Longman Pvt. Ltd, Mumbai,2002
- "Construction Technology" volume-I by R Chudley, ELBS & Longman group Ltd.
- Barry R, "The construction of buildings" , Vol-2, 5th Edi, East West Press, New Delhi 1999.
- Bindra S.P and Arora S.P, Building Construction-Planning Techniques and Method of Construction, 19thedi, Dhanpat Rai Pub ,NewDelhi, 2000

- "Building Construction" by JanardhanJha, Khanna New-Delhi.
- Rangawal S.C ,"Building Construction" 22nd Edi, charotar Publishing house, Anand, 2004
- "Engineering Materials" by Surendra Singh, Vikas Delhi.
- "Building Materials" by S K Duggal, IBH New Delhi.
- Sushil Kumar T.B of Building Construction 19thedi, Standard Pub House, NewDelhi, 2003.
- Chowdhary K.P. Engineering Materials used in India, 7th Edi, Oxford and IBH Pub ltd New Delhi, 1990.
- Building Construction Hand book: By R Chudly& R Greeno, Bullerworth Heinemann, New-Delhi.

Scheme for internal Assessment (ISA): Evaluation of term work regularly and tests conducted
Scheme for Semester End Examination (ESA): Evaluation of term work portfolio & Viva

Program: Architecture		
Course Title: SERVICES – IV(Acoustic)		**Course Code:** 18AATC310
L-T-P : 2 – 0 - 0	**Credits: 2**	**Contact Hours: 2Hrs**
ISA Marks: 50	**ESA Marks: 50**	**Total Marks: 100**
Teaching Hours: 28 Hrs	**Examination Duration: 3 Hours**	

Unit I

Introduction and Scope of Acoustics:

1. **Nature and properties of sound, Physics of sound** – Sound propagation basic terminologies – frequency, pitch tone, sound pressure, sound intensity, decibel scale, loudness, threshold of audibility & plain, masking, sound distance- inverse square law.
2. **Acoustics in built environment** - Behavior of sound in enclosed spaces, Reflection of sound, Nature of Reflection from plane, Convex & concave surfaces, sound diffraction, Echoes, Whispering galleries, Dead spots & sound foci. Reverberation, reverberation time, use of Sabine's formulae and its interpretation.

   Sound field of classrooms, offices & studios.

   Auditorium acoustics – Design criteria.
3. **Noise Control** – Classification of Noise, Environmental impact of noise & acceptable noise levels. Principles

   Of noise control – noise sources, airborne & structure borne sound.

   Vibration isolation – Damping of noise, noise barriers, noise transmission through ducts, Design criteria for Industrial noise control, planning considerations, use of unit absorbers, treatment of floor & wall.

Unit II

Study of Acoustical Materials –

1. **Sound Absorbers** (Acoustical Foam, White Printable Acoustical Panel, Fabric wrapped panels, Wall Acoustical Coverings, Ceiling Tile, and Baffles & Banners).
2. **Sound Diffusers** such as (Quadra Pyramids diffusers, Pyramid Diffuser, Double duty Diffusers, Quadric Diffuser) etc. Absorption coefficient of Indigenous acoustical materials method of setting out of raked seating.
3. **Applications of noise control** - Sound proof doors and windows, sound leaks in doors and windows, floating floors, cavity wall construction, discontinuous joints, noise reduction between rooms and floors, resilient hangers.

Unit III

Study and development of ---Auditorium and theaters

Brief about – History of Greek & Roman style theatres, open air theatre concept.

1. Design details of---- audio visual room,
2. Seminar hall, Cinema Theater, auditorium with balcony used for drama, music and speech.
3. Lecture halls, office building

Case study of an auditorium acoustically treated with drawings---acoustical design for any one type of building with RT calculations.

Objective: To acquaint the student with the general guiding principles and procedures on which Acoustical Designing is based and applications of such principles in Architectural cases.

Text Books

Reference Books:

1. "Architectural Acoustics Principles and Design "By David R. Johnson and Madan L. Mehta.

2. "Auditorium Acoustics and Architectural Design" By Michael Barron.

3. "McDavid Egan (1988)-Architectural Acoustics" McGraw hill book co., NY.

4. Parich, Peter (1979) Acoustics: Noise and Buildings, Faber and Faber, London

5. Acoustics and Noise Control: B.J. Smith, R.J. Peters, S owen, Longman Group Ltd. U.S.A., 1982

6. Acoustical Designing in architecture: Vern o. Knudsen and Cyril M. Harris, John Wiley & Sons, inc. London. 1963

7. Master Hand book of Acoustics: F.Alton Everest, 4ed, McGraw-Hill, Two Penn Plaza, New York, NY 10121-2298 (Delhi- India), 1945

8. Acoustics Noise and buildings: P.H. Parkin, H.R. Humphreys and J.R Cowell, 4ed, Ebenezer Balis and Son, Ltd., the Trinity Press, Worcester, and London, 1979

9. Acousics : R. L. Suri, 1ed, Asia Publishing, Mumbai, 1966

Scheme for Semester End Examination (ESA)

UNIT	8 Questions to be set of 20 Marks Each	Chapter numbers	Instructions
I	**Question Numbers 1, 2 & 3**	I	Solve Any **2** out of **3**
II	**Question Numbers 4, 5 & 6**	II	Solve Any **2** out of **3**
III	**Assignment**	III	Design application Solve **1** OUT OF **1**

Program : Architecture		
Course Title: Contemporary Architecture		**Course Code:** 18AATC311
L-S-P: 2-0-0	**Credits: 02**	**Contact Hours: 2 Hrs**
ISA Marks:50	**ESA Marks: 50**	**Total Marks: 100**
Teaching Hours: 28 Hrs	**Examination Duration: 3 HOURS**	

UNIT I:

- Ideas and works of late modernism architect's i.e Richard Meier etc,
- Ideas and Works of postmodern architect's i.e., Charles Moore etc
- Ideas and Works of De-construction architect's i.eFrank Gehry etc

UNIT II:

- Contemporary western architecture –
- Ideas and Works of hi-tec architecture i.e. Works Norman Foster, Renzo Piano, Richard Rogers, etc.
- Ideas and Works of artist and architects i.e. Santiago Calatrava etc

UNIT III:

- Contemporary Indian architecture ninety onwards.

NOTE:

The architects and ideas mentioned above are indicative only

The course teacher may choose the ideas and works of architects to explain with examples

Text Books: Nil

Reference Books:

1. **Bahga, Bahga and Bahga**, Modern Architecture in India
2. **Jon Lang**, A Concise History of Modern Architecture in India
3. **Charles Jencks,** Current Architecture
4. **Dennis Sharp,** 20th Century Architecture, A Visual History
5. **James Steel,** Architecture Toda

Internal Semester Assessment (ISA) - 2 Minor test and assignments

Scheme for Semester End Examination (ESA)

Sl.No	8 Questions to be set of 20 Marks Each	Unit Number	Instructions
1	**Question Numbers 1, 2 & 3**	I	Solve Any **2** out of **3**
2	**Question Numbers 3, 5 & 6**	II	Solve Any **2** out of **3**
3	**Question Numbers 7 & 8**	III	Solve Any **1** out of **2**

Program: VI Semester B. Arch		
Course Title: Settlement Planning		Course Code: 18AATC312
L-S-P: 2-0-0	Credits: 2	Contact Hours: 2 hrs
ISA Marks:50	ESA Marks:50	Total Marks: 100
Teaching Hours: 28 hrs	Examination Duration: 3 hrs	

Unit I

1. INTRODUCTION TO HUMAN SETTLEMENTS

Elements of Human Settlements, their functions and Linkages – Anatomy & classification of Human settlements Historical development of a City as a product of socio-cultural, economical and political ideologies, Urban settlements and rural settlements: Origins, evolution and growth of settlements, characteristics, relation and differences. Principles of settlement planning in various historical periods like Mesopotamian, Egyptian, Greek, Roman, Medieval, Renaissance and Neo-classical, Cities of Vedic period, Indo- Aryan cities, Indus valley, typical Dravidian temple city. Cities of Mughal period and British-Colonial period.

2. PLANNING CONCEPTS:

Role and contribution of the following towards contemporary town planning thought:

Geddesian Triad and outlook Tower by Patrick Geddes, City Beautiful by Daniel Burnham, Garden city by Ebenezer Howard, Neighbourhood by C.A.Perry, Radburn by Henry Wright and Clearance stein, Ekistics by CA Doxiadis, City for three million habitat, Radiant city and Chandigarh by Le Corbusier and F.L.Wright, Soria Y Mata, Kevin Lynch, Ian Mcharg and Jane Jacobs.

Unit II

3. CONTEMPORARY ISSUES IN URBAN PLANNING:

Contemporary problems of settlements, Environmental impact of unplanned growth. Socio-economic aspects of urban housing and problems of slums NHP, rationale of urban regulatory controls. Urban redevelopment and renewal, urban traffic and transportation planning, URDPFI, JNNURM, PMAY

4. URBAN AND REGIONAL PLANNING

Influence of socio-economic factors in the development of human settlements, growth and decay of human settlements. Classification of settlements: Classification based on population, functions, locations, Municipal status. Town and its land uses, graphical representation and colour coding of land use, character of a town, categories of a town, densities of a town, Principles, Advantages and types of Zoning. Scope and purpose of Perspective Plan, Regional Plan, Development Plan, Local Area Plan, Special Purpose Plan, Annual Plan, Project, and Concept of Participatory approach in planning process. Introduction to Urban Design, Basic Definitions and Terminology, elements, principles, Concept of public and private realm

Unit III

5. TOWN PLANNING TECHNIQUES

Data Collection Techniques, Types of Surveys, Data and Map Analytical Techniques, Applying Carrying Capacity for Urban and Regional planning, Threshold Analysis – Factors taken into consideration to assess the most suitable land use & weighted overlay of Land suitability, Projection Techniques - Population Projection and Economic Projection, Plan formulation through Remote Sensing & Geographic Information System, Central business district, other business districts, urban nodes, rest of the city, fringe area and suburbs

6. EMERGING TRENDS IN URBAN PLANNING

Globalization and its impact on cities: Self Sustained Communities, Special Economic Zones (SEZ), Transit Oriented Development (TOD) and Integrated townships, New Urbanism, Smart growth, Transect Future of cities and cities of future - Sustainable cities, Intelligent cities, Livable cities, Resilient cities, Smart Cities, Global city, Eco city, Compact city, Vertical urbanism, MediCity, Sports city

Scheme for Internal semester assessment (ISA)

Term work: Evaluation of Portfolio, assignments by internal examiner, theory exam

Scheme for End Semester Assessment (ESA)

External examination-3 hrs

Mode of assessment :

Portfolio& Theory exam.

Text Books:

Reference Books:

1.Chapin III F. Stuart, Kaiser Edward J. and Godschalk David R., Urban Land Use Planning, University of Illinois Press, Illinois,1995 and onwards.

2.Dutt, Binode Behari, Town Planning in Ancient India, Gyan Books Pvt. Ltd., Delhi,2009

3.Gallion Arthur and Eisner, The Urban Pattern: City Planning and Design, CBS Publisher, New Delhi ,2005 and onwards.

4. Lynch Kevin, The Image of the City, Harvard University Press, Harvard,1960 and onwards.

5. Correa Charles, Housing and Urbanization, Thames & Hudson, London,2000

6. Rossi Aldo, The Architecture of the City, The MIT Press, New York,1984 and onwards.

7. Keeble Lewis, Principles and Practice of Town and Country Planning, The Estates Gazette Ltd., London,1969

8.Gordon Cullen Thomas, The Concise Townscape, Architectural Press Routledge,1961 and onwards

9.Hough Michael, Cities and Natural process: A Basis for Sustainability,Routledge,1995 and onwards

Scheme for Semester End Examination (ESA)

UNIT	8 Questions to be set of 20 Marks Each	Chapter numbers	Instructions
I	Q.No.-1, Q.No.-2, Q.No.-3	I	Solve Any **2** out of **3**
II	Q.No.-4, Q.NO – 5 Q.No.-6,	II	Solve Any **2** out of **3**
III	Q.No.-7, Q.No.-8	III	Solve Any **1** out of **2**

Program : Architecture		
Course Title: Interior Design		**Course Code: 18AATC313**
L-S-P: 0-2-0	**Credits: 2**	**Contact Hours: 3 Hrs**
ISA Marks: 50	**ESA Marks: 50**	**Total Marks: 100**
Teaching Hours: 42 Hrs	**Examination Duration: NA**	

UNIT I:

Introduction to Interior Architectural Design

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

History of Interior Architectural Design

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

UNIT II:

Elements of Interior Architecture - Enclosing Elements

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

Elements of Interior Architecture – lighting accessories & interior landscaping

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

UNIT III:

Elements of Interior Architecture - Space Programming

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

Quantity survey and costing of Interior materials and elements

Study of the basic quantifying and estimation of the interior design items. Market study investigating the material manufacturers, usage, standards available, and thumb rule based costing and quantity calculation for an interior design project.

Scheme for Internal semester assessment (ISA)

The Portfolio covering the given topics and the study models shall be presented.

The evaluation shall be through periodic internal reviews and assignments.

The students have to present the entire semester work for assessment along with Models.

Term work Evaluation of Portfolio, assignments by internal examiner

Scheme for End Semester Assessment (ESA)

Term work: Evaluation of Portfolio and assignments by internal and external examiners/Viva

Mode of assessment : Portfolio, Models, Assignment, Presentation, Reviews

TextBo oks –

1. John Hancock, Time Saver Standards for Architectural Data.
2. Ramsay and Sleeper, Architectural Graphic Standards
3. Alexander and Mercourt , Design of Interior Environment
4. Panero Julious and Zelink Martin, Human Dimension and Interior Space

Reference Books:

1. Ching, F. D. K. (1987). Interior Design Illustrated. New York : V.N.R. Publications.
2. Doshi, S. (Ed.) (1982). The Impulse to adorn - Studies in traditional Indian Architecture. MargPublications.
3. Kathryn, B. H. and Marcus, G. H. (1993). Landmarks of twentieth Century Design. Abbey VillePress.
4. Penero, J. and Zelnik, M. (1979). Human Dimension and Interior space: A Source Book of Design Reference Standards. New York : Whitney Library ofDesign.
5. Slesin, S. and Ceiff, S. (1990). Indian Style. New York : Clarkson N.Potter.
6. Dorothy, S-D., Kness, D. M., Logan, K. C. and Laura, S. (1983). Introduction to Interior Design. Michigan : Macmillan Publishing.

Scheme for internal Assessment (ISA) : Evaluation of term work regularly andReviews
Scheme for Semester End Examination (ESA) : Evaluation of term work portfolio &Viva

Program : Architecture		
Course Title: STRUCTURES - VI		**Course Code: 18AATC313**
L-S-P: 3-0-0	**Credits: 3**	**Contact Hours: 3**
ISA Marks: 50	**ESA Marks: 50**	**Total Marks: 100**
Teaching Hours: 42	**Examination Duration: 3 HOURS**	

UNIT I:

1. Vertical/lateral structural systems: introduction. Structural design project of a 15 story of 40m X 40m X 32m. Calculation dead load, live load and wind load as per IS 875-1984.
2. Seismic loading calculation as per IS1983-2002 part - I.
3. Introduction to lateral load resisting system, shear wall system and dual system.

UNIT II:

4. Introduction to earthquake resistant system, and effect of an earthquake as a whole on society. Elementary seismology, plate tectonic theory, magnitude and intensity of earthquake and seismic zonal map of India.
5. Earthquake loads on a simple building, vertical load distribution of base shear. Design philosophy of earthquake resistant structures.

UNIT III:

1. Seismic behavior of load bearing structures, in plane and out of plane walls and stiffeners. Shear walls, moment resisting frames and braced frames
2. plan configuration, vertical configuration and infill walls

Text Books:

1. Dr. Ram Chandra, Design of Steel Structures, Vol I, 10th ed. Standard book house, New Delhi, 1999.
2. S. Ramambrutham and R Narayanan, Design of Steel Structures, 4th ed. Dhanpat Rai and Sons, Delhi 1995

Reference Books:

1. Structures Martin Bechthold, Daniel L Schodek. PHI Learning pvt. Ltd

Internal Semester Assessment (ISA) 2 Minor test and assignments

Scheme for Semester End Examination (ESA)

Sl.No	8 Questions to be set of 20 Marks Each	Unit Number	Instructions
I	Q.No.-1, Q.No.-2, Q.No.-3	I	Solve Any **2** out of **3**
II	Q.No.-4, Q.NO – 5 Q.No.-6,	II	Solve Any **2** out of **3**
III	Q.No.-7, Q.No.-8	III	Solve Any **1** out of **2**

Program : Architecture		
Course Title: Analyzing Architecture		**Course Code:** 18AATE308
L-S-P: 0-2-0	**Credits:** 01	**Contact Hours:** 02
ISA Marks: 50	**ESA Marks:** 50	**Total Marks:** 100
Teaching Hours: 28	**Examination Duration:** NA	

Course contents:

Unit-I: Architecture as identification of place, basic elements and modifying the elements.

Unit-II: Architecture as doing more than one thing, using things that are there and using primitive place types.

Unit-III: Architecture as making frames and establishing the relationship of space to structure.

Sessional Work (Internal semester assessment)

Evaluation of assignments in three stages

Scheme for Semester End Assessment (ESA)

Evaluation of assignments

Mode of assessment :

Evaluation of Portfolio, assignments by internal and external examiners

References : Architectural design books, periodicals & websites

VII Semester – VIII Semester

Program Head

Signature of Dean (Academic Affairs)

Semester:VII(2018-19)

Sr.No	Course code	Course Title	Period			Evaluation scheme			Credit (L+T+P)	Hours
			L	T	P	ISA	ESA	Sub total		
1	18AATC401	Architectural Design VII (Campus Planning)	0	7	0	50	50	100	7	10
2	18AATC402	Building Construction and Materials	1	3	0	50	50	100	4	6
3	18AATC403	Dissertation	0	3	0	50	50	100	3	4
4	18AATC404	Structure-VII	0	3	0	50	50	100	3	4
5	18AATC405	Professional Practice 1	3	0	0	50	50	100	3	3
6	18AATC406	Online Portfolio	0	1	0	50	50	100	1	2
7	18AATC407	Elective-III	0	0	1	50	50	100	1	2
TOTAL			7	14	1	350	350	700	22	31

ISA: In-semester Assessment **ESA**: End Semester Assessment **L**: Lecture **T**: Tutorials **P**: Practical

Credit	Lecture Hours	Studio Hours	Practical Hours
1	1	1.5	2

Program Head

Signature of Dean (Academic Affairs)

Program : Architecture		
Course Title: Architectural Design VII (Campus Planning)		Course Code: 18AATC407
L-S-P: 0-7-0	Credits: 7	Contact Hours: 10
ISA Marks: 50	ESA Marks: 50	Total Marks: 100
Teaching Hours: 140	Examination Duration: NA	

Course content: the following issues relating to institutional design will be addressed to:

• Nature of contemporary institution, correlation to urban structure.
• Development control and urban infrastructure affecting design.
• Various attitudes to building in urban context.
• Integration to function and movement, climate, and sound, structure and services into group of buildings
• Landscaping and site planning.
• Institutional character – from abstract to detail.
• User behavior and requirements pertaining to the physically handicapped.

Necessary theoretical inputs to be given highlighting the norms and design issues The topics not covered as studio faculty members through lecture/slide shows and site visits may cover design problems.

The topics to be covered as design problems may include:

• Institution of learning – colleges with it's various departments such as medical, engineering, law, business, music, and dance colleges, vocational training institutes etc.
• Institutions of life such as hospitals, reformatories and rehabilitation institutes for the disabled.
• Institutions of research in various disciplines.
• Local/legal institutions such as the high courts, secretariat, development authorities, directorates etc.

At least two major exercises and two minor design / time problems should be given .the final submission shall necessarily include a model for at least one of the two main problems.

The students have to present the entire semester work for assessment along with Model.

Sessional Work (Internal semester assessment)

The 'Sessional Work' shall comprise of the following.
(i) A hand written journal with notes and manual sketches of representative examples (10 marks)
(ii) A graphically presented or a written report with illustration of Any One of the topics to be individually elected and completed under the periodic supervision and guidance of the subject teacher. (20 marks)
(a) Scaled manual documentation of field studies of precincts, streets, building or parts thereof and artifacts bearing significance to the periodic history under study (not more than two half imperial sized sheets A2 – 420 x 594 mm each)
OR
(b) Graphically illustrated and annotated manual presentation on 'Style identification' of Building or parts thereof bearing significance to periodic history under study (Not more than two half imperial sized sheets (42 – 420 x 594 mm each).
OR
(c) A hand written illustrated report of not more than 1000 words on comparative study of architectural features, motifs, design themes and typological planning

Evolutions in the periodic history under study. (20 marks)

Scheme for Semester End Assessment (ESA)

Mode of assessment :

References :

1 Campus design in India – Kanvinde& Miller
2. Compus Planning _ Richard Dober.
3. Urban Design. The Architecture of towns and cities. –Paul Sprereingen.
4. Exterior design in Architecture __ AshiharaToshinibu
5. Modern Language of Architecture __ Bruno Zevi.
6. Modern Movements in Architecture __ Charles Jencks
7. Language of Post – modern Architecture - Charles Jencks
8. Complexities and contradictions in Architecture – Robert Venturi
9. Architectural Composition. –Rob Krier.
10. Pattern Language Christopher Alexander.
11. Town Design –Fredrick Gibberd Alexander
12. Various monographs and periodicals

Program : Architecture		
Course Title: Building Constructions & Materials- VII		**Course Code: 18AATC402**
L-S-P: 0-4-0	**Credits: 4**	**Contact Hours: 6**
ISA Marks: 50	**ESA Marks: 50**	**Total Marks: 100**
Teaching Hours: 84Hrs	**Examination Duration: NA**	

Course contents:

Unit-I: Large span Roofing systems,shell roof ,Folded Plates in R.c.c, advantages over conventional roofing systems and details there in space frame, Tensile &Pneumatic structures ,evolution ,advantages ,scope and construction details there in.

Unit-II : Envelop systemMethod of using various types of curtain wall method including structural glazing Advantages, provision and arrangements made during construction , working out details with various metals.

Unit-III Pre fab,Pre stress and post tension study of various buildings prefab elements ,advantages over in situ components study of pre tensioning and post tensioning of prefab and in situ components

Advantages &disadvantages over regular reinforcement, pre& post tensioning method.

Material-

Concrete admixture adhesive &sealants, pest control Identifying the pest which may attack the buildings precautionary measures taken during construction. Pre &post treatment methods

Sessional Work (Internal semester assessment)

The 'Sessional Work' shall comprise of the following.

Scheme for Semester End Assessment (ESA)

The students have to present the entire semester work for assessment along with Model.

Mode of assessment :

A1 size sheets related to above mentioned topics

Models to scale on each topic are expected

References :

Program : Architecture		
Course Title: Dissertation		**Course Code:** 18AATC403
L-S-P: 0-3-0	**Credits: 3**	**Contact Hours: 4**
ISA Marks: 50	**ESA Marks: 50**	**Total Marks: 100**
Teaching Hours: 42	**Examination Duration: NA**	

Course contents: The objective of this course is to orient the students to gain a strong theoretical analytical base for a well structured research. The course shall enable students to conduct research, analyse and write a research paper on a topic of their interest.

Students may choose a topic related to Architecture and allied subjects. Emphasis must be on critical understanding, logical reasoning and structured writing.

Unit-I:

The nature and function of research, meaning of research in the field of architecture, pure and applied research, traditional and potential areas/types, the three stages of research

Research methodology, various techniques of data collection in general, specific techniques in architectural research, methods of analysis stage, communication of research reporting, the structure of a report, the necessity for the development of writing skills.

Unit-II

Technical data about formal writing, the use of visuals, the qualities of research, the use of primary and secondary references, bibliography, notation, cross reference etc. Issues of selective reference. Methods of writing draft reports before finalisation. Research in the fields of environment, community structure, architectural history and theory, urban structure, building type studies, etc.

Unit-III

Behavioural studies and user evaluation.

Sessional Work (Internal semester assessment)

Students are expected to present the progress of the study at various stages of the semester.

Students will be asked to prepare research proposals, which will be discussed and modified.

Scheme for Semester End Assessment (ESA)

Final assessment of the students' work may be based on written Paper as well as oral communication. However, greater weightage may be given for writing skills and research content of the study.

Mode of assessment :

By the end of the semester, students are expected to submit a written paper of approximately 3500 words.

Standard referencing conventions and technical writing norms must be adhered to.

Students are expected to present the progress of the study at various stages of the semester.

References :

1. Murray, R. Writing for academic journals. Berkshire: Maidenhead, Open University Press. (2005).
2. Borden, I. and Ray, K. R. The dissertation: an architecture student's handbook. (2006).
3. Anderson, J. and Poole, M. Thesis and assignment writing. Brisbane: John Wiley. (1998).
4. Architectural research methods; Linda Groat& David Wang, John Wiley and sons, New York
5. Visual research methods in Design; Henry Sanoff, Van Nostrnad Reinhold, New York
6. Architectural research; Snyder James C; Van Nostrnad Reinhold

Program: Architecture		
Course Title: Professional Practice I		Course Code: 18AATC405
L-T-P 3-0-0	Credits: 3	Contact Hours: 3
ISA Marks: 50	ESA Marks: 50	Total Marks: 100
Teaching Hours: 42	Examination Duration: 3 Hrs.	

Unit I

1. **Architect and his Practice:**

Profession of architecture, duties and liabilities to the profession, Types of Architect's Office – proprietorship, partnership and combined concerns, advantages and Disadvantages of each, secure clientage, office administration and accounts of firms, Competitions, Supervision by Architects:Site Visits, Meaning and Purpose of Supervision, Remarks on Site Book, Site Meeting and Bill Checking

2. **Council of Architecture (COA) and The Indian Institute of Architects (IIA)**

Council of Architecture (COA), Code of Professional Conduct, Architect's Act 1972, The Indian Institute of Architects (IIA), Conditions of engagement, Scale of Professional Charges, Mode of Payment, Taxation in the profession, Architect's responsibilities and liabilities towards client

Unit II

3. **Tenders –** Tender documents, Types, Tendering Procedure, Tender Notice, EMD, Mobilization Fund, Security Deposit, Retention Amount, Mobilization Fund, Contractor's Profit, Work Order, and Letter of Acceptance.
4. **Contracts –** Definition, General Principles, Types of Contract, Importance of Articles of Agreement and Appendix, Definition of various terms and their scope. Architect's power and duties with respect to execution of contract conditions, Contractor's Duties and Liabilities under contract. Problems arising out of contract – Virtual completion and defects liability, liquidated and unliquidated damage, Penalty Bonus, Extension of Time, Non tendered items, extra and additional work, variation, prime cost and provisional sum, fire insurance and conditions of claim.

Unit III

5. **Valuation –** Introduction,Essential Characteristics, Value and its classification, purpose of Classification, methods of valuation, standard rent, cost of construction.

Text Books

Reference Books:

1. Professional Practice – Dr. Roshan Namavati
2. Architectural Practice and Procedure – Ar. V S Apte
3. The Business of Architectural Practice – Derek Sharp
4. Architectural Practice in India – Ar. MadhavDeobhakta
5. Professional Practice – Dr. K G Krishna Murthy and Prof S V Ravindra

Scheme for Semester End Examination (ESA)

UNIT	8 Questions to be set of 20 Marks Each	Chapter numbers	Instructions
I	3 Questions	1 & 2	

Program : Architecture		
Course Title: Digital Tool III (REVIT)		**Course Code: 18AATC407**
L-S-P: 0-0-1	**Credits: 1**	**Contact Hours: 2**
ISA Marks: 50	**ESA Marks: 50**	**Total Marks: 100**
Teaching Hours: 64	**Examination Duration: NA**	

COURSE OVERVIEW:

Building Information Modelling is used by architects and other building professionals to help reduce risk obtain insight into how buildings will perform before construction begins, develop better quality designs, and improve project delivery.

Course contents:

UNIT I:

1. Building Information Modeling
2. Revit Architecture Basics
3. Starting a Design
4. The Basics of the Building Model
5. Loading Additional Building Components

UNIT II:

1. Viewing the Building Model
2. Using Dimensions and Constraints
3. Developing the Building Model
4. Detailing and Drafting
5. Construction Documentation.

UNIT III:

Presenting the Building Model.

Sessional Work (Internal semester assessment)

- Assessment will be done in three parts (Minor-I, Minor-II and Final Submission).
- There will submission for both the minors along with test in the lab where they will be marked.
- Term work submission will be in the format of portfolio containing the compilation of all the works done throughout the semester.

Scheme for Semester End Assessment (ESA)

- Portfolios will be marked on the basis of submission after ISA.

Mode of assessment :

- Portfolio Submission.

References : Online BIM tutorial

Program : Architecture		
Course Title: Online Portfolio		Course Code: 18AATC406
L-S-P: 0-0-1	Credits: 1	Contact Hours: 02
ISA Marks: 50	ESA Marks: 50	Total Marks: 100
Teaching Hours: 48	Examination Duration: NA	

Course contents:

Unit-I:

Students will learn the industry-standard publishing application to design and publish high-quality Architectural presentations and portfolio across a full spectrum of digital and print media.

Portfolios and Presentations in Adobe InDesign, will take students through all of the steps needed to build a professional presentation and portfolio using textual description, photos of drawings, photos models, sketches etc.

Unit-II

Demonstrating how to set up Architectural online portfolio website using Word press (open source CMS).

Create profile and upload Architectural content like: Academic assignments, design sheets, participations, Award, hobbies etc. to share with professional architects and web audience.

Unit-III

Installing plugins, themes, and attracting web users with permalinks, social sharing etc. in wordpress.

Sessional Work (Internal semester assessment)

Regular Assignments, Architectural portfolio hardcopy (booklet) and online portfolio website

Scheme for Semester End Assessment (ESA)

Term work: Evaluation of Portfolio booklet and online portfolio website by external examiners

Mode of assessment: Printed portfolio booklet and online portfolio website

References :www.adobe.com, www.wordpress.com, video tutorials and web resources

Program : Architecture		
Course Title: STRUCTURES – VII		Course Code: 18AATC404
L-S-P: 0-3-0	Credits: 3	Contact Hours: 4
ISA Marks: 50	ESA Marks: 50	Total Marks: 100
Teaching Hours: 64	Examination Duration: NA	

UNIT I:

1. Case studies- Study of ongoing residential, public and commercial RC frame building structures by site visits.
2. Collecting data regarding the type of structural system, structural configuration, arrangement of columns, beams for the different floors.
3. Critical analysis and interpretation of data at the studio, for the possible alternative structural systems with column positions and beam layout.

UNIT II:

4. Preparing a RC structural system for an proposed architectural design of a residential, commercial and public building structures. Preparing column positions, beam layout as per requirements of all floors and parking arrangement.
5. Preparing various options of foundations can be provided for the proposed building structure. Design of typical isolated column foundation and pile foundation for the estimated axial loading Design of typical columns for the estimated gravity load subjected to axial load and uni-axial moment. Design of typical beam and slab elements for the estimated loading.

UNIT III:

6. Structural detailing - Preparing the structural drawings of layout of columns, foundation and retaining walls.

Typical floor structural drawing with reinforcement details

Text Books :

1. S.R. Karve and V. L. Shah, Limit state theory and design of reinforced concrete structures publications Pune

Reference Books:

1. IS: 875- 1987 (Part – I. II and III) Code of practice Design loads other than earthquake laod for building structures.
2. IS: 456- 2000 Code of practice for plane and reinforced concrete.

Program: Architecture		
Course Title: Elective – Architecture Film Making - I		Course Code: 18AATE407
L-T-P:0-0-1	Credits: 1	Contact Hours: 2
ISA Marks:50	ESA Marks:50	Total Marks:100
Teaching Hours:32	Examination Duration: NA	

Unit I

Film Pre-production

Introduction to Architectural film making concepts, story board, screenplay and planning.

Unit II

Film Production

Introduction to video shooting using various devices.

Unit III

Film Post-Production

Video post-production techniques like editing, titles, sub titles, narration and rendering.

Text Books

Reference Books: Online tutorials

Scheme for Semester End Examination (ESA)

Assignments, Checking of Portfolio of Term Work / Viva.

Program : Architecture		
Course Title: SUSTAINABLE DEVELOPMENT OF LIVING HERITAGE-II		**Course Code: 18AATE408**
L-S-P: 0-2-0	**Credits: 2**	**Contact Hours: 2 hrs.**
ISA Marks: 50 marks	**ESA Marks: 50 marks**	**Total Marks: 100**
Teaching Hours: 32	**Examination Duration: NA**	

UNIT I:

Definition of Cultural Heritage, Cultural Landscape, Monuments & site (UNESCO operational guidelines)
Documentation of the Heritage Site
Need for conservation of living cultural heritage sites.
Values & Ethics in heritage conservation
Charters

UNIT II:

Mapping
Analysis
Draft Proposals and report

UNIT III:

1. Final proposal and report

Text Books: Nil

References :

Nil

Program : Architecture		
Course Title: Transit Oriented Development		**Course Code: 18AATE409**
L-S-P: 0-2-0	**Credits: 2**	**Contact Hours: 2 hrs.**
ISA Marks: 50 marks	**ESA Marks: 50 marks**	**Total Marks: 100**
Teaching Hours: 32	**Examination Duration: NA**	

Course contents:

Unit-I:

Introduction to Transit Oriented Development

Theories and Principals of TOD

Examples of TOD

Unit-II

Study, Analysis and Design of an identified area along a transit Corridor using Principles of TOD and Infrastructure

Unit-III

Research Paper on any one principal or component of Transit Oriented Development

Sessional Work (Internal semester assessment)

Scheme for Semester End Assessment (ESA)

Mode of assessment:

Checking of Portfolio of Term Work / Viva

References:

Nil

Program : ARCHITECTURE		
Course Title: ARCHITECTURAL LIGHTING		**Course Code: 18AATE410**
L-S-P: 0-2-0	**Credits: 2**	**Contact Hours: 2**
CIE Marks: 50	**SEE Marks: 50**	**Total Marks:**
Teaching Hours: 32	**Examination Duration:**	

UNIT I:

1. The history of architectural lighting
2. Basics of Lighting Design
3. Terminology and units
4. Types of Light and light sources
5. Control gear and control equipment

UNIT II:

6. Light – Qualities and features
7. Controlling light
8. Luminaries
9. Lighting design
10. Lighting design and analysis tools

UNIT III:

8. Exercise: Design of Lighting for a sample space.

Text Books: NIL

Reference Books:

- Handbook of Lighting Design by RudigerGanslandt and Harald Hofmann
- Lighting Design Basics by Mark Karlen
- Designing With Light: The Art, Science and Practice of Architectural Lighting Design by Jason Livingston.
- The Architecture of Light (2nd Edition): A textbook of procedures and practices for the Architect, Interior Designer and Lighting Designer.

Semester: VIII (2018-19)

Sr.No	Course code	Course Title	Period			Evaluati
			L	T	P	ISA
1	18AATT401	Professional Training	0	22	0	50
TOTAL			0	22	0	50

ISA: In-semester Assessment **ESA**: End Semester Assessment **L**: Lecture **T**: Tutorials **P**: Practical

Credit	Lecture Hours	Studio Hours	Practical Hours
1	1	1.5	2

Program Head

Signature of Dean (Academic Affairs)

Program : Architecture		
Course Title: Professional Training		**Course Code: 18AATT401**
L-S-P: 0-22-0	**Credits: 22**	**Contact Hours: 30**
CIE Marks: 50	**SEE Marks: 50**	**Total Marks: 100**
Teaching Hours: 420	**Examination Duration: NA**	

UNIT-1

The Student is expected to be exposed to preparation of working drawing, detailing, preparation of architectural models, computer applications in design and drafting, filing system in respect of documents, drawing and preparation of tender, documents. Site experience may be given in respect of supervision of the construction activity, observing the layout on site, study of the stacking methods of various building materials, study of taking measurement and recording.

Students will have to maintain a day to day record of their engagement for the period of training. This will be recorded in an authorized diary to be counter signed by the architect at the end of each month and the same diary shall be sent to the department once in a month. At the end of the training period, a student will have tp produce a certificate of experience and satisfactory performance from the concerned office in the prescribed format.

UNIT-II

The viva-voce marks shall be awarded based on the following works to be submitted by the student and presented during the viva.

Training Report: this shall contain copies of various drawing done by the student either drafted or designed. It shall also contain other works like photographs of site visited, models done, computer output produced etc.,

Building study – This shall be a detailed critical study of a building designed by the architect with whom the student has worked. It shall include the study of function, aesthetics, context, structure etc., This shall be presented through drawings, photographs, write ups etc.,

UNIT-III

Building Materials Study – This shall be a detailed study of a new or relatively new building material available in the market. A study of its properties, uses, cost, maintenance etc., is expected to be done. Samples of materials shall also be obtained and presented.

Detailed Study – This shall be a study of any interesting detail done in the firm where the student has undertaken training. This shall include sketches and photographs of the detail.

A Candidate failing in the viva examination shall repeat the training afresh for 16 weeks, the starting date coinciding with the beginning of a subsequent semester.

Objectives of the course:

To provide exposure to the various dimensions of architectural practice.

Text Books: NIL
Reference Books: NIL

School of Architecture,
KLE Technological University,
BVBCET Campus, Vidyanagar, Hubli.

CURRICULUM SCHEME & SYLLABUS OF

IX Semester – X Semester

(Year of introduction-2015, Faculty-A, Architecture-AT, Core course-C, Humanities-H, Lab-L, Elective-E, internship-I, Practice-p, W-Project)

Semester: IX (2017-18)

Sr.No	Course code	Course Title	Period			Evaluation scheme			Credit (L+T+P)	Hours
			L	T	P	ISA	ESA	Sub total		
1	17AATT501	Professional Training	0	22	0	50	50	100	22	18
TOTAL			0	22	0	50	50	100	22	18

ISA: In-semester Assessment **ESA**: End Semester Assessment **L**: Lecture **T**: Tutorials **P**: Practical

Credit	Lecture Hours	Studio Hours	Practical Hours
1	**1**	**1.5**	**2**

Program Head

Signature of Dean (Academic Affairs)

Semester: X (2017-18)

Sr.No	Course code	Course Title	Period			Evaluation scheme			Credit (L+T+P)	Hours
			L	T	P	ISA	ESA	Sub total		
1	17AATC501	Architectural Design - IX (Thesis Project)	0	20	0	50	50	100	20	18
2	17AATE501 Onwards	Electives-VI	0	2	0	50	50	100	2	2
TOTAL			0	22	0	100	100	200	22	20

ISA: In-semester Assessment **ESA**: End Semester Assessment **L**: Lecture **T**: Tutorials **P**: Practical

Credit	Lecture Hours	Studio Hours	Practical Hours
1	**1**	**1.5**	**2**

Program Head

Signature of Dean (Academic Affairs)

IX SEMESTER

Program : Architecture		
Course Title: Professional Training		**Course Code: 17AATT501**
L-S-P: 0-22-0	**Credits: 22**	**Contact Hours: 30**
CIE Marks: 50	**SEE Marks: 50**	**Total Marks: 100**
Teaching Hours: 420	**Examination Duration: NA**	

UNIT-1

The Student is expected to be exposed to preparation of working drawing, detailing, preparation of architectural models, computer applications in design and drafting, filing system in respect of documents, drawing and preparation of tender, documents. Site experience may be given in respect of supervision of the construction activity, observing the layout on site, study of the stacking methods of various building materials, study of taking measurement and recording.

Students will have to maintain a day to day record of their engagement for the period of training. This will be recorded in an authorized diary to be counter signed by the architect at the end of each month and the same diary shall be sent to the department once in a month. At the end of the training period, a student will have tp produce a certificate of experience and satisfactory performance from the concerned office in the prescribed format.

UNIT-II

The viva-voce marks shall be awarded based on the following works to be submitted by the student and presented during the viva.

Training Report: this shall contain copies of various drawing done by the student either drafted or designed. It shall also contain other works like photographs of site visited, models done, computer output produced etc.,

Building study – This shall be a detailed critical study of a building designed by the architect with whom the student has worked. It shall include the study of function, aesthetics, context, structure etc., This shall be presented through drawings, photographs, write ups etc.,

UNIT-III

Building Materials Study – This shall be a detailed study of a new or relatively new building material available in the market. A study of its properties, uses, cost, maintenance etc., is expected to be done. Samples of materials shall also be obtained and presented.

Detailed Study – This shall be a study of any interesting detail done in the firm where the student has undertaken training. This shall include sketches and photographs of the detail.

A Candidate failing in the viva examination shall repeat the training afresh for 16 weeks, the starting date coinciding with the beginning of a subsequent semester.

Objectives of the course:

To provide exposure to the various dimensions of architectural practice.

Text Books: NIL

Reference Books: NIL

X SEMESTER

Program : Architecture		
Course Title: Architectural Design - IX		Course Code: 17AATC501
L-S-P: 0-20-0	Credits: 20	Contact Hours: 18
ISA Marks: 50	ESA Marks: 50	Total Marks: 100
Teaching Hours: 252	Examination Duration: NA	

Course contents:Thesis project is the culmination of the Undergraduate program in architecture. In thesis a student is expected to undertake an in-depth investigation of an area of architecture that he/she is interested in. Students are required to develop the design as per the design objectives and design brief submitted in the report during Pre thesis. Afull-fledged large scale Architectural Design with holistic approach including site Investigation, Design programme formulation, Structural considerations, Interior space planning, Environmental planning, Building Services, Climate responsiveness shall be demonstrated.

Unit-I:

- Architectural Project shall consist of a graphically presented Design solution in from of sufficient number of architectural drawings with models, views.

- It is expected that students demonstrates an ability of holistic and comprehensive thinking in the areas of Site Planning, Interior space planning, Climate responsive design.

Unit-II:

- Architectural Project shall consist of a graphically presented Design solution in from of sufficient number of architectural drawings with models, views etc.
- It is expected that the students demonstrates an ability of holistic and comprehensive thinking in the areas of Environmental planning, Building Services, sustainable architecture and Architectural Detailing.
- Architectural thesis report addressing the above mentioned areas.

Unit-III:

- Design Portfolio of graphically presented Design solution in totality with the models and an Architectural thesis.

Sessional Work -Internal semester assessment (ISA)
The Internal assessment of Architectural Thesis Project shall be carried out Stage wise during the reviews as decided by the School.

Scheme for Semester End Assessment (ESA)
The final assessment in the examination shall be done by Internal and External Examiner / s in which the students will display the work and explain their work and answer all the queries raised by the Examiners.
The Time allotted per student shall be minimum 20 minutes to maximum 30 minutes.
The Internal stage wise making shall be done out of 50 marks and External marking shall be done jointly by the External Examiner/s out of 50 marks. 5 marks shall be reserved for oral presentation to be assessed jointly by both Internal and External Examiners.

Mode of assessment : Stage wise reviews **(**internal and external) for ISA and External Jury for ESA

References :

1. Design Methods by Jones C. J. (1992) John Willey and Sons, Inc.
2. How Designers think: the design process demystified by Lawson B.2005 ,Architectural Press, Oxford

Electives

Program : Architecture		
Course Title: Barrier Free Architecture		**Course Code:15AATE501**
L-S-P: 0-2-0	**Credits: 2**	**Contact Hours: 2**
ISA Marks: 50	**ESA Marks: 50**	**Total Marks: 100**
Teaching Hours: 28	**Examination Duration: NA**	

Course Objectives:
To understand and inculcate skills required for designing for barrier free built environments for for persons with disabilities and elderly persons. Techniques involved in making such provisions.

Course contents:

Unit-I

Introduction to Provisions of persons with Disabilities Act, 1995, Type of disabilities, National Policy for provisions for elderly persons, Concept of equal opportunity, human rights, social justice and empowerment of physically challenged persons. Initiatives at global and International level for protection of rights of disabled and also elderly person.

American disabilities Act 1990 etc.

Unit-II

National Institutes, agencies and professional bodies involved in disabled welfare, associated norms and standards thereof.

Design principles in Architecture for creating environments friendly for various types of physically challenged persons. Educational Institutions, Hospitals, Transportation terminals such as bus, railway stations and airports for barrier free spaces. Study of Standards as given in TSS, TCPO, CPWD ADA etc., and others

Unit-III

Provisions in public spaces and site planning – parks, play grounds, public transportation, parking lots, Details of sidewalks, road intersections, access to public toilets.

Provisions in design of public buildings –Details in, ramps, guide rails, lifts, dimensions of wheel chairs, accessibility in public buildings, Signage, audio visual facilities etc. Design of Toilets and interiors spaces for use of physically challenged.

Scheme for Internal semester assessment (ISA)

Reworking on Previous semester Design Projects to design barrier free spaces.

Scheme for Semester End Assessment (ESA)

Site planning: 30%, Design of Built spaces: 30%, Design of details:40%

Mode of assessment : Evaluation of assignments by internal and external examiners

References :

1. Micheal J.Bednar. “Barrier Free Environments”, Dowden, Hutchinson and Ross, Ive 1977.
2. Ministry of Urban Affairs and Employment. Central Public Works Department, India,“Guidelines and Space Standards for Barriers Free Environment for Disabled and Elderly Person, 1998.
3. Unnati. “ Design Manual for a Barrier – Free Built Environment” , Handicap International, December, 2004
4. Building without barriers for the disabled, Harkness,

Program : Architecture		
Course Title: Human Centered Design		**Course Code: 15AATE502**
L-S-P: 0-2-0	**Credits: 2**	**Contact Hours: 2**
ISA Marks: 50	**ESA Marks: 50**	**Total Marks: 100**
Teaching Hours: 28	**Examination Duration: NA**	

Course contents:

Understanding Design as a very old human capability that has been forgotten by the mainstream educational system and traditionalist alike.A modern human activity that can help the products,services and policies of the future within the constraints of our contexts.

Unit-I:

What is Design?

Multiple Dimensions of Design,Processes and Applications

What is Human Centered Design?

1 Looking: Observing Human Experience

2 Understanding: Analyzing challenges and opportunities
3 Making: Envisioning Future Possibilities

Unit-II

HCD to identify problem.

Unit-III

Field Work, Define, Ideate, Prototype(Concept design, Detailed Design) ,Test, Feedback

Scheme for Internal semester assessment (ISA)

Field work
Ideation, Concept design,Final Design
Periodic reviews presentations of finding , concerns, Development stage of product and justification

Scheme for Semester End Assessment (ESA)

Final Report
Prototype design

Mode of Assessment:

Field work attendance
Assignment

References:

1. Harold Nelson: The Design Way Intensions/Compositions/Value
2. John Heskett :Toothpics and Logos Objects/Communication/Environments/Identities/Systems/Contexts/Future
3. Klaus Krippendorff:The Semantic Turn ,Meaning of Artifact in :Use/Language/Life Cycle/Ecology

Program : ARCHITECTURE		
Course Title: SUSTAINABLE ARCHITECTURE		**Course Code: 15AATE503**
L-S-P: 0-2-0	**Credits: 2**	**Contact Hours: 2**
CIE Marks: 50	**SEE Marks: 50**	**Total Marks: 100**
Teaching Hours: 28	**Examination Duration: NA**	

UNIT I:

1. Introduction to Sustainable Architecture
2. Approaches to Sustainable Design
3. Concept of Cradle to Cradle
4. Life Cycle Analysis

UNIT II:

5. Principles of Building Physics for Sustainable Design
6. Sustainable Urban Spaces and Landscape Design
7. Building Skins and Façade Design
8. Sustainable Indoor Spaces
9. Passive Design Strategies
10. Professional Responsibility in Sustainable Environmental Design

UNIT III:

11. Design Project for Demonstration of the Learning.

Scheme for Internal semester assessment (ISA)
Termwork and assignments evaluation by internal examiner

Scheme for Semester End Assessment (ESA)
Termwork and assignments evaluation by internal and External examiner

Mode of Assessment: Evaluation of assignments by internal and external examiners

Text Books: NIL

Reference:

Program : Architecture		
Course Title: Special Facilities Planning		**Course Code:** 15AATE504
L-S-P: 0-2-0	**Credits: 2**	**Contact Hours: 2**
ISA Marks: 50	**ESA Marks: 50**	**Total Marks: 100**
Teaching Hours: 28	**Examination Duration: N/A**	

Course contents:

UNIT-I Understanding the Facilities context.:

Facility needs, The Building cycle, Leasing or buying, User Requirements and Building information, Over view of URM. Facility management and space management concepts, Facilities management functions, User requirements and Meeting space

Requirements, space evaluation and space management. Facilities Utilization, concepts, assessing Utilization, role of User requirements in Utilization.

UNIT-II Fundamentals of URM.

URM Terminology, ready to apply URM, staffing URM, getting organized for URM. Analysing operations and activities, Defining User Requirements, Communicating User Requirements.

UNIT-III Applications and modifications of URM.

URM Applications- Flexibility of URM, Evaluating existing buildings, (Lease or purchase)
Evaluating currently occupied buildings, Standardized spaces and facilities, Facilities and space management.. Using computers with URM, Computers with facilities planning, CAD & CAFM, Graphics/ DBMS combined.

Scheme for Internal semester assessment (ISA)
Termwork and assignments evaluation by internal examiner

Scheme for Semester End Assessment (ESA)
Termwork and assignments evaluation by internal and External examiner

Mode of Assessment: Evaluation of assignments by internal and external examiners

References :

1. Facilities PlanningThe User Requirements MethodSecond Edition,RogerL.Brauer

Program : ARCHITECTURE

Course Title: Building Performance Analysis &Appraisal		**Course Code: 15AATE505**
L-S-P: 0-2-0	**Credits: 2**	**Contact Hours: 2**
CIE Marks: 50	**SEE Marks: 50**	**Total Marks: 100**
Teaching Hours: 28	**Examination Duration:**	

UNIT I:

Introduction to Building Performance Analysis
Introduction to Building Information Modeling
Introduction to the appraisal process and certifications

UNIT II:

Introduction: Building Performance Analysis

Energy Literacy & Building Loads

Climate & Weather Analysis

Solar Measurements & Strategies

Wind & Airflow Strategies

Day lighting Strategies & Analysis

Whole Building Energy Optimization

UNIT III:

Appraisal and Certifications like Energy Star, IGBC, REC, Clean Energy Certificate, Net Zero Energy Building certification, GRIHA, BEE rating etc

Scheme for Internal semester assessment (ISA)

Termwork and assignments evaluation by internal examiner

Scheme for Semester End Assessment (ESA)

Termwork and assignments evaluation by internal and External examiner

Mode of Assessment: Evaluation of assignments by internal and external examiners

Text Books:NIL

Reference:

1. Teri GRIHA
2. IGBC Website
3. BEE Website
4. Autodesk : Sustainability Workshop